Principles, Processes and Practices of Fraud Prevention

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Principles, Processes and Practices of Fraud Prevention

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door

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geboren te San Salvador, El Salvador
promotor: prof.dr. T.L.C.M. Groot
To my family,

For their eternal patience, understanding and support throughout this journey.

“Try not to become a man of success but rather to become a man of value”
Albert Einstein (1879-1955)

“The most successful men in the end are those whose success is the result of steady accretion.
It is the man who carefully advances step by step, with his mind becoming wider and wider -- and progressively better able to grasp any theme or situation -- persevering in what he knows to be practical, and concentrating his thought upon it, who is bound to succeed in the greatest degree”
Alexander Graham Bell (1847-1922)
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Samuel Johnson once said that: “Few things are impossible to diligence and skill. Great works are performed not by strength, but perseverance.” And perseverance, in my case, has become a reality with this doctoral dissertation. Perseverence requires great strength, which in my case comes from a few sources: the love of family, the support of friends, and the insight of colleagues.

I come from a very humble and proud beginning. The Hernandez family was born in El Salvador and immigrated to Canada in 1987. The dream of my parents was a better future for their three children. We left behind a country of contradictions, discrimination, and poverty; on the other hand, this was a country of warmth, family and memories. We arrived in Canada during an economic recession, but our dreams could not have imagined how the Hernandez family would flourish in countries of great opportunity such as Canada and, now, the Netherlands.

In 2001, I moved (with my wife) to the Netherlands with the desire to become a better professional and to see whether a part-time PhD would be possible. As fate would have it, there was a Dutch professor, who had lived in El Salvador, that was willing to take a chance with me: Tom Groot. I said many things, but had little to offer other than dreams and ideas. Tom has been very supportive and understanding; he has allowed me to do research independently; and has guided me every step of the way. Thank you, Tom.
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From an early age, I’ve had the desire to “become a giant.” This is a deep feeling of always wanting to do more and better things, and of leaving a mark on this world in meaningful ways. As a child, I came to my father’s business to see how boats were repaired. As a teenager, I wanted to feel as an independent young man: I worked in a seafood processing plant during weekend days and worked as a restaurant “bus-boy” during nights. I quickly learned to focus, push the boundaries of my mind and body, and to have bigger dreams. I was initially not accepted to the Accounting program at the University of Waterloo in 1993. It took 15 months of hard work, and help from Professor Carter, to join the Math and Accounting program. I have learned to accept disappointments, but also how to persevere.

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I first joined PwC in 1996. Throughout this time, I have met some incredible people. I have been fortunate to have had great mentors along the way, including Mike Garvey (my role model), Rich Baird, Alan Kelly, and, most recently, Hans Winters. PwC has been very good to me. Alan Kelly, Alan Good, and Anton Bakkum were extremely helpful in providing data and much-needed support for my study. PwC also provided some financial assistance to cover certain out-of-pocket costs for my research assistants, and for this I need to thank Hans Winters. Colleagues, such as Olof Bik, have taken their time to provide a lot of insight on earlier paper drafts. My external coach – Sonja Vissinga – has been very helpful during a difficult period of my
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During the last four years, I have been absorbed by this PhD process and my PwC career. I have, in turn, not maintained many personal relationships, simply due to lack of time. To my friends from my tennis group, Rotary Club The Hague Metropolitan, Genesis Park, and those living in Amsterdam and around the world, I look forward to spending more time with you in the future. My largest clients (in the Netherlands and Germany) over the past four years told me that I could write stories about the fraud and bribery which occurred at their companies. Because of litigation and confidentiality reasons, I cannot do so. But I am confident that some of their experiences are reflected in this dissertation, as they certainly helped me shape my thoughts and theories.

To all who have helped me, thank you. I am forever indebted to you. This PhD dissertation is a dream come true and I can use it as a vehicle to give many more things back to society. When family, friends, and colleagues support you, few things are impossible.
Preface

It is somewhat masochistic to be a full-time partner at a Big 4 accounting firm, dealing with Securities Litigation and Investigation matters, working with European companies involved in a crisis and facing investigations by US regulators, and, at the same time, be focused on “part-time” academic studies on a topic that is so interesting – financial reporting fraud. During the past four years, I have had the opportunity to be part of a team that helped investigate some of the major financial reporting fraud scandals in Europe, assisted 10A investigations, and also dealt with companies confronting pervasive corruption issues. Being “in the inside” has offered me a unique opportunity to examine how things go wrong, and the length to which individuals will go to cover and deny wrongdoing. I have been fortunate to act in an investigator role, although it has been a bigger challenge to help Audit Committees and Senior Executives (usually “new management”), to undertake remediation initiatives involving personnel, correcting of accounts, and implementing new internal controls.

Almost inevitably, a scandal is a clear sign of a compliance breakdown, involving all internal compliance-responsible departments: Accounting & Reporting, Internal Audit, Office of the General Counsel, and Office of Ethics and Compliance. To address a compliance breakdown, structural changes are necessary, from the actions of an Audit Committee, to the profile and credibility senior management, and to the structure of corporate ethics and compliance activities. Compliance is about culture, which only changes with the right commitment from the top, the right organizational structures, policies and procedures in place, the right people heading all
Compliance-related departments, and a commitment to “zero tolerance.” Compliance requires significant investments in time and resources. Changing an organization which has been used to being non-compliant and engaging in illegal activities, requires a commitment from the top, the right compliance-directed organizational structures, and a “zero tolerance” approach misconduct. People, politics, and money always get in the way of Compliance.

I have been fortunate to have helped build Compliance departments at multi-billion dollar corporations. The structural changes which I have helped implement with these organizations, have been aligned to US requirements (Seabord Report, McNulty Memo, FCPA Opinion Procedure Release 04-02, US Federal Sentencing Guidelines, Bank Secrecy Act/Anti-Money Laundering Examination Manual) and generally “feel right” once the work has been completed. There is no “silver bullet” to fraud prevention; it is just fair to assume that a structural compliance breakdown is generally behind frauds, and that it will take years to correct such organizational failures. Only eternal vigilance and focus on Ethics and Compliance can help to minimize corporate fraud from recurring. My daily work inspired the search for academic evidence supporting – or disproving – what I was seeing at major fraud cases. Indeed, the results of the research are not inconsistent and, even shed deeper insight on fraud variables. I have, in turn, gained a much deeper insight and appreciation into the subject of fraud and its basic human elements.

It is well known that fraud is rarely perpetrated by one individual alone. In most instances, fraud is a result of collusion between two or more individuals and/or entities. My hope is that this research can be used to focus some ineffective efforts taken by regulators, senior executives, independent directors and, at times, auditors, to focus on the elements which contribute most to fraud. Only a joint, synchronized, and sustainable concerted effort by all parties involved in financial reporting can bring focus to the most important elements of fraud.
CHAPTER 1

INTRODUCTION
CHAPTER 1

INTRODUCTION

The purpose of this research project is to study corporate, financial reporting fraud, and associate principles, processes, and practices. Fraud is defined as “all multifarious means which human ingenuity can devise, and which are resorted to by one individual to get advantage over another by false suggestions or by suppression of truth. It includes all surprise, trick, cunning, dissembling, and any unfair way by which another is cheated.”\(^1\) Within a financial reporting setting, little is known about how frauds happen, why managers choose certain courses of action, and what elements in an organization contribute the most to fraud commission. The most prominent research on fraud comes from the United States, from reviews of SEC enforcement actions (SEC 2003, Dechow et al. 1996, Treadway Commission 1987) or study of auditor experiences with fraud (Loebbecke et al. 1989). A large part of this US-centred research has been embedded into auditing standards such as Statement on Auditing Standards (“SAS”) 99 Consideration of Fraud in a Financial Statement Audit and International Standards on Auditing (“ISA”) 240 The Auditor’s Responsibility to Consider Fraud in a Financial Statement Audit. These audit standards outline three conditions (also referred to as the “Fraud Triangle”) generally present when material misstatements due to fraud occur: (a) incentive and pressures on managers; (b) an opportunity to engage in fraud; and (c) managers, and the organization, have an attitude or method of rationalization which justifies their behaviour.

Why is Financial Reporting Fraud a Problem?

Financial reporting fraud is damaging on multiple fronts. From an economics perspective, it leads to an adverse selection problem, where shareholders must protect themselves by increasing their risk premium to compensate for the lack of transparency and trust on reported figures. Such gaps in trust and credibility on managers and the financial reporting figures which they produce, act as constraints for the optimal allocation of capital. Capital market research has shown that there is a 9% average abnormal drop in share prices, stemming from announcements of accounting irregularities (Dechow et al. 1996). Financial reporting fraud is also problematic from a legal perspective, as it tends to be predominantly an illegal activity which can have both criminal and civil consequences.

Positive accounting theory (Watts and Zimmerman 1978) suggests that (i) manager accounting policy choices are designed to shift future earnings to the current period, in order to achieve higher pay-outs from managerial incentive arrangements (bonus plan hypothesis); (ii) policies are chosen to shift future earnings to the present in order to avoid debt-covenant violations (debt covenant hypothesis); and, (iii) accounting policies may be chosen to defer current earnings into the future in order to minimize any political repercussions (political cost hypothesis). Empirical research finds support for manager incentives and actions (as predicted by positive accounting theory) to manipulate earnings to achieve certain results (Healy and Wahlen 1999). Such manipulative actions which fall outside of generally accepted accounting standards and intentionally mislead are considered to be fraudulent (SAS 99; ISA 240) are of paramount concern to auditors. The auditing profession brings value to the capital markets by adding trust and credibility to financial reporting figures. The presence (without discovery) of financial reporting fraud, questions, and potentially undermines, the value of the audit and the
“franchise” which the auditing profession has from the capital markets. The audit profession is struggling with the public’s expectation to discover fraud, uncover corporate misdeeds, and reduce financial statement risk. Within this process, there is a gap between what companies want and what investors want. Auditors are, therefore, turning their attention back to certain basics to regain their reputation as objective professionals who serve the public interest.

Financial reporting fraud, in its most egregious forms, systematically questions all forms of control, governance, and external oversight. In response to the challenge – of maintaining its relevance and limiting its liability – the auditing profession has issued SAS 99 and ISA 240; auditors have pushed and supported corporate governance reforms, including the Eighth Directive in Europe; and, auditors are helping non-executive directors deal with the threat of fraud through more open and transparent communication channels, meeting the requirements of ISA 260 Communication of Audit Matters with those Charged with Governance and Public Company Accounting Oversight Board’s Audit Standard No. 2 An Audit of Internal Control Over Financial Reporting Performed in Conjunction with an Audit of Financial Statements (superseded by Standard No. 5) \(^2\). In addition to these requirements, auditors have an obligation to consider potential illegal acts (especially those involving senior management misconduct) and the potential effect on the financial statements per SAS 54 Illegal Acts by Clients and ISA 250 Consideration of Laws and Regulations in an Audit of Financial Statements.

Fraud is a phenomenon which is damaging to the capital markets and is likely to persevere in the future. The 2005 PricewaterhouseCoopers Global Economic Crime (“PwC GEC”) survey noted that the number of companies reporting incidents of fraud has increased since 2003, with a 71% increase in the number of organizations reporting corruption and bribery, a 133% increase in the number reporting money laundering, and a 140% increase in the number

reporting financial misrepresentation. The 2005 PricewaterhouseCoopers Securities Litigation Study noted that the number of accounting-related enforcement actions\(^3\) from the United States Securities Exchange Commission has grown steadily, from 107 in 2001 to 120 in 2004. Further, the number of accounting cases involving criminal activity has increased from 13 in 2001 to 20 in 2004, with 2002 involving 43 in total.\(^4\) The PwC GEC survey also noted that 40% of respondents indicate that they had suffered significant “collateral damage,” such as loss of reputation, decreased staff motivation, and declining business relations. The accounting scandals of Enron, Worldcom, Ahold, and Parmalat are recent prime examples of financial reporting scandals which have cost investors (and financial intermediaries) billions of dollars and have led to a loss of public trust in the capital markets.

From an ethical perspective, the law tends to capture minimum ethical standards of a society. To the extent that fraud is illegal, then it also constitutes an ethical violation. But the relationship between ethics and financial reporting fraud goes much further. The occurrence of financial reporting fraud can be attributed to both the ethical tones embedded within an organization (corporate climate) and the ethical principles of the individual engaging in such misconduct. In addition to considering the corporate and individual ethical dimensions, there is also a question of the moral philosophy around fraudulent financial reporting circumstances. For example, who should managers “serve” and in what priorities? Themselves, their team, their organization, current shareholders, future shareholders, the community, or other stakeholders?

In serving multiple constituents, what moral concepts should managers use as a basis for decision making? Utility Theory would consider the interest of all the persons affected by the act; Act Utilitarians would seek to maximize

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\(^3\) A proxy for the number of total fraud cases across US registered companies.

\(^4\) This was an unusual year as it involved the accounting melt-downs of Enron, WorldCom, and others.
utility for the greatest number of shareholders, whereas, Rule Utilitarians would consider rules such as GAAP as moral equivalents which cannot be compromised (DePree and Grant 1999). Following Rights Theory would suggest that individual rights and freedoms should be protected at all cost. Under Justice Theory, concepts such as equity, fairness, and impartiality should prevail in a business setting (DePree and Grant 1999). However, utility, justice, and rights theory need to be applied by individual managers, and therefore the individual’s moral reasoning levels (pre-conventional, conventional, and post-conventional; Kohlberg 1986) and locus of control (internal, external; Trevino and Youngblood 1990) also play a role in shaping how moral principles are to be applied. Research into earnings management has shown that there are diverging views of the ethicalness of accounting decisions, both in the application of concepts (materiality, direction and size of manipulation, beneficiaries) and in the views of various parties (managers, internal and external auditors; Merchant and Rockness 1994). Generally, there is little consensus and guidance on the ethical and moral principles around financial reporting, although securities laws generally require the application of certain rules, supporting a Rule Utilitarian concept in a financial reporting setting.

**Earnings Management versus Fraud**

International audit standards (ISA 240.A2) consider that fraud “can be caused by the efforts of management to manage earnings in order to deceive financial statement users by influencing their perceptions as to the entity’s performance and profitability. Such earnings management may start out with small actions or inappropriate adjustment of assumptions and changes in judgments by management.” Dechow et al. (1996) explain that the term “earnings management” is generally restricted to reporting practices that are within the bounds of GAAP. Dechow et al. (1996) also make the case for using earnings management literature for fraud studies:
Since earnings manipulation outside of GAAP entails potential legal costs that can be avoided through earnings manipulation within GAAP, we expect that firms resorting to manipulation outside of GAAP will also be managing earnings within GAAP. Thus, the academic literature on motivations for earnings management provides a potential source of motivations for earnings manipulation.

Accounting and audit standards (SAB 99, ISA 320, SAS 99, ISA 240) consider that the distinguishing factor between fraud and error is whether the underlying action that results in the misstatement of the financial statements is intentional or unintentional. Therefore, fraud appears to encapsulate intentional misstatements meant to deceive, whereas earnings management “occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers” (Healy and Wahlen 1999).

Although there is insufficient research and practical guidance differentiating between earnings management and its egregious cousin – financial reporting fraud – the literature motivating earnings management (e.g., Healy and Wahlen 1999) and analysis of prior fraud cases (e.g., Dechow et al. 1996, Loebbecke et al. 1989) are both considered within this dissertation. However, this study is aimed at the analysis of fraud red flags and their impact on auditor fraud risk perceptions. This dissertation ignores whether managers had the intent to convey private information to stakeholders, and follows the definition within audit standards: intent to materially mislead, in a financial reporting setting, is equated with fraud.

**The source of the problem**

From a legal and audit perspective, the source of financial reporting fraud is centred on managerial incentives, corporate opportunities, and
individual and corporate rationalizations (Baucus 1994; Loebbecke et al. 1989). Managerial incentives, from earnings management literature, can be grouped into four categories (Healy and Wahlen 1999): (1) capital market motivations, in which managers attempt to influence short-term, stock price performance by meeting (or exceeding) the expectations of investors and financial analysts; (2) contracting motivations – including management compensation and lending contracts, in which accounting information is used to help monitor and regulate the contracts between the firm and its stakeholders; (3) regulatory motivation, where the literature has explored the effects of both industry-specific regulation and anti-trust regulation; and (4) firm-specific motivation, in which firms manage earnings when they anticipate a loss, report an earnings decline, or fall short of investors’ expectations.

Corporate opportunities for fraud generally arise from weaknesses in internal control and in organizational control. Internal control deficiencies have been at the centre of corporate governance reform with the introduction of Section 404 of the Sarbanes-Oxley Act of 2002 covering certifications around internal controls, the Tabaksblat Corporate Governance Code in the Netherlands, and the broader introduction of the Eighth Company Law Directive in Europe. Organizational control weaknesses arise from complex or unstable organizational structures, industries prone to engage in illegal activity, and lack of sufficient management oversight, from a Board of Directors and external regulator perspective (Baucus, 1994).

A last, but perhaps most important, source of the financial reporting fraud problem are organizational and individual rationalizations of improper behaviour. Organizational rationalizations arise from the examples which corporate executives set for the organization by ignoring, condoning, rewarding, or participating in past instances of wrongdoing, which likely leads to recidivist’s conditions. Research has shown that firms with highly committed employees, a corporate culture reinforcing illegal activities, and
high levels of executive succession, will tend to behave illegally (Baucus 1994).

Individual rationalizations have been shown to be shaped by moral reasoning levels, locus of control, cultural background, and moral philosophy. Kohlberg (1969) developed a theory of moral development in which persons progress in moral reasoning through three levels: (1) Pre-conventional level, where labels of “good” or “bad” are interpreted in terms of physical consequences (punishment, reward) or in terms of physical power; (2) Conventional level, where active support of the fixed rules or authority in a society becomes the reference criteria; and (3) Post-conventional level, where the individual makes clear effort toward autonomous moral principles with validity apart from the authority of the groups or persons who hold them and apart from individual identifications. There is evidence that moral reasoning has some effect on intentions of Chief Financial Officers to report fraudulently on financial statements (Uddin and Gillett 2002). Locus of Control classifies individuals as either attributing the cause of (or control over) events to themselves (“internals”) or to their surrounding situation (“externals”); the characteristics of “externals” are closely related to the surrounding environment (Trevino and Youngblood 1990). Both moral reasoning and locus of control theories are important because it helps to understand the effect that the organizational policies and external regulation can shape ethical judgments of an individual.

Culture can also affect the ethical values and perceptions of individuals. Research has shown that five different dimensions of culture have a significant impact on ethical perceptions, which, in turn, reflect the influence of beliefs and fundamental attitudes linked to individual personality and cultural influences: Individualism/Collectivism, Power/Distance, Uncertainty/Avoidance, Masculinity/Femininity, and Long-term Orientation/Confucian Dynamism (Hofstede 1991). The lack of consensus on ethical theories to apply in a financial reporting setting (Utilitarian, Rights,
Justice), cultural influence, moral reasoning levels, and locus of control, complicates the academic and industry understanding of financial reporting fraud, as the balance of measures which may be taken at both the individual and organizational level to prevent fraud are complex, and ill-understood in a financial reporting setting.

Broad lack of understanding on how Financial Reporting Fraud can be tackled

The lack of understanding on why financial reporting fraud occurs and how it can be prevented, has led to various regulatory approaches. In the United States, regulators have tackled fraud by introducing external reporting and attestation requirements surrounding internal controls (Section 404 of Sarbanes-Oxley; PCAOB AS 5); strengthening regulatory oversight over auditors (PCAOB; AFM) and US public companies (Securities and Exchange Commission; United States Department of Justice; various State Attorney Offices); and, by increasing the cost of non-compliance with US securities laws through private securities class actions (settlements in WorldCom and Enron are exceeding $5 Billion each; Ahold – a Dutch registrant – recently settled for $1.1 Billion for accounting fraud allegations; Nortel – a Canadian company settled for $2.5 billion). In addition, with the introduction of the Sarbanes-Oxley Act, financial reporting fraud has been further criminalized. Generally, both the company and any of its employees could be held criminally liable for misconduct. Indictments under United States criminal laws may preclude the company from licenses, contracts, and other dealings involving the US government. And for individuals, the prison terms are measured more in decades rather than years.

In Europe and the Netherlands, similar regulatory oversight and corporate governance trends are emerging as in the US market, albeit with significant differences (less rigorous provisions). The approach in Europe focuses on corporate governance codes and certain legislative requirements
being introduced through the Eighth Company Law Directive such as Audit Committee requirements for all public interest entities, independent oversight body over auditors, the usage of International Standards on Auditing, and communication of key matters between auditors and the Audit Committee (key matters arising from the statutory audit, and in particular on material weaknesses in internal control in relation to the financial reporting process).

In Europe, the move to combat fraud, in the light of international financial scandals, and balancing with improving the competitiveness of EU business, is driving the agenda of the EU Company Law Action Plan.

However, US regulators admit that they don’t have the balance right. The SEC’s priority to develop “top down, risk-based” control guidance (SEC 2006), especially in areas dealing with fraud, after the concerns over Section 404 implementation results in the United States, is a sign of more efforts and understanding necessary over financial reporting fraud. Recently, the PCAOB criticized auditors for adopting a “checking off the list” approach, not expanding their audit procedures when addressing identified fraud risk factors, and not having pre-conceptions when undertaking fraud “brainstorming” sessions (PCAOB Release No. 2007-001). But how can it be expected that auditors do proper fraud procedures when few individuals ever encounter fraud and there is little fraud training embedded into university curricula? In Europe (and to some extent in the US), there is little, to no guidance on how organizations should organize themselves in order to address misconduct: (i) how to set the right tone-at-the-top; (ii) how internal organizational departments should be aligned to oversee and implement Ethics and Compliance visions, involving the Internal Audit, Accounting & Reporting, General Counsel, Corporate Compliance, and the business-side of an organization; (iii) the committees that are necessary to oversee management’s actions; (iv) the areas Directors and regulators should focus on; (v) how to use whistle-blowing and consultation functions; (vi) the types of policies that are needed within an organization; (vii) what compensation, reward, and incentives are needed to support an adequate tone in the organization; (viii) the
internal controls that are necessary to prevent fraud in an organization; (ix) how to focus targets and manager incentives, to support an ethical and compliance tone in the organization; and (x) whether a “zero tolerance” policy is an important vehicle to address financial reporting fraud. These open areas deal with the principles, processes, and practices of fraud, and form the central motivating questions for this research project.

The fraud triangle and the 3Ps of fraud: principles, processes, and practices

Audit standards note that fraud involves managerial incentives or pressures to commit fraud, perceived opportunities to do so, and some rationalization of the act (ISA 240). Positive accounting theory and earnings management research have provided significant evidence on the incentives and opportunities which drive fraud. There is little research, however, on the managerial attitudes associated with earnings manipulation or fraud, an issue not specifically addressed by positive accounting theory (exceptions include Uddin and Gillett 2002; Merchant and Rockness 1994). This research project studies different groups of managerial incentives (practices), opportunities (processes), and attitudes (principles) which are associated with financial reporting fraud, from the perspective of external auditor assessments of their clients’ risks (refer to the three papers of this dissertation; Figure 1).

To structure the investigation of specific fraud risks perceived and observed by external auditors at their clients, the three-part research project documented in this dissertation focuses on three specific research questions: (1) how do managerial attitudes affect auditor risk perceptions? (2) how do external auditors weigh the relative importance of the three components of the fraud triangle (conditions, motivations, attitudes)? And, (3) how do auditors perceive specific fraud conditions involving ethics, profits, and performance targets to affect fraud? These individual research questions will be the focus of Papers 1, 2 and 3, presented in Chapters 2 through 4, respectively.
The first research paper, titled *How Managerial Attitudes Influence Auditor Fraud Risk Assessments*, examines three important groups of managerial attitudes shaping the financial reporting culture in an organization: the ethics of senior management, the aggressiveness of accounting practices in an organization, and the attitudes of managers towards the auditors (Figure 1). This research study focused on the role that senior management unethical behaviour and aggressive accounting places on fraudulent financial reporting. The contribution of this paper should help directors, managers, regulators, and auditors understand the relative importance of various elements shaping the financial reporting culture in an organization and contributing to financial reporting fraud. In fact, approximately 80% of fraud risk assessment variability is found to be attributable to managerial attitudes and behaviours, with ethical conduct of senior managers showing the most prominent effect. This first paper, in sum, sheds light unto the importance of having the right ethical, legal, and accounting principles governing an organization in order to prevent the occurrence of fraud.

The first research paper poses three hypotheses which address prior gaps in the literature: (1) auditor judgments of client integrity risks are positively related to fraud risk judgments – Beaulieu (2001) support this finding from an audit evidence and planning perspective, but not in a fraud setting; (2) senior management behavioural anomalies and their aggressiveness towards financial reporting increases increase fraud risk – this is documented in Bell and Carcello (2000) and Loebbecke et al. (1989), both using KPMG audit partners and their experiences in the United States, rather than other Big 4 data in a non-US context; and (3) management attitudes and financial reporting behaviours have a significant effect on auditor fraud risk perceptions – Apostolou et al. (2001) performed an exploratory experiment with a limited group of US auditors, but did not test actual client auditor risk perceptions such as was done by Bedard and Johnstone (2004) nor validated
the fraud risk variable with external observable phenomena such as audit reporting and communication with the Board.

The second research paper, titled *Is the Fraud Triangle Equilateral*, extends the first paper by moving beyond managerial attitudes and exploring managerial incentives and opportunities (the three components of the fraud triangle) from both a risk and controls perspective. That is, this paper explores the relative importance of internal controls over managerial attitudes (senior management ethics and integrity), incentives and pressures from compensation arrangements, and governance and accounting processes, in lowering the risk of fraud (Figure 1). The contribution of this paper is directed at Companies that are focused on implementing a “top down, risk-based” approach to financial reporting controls for external and internal purposes. In fact, auditor risk assessments are found to be non-linear, with ethical (attitude) controls being the most important factor which auditors associate with fraud (at the highest risk level).

The second research paper poses three hypotheses which address prior gaps in the literature: (1) auditors have increased sensitivity to opportunity and incentive cues in low fraud risk situations – Wilks and Zimbelman (2004) supported this finding in an experiment with 52 US audit managers although this has not been replicated in the evaluation of actual auditor risk assessments of their clients; (2) fraud red flags impact auditor fraud risk perceptions equally – Loebbecke et al. (1989) relied on auditor recall to determine the most frequently observed fraud red flags, while Bell and Carcello (2001) studied a fraud-no fraud sample and found seven specific groups of fraud red flags as significant predictors of 77 auditor fraud engagements, but neither have explicitly weighed *ex ante* auditor fraud risk observations and assessments; and (3) auditors perceive attitude risk factors as more important than opportunity and incentive risk factors – Heiman-Hoffman et al. (1996) support this finding in their survey of 130 practicing US auditors, although it was not specifically linked to a specific auditor-client setting.
FIGURE 1: EXPLORATION OF FRAUD TRIANGLE COMPONENTS (AND 3Ps) THROUGH THE STUDY OF AUDITOR RISK ASSESSMENTS – OVERVIEW OF VARIABLES EXAMINED TO TEST THE VARIOUS HYPOTHESES

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<tr>
<td>Incentives (Practices)</td>
<td>Opportunities (Processes)</td>
<td>Attitudes (Principles)</td>
<td>Management inclination to intentionally misstate financial reporting</td>
</tr>
<tr>
<td>Management Compensation Pressure</td>
<td>Accounting Control</td>
<td>Management Ethics</td>
<td>Management Ethics</td>
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<tr>
<td>Consistency of Past Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggressive Accounting practices</td>
<td>Audit Relationship</td>
<td>Audit Relationship</td>
<td>Audit Relationship</td>
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</table>
The last paper, titled *The Pursuit of Profits: How Ethics and Targets Influence Fraud*, differs from the second paper as it focuses on specific conditions which may lead to higher risk of fraud (entity profitability and usage of performance targets), however it does not consider the role of accounting or governance controls (managerial opportunities). This third paper studies the effect of performance targets, profits, and ethics on auditor fraud experiences (Figure 1). The contribution of this paper is aimed at senior executives of multi-national organizations, who seek to balance the pursuit of profits and the prevention of fraud. Capital market practices which reward predictability (targets which lower volatility), sustainable profits, and heavily weigh current-period profits, are potentially to blame for the occurrence of fraud. This paper finds that pressures from targets, in the most profitable companies, are associated with a heightened risk of fraud, thus providing some evidence on the importance of considering greed and *hubris* as principal rationalization for condoning fraud. Are these observations “off-track”? On 24 July 2006, the CFA Centre for Financial Market Integrity and the Business Roundtable Institute for Corporate Ethics jointly called on corporate leaders, asset managers, investors, and others to break the “short-term obsession” harming shareholders’ interests by reforming practices involving earnings guidance, compensation, and communications to investors. This research provides the some empirical support for such a call to action.

This paper proposes three hypotheses which address prior gaps in the literature: (1) entities that are more profitable and more consistent in meeting performance targets have reduced auditor fraud risk perceptions – Loebbecke et al. (1989), as well as Bell and Carcello (2000), have noted that inadequate profits are an important fraud red flag; there is conflicting evidence on the role of thresholds in the capital markets from DeGeorge et al. (1999) and Dechow et al. (2003); (2) entities with more talent and depth in their senior management teams are more likely to engage in fraud – Nieschwitz et al. (2000) have noted that fraud is often carried out by highly motivated, clever teams of knowledgeable managers, while over 80% of SEC enforcement
actions involve a member of senior management (SEC 2003); however, the depth and talent of a management team has generally not been empirically associated with fraud; and (3) higher compensation incentives are associated with higher fraud risk conditions – supported by executive compensation studies such as Denis et al. (2006) but not by SEC enforcement action studies of Dechow et al. (1996).

**How was the research undertaken?**

In the academic realm, the most common method of researching financial reporting fraud has traditionally involved the study of SEC enforcement actions of companies allegedly involved in fraud. Within the legal literature, the focus has been on the study of occupational crime, product liability claims, and other violations of civil and criminal statutes. This research project uses audit partner assessments of their client’s risks across various dimensions. This methodology has been used previously in the study of earnings manipulation risk and fraud (Bedard and Johnstone 2004; Johnstone 2000) and captures important dimensions of auditor recall and feedback as used by Nelson et al. (2002). A Big Four accountancy firm in the Netherlands provided data covering a two-year period and the underlying risk observations across 5,600 audits. These audits involved clients of all sizes and sectors. These risk observations were performed as part of that firm’s client acceptance and continuance procedures, which must be performed at least on an annual basis, in compliance with that firm’s global quality assurance and risk management policies (see Figure 2). Overall, over 60,000 data points formed the basis of analysis supporting this study. Such a large data set, across a cross section of industries and years, in a fairly homogeneous country which suffered a large accounting scandal during the period of study (Ahold), allows for the in-depth study of patterns and trends which are not commonly tested or examined in academia.
Figure 2 visualizes how the risk assessment process is one of the first exercises in a financial statement audit at the sampled Big 4 firm. Generally, before an audit is accepted or the mandate from a previous year rolled-forward to another year, the audit partner would answer over 60 questions capturing all facets of the client engagement and client conditions. These questions range from dichotomous (yes/no; two alternatives) or free-text questions, to questions capturing five levels of risk conditions per dimension captured by the question (lowest, low, some, high, or highest risk). All risk conditions or questions in the survey are framed and anchored statements, demanding that the auditor either gather information or recall specific knowledge or experiences with a (prospective or current) client. These assessments are performed electronically, with the possibility for auditors to review their assessments during the planning phase. However, once the partner approves the assessment scoring and responses, the system locks the assessment and triggers input for other phases of the audit processes and the Big 4 Firm’s quality review and risk management procedures.

The inputs and results of the Big 4’s risk assessment are used as a basis for audit planning, execution, and completion. Auditors use the experience from previous audits as a basis to gauge the next audit, with a natural recall and feedback mechanism that relies on audit manager and partner experience with their clients. As part of this process, auditors rely on their perceptions and observations, auditor suspicions, and, for the higher risk observations, generally require tangible evidence of the presence of “red flags” or past incidents. This study, therefore, relies on auditor perceptions, observations, and auditor recall as the basis of analysis and conclusion (refer to Appendix I in Chapters 2 through 4), using 12 questions from 5,600 auditor risk assessments. In addition, sensitivity and robustness analysis was performed using approximately 10 dichotomous questions from the auditor risk assessment, which indicated the presence of certain prior events (types of prior audit opinions, communications to the Board regarding fraud, auditor-client disagreements, amongst others).
FIGURE 2: RISK ASSESSMENT PROCESS AT THE SAMPLED BIG 4 AUDIT FIRM

<table>
<thead>
<tr>
<th>Stage</th>
<th>Question Type</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Risk Assessment</td>
<td>Free-text questions</td>
<td>&gt;10 free-text entity-specific questions</td>
</tr>
<tr>
<td></td>
<td>Dichotomy questions</td>
<td>&gt;10 Yes/No questions</td>
</tr>
<tr>
<td></td>
<td>5-point framed risk questions</td>
<td>&gt;12 questions used as basis for this study (&gt; 30 other questions)</td>
</tr>
<tr>
<td>Audit Planning stage</td>
<td>Total Engagement Risk Score</td>
<td>Total Engagement Risk Score (one per Engagement) + indications of heightened risk conditions</td>
</tr>
<tr>
<td>Audit Execution stage</td>
<td>Planning for Individual Heightened Risk Conditions</td>
<td>To Address In the Audit</td>
</tr>
<tr>
<td>Audit Completion stage</td>
<td>Audit Procedures to Mitigate Individual Heightened Risk Conditions</td>
<td>Audit Sign-off After All Risks Have Been Adequately Addressed</td>
</tr>
</tbody>
</table>

Feedback for next year’s audit (auditor feedback mechanism)
The primary methods of analysis across this dissertation included ordinary least squares regression and structural equations modelling. The main advantage of SEM over multiple regressions is the ability to test a set of relations among variables, simultaneously. This cannot be done using standard regression, due to the complex set of simultaneous relations. SEM has been used and discussed in previous studies and in a similar context (Gillett and Uddin 2005; Johnstone 2000; Dusenbury et al. 2000; Wilks and Zimbelman 2004). For this study, AMOS version 6.0 (alongside SPSS 14) is used as the vehicle to model structural relationships (and OLS for first order relationships).

**Validity of the dependent variable used in this dissertation**

This dissertation studies the factors associated with manager inclinations to intentionally misstate financial statements, as a proxy for the risk of fraud, from the perspective of external auditors. This proxy is derived from one question in the auditor acceptance and continuance questionnaire, which has 5 alternative choices, using fully-anchored, framed statements, on a five-point risk level instrument based on standardized set of statements (risk descriptions) and includes an explanation of that particular risk level. This specific variable \((\text{MgtInclin2IntentMisstate})\) measures management inclinations to intentionally misstate financial statements. It is based on the client’s approach to financial reporting and past experience which the auditor may have had, or observed, with the client. The first two risk levels of the dependent measure captures the importance managers place on financial reporting; the highest risk levels capture manager disregard or observed attempts to distort or hide material information. The audit partner completing such an assessment would see the following frame as part of the audit acceptance and continuance process:
FIGURE 3: EXCERPT FROM THE RISK ASSESSMENT QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Management inclination to intentionally misstate financial reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lowest Risk:</strong> Management attaches great importance to achieving fair and accurate financial statement presentation.</td>
</tr>
<tr>
<td><strong>Low Risk:</strong> Management makes a reasonable effort to achieve fair and accurate financial statement presentation.</td>
</tr>
<tr>
<td><strong>Some Risk:</strong> Management is not particularly interested in financial statement presentation but there has been no evidence of intentional misstatement.</td>
</tr>
<tr>
<td><strong>High Risk:</strong> Management sometimes shows a disregard for fair and accurate financial statement presentation.</td>
</tr>
<tr>
<td><strong>Highest Risk:</strong> Management has in the past attempted to distort or hide information relevant to the entity's financial condition or operating results.</td>
</tr>
</tbody>
</table>

The assessment question above is focused on intentional misstatements rather than errors. Fraud audit standards (SAS 99, ISA 240) consider that “the distinguishing factor between fraud and error is whether the underlying action that results in the misstatement of the financial statements is intentional or unintentional.” Therefore, the audit partner assessment which aims at capturing inclinations of managers to intentionally misstate would be expected to be closely correlated to fraud risks and broader audit quality measures. If auditors were to be sensitive to such risks, it would be expected that their response would alter their communication with Audit Committees and senior management, as well as nature, timing, and extent of audit procedures, and acceptance or continuation of the audit relationship. Although, because of confidentiality and data constraints, the data set provided by the Big 4 firm did not include client names, nor decisions associated with the client (accept/reject), the proxy for fraud risk was externally validated through two actions: (i) internal Firm interviews were held, and searches through Dutch newspaper clippings were undertaken, to determine whether any serious fraud had actually taken place on the 43 riskiest clients; and (ii) evaluated whether auditors altered their audit procedures and opinions as a means to mitigate the risk from higher fraud-inclined clients.

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5 An exception was made for such clients by the accounting firm. The gathering of names proved to be a lengthy exercise, involving various Firm approvals.
On item (i), an interview with a risk management partner, at the sampled Firm, revealed that there were no instances of serious fraud recalled within the sampled population. Within the period of study, it is important to note that fraud and fraud-related procedures were not clarified until the introduction of ISA 240 (RAC 240) in 2004 (after the sampled time period). In the Dutch environment, financial frauds are relatively uncommon, and so is any litigation associated with fraud (unlike the United States). In one instance, however, a manager was convicted of financial fraud, in a Dutch criminal court, three years after the time of the audit.

The sampled population was stratified between the top 43 highest risk assessments (scored as higher and highest risk) and the rest of the sampled population. Using ANOVA mean comparison procedures, two major findings were arrived at. First, audit opinions were significantly affected by higher fraud risk assessments:

1. There were more modified audit opinions in higher risk assessments than in the remainder of the sample, suggesting that auditors were more conscious of risk and provided signals to investors ($\mu_{low}: 0.04; \mu_{high}: 0.19; p < 0.01$).  
2. There were more explanatory paragraphs within audit opinions of higher risk assessments ($\mu_{low}: 0.03; \mu_{high}: 0.09; p: 0.01$).
3. There was more communication by the auditors to the Board of potential fraud or illegal acts noted during the client acceptance process ($\mu_{low}: 0.00; \mu_{high}: 0.33; p < 0.01$).
4. There had been more prior auditor disagreements ($\mu_{low}: 0.01; \mu_{high}: 0.67; p < 0.01$), resignations ($\mu_{low}: 0.00; \mu_{high}: 0.50; p < 0.01$), and prior auditor limitations of responses ($\mu_{low}: 0.00; \mu_{high}: 0.50; p < 0.01$) during the client acceptance process, suggesting that auditor changes or withdrawals are a market signal of potential improper conduct.  

This relationship does not hold any statistical significance for client acceptance assessments.  

Additional finding: A higher proportion of higher-risk clients had more than one external audit firm which audited the organization ($\mu_{low}: 0.05; \mu_{high}: 0.21; p < 0.01$) and even had over 40% of the external audit work performed by another audit Firm, even though the sampled

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6. This relationship does not hold any statistical significance for client acceptance assessments.
7. Additional finding: A higher proportion of higher-risk clients had more than one external audit firm which audited the organization ($\mu_{low}: 0.05; \mu_{high}: 0.21; p < 0.01$) and even had over 40% of the external audit work performed by another audit Firm, even though the sampled
5. There were more prior year errors and account restatements ($\mu_{\text{low}}: 0.03; \mu_{\text{high}}: 0.16; p < 0.01$), suggesting the potential lack of reliable figures across more fraud-prone organizations.

Second, auditors respond to higher fraud risk assessments by refusing to have their audit scope changed, having more complex negotiations with their clients, and by implementing additional internal Firm quality controls:

1. A significant number of partners voluntarily requested additional support and consultation from internal Firm risk management partners in order to mitigate their risk ($\mu_{\text{low}}: 0.04; \mu_{\text{high}}: 0.23; p < 0.01$).

2. Higher fraud risk assessments were associated with more past auditor-client disagreements (in acceptance - $\mu_{\text{low}}: 0.00; \mu_{\text{high}}: 0.10; p < 0.01$; in continuance - $\mu_{\text{low}}: 0.01; \mu_{\text{high}}: 0.29; p < 0.01$).

3. Higher fraud risk clients had a much higher inclination to attempt to restrict the scope of the audit ($\mu_{\text{low}}: 0.00; \mu_{\text{high}}: 0.12; p < 0.01$) and attempted to amend the client-auditor engagement contract ($\mu_{\text{low}}: 0.01; \mu_{\text{high}}: 0.16; p < 0.01$).

4. Higher fraud risk clients were more prone to have unpaid prior year audit fees, indicating the leverage or opportunism which may be exercised by such clients ($\mu_{\text{low}}: 0.00; \mu_{\text{high}}: 0.07; p < 0.01$). Note that there was no statistical difference in the level of business or cash flow problems (of entities subject to audit) between the higher and lower risk samples, suggesting that the decision not to pay audit fees did not have any relationship with underlying business or financing issues.

5. Engagement partners at higher risk clients tended to be designated quality-assurance partners within their office ($\mu_{\text{low}}: 0.08; \mu_{\text{high}}: 0.16; p: 0.07$) and there was a higher likelihood of having a Firm rendered the parent company opinion ($\mu_{\text{low}}: 0.02; \mu_{\text{high}}: 0.14; p < 0.01$). With the Eighth Directive, and after the Parmalat debacle, there will be more accountability to the Parent auditor for the overall financial statement audit.
concurring, second partner reviewer ($\mu_{\text{low}}: 0.16; \mu_{\text{high}}: 0.37; \ p<0.01$).\textsuperscript{8}

In sum, the measure used throughout this dissertation as a proxy for auditor fraud risk is found to be closely associated with measures of audit quality suggested by the literature. The in-depth analysis of such a relationship is not the focus of this dissertation, but will be subject of a separate study. In summary, the dependent variable (capturing fraud risk) can be seen to be associated with modified audit opinions and additional audit safeguards, and thus provides external validity to the fraud risk proxy used across this dissertation, as well as strengthening the rigour of the findings.

**Future research**

Following this dissertation, three specific avenues of future research will be explored. First, as discussed in the previous paragraph, the relationship between audit quality and the measure of fraud risk requires further study and analysis. To the extent that there is a significant relationship between risk assessments, fraud risks, and audit quality, this may allow more refined efforts by practitioners and regulators in reducing the instances of investor confidence breakdowns (as they occurred in 2001) over financial reporting figures, the managers who produce them, and the auditors who validate the information. Second, the high incidence of entities considered by auditors in this study to be of increased governance risk (14% of the population) should be further studied and analyzed. Surprisingly, the level of governance, control, and oversight of the financial reporting within the sample was not found to be correlated with the fraud risk variable, thus suggesting some underlying institutional variables or sets of relationships that ought to be explored. Third, rather than exploring overall fraud risk, it would appear reasonable to investigate the variables at work in specific earnings

\textsuperscript{8} Such relationships does not hold statistically significant during the client acceptance process.
manipulation scenarios, as well as understanding the relationship with specific fraud risk conditions within this dissertation.

**Limitations**

This dissertation analyzes auditor risk assessments in the Netherlands across a broad spectrum of audit clients who differ in industry, size, jurisdictional requirements, and ownership structure. Due to data confidentiality and data limitations, such differences could not be fully reported, although there is evidence that the presence of certain regulated industries and institutional variables do not alter the results. First, in comparing assessments between the years (2002 through 2004) and differences between acceptance and audit continuance assessments, auditors were found to be more conservative in their acceptance between 2003 and 2004; other substantial differences were not found across the elements researched in this dissertation. One possible explanation for the increased auditor conservatism between 2003 and 2004 could be that this was the period when the Ahold accounting scandal in the Netherlands took place (announcement of accounting irregularities in February 2003; accounting irregularities of EUR 880 Million were reported by the end of 2003).

Second, although the sampled population does not clearly differentiate between public and private companies, approximately 16% of the sample represented either US listed companies and/or their subsidiaries that are audited in the Netherlands; in addition, 4% were stand-alone, Dutch headquartered listed companies audited by the Big 4 firm in the Netherlands. After considering these variables in the overall regression model, the results presented in this dissertation remain unaffected. US listed audits were found to have increased levels of auditor scepticism and thus negatively associated with auditor fraud risk assessments (β: -0.03; \( p < 0.01 \)); however, no statistical significant effect was found for Dutch headquartered listed companies. One possible suggestion would be that institutional variables create additional
sensitivities, although replication of this study in other countries and using other Big 4 assessments would appear warranted. Note, however, that the effect of US listed companies disappears at the high fraud risk level and, unlike in the full sample, Dutch headquartered listed company audits demonstrate higher sensitivities to fraud risks.

Third, 23 industries (using the Big 4 firm’s industry classification) were covered within the sample studied in this dissertation. The inclusion of these industry variables did not alter the results within this dissertation. However, certain industries were found to trigger increased fraud risk perceptions, including automotive, public real estate associations, diversified manufacturing, and entertainment industries. Note that neither technology companies nor financial service industries were found to play a significant role, in terms of fraud risk perceptions, thus differing from US findings regarding SEC enforcement actions. In fact, across all higher fraud risk perceptions, none of the industry variables were found to be significant, suggesting that industry variables do not significantly alter this dissertation’s findings.

Fourth, 13 different office (or office groups) were considered within the analysis. The inclusion of these variables did not affect the results in the dissertation. However, two specific offices were found to have lower fraud risk perceptions, although the effect is eliminated across the highest risk sub-sample. This result would support the assumption that auditor fraud risk perceptions remain unaltered by the group of auditors performing the analysis.

The data provided by the Big 4 firm for analysis did not include client identifiers that would permit the matching of individual client assessments across the years under study. As these assessments could be assumed to be highly correlated, and this correlation should be optimally dealt with in the statistical tests, there is a risk of overstating the significance levels within the study. To mitigate this risk, the full model was run on larger population sub-
sets, with consistent results being found across sub-samples, with the exception of acceptance forms between 2003 and 2004 (as noted above).

An additional limitation of this study is that auditor ultimate decisions to accept or reject a client, as a result of the individual risk scores, was not an observable decision. In general, the precision of auditor assessments of risk cannot be validated and assumed to be accurately reflecting reality. Although there is no “correct” fraud risk assessment, the weights auditors place on different variables provides an opportunity to explore the interplay of relationships which auditors observe and consider in their financial audits. To the extent that they are accurate representations of reality, it would allow major financial reporting stakeholders to devise strategies which aim at mitigating conditions which increase the potential for fraud.

**Concluding comments**

There are three main learning points from this dissertation. First, the “attitude” of a client’s management toward committing fraud is the single most important “leg” of the fraud triangle (i.e. more important than “motivation” and “conditions”) from the perspective of the partners of the accounting firm providing the data. This is an intuitively appealing finding since top managers will almost always face a variety of motives to misstate earnings and can probably override any controls that may or may not be in place – if they are willing to do so. One possible implication is that fraud prevention strategies by regulators, auditors, and Companies alike, may need to allocate more time and investment in understanding the “tone at the top” of organizations and investigating how to best address indications of senior management misconduct.

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9 *Ex post* observation of fraud does not validate or invalidate a specific risk assessment since the actual outcome is a single draw from a distribution of possibilities. Relative frequencies across the population of firms do not help since each audit (and probably each fraud) is idiosyncratic. The correct theoretical probability distribution of potential fraud can only be correctly gauged relative to the company itself, and since we can not observe alternative states of the company, there is no ‘correct’ fraud assessment.
Second, auditors consider that pressures from the capital markets for
profits and the achievement of targets, alongside the presence of talented
senior management, as important factors associated with fraudulent
managerial intentions. The capital asset pricing model assigns a lower risk
premium to those companies with lower earnings volatility, higher profits, and
having talented management. Assuming capital markets are fully efficient,
they would take into account a fraud risk premium when volatility is low,
profits are high, and managers are talented. Perhaps the average abnormal
drop of 9% in the share prices of entities accused of fraud (Dechow et al.
1996) may be partially attributable to an embedded premium assigned to
entities with no financial reporting fraud by senior management.

Third, there is consistent evidence to suggest that auditors consider the
integrity and ethics of senior management as the single most important fraud
red flag. It would seem reasonable to therefore suggest that better governed
and higher quality organizations ought to consider having a determined focus
on Ethics & Compliance activities as a strategic imperative to maintain
confidence in the capital markets and minimize the probability of fraudulent
financial reporting. On matters of management attitudes and ethics, one
should consider the words of Albert Einstein: "relativity applies to physics, not
ethics."
CHAPTER 2

Paper I - How Managerial Attitudes Influence Auditor Fraud Risk Assessments
How Managerial Attitudes Influence Auditor Fraud Risk Assessments *

ABSTRACT

This study investigates the nature and extent to which managerial attitudes influence fraud risk perceptions, observations and experiences of audit partners. Using a sample of 5,603 client acceptance and audit continuance assessments at a Big Four audit firm in the Netherlands, this study finds that: (1) manager integrity, honesty, and ethics are considered by audit partners to be of highest importance in fraud risk assessments; (2) the aggressiveness of an organization’s revenue recognition and accounting estimates appear to significantly influence auditor fraud risk perceptions; and (3) the quality of the auditor-client relationship, and the level of senior management experience, provide important cues influencing auditor perceptions in “low risk” fraud situations, but neither are used to identify nor categorize high fraud risk clients. These empirical findings highlight the significant importance of senior management attitudes in influencing auditor perspectives, accounting for 82% of the variability in fraud risk assessments.

Key words: fraud; attitudes; ethics; revenue recognition; accounting estimates.

Data availability: Data used for this paper are derived from a proprietary source.

* A previous version of this paper was presented in January 2007 at the mid-year American Accounting Association Audit Section meeting and, in August 2007, at the annual American Accounting Association concurrent session. A debt of gratitude is owed to the participants and discussants at these sessions.
Introduction

This study investigates how managerial attitudes in an organization’s financial reporting environment may be associated with heightened auditor (financial reporting) fraud risk assessments. Prior research has found that managerial attitudes and aggressiveness towards financial reporting are important fraud red flags (Loebbecke et al. 1989; Bell and Carcello 2000). Such attitudes are difficult to address as they can be easily manipulated as concealed (Wilks and Zimbelman 2004) and fraud may occur even when attitude risk may be low (AICPA 2002). There is evidence that the ethical tone in an organization is largely derived from senior management attitudes (Cohen 2002) and that intentions to engage in fraudulent activity are linked to moral reasoning levels (Uddin and Gillett 2002). Empirical research suggests that fraud red flags associated with management attitudes and behaviours carry more weight than motivation and condition red flags (Deshmukh and Talluru 1998); however, such behaviours and attitudes are difficult to observe and empirically study. This study attempts to address this gap in the literature, by examining perceived senior management attitudes from the perspective and experiences of external auditors.

One of the responsibilities of an auditor is to correctly assess the risk of financial fraud at their clients (Zimbelman and Waller 1999; AICPA 2002;
Auditor risk assessments have been used to study earnings manipulation behaviour and auditor decisions (Bedard and Johnstone 2004; Johnstone 2000) and are used within this study as a basis to study the importance of management attitudes across financial reporting fraud risk assessments. This study extends the work of Bell and Carcello (2000) and Loebbecke et al. (1989), and considers managerial ethics, alongside managerial attitudes and actions on critical accounting areas most prone to fraud: revenue recognition and accounting estimates (extending the work of Hernandez and Groot 2006a,b who focus on the overall fraud triangle and the effects of targets and profits, respectively). The principal research question of this study is to investigate the extent and types of managerial attitudes which influence audit partner fraud risk assessments.

Practitioner guidelines, as codified in audit standards (SAS 99; ISA 240), have outlined auditor responsibilities in relation to fraud and three conditions generally present when material misstatements due to fraud occur: (a) incentive and pressures on managers; (b) an opportunity to engage in fraud; and (c) managers, and the organization, have an attitude or method of rationalization which justifies their behaviour. In applying such standards, auditors are called to pay special attention to illegal acts (ISA 250; SAS 54) and the materiality or significance of senior management improper conduct in

13 Wilks and Zimbelman (2004) used a game theory perspective of fraud settings in order to develop suggestions for audit policy and practice action steps intended to improve fraud detection and deterrence. Their overall summary on fraud risk assessments noted that fraud checklist usage may be unreliable; auditors generally overweight cues indicative of management’s character, lowering their fraud risk assessment to a too-low level, even though the opportunity and incentives may be high (Jonas 2001; SAS 99) and these clues may be most unreliable; and audit standards should consider how management may manipulate their perception of fraud cues.

14 ISA 240 and SAS 99 provide lists of fraud indications, but do not specifically define what an appropriate audit response should look like or does it address the relative importance of fraud cues.

15 ISA 250, Consideration of Laws and Regulations in an Audit of Financial Statements, which is similar to SAS 54, Illegal Acts by Clients, states that the auditor should “obtain an understanding of the nature of the act and the circumstances in which it has occurred, and sufficient other information to evaluate the possible effect on the financial statements.” In addition, ISA 250 states that “the auditor should consider the implications of non-compliance [with laws and regulations] in relation to other aspects of the audit, particularly the reliability of management representations.” Practitioner auditor guidance, therefore, highlights the importance of senior management integrity, ethics, honesty, and the aggressiveness of an organization’s accounting practices as important elements associated with fraud.
relation to the financial statements and management’s representations thereof (SAB 99; ISA 320; SAS 54; ISA 250).  

The contribution of this study to the existing literature is fourfold. Unlike the models tested by Loebbecke et al. (1989) and Bell and Carcello (2000), which are based on the presence or absence of risk factors, the model in this study contains Likert-type, risk-framed scales permitting more variability in the measurement of fraud risk factors. This study’s data does not originate from surveys (Loebbecke et al. 1989; Bell and Carcello 2000; Nelson et al. 2002) or from experiments (as is the case, for instance, in Eining et al. 1997; Gillet and Uddin 2005; Dusenbury et al. 2000), but it is archival data from 5,603 client acceptance and audit continuation decisions made between 2002 and 2004. The type of data and the size of the sample allow the use of structural equation modelling techniques, which enables the analysis of the relative strength of each of the independent variables, as well as their interrelatedness in identifying fraudulent reporting. And, perhaps more important, this study extends the current literature by using non-US data, which may help bridge US research into a European context. The non-United States context is important as most empirical studies of fraud have been restricted to United States’ SEC sanctioned firms. This sample of SEC-sanctioned firms covers over 100 companies and has been extensively investigated, but virtually nothing is known about the characteristics of fraud outside the United States, its impact on the capital markets, and whether non-US populations would respond differently to ethical financial reporting matters (Merchant and Rockness 1994). This study investigates the effect of

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16 The degree of non-compliance with laws or ethical codes and the extent of an accounting violation, all refer to a set of rules which require judgement for interpretation. Generally, materiality or significance guidelines are used to determine the severity of a violation. ISA 240 distinguishes errors as unintentional misstatements and labels intentional misstatements as fraud. This approach is similar to the one adopted by SEC Staff Accounting Bulletin 99, Materiality. The focus on “softer” elements such as intent, aggressiveness, and bias are strong indications why a strong focus on the financial reporting culture warrants the research documented in this paper. The next generation of auditing procedures are not those that focus on complex transactions and control assertions, but those that set and test for boundaries for a sound financial reporting culture within an organization.

17 As audit standards in the Netherlands follow international conventions, and there are largely identical to US standards, there would not be a priori reason to believe auditor perceptions of
two of the most-often cited fraud schemes in the US (revenue recognition and accounting estimates; SEC 2003) and those most often involved in misconduct (senior executives; SEC 2003) within a European context.18

This study documents that managerial attitudes significantly affect auditor fraud risk decisions, accounting for 82% of the variability in audit partner judgements (providing empirical support to the work of Heiman-Hoffman et al. 1996). Auditor concerns over senior management ethics and integrity are found to be of highest importance and significance in their assessments of fraud risks, followed by concerns over aggressive revenue recognition and accounting estimates (consistent with Kizirian et al. 2005).19 At lower fraud propensity levels, however, managerial attitudes appear to be more driven by accounting practice considerations rather than ethics. This would indicate that accounting convention concerns are more prevalent, initial indications of increased fraud risk and also suggesting non-linear audit partner evaluation of risks. Therefore, ethical principles may be perceived by auditors as more important boundaries defining the financial reporting environment in an organization, and affecting the likelihood of fraud, more than accounting rules.

The results also show that the honesty and openness reflected in the auditor-management relationship (as perceived by audit partners) is a fraud risk aught to differ materially. The most recent major Dutch scandal (Ahold) involved the manipulation of estimates and revenue recognition.18 Further, research into illegal acts has noted that executives who ignore, condone, reward, or participate in past instances of wrongdoing will likely be recidivists (Baucus 1994). Therefore, the financial reporting culture within an organization, shaped by the ethical tone of senior managers, their degree of honesty, and aggressiveness of accounting practices, is likely to be associated with fraud.19 The audit literature dealing with fraud has found that senior executives are generally responsible for accounting fraud violations (SEC 2003) and that in the majority of cases where auditors recalled management fraud, there were indications of decision-making domination by one person or a small group acting in concert, ethical misconduct, and weak internal controls (Loebbecke et al. 1989; Bell and Carcello 2000). Further, US regulators have noted that the vast majority of accounting violations involved either aggressive revenue recognition or improper recording of expenses or losses (SEC 2003; Bell and Carcello 2000). Corporate cultures, influenced by the policies and practices of senior management, exert strong influence on employee behaviour and can therefore promote serious violations of law, and in such subtle and pervasive fashion that managers may come to lose sight of legal obligations completely (Baucus 1994).
significant source of cues which auditors use in gauging an organization’s propensity for fraud. However, cues attributable to the quality of the auditor-management relationship and the quality of senior management do not appear to be used by auditors (or perceived as important) in their assessment or categorization of higher fraud-risk clients. Both factors appear to be important attitude red flags, but auditors seem to need additional, more specific indications to classify potential clients in high risk categories.\(^{20}\)

The remainder of the paper is organized as follows. The next section provides a literature review, based on which an empirical model is developed. The third section discusses the risk assessment sample and describes the research design. The empirical results are given in the fourth section. Conclusions, recommendations, and implications for future research are found in the final section.

**LITERATURE REVIEW AND EMPIRICAL MODEL**

**Differing importance of fraud red flags**

There is a substantive amount of research covering the subject of fraud.\(^{21}\) However, there is limited research on how indications of increased

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\(^{20}\) Perhaps, as a possible implication, the next generation of audit procedures are those that seek out indications of management misconduct (e.g., through whistleblower “hotlines”) rather than those exclusively focused on accounting errors and information systems.

\(^{21}\) Academic literature, in the fields of psychology, accounting, auditing, law, and economics, provide various complementary theories, which explain why financial fraud arises in business. These disciplines provide alternative hypotheses to control mechanisms, that may help prevent such irregularities. For example, social and cognitive psychology gives insight into human thinking, rationalization, and behaviour at the individual level and within a social context. Management accounting and control literature, particularly literature related to reliance on accounting performance measures (RAPM) and budgeting, gives insight into the behaviour of managers in an accounting performance measurement, control, and evaluation system. Financial reporting research has studied capital market responses to accounting earnings and, in the area of earnings management, provided a wealth of knowledge into manager motivations and conditions that lead to earnings manipulation behaviour. The auditing literature has been studying auditor experiences and application of knowledge in the area of accounting fraud. Legal, criminal, and corporate governance research provide insight into the constraints and behaviours which affect individual managers, executives, boards, and audit
fraud risk can be weighted or put into a model to assess the likelihood of fraud. Hackenbrack (1993) noted that there was a high degree of variability in the importance ratings assigned to various fraud risk factors which appeared partially attributable to the auditors' experience and client size. He noted that auditors assigned primarily to large client engagements place relatively more emphasis on risk factors relating to opportunities to commit fraud than do auditors assigned primarily to smaller companies.

Bell and Carcello (2000) proposed a model that is potentially useful in predicting the existence of fraudulent financial reporting. Their model correctly classified 80 percent of the fraud cases while only misclassifying 11 percent of the non-fraud cases. The significant risk factors included in the model were: weak internal control environment, rapid growth, inadequate/inconsistent profitability, undue emphasis on meeting earnings projections, dishonest or overly evasive management, ownership status (private vs. public), and an interaction between a weak control environment and an aggressive attitude toward financial reporting. Apostolou et al. (2001) found that management characteristics and influence over the control environment red flags were approximately twice as important as operating and financial stability characteristics red flags and about four times as important as industry conditions using an analytic hierarchy process.

Albrecht and Romney (1986) found that one-third of the 87 red flags studied were found to be significant predictors of fraud, which generally included personal characteristics of management. Loebbecke et al. (1989) presented the results of a survey of audit partners from KPMG who have had experiences with fraudulent financial reporting and with asset misappropriations. This research established that there were general committees and the repercussions (from regulators and litigation) of the failure of these groups to exercise their legal and fiduciary duties. Economics has contributed the principal-agency theory, the concept of utility as the basis for explaining that lead to accounting fraud, and the concept of contracts as a means to control agent behaviour. Bell and Carcello’s (2000) work notes that there are several risk factors presented in the authoritative guidance and elsewhere in the literature that are not particularly effective in discriminating between fraud and non-fraud engagements.
conditions, motivations and attitudes, which could predict the probability of material irregularities. For example, they found the primary conditions that encouraged fraud included dominated decisions by senior management and weak internal controls.\(^{23}\) Finally, Loebbecke et al. (1989) compiled the primary set of attitudes, or ethical values, of persons with positions of authority that would allow them to seek out, or partake in, management fraud. These factors included dishonest management, personality anomalies, and lies or evasiveness, particularly to auditors.\(^{24}\) Loebbecke et al. (1989) found in 75% of observations, there were indications of decision-making domination by one person or small group acting in concert and weak internal controls. Amongst a broader study of fraud indicators, Loebbecke et al. (1989), as well as SAS 99 and ISA 240, identify three groups of red flags capturing a specific dimension of the financial reporting culture within organizations: aggressive accounting practices, management ethical attitudes, and the relationship between company managers and their auditor. These will be discussed in the following sections and are the focal point of this study.

**Aggressive Accounting practices and Fraud**

Internal controls, particularly over critical accounting areas, are able to codify and capture expectations on legal behaviour, increase the likelihood of detection, punish transgressions, and reward desired behaviour (McKendall et al. 2002, AICPA 2001). Holmes et al. (2002) analyzed 2,600 cases of fraud and noted that organizations with lax management attitudes are more likely to be victimized internally, by both management and non-management employees. Further, the fraud schemes used were more complex, pervasive, and involved collusion in situations with lax management attitudes. In addition, Holmes et al. (2002) notes that managers with strong incentives to commit fraud prefer weak controls in order to disguise their fraudulent behaviour. Bell and Carcello (2000) confirm that this combination of weak

\(^{23}\) Other primary conditions included: (i) major transactions were taken advantage of; (ii) there were business dealings with related parties; (iii) internal controls were weak; and (iv) transactions were difficult to audit.

\(^{24}\) Other primary attitudes / rationalizations included: (i) emphasis on earnings projections; (ii) prior-year irregularities; and (iii) aggressive attitude to financial reporting.
control and aggressive financial reporting contribute significantly to fraud. And, Loebbecke et al. (1989) found that an aggressive, senior management attitude towards financial reporting was an important factor associated with the risk of material irregularities.

The SEC has found that improper revenue recognition is the most common method of accounting fraud, and that aggressive financial estimates made by management (involving estimates of costs and expenses), is the second most common fraud scheme (SEC 2003). It is therefore possible that auditors may mistrust the financial reporting environment whenever indications of aggressive accounting practices arise, especially those involving the revenue recognition process and the determination of significant accounting estimates (consistent with SAS 99 and ISA 240).

Victor and Cullen (1988) have noted that ethical behaviour cannot simply be explained by individual characteristics, suggesting the importance of tone-at-the-top (Treadway Commission 1987). It seems inappropriate for organizations to exclusively rely on individual integrity to guide behaviour; thus, organizations must provide the context to support ethical behaviour and discourage unethical behaviour (Butterfield et al. 2000; Dallas 2003). This support can be given by the company’s ethical climate, consisting of the ethical meaning employees attach to organizational (financial reporting) standards, practices and procedures, including the managerial behaviour and

25 The United States has the world’s largest capital markets and also some of the tightest regulatory controls in the area of corporate fraud. The SEC publishes its enforcement actions and this provides a first window to explore the characteristics of firms accused of, or found to have committed corporate fraud. The SEC has noted that a significant number of enforcement actions involve violations of reporting requirements, relate to inadequate books and records, and involve improper accounting controls (SEC 2003). Similarly, the SEC has found that the most common methods of fraudulent financial reporting are:

1. Overstatement of revenues and assets
2. Understatement of costs and expenses and liabilities
3. Manipulation of the timing of when transactions are recorded or events are recognized
4. Incorrect measurement or estimation of the effects of transactions or events
5. Misapplication of generally accepted accounting principles (“GAAP”)
6. Misrepresentation or omission of information material to users of financial information.
reward systems that reflect the corporate norms and values (Barnett and Vaicys 2000; Dallas 2003). The areas of ethics and accounting concerns will be further reviewed in the following paragraphs.

**Senior Management Ethical Conduct and Fraud**

Financial reporting fraud is typically committed by top management (SEC 2003, Loebbecke et al. 1989). From a legal perspective, firms with executives who ignore, condone, reward, or participate, in past instances of wrongdoing, will likely be recidivists due to the predisposition of their behaviour and attitude (Baucus 1994). Further, Baucus (1994) reports that firms with highly committed employees and a corporate culture reinforcing illegal activities tend also to be predisposed to illegal behaviour. The legal view also reconciles with the view found in the audit literature. Managers, who are generally dishonest and are evasive towards their auditors, are more likely to engage in financial fraud (Loebbecke et al. 1989). Other audit studies – such as Bell and Carcello (2000) – have found, through matched-fraud and no-fraud samples, that overly-evasive or dishonest management is an important fraud red flag.

The ethics and conduct of corporate senior managers sets the overall, ethical tone in an organization. It is not corporations that commit financial fraud; rather, fraud is perpetrated by the people within the corporation. It is generally understood that the primary reason why people commit fraud – especially white collar crime – is money (usually, from bonuses or options linked to the appreciation of stock prices), power, advancement, and *hubris* (Baucus 1994). The sample of auditor assessments of firms investigated in this study provides a unique opportunity to investigate whether firms with a higher propensity to commit fraud are more likely to demonstrate indications of ethical misconduct (mistrust).

Empirical research suggests that auditors perceive fraud red flags associated with management attitudes and behaviours to carry more weight
than motivation and condition red flags (Deshmukh and Talluru 1998; Heiman-Hoffman et al. 1996). There is also evidence that the ethical tone in an organization is largely derived from senior management attitudes (Cohen et al. 2002). Research notes that a focus on long-term gains and idealist principles (rather than short-term gains and relativism) should have a positive contribution on reducing earnings manipulations (Elias 2002). Further, organizations should promote idealist values and re-enforce these values through a long-term focus on the business (Elias 2002). In an audit setting, management integrity assessments and concerns have been shown to impact the persuasiveness of evidence sought and the auditor's assessment of management integrity improved the likelihood of detecting misstatements (Kizirian et al. 2005).

Research in psychology and organizational behaviour has demonstrated that individuals make egocentric interpretations of fairness and ethics. In situations involving earnings management, where no consensus on acceptable behaviour exists, multiple interpretations of ethical actions are likely to arise (Kaplan 2001). Organizations, therefore, must reduce the moral ambiguity surrounding improper financial reporting and ethical compliance conduct by providing the right guidance and decision support mechanisms that guide organizational behaviour.²⁶

Fraudulent financial reporting starts with small ethical transgressions (Treadway Commission 1987; Merchant and Rockness 1994; IFAC 2004).

²⁶ Ethical conduct controls within an organization are generally associated with the actions and control practices of organizations which shape the ethical climate. An organization’s ethical climate refers to the ethical meaning which employees attach to organizational policies, practices, and procedures that determine the ethical conflicts that are to be considered, the process by which such conflicts are resolved, and the characteristics of the resolution (Dallas 2003). Schnatterly (2003) notes that clarity of policies and procedures and formal cross-company communication significantly reduces the likelihood of a crime. It is important to consider the relationship between ethics and the law. Generally, illegal behaviour is a subset of unethical behaviours, as laws are a means for society to capture our moral standards (Baucus 1994). Therefore, given the importance of the matter, one would have expected that regulators and industry would have detailed best practice guidance on how to organize the ethical and legal compliance functions within an organization. Such lack of guidance is also present in the academic literature.
Trevino and Youngblood (1990) concluded that ethical decision-making behaviour in organizations results from a complex interplay of individual differences, how individuals think about ethical decisions, and how organizations manage rewards and punishment. They find that ethical decision making is influenced directly by cognitive moral development. Moral reasoning is defined as “the cognitive processes people use in making ethical decisions” (Trevino and Youngblood, 1990, p. 378). In this paper the terms moral reasoning and moral development were used interchangeably. In their path analysis, Trevino and Youngblood (1990) also found (1) evidence that Locus of Control\textsuperscript{27} influenced ethical decision making directly and through outcome expectancies; and (2) vicarious rewards affected ethical decision making indirectly as it influenced outcome expectancy (no significant linkage was found for vicarious punishment).

Moral reasoning\textsuperscript{28} is an important element that affects economic decisions, including fraudulent ones (Rutledge and Karim 1999). Uddin and Gillette (2002) provide evidence that moral reasoning had some effect on intentions of Chief Financial Officers to report fraudulently on financial statements. They also note that having a greater number of high moral reasoners in an organization can decrease the probability of fraud as these individuals are less influenced by social norms. They suggest that addressing the personal attitudes and subjective norms in an organization can be a critical determinant that prevents fraudulent behaviour. It follows that corporations may affect a person’s reasoning at the conventional level through its policies

\textsuperscript{27}Trevino and Youngblood (1990) note that individuals with internal Locus of Control (“LOC”) are more likely to do what they think is right and to tolerate discomfort or penalty for doing so. The concept of internal-external LOC classifies individuals as either attributing the cause of or control over events to themselves (“internals”) or to their surrounding situation (“externals”). The characteristics of “externals” are closely related to the surrounding environment. Ashford et al. (1989) compared “externals” vs. “internals” and found that “internals” generally see environmental situations as being less important and believe that they have the power to counteract environmental threats.

\textsuperscript{28}Kohlberg (1969) developed a theory of moral development in which persons progress in moral reasoning through three levels: (1) Pre-conventional level, where labels of “good” or “bad” are interpreted in terms of physical consequences (punishment, reward) or in terms of physical power; (2) Conventional level, where active support of the fixed rules or authority in a society becomes the reference criteria; and (3) Post-conventional level, where the individual makes clear effort toward autonomous moral principles with validity apart from the authority of the groups or persons who hold them and apart from individual identifications.
and practices by asserting or establishing the definition of what is socially acceptable within the work environment. Under Kohlberg’s theory of moral development (1969), researchers have found that managers use lower levels of reasoning in business contexts than in non-business contexts and that managers typically reason at the conventional level (Weber 1990).

Pant et al. (2002) suggest that rather than broad attempts being made to change the moral development of managers, efforts should be placed on sensitizing them to moral issues and how to address these. In turn, this would suggest that an Ethics and Compliance program is necessary within all organizations, but such programs can only work if they are sponsored by senior management. Because of the authority and status of top management, ethics researchers suggest that a high ranking officer in the organization oversee ethical compliance, and that such matters be discussed at the Board and Audit Committee level (Dallas 2003). Generally, as summarized by Dallas (2003), ethics and ethical compliance systems require consideration of: (i) organizational values; (ii) the nature of organizational decision making; (iii) the values and behaviours of the organization’s leaders; (d) the organization’s reward systems; (e) the handling of conflicts of interest; (f) the availability of ethical guidance for employees; and (g) the organization’s monitoring system.

**Management-auditor relation and Fraud**

Loebbecke et al. (1989) noted that the relationship between a client’s management and the auditor is an important indicator of heightened fraud risk, including frequent disputes with the auditor, undue pressure on auditor, and disrespectful attitudes towards the auditor. Bell and Carcello (2000) confirm this finding and conclude that previous audit experience had significant predictive abilities for the detection of current fraudulent behaviours.

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Moral philosophy can be described as the extent to which an individual is a relativist and/or idealist. High relativists (Forsyth, 1980) believe that the morality of an action depends upon the particular circumstances involved and not on moral/universal absolutes. High idealists believe that moral actions should and do have positive consequences and that it is always wrong to pursue a course of action that will cause harm (or affect the welfare of) others.
especially when management had been overly evasive in responding to audit inquiries and when management had engaged in frequent disputes with auditors. The strength of audit clients’ corporate governance system and the strictness of their management control philosophy are related to greater willingness on the part of the auditor to recommend client acceptance and more likeliness to reduce substantive testing (Cohen and Hanno 2000). Auditors also appear to react to integrity information about a client’s Chief Financial Officer (CFO): the CFO’s integrity is negatively related to auditors’ risk judgments and to recommendations for increasing audit extent and audit fee (Beaulieu 2001). Anderson et al. (2004) find auditors are less likely to believe management explanations when management’s incentives are high. A quantified explanation is viewed more likely to be sufficient than a non-quantified explanation. Audit planning decisions appear to be solely influenced by incentive system and expected resulting aggressiveness in financial accounting. Anderson et al. (2004) also found that when incentives for earnings management are low, auditors do not appear to critically question explanatory information contained in the quantified explanations. This study therefore expects auditors’ judgments to be partly influenced by pre-audit information and experience about the client’s behaviour, conduct and specific audit related circumstances. To do their job effectively, auditors rely on representations from managers to validate their sample results. If managers are not open, interfere in the audit process, or are not cooperative with the auditors, then this could indicate a heightened risk of financial fraud. Managers who have a tense (or opaque) relationship with their auditors will tend to have a higher probability for financial fraud.

This study poses three hypotheses which address prior gaps in the literature: (1) auditor judgments of client integrity risks are positively related to fraud risk judgments – Beaulieu (2001) support this finding from an audit evidence and planning perspective, but not in a fraud setting; (2) senior management behavioural anomalies and their aggressiveness towards financial reporting increases fraud risk – this is documented in Bell and Carcello (2000)
and Loebbecke et al. (1989), both using KPMG audit partners and their experiences in the United States, rather than other Big 4 data in a non-US context; and (3) management attitudes and financial reporting behaviours have a significant effect on auditor fraud risk perceptions – Apostolou et al. (2001) performed an exploratory experiment with a limited group of US auditors, but did not test actual client auditor risk perceptions such as was done by Bedard and Johnstone (2004) nor validated the fraud risk variable with external observable phenomena such as audit reporting and communication with the Board.

SAMPLE AND RESEARCH DESIGN

This section is composed of three subsections. The first section discusses the auditor acceptance and continuance process undertaken by a Big Four accounting firm in the Netherlands, which forms the basis of analysis for this study. The second section gives the sample composition and presents some high-level, descriptive analytics on the sample. Finally, the third section describes the empirical proxies for fraud, unethical management conduct and tone set in the organization, excessive compensation pressures, and a poor control environment.

Auditor Acceptance and Continuance Process

Risk assessment processes are critical to an auditor’s design of procedures to detect material, financial statement misstatements, whether caused by fraud or otherwise. International audit standards require that an auditor obtain an understanding of audit risk and its components: inherent risk, control risk, and detection risk (ISA 400). Risk assessment systems at Big Four accounting firms generally consider all key audit and fraud risk indicators, as suggested by audit standards, either in isolation or through separate questionnaires (Shelton et al. 2001). This study closely the approach
employed by Bedard and Johnstone (2004) who used engagement partners’ assessments of their clients, as part of their client acceptance and annual audit, continuance, risk assessment, process to examine the relationship between earnings manipulation and corporate governance variables.

The data used in this study was derived from audit partner assessments of their clients during the acceptance and audit continuance process, performed during the years 2002 to 2004, at a Big Four Dutch accounting firm. During this process, partners at the firm perform their preliminary assessments of the various risk factors affecting the probability of an inadequate, audit opinion for particular clients. The risk assessment is completed on a standardized, electronic form which requests that the audit partner select from a range of choices, or risk judgements, based on uniform definitions (adequacy of Big 4 risk assessments discussed by Shelton et al. 2001). Once the acceptance and continuance form is completed by an audit manager or the audit partner, the partners must sign the form, and, in certain instances, the form is subject to additional internal, Firm reviews in accordance internal quality, review guidelines. Once the form has been approved, audit partners and managers then proceed to design an audit plan based on any heightened risk conditions identified through the process.

Sample Selection and Description

In total, 5,603 acceptance and continuance risk evaluations were included in this study with only 3% of the assessments discarded due to missing information. These risk assessments include public and private companies, foreign and domestically-owned entities and cover multiple industries. They are a sub-set of all the audit engagements performed by the Big Four firm for the years 2002 through 2004. We excluded all assessments performed for very small clients (total audit hours less than 500), assessments for non-financial audits, and other services. The remainder of the sample population covers the assessments of approximately 150 audit partners. In the
Netherlands, there is a general statutory audit requirement, with an exemption for entities that do not meet certain size criteria (approximately €8 million revenues and €4 million in assets). Due to confidentiality limitations, information such as the client name, size, audit fees, and other sensitive information was removed from the data provided to the researcher. The Big Four firm uses a proprietary algorithm to arrive at a risk score, and to identify the indicators of increased risk, which are to be considered by the auditor as part of the planning, execution, and completion of the audit. The outputs of such an algorithm, and the ultimate performance of the auditor, were not observable nor the subject of this study.  

**Variable Measurement**

The participating Big Four accounting firm’s client acceptance and audit continuance risk assessment process requires audit partners to answer questions on a number of risk factors. Certain of these risk factors are the focus of this study (refer to Appendix 1 for full variable definitions). They are:

(i) risk associated with the ethical conduct of managers based on perceptions and known instances of potential misconduct (*IntegrityAndEthics*) and risk associated with the experience and skill of the management team (*MgtExperienceSkill*).

(ii) risk associated with aggressive accounting estimates (*AcctgEstimateReliability*) and revenue recognition practices (*RevenueRecognition*).

(iii) risk arising from the lack of openness and transparency between an auditor and its audit client (*AuditRelationship*).

(iv) the risk from management inclinations to intentionally misstate financial statements – the proxy for actual fraud (*MgtInclin2IntentMisstate*).

Note that auditors are required to perform specific risk evaluations and design appropriate procedures to meet SAS 99 and ISA 240 requirements dealing with fraud. The evaluations at the sampled Big 4 firm are based on initial risk indications arising from the acceptance and continuance system.
Risk evaluation is based on a fully-anchored, five-point risk level instrument, based on a standardized set of framed statements (risk descriptions) and includes an explanation of that particular risk level. Most empirical research has tended to measure fraud red flags using binary variables. Deshmukh and Talluru (1998) note that, in the real world, the differences which exist in certain red flags have been largely ignored in researcher measurement and research models. For example, during an audit, it becomes necessary to consider internal controls on a continuous or categorical scale, rather than on a dichotomous, binary scale.

The empirical proxy used to measure the perceived propensity for fraud in this study is derived from one question in the auditor acceptance and continuance questionnaire. This specific variable measures management inclinations to intentionally misstate financial statements. It is based on the client’s approach to financial reporting and past experience which the auditor may have had, or observed, with their client. The first two risk levels of the dependent measure capture the importance managers place on financial reporting; the highest risk levels capture manager disregard or observed attempts to distort or hide material information (refer to Appendix I and Figure 3).

All risks are measured on a five point scale, from lowest to highest, with framed statements to assist the auditor in the process. A Likert scale from 1 (lowest risk) to 5 (highest risk) is used as a basis for analysis. Auditor risk statements are framed to capture auditor perceptions, observations, and suspicions at the lower risk levels. At the higher risk levels auditor recall, evidence of “red flags”, and past incidents are used by auditors as a basis for their risk assessments. Therefore, this study relies on auditor perceptions, observations, and auditor recall as the basis of analysis and conclusion (as required by audit standards and not inconsistent with SAS 99/ISA 240 requirements for increased scepticism in evaluating prior auditor assumptions on a client’s fraud risk factors).
To validate whether auditors were conscious of their fraud risk assessments (dependent variable construct reliability; responses to the dependent variable in this study - MgtInclin2IntentMisstate) and acted upon such assessments through additional audit safe-guards, two groups of sample ANOVA mean comparison tests were performed. The first test examined whether audit opinions were significantly affected by higher fraud risk assessments. It was found that higher risk assessments had the following statistical differences (1% level) with the rest of the sample: (i) more modified audit opinions; (ii) more explanatory paragraphs within audit opinions; (iii) there was more communication by the auditors to the Board of potential fraud or illegal acts; (iv) there had been more prior auditor disagreements, resignations, and prior auditor limitations of responses; and (v) there were more prior year errors and account restatements. In addition, a second group of tests for external validity of the dependent variable (using ANOVA means comparison, at the 1% level of significance) suggest that auditors respond to higher fraud risk assessments by refusing to have their audit scope changed, having more complex negotiations with their clients, and by implementing additional internal Firm quality controls (e.g., use of concurrent partners). In summary, there is evidence to suggest that auditors act on their fraud risk assessments and it establishes the external validity of the dependent variable for this study.

RESULTS OF EMPIRICAL TESTS

The discussion of the results is presented in three sections. The first section provides a risk profile of the variables under study and evidence of the positive association between fraud red flags. The second section presents evidence that unethical management actions, aggressive accounting practices, and strained auditor relations are important indications of increased fraud risk. The last section provides evidence of the relative importance of ethical
manager conduct and accounting practices, in relation to the varying levels of fraud risk.

The importance of management attitudes

Table 1 provides descriptive statistics on the indications of mistrust and managerial attitudes, and related risk judgments, across the 5,603 firm auditor assessments. Descriptive results of the sampled population indicate that relatively few clients were assessed as having high risk levels in the variables measured in this study. More specifically, 0.8% of auditor assessments had a low level of management experience and skill and 1.1% were perceived as exhibiting low levels of integrity and ethical behaviour. In the variables which captured aggressive accounting, 0.9% were assessed as having aggressively-structured revenue recognition practices, and 1.3% were assessed as having consistently, unreliable accounting estimates. In addition, 0.4% of entities were considered to have strained, audit-management relationships.

Table 2 provides the Pearson Correlation coefficients for all indicators of mistrust, measuring the managerial attitudes which shape financial reporting cultures of organizations. Consistent with what the literature suggests, all mistrust indications have a strong positive correlation with the risk of fraud (significance at the 1% level). Surprisingly, however, is the magnitude of the correlations assessed by auditors, generally ranging from 0.3 to 0.4. As well, the ethical integrity and conduct of senior management is seen as the single most significant element in fraud risk (0.47), followed by the quality of the audit relationship (0.4).
TABLE 1: DESCRIPTIVE STATISTICS

<table>
<thead>
<tr>
<th></th>
<th>TOTAL SAMPLE</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>HIGHER RISK SUB-SAMPLE</th>
<th></th>
<th></th>
<th>LOWER RISK SUB-SAMPLE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Min</td>
<td>Max</td>
<td>Mean</td>
<td>Variance</td>
<td>% High / Highest</td>
<td>N</td>
<td>Mean</td>
<td>Variance</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>Y, fraud proxy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MgtInclIn2IntentMisstate</td>
<td>5,603</td>
<td>1 5</td>
<td>1.92</td>
<td>0.31</td>
<td>0.8%</td>
<td>565</td>
<td>3.08</td>
<td>0.09</td>
<td>5,038</td>
<td>1.78</td>
<td>0.17</td>
</tr>
<tr>
<td>X, risk factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IntegrityAndEthics</td>
<td>5,603</td>
<td>1 5</td>
<td>2.22</td>
<td>0.39</td>
<td>1.1%</td>
<td>565</td>
<td>2.81</td>
<td>0.28</td>
<td>5,038</td>
<td>2.15</td>
<td>0.36</td>
</tr>
<tr>
<td>AuditRelationship</td>
<td>5,603</td>
<td>1 5</td>
<td>1.86</td>
<td>0.42</td>
<td>0.4%</td>
<td>565</td>
<td>2.41</td>
<td>0.47</td>
<td>5,038</td>
<td>1.80</td>
<td>0.33</td>
</tr>
<tr>
<td>MgtExperienceDepth</td>
<td>5,603</td>
<td>1 5</td>
<td>2.08</td>
<td>0.34</td>
<td>0.8%</td>
<td>565</td>
<td>2.48</td>
<td>0.42</td>
<td>5,038</td>
<td>2.03</td>
<td>0.31</td>
</tr>
<tr>
<td>RevenueRecognition</td>
<td>5,603</td>
<td>1 5</td>
<td>1.75</td>
<td>0.48</td>
<td>0.9%</td>
<td>565</td>
<td>2.10</td>
<td>0.74</td>
<td>5,038</td>
<td>1.71</td>
<td>0.43</td>
</tr>
<tr>
<td>AccptEstimateReliability</td>
<td>5,603</td>
<td>1 5</td>
<td>2.13</td>
<td>0.35</td>
<td>1.3%</td>
<td>565</td>
<td>2.50</td>
<td>0.46</td>
<td>5,038</td>
<td>2.09</td>
<td>0.32</td>
</tr>
</tbody>
</table>

(1) The Acceptance and Continuance process at the sampled Big 4 firm asks the auditor for an assessment of specific risk conditions. For each of these questions the auditor is requested to provide an assessment across five categories: Lowest Risk, Low Risk, Some Risk, High Risk, and Highest Risk. Each of these risk categories contains a brief description of what is meant by each of the particular risk levels, which frames the assessment for the auditor. Generally, the framing statement associated with the low and lowest risk level contains positively framed statements representing good qualities that the auditor believes to be present. The high and highest risk generally refer to specific (more tangible) auditor indications of negative qualities associated with the question and perceived to pose risk of issuing an incorrect audit opinion. For the purpose of this study, a 5-point ordinal Likert Scale [1-5] is used to represent lowest to highest risk conditions respectively.

(2) The higher risk sample contains sample cases for which the auditor has indicated that the management’s inclination to misstate is 3 or higher on the five-point Likert scale, representing some to highest risk (refer to Appendix I).
TABLE 2: PEARSON CORRELATION COEFFICIENTS (FULL SAMPLE; N: 5,603)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) MgtIncln2IntentMisstate</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) IntegrityAndEthics</td>
<td>.472(**)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) MgtExperienceSkill</td>
<td>.315(**)</td>
<td>.355(**)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) AcctgEstimateReliability</td>
<td>.336(**)</td>
<td>.325(**)</td>
<td>.287(**)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) RevenueRecognition</td>
<td>.296(**)</td>
<td>.255(**)</td>
<td>.203(**)</td>
<td>.294(**)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>(6) AuditRelationship</td>
<td>.404(**)</td>
<td>.334(**)</td>
<td>.238(**)</td>
<td>.276(**)</td>
<td>.302(**)</td>
<td>1</td>
</tr>
</tbody>
</table>

Pearson correlation coefficients; (***) denotes significance of correlation coefficient at 1% level (2-tailed test); N: 5,603

Note: Consistent with the above table, Pearson correlation coefficients at the lower risk sub-sample (N: 5,038) are all positive amounts, and all correlations remain significant. At the higher fraud risk sub-sample (N: 565), all correlation coefficients are lower (but continue to be significant at the 5% level); however, there is no significant correlation between MgtIncln2IntentMisstate and MgtExperienceSkill (i.e., the experience and skill of a senior management team is not related to the risk of fraud; perhaps more experienced management would be in a better position to engage in fraud)
These findings are consistent with the Loebbecke et al. (1989) model for material irregularities and auditor observations. Interestingly, all attitude indications and fraud red flags are statistically correlated with each other at the 1% level (without a multi-collinearity concern). These observations suggest that managerial attitude indications are considered by auditors to be strongly associated with fraud.

**A multivariate analysis of fraud risk components**

Table 3 provides the results of the linear regression between various management attitude indications – unethical management conduct, inexperienced management, aggressive revenue practices, aggressive estimates, and degree to which management is forthcoming with its auditors – and the risk of fraud. The results confirm that there is a positive association between indications of mistrust and adverse managerial attitudes and fraud risk. The model is significant ($F: 552; p<0.01$) and the explanatory power is high ($R^2: 0.33$). All the Betas are positive and statistically significant at the 1% level.

The results confirm that auditors do perceive the lack of honesty, openness and transparency between management and themselves as an important element increasing fraud risk perceptions ($\beta_{\text{TOTAL}}: 0.22; p<0.01$). As demonstrated in Table 3, this is the second most important variable determining the risk of fraud. The implication is that auditor assessments may be capturing an element of management behaviour which is useful to auditors in assessing the risk of fraud. And, at the highest risk levels, auditors rely on tangible evidence rather than perceptions alone. This view is supported by re-running the regression model with a sub-sample of the higher fraud risk assessments (565 higher-risk assessment forms; $\beta$ not significant; Table 3) that suggests that the audit relationship is not perceived as an important factor at higher levels of fraud risk.
TABLE 3: MULTIPLE REGRESSION RESULTS ACROSS FULL SAMPLE AND HIGHER/LOWER RISK SUB-SAMPLES

<table>
<thead>
<tr>
<th>X (risk factor)</th>
<th>TOTAL SAMPLE REGRESSION</th>
<th>HIGHER RISK SUB-SAMPLE REGRESSION</th>
<th>LOWER RISK SUB-SAMPLE REGRESSION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unstandardized Coefficients</td>
<td>Standardized Coefficients</td>
<td>Unstandardized Coefficients</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>Integrity &amp; Ethics</td>
<td>0.27</td>
<td>0.01</td>
<td>0.30</td>
</tr>
<tr>
<td>(24.91) ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audit Relationship</td>
<td>0.19</td>
<td>0.01</td>
<td>0.22</td>
</tr>
<tr>
<td>(17.87) ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mgt Experience Skill</td>
<td>0.10</td>
<td>0.01</td>
<td>0.10</td>
</tr>
<tr>
<td>(8.58) ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue Recognition</td>
<td>0.08</td>
<td>0.01</td>
<td>0.10</td>
</tr>
<tr>
<td>(8.21) ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accrual Estimate Reliability</td>
<td>0.11</td>
<td>0.01</td>
<td>0.12</td>
</tr>
<tr>
<td>(2.92) ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.29</td>
<td>0.03</td>
<td>***</td>
</tr>
<tr>
<td>Adjusted $R^2$ :</td>
<td>0.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F:</td>
<td>552.57</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>df:</td>
<td>5,602</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dependent Variable: Mgt Performance

Note 1: Amounts in ( ) and italics represent t-statistics. *** denotes significance at the 1% level; ** denotes significance at the 5% level (* for 10% level).

Note 2: No evident multi-collinearity issue noted: variance inflation factors ranged from 1.06 to 1.3; tolerance levels ranged from 0.77 to 0.94.
In examining a smaller, sub-sample of higher fraud risk assessments (Table 3, middle column), neither the quality of the audit relationship, nor the level of management experience are found to be statistically significant ($b^{\text{HIGH}}$). This finding appears unusual as practitioner and academic guidance would suggest that strained auditor-client relationships (built on honesty and trust) and inexperienced managers are an important element in higher, fraud risk levels. An alternative explanation is that auditors need additional red flag information besides and above the “soft” indicators of auditor-client relationship and managers’ experience before classifying clients in the high risk categories.

Results on Table 3 also confirm that aggressive management actions are perceived to be important factors associated with fraud. More specifically, aggressive revenue recognition practices are found to be an important and statistically-significant managerial attitudes associated with fraud risk ($b^{\text{TOTAL}}$: 0.10; $p<0.01$), alongside biased accounting estimates ($b^{\text{TOTAL}}$: 0.12; $p<0.01$). This finding is consistent with the observations from SEC enforcement actions which note that these two types of practices are noted in a large number of financial fraud allegations (SEC 2003). Further, this finding lends additional support to Loebbecke et al. (1989) and Bell and Carcello (2000), who noted that aggressive financial reporting practices are an important element which may lead to material irregularities.

The regression results confirm that manager ethical misconduct is the most important element perceived to drive the risk of fraud ($b^{\text{TOTAL}}$: 0.30; $p<0.01$). In addition, inexperience and lack of managerial skill are noted as additional conditions or factors which are also, independently, significantly associated with higher fraud risk assessments ($b^{\text{TOTAL}}$: 0.10; $p<0.01$). This finding is not surprising if one considers that various internal control frameworks, such as COSO, rate the control environment and relevant company-level controls (which are set by senior management) as the most important elements of control within an organization. However, this study
provides tangible evidence of the importance of both the ethics and experience of managers in determining the risk of fraud. For example, the standard \( \beta_{\text{TOTAL}} \) for the two variables representing aggressive accounting practices amounts to 0.22, compared to 0.40 for the ethical tone and experience of managers.

In summary, this study provides evidence that two groups of managerial attitudes—ethical conduct of managers and aggressive accounting practices— are very important elements associated with higher fraud risk assessments. With new standards for communication to audit committees on critical accounting and control areas, there is some empirical evidence to suggest that managers’ conduct and critical accounting practices should continue to be at the top of the list of matters to be communicated to governance bodies, in an effort to minimize the risk of fraud.

**Consistency across fraud risk levels**

The previous section noted that there were differences in the relative importance which auditors attributed to various fraud risk factors. It was documented that regression results differ between the full sample, and the sub-sample containing only the higher fraud risk assessments. These regression results showed, that the quality of the auditor relationship with management and the level of management experience, were not perceived by auditors as a statistically significant element in their assessment of higher fraud risk situations. To isolate risk factors and to focus on the ethical conduct and tone set by managers versus aggressive accounting practices, a simple structural equation model was created.

Structural equations modelling (SEM) combines regression with factor analysis, simultaneously as well as reduce measurement error. The main advantage of SEM over multiple regressions is the ability to test a set of
relations among variables, simultaneously. This cannot be done using standard regression, due to the complex set of simultaneous relations. SEM has been used and discussed in previous studies and in a similar context (Gillett and Uddin 2005; Johnstone 2000; Dusenbury et al. 2000; Wilks and Zimbelman 2004). For this study, AMOS version 6.0 is used as the vehicle to model the structural relationships between ethical conduct of managers and aggressive accounting practices. The SEM model uses four constructs:

1. a construct for the ethical conduct of managers, which is derived from the variables capturing the ethical conduct of senior management ($\lambda:1$) and the degree of management experience and skill;\(^{31}\)

2. a construct for aggressive accounting practices, which is derived from the variables capturing revenue recognition practices and reliability of accounting estimates ($\lambda:1$);

3. a construct for audit relationship which has one variable linked to it;\(^{32}\)

4. a construct for the interaction between management ethical risks and aggressive accounting;

5. a construct for fraud risk which is measured by the variable measuring management inclination to intentionally misstate financial statements.\(^{33}\)

\(^{31}\) Although the literature is mixed on whether experienced managers increase or decrease the risk of fraud, high Pearson correlations (0.36) between these variables suggest that they may be working together in a positive manner. Factor analysis also supports this view.\(^{32}\) For latent variables within the SEM model which have only a single indicator variable (constructs for audit relationship risk and accounting control risk), these are represented like any other latent variable, except the error term for the single indicator variable which constrained to have a mean of 0 and a variance fixed at an ‘arbitrary’ value times its variance (Jöreskog et al. 1993 suggest that using an arbitrary value, or estimate based on reliability, is a more reasonable assumption than the assumption of a zero error). For Audit Relationship, the assumed variable reliability has been set at approximately 50%, as the assessment is largely based on auditor perceptions, rather than established facts (and this variable is meant to capture multiple dimensions affecting other latent variables); therefore the error variance mapped in the model is represented by approximately 50% times the variance observed of the underlying variable across the relevant sub-sample. This ‘random’ percentage was chosen based on the stability of the model (increasing the reliability of other constructs) and the plausibility that audit relationship risk is a difficult-to-measure metric of trust and honesty. For the higher risk sub-sample, construct reliability of 80% was chosen, as the underlying variable relies more on tangible observations and facts (refer to Figure 3).\(^{33}\) Construct reliability has been set at 90% for the full sample and lower-risk sub-sample. For the higher risk sub-sample, a 50% reliability was necessary for model stability.
### TABLE 4: SUMMARY OF REGRESSION AND SEM RESULTS

<table>
<thead>
<tr>
<th>Fraud related risk factors</th>
<th>OLS Regression Standard Betas</th>
<th>Structural Equations Model Standard Load Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta_j^{LOW}$</td>
<td>$\beta_j^{HIGH}$</td>
</tr>
<tr>
<td>Management Ethical Tone</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>IntegrityAndEthics</strong></td>
<td>0.24</td>
<td>0.20</td>
</tr>
<tr>
<td><strong>MgtExperienceSkill</strong></td>
<td>0.08</td>
<td>-</td>
</tr>
<tr>
<td>AuditRelationship</td>
<td>0.18</td>
<td>-</td>
</tr>
<tr>
<td>Aggressive Accounting</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RevenueRecognition</strong></td>
<td>0.12</td>
<td>0.08</td>
</tr>
<tr>
<td><strong>AcctgEstimateReliability</strong></td>
<td>0.12</td>
<td>0.06</td>
</tr>
<tr>
<td>Management Ethical Tone *</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aggressive Accounting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$:</td>
<td>0.33</td>
<td>0.06</td>
</tr>
<tr>
<td>$\chi^2$:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results of the overall model confirm (Table 4; Figure 1) that the ethical conduct of senior management ($\gamma_{\text{TOTAL}}$: 0.71; $p<0.01$) is approximately two times more important than aggressive accounting practices ($\gamma_{\text{TOTAL}}$: 0.37; $p<0.01$), even after considering variable inter-relationships. The model is significant and acceptable (AGFI: 0.98; RMR: 0.01; TLI: 0.97; NFI: 0.99; all acceptable levels per the literature, particularly observations of Hu and Bentler 1999; construct reliability above 0.6). In addition, the explanatory power of the model is significantly higher than regression (squared multiple correlation or $R^2$: 0.82).

It is important to note that the interaction of management ethical tone risk and aggressive accounting has a significant, negative direct relationship with fraud risk ($\gamma_{\text{TOTAL}}$: -0.28; $p<0.01$). However, the total standard effect of all constructs on fraud risk is all positive, suggesting that the interaction effect is a compensating risk factor. To gain insight as to what may be causing such a negative effect, a general linear model (GLM) was run with all variables in the measurement model and including all main and interaction effects. This GLM model ($F$: 886; $p<0.01$; $R^2$: 0.95) demonstrates that all main and interaction effects are statistically significant at the 10% level. Upon close examination, the GLM shows five “conditions” or “dosages,” between management integrity/tone variables and aggressive accounting, which are negative and significant at the 5% level. In all of these situations, lower levels of managerial integrity risk interact with lower levels of revenue recognition.

34 There is no consensus as to the set of indices which work best as each test statistic poses advantages and disadvantages, just as there is no consensus on the effect of factors such as sample size and normality violations on different fit indices. Kline (1998: 130) recommends at least four tests: (1) chi-square ($\chi^2$); (2) goodness of fit (GFI), normed fit index (NFI), or comparative fit index (CFI); (3) the Tucker-Lewis Index (TLI), also called the NNFI (nonnormed fit index); and (4) root mean square residual (RMR). For the $\chi^2$ statistic, obtaining a probability of greater than 0.05 indicates a good fit. The value of the $\chi^2$ statistic is limited because it is very sensitive to sample size and distributional assumptions (Hu and Bentler 1999). For other statistics (GFI, NFI, CFI, TLI) a cut-off value of 0.9 is often used, however some argue that the cut-off value should be greater than 0.95 for TLI, IFI, and CFI (Hu and Bentler 1999). For the use of RMR, a cut-off value of 0.08 appears an adequate cut-off value and a value of 0.06 for root mean square residual statistic (RMSEA). McDonald and Ho (2002) have outlined four problems with fit indices which included an observation that there is no established mathematical basis for using them, no compelling ground for using absolute or relative indices, alternative measures may lead to inconsistent decisions, and a misfit can occur due to concentrated mis-specified parts of a model.
and accounting estimate reliability risk, producing a negative, significant effect on fraud risk.\textsuperscript{35} In addition, in three situations, lower revenue recognition risks compound with lower accounting estimate risks, to produce a negative, significant effect.\textsuperscript{36} In summary, risks appear to compound in a non-linear manner, specifically, better management integrity levels and lower levels of aggressive accounting appear to produce an increase in fraud risk, over-and-above that expected when considering first order variable relationships (main effects). And this is what can be seen from the negative interaction effect ($\gamma_{\text{TOTAL}}$: -0.28).

These findings are significant because they provide evidence of the importance of ethics and aggressive accounting practices in determining the risk of fraud. These findings are consistent with Loebbecke et al. (1989), Bell and Carcello (2000), and Baucus (1994), but extend that research by providing quantification of the relative importance of two, critical, risk areas and managerial attitudes affecting fraud. More specifically, the ethical conduct of senior management is approximately two times more important than aggressive accounting practices in determining the risk of fraud.

\textsuperscript{35} Note that all two-way interactions between \textit{IntegrityAndEthics} (IE), \textit{RevenueRecognition} (RR), and \textit{AcctgEstimateReliability} (AE) were negative and significant – IE2*AE3: -0.71; IE3*AE1: -1.18; IE3*AE2: -0.98; IE3*AE3: -1.06; IE1*RR2: -1.25. Note that the numbers associated with IE, RR, and AE, refer to risk levels, where ‘1’ denotes lowest risk and ‘3’ denotes some risk, as per Appendix I.

\textsuperscript{36} The only three significant interactions (5% level) between \textit{RevenueRecognition} (RR) and \textit{AcctgEstimateReliability} (AE) were – RR2*AE2: -0.85; RR2*AE3: -0.78; RR3*AE3: -0.72. Note that the numbers associated with RR and AE, refer to risk levels, where ‘1’ denotes lowest risk and ‘3’ denotes some risk, as per Appendix I.
In order to go further in understanding auditor thinking, SEM was applied to a sub-sample of lower-risk assessments (refer to Figure 2; 5,038 or 90% of the sampled population). Interestingly, the strength of the ethical conduct of senior management construct (γ\text{LOW} \; 0.45; p<0.01; Table 4; Figure 2) is less important than the assessed importance of aggressive accounting practices (γ\text{LOW} \; 0.60; p<0.01); the interaction effect also remains negative (γ\text{LOW} \; -0.21; p<0.01). This model remains similarly significant, as in Figure 1. As the results are different from the overall model, inference would indicate that – for higher risk clients – auditors place a lot more weight on the ethical conduct of managers than on aggressive accounting practices. This
result is confirmed by the SEM model, run on the 565 higher-risk sub-sample (summarized in Table 4), although this model is marginally significant (AGFI: 0.95; RMR: 0.01; TLI: 0.79; NFI: 0.88 – not all acceptable levels; construct reliability were above 0.6). \(^{37}\)

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**FIGURE 2: STRUCTURAL EQUATION MODEL FOR THE LOWER RISK SUB-SAMPLE (N: 5,038)**

![Structural Equation Model Diagram]

**Figure 2:** Structural Model Results under Maximum Likelihood Method (MLE) for the lower-risk sub-sample (N: 5,038). X²=50, AGFI=0.99. Amounts between arrows indicate standardized regression weights (all amounts significant at 1% level).

Results under MLE are consistent with other estimation methods (Generalized Least Squares, Asymptotic Distribution Free); no normality concerns. Model fit statistics. RMR: 0.01; NFI: 0.96; RFI: 0.96; IFI: 0.99; TLI: 0.96; CFI: 0.99; RMSEA: 0.04. Standardized total effect of Audit Relationship construct on Risk of Fraud: 0.72; Aggressive Accounting on risk of fraud: 0.59; Ethical tone on risk of fraud: 0.45; Interaction of Aggressive Accounting and Ethical tone: 0.43.

Circled elements represent constructs, which are part of the structural model; variables in rectangles represent measurement variables. Numbers on top-right of measurement variables and constructs represent squared multiple correlations.

\(^{37}\) Note that results of the General Linear Model for the higher-risk sub-sample were consistent with those of the full sample.
**TABLE 5: HYPOTHESES - TESTS AND RESULTS**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Method</th>
<th>Variables/Constructs</th>
<th>Population Test Results</th>
<th>Test of Hypothesis</th>
<th>Is Hypothesis Supported?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Auditor judgments of client integrity risks are positively related to fraud risk judgments</td>
<td>Regression</td>
<td><em>IntegrityAndEthics</em></td>
<td>0.24 0.20 0.30</td>
<td>$\beta &gt; 0$</td>
<td>Yes</td>
</tr>
<tr>
<td>2A – Senior management behavioural anomalies increase fraud risk</td>
<td>Regression</td>
<td><em>IntegrityAndEthics</em></td>
<td>0.24 0.20 0.30</td>
<td>$\beta &gt; 0$</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Regression</td>
<td><em>AuditRelationship</em></td>
<td>0.18 0.22</td>
<td>$\beta &gt; 0$</td>
<td>Partial</td>
</tr>
<tr>
<td></td>
<td>SEM</td>
<td>Management Ethical Tone Risks</td>
<td>0.45 0.83 0.71</td>
<td>$\gamma &gt; 0$</td>
<td>Yes</td>
</tr>
<tr>
<td>2B – Management aggressiveness towards financial reporting increases fraud risk</td>
<td>Regression</td>
<td><em>RevenueRecognition</em></td>
<td>0.12 0.08 0.10</td>
<td>$\beta &gt; 0$</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Regression</td>
<td><em>AccctgEstimateReliability</em></td>
<td>0.12 0.08 0.12</td>
<td>$\beta &gt; 0$</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>SEM</td>
<td>Aggressive Accounting Risk</td>
<td>0.60 Nil 0.37</td>
<td>$\gamma &gt; 0$</td>
<td>Partial</td>
</tr>
<tr>
<td>3 - Management behaviour and attitudes towards accounting practices has a significant effect on auditor fraud risk perceptions</td>
<td>SEM</td>
<td>Structural model squared multiple correlation ($R^2$)</td>
<td>0.77 0.26 0.82</td>
<td>$R^2 &gt; \frac{1}{3}$ (Management attitudes represent $\frac{1}{3}$ of the fraud triangle)</td>
<td>Partial</td>
</tr>
</tbody>
</table>
CONCLUSION AND IMPLICATIONS FOR FUTURE RESEARCH

This study documents that managerial attitudes significantly affect auditor fraud-risk perspectives, accounting for 82% of the variability observed by auditors in assessing senior management inclinations to intentionally misstate financial reporting. Managerial attitudes are represented in this study by managerial ethical misconduct indications, aggressiveness in accounting practices, and the auditor-management relationship quality. It would appear reasonable to infer that if auditors were to focus their fraud-risk procedures (in applying SAS 99 or ISA 240), they could mitigate 82% of their risk by seeking out indications of senior management misconduct and focusing on significant areas of accounting most prone to fraud (revenue recognition and accounting estimates). The former could be achieved through examination of misconduct allegations stemming from whistleblower lines, internal audit reports, or the press, and by reflecting on the sources of tension in the auditor-management relationship. The latter can be achieved by identifying the areas of accounting most susceptible to management manipulation. Information over management behaviour and attitudes which shape an organization’s financial reporting culture have been studied in this paper using auditor observations, perceptions, and tangible evidence of heightened risk (recall) across a sample of 5,603 audit acceptance and continuance forms used by a Big Four accounting firm in the Netherlands.

The first hypothesis posits that auditor judgments of their client’s integrity risks are positively related to auditor fraud risk judgements. This study finds support for such a hypothesis (Table 5). Regression analysis on the management integrity and conduct risks finds that the risk associations are positive and significant across the full sample, as well as the higher and lower-risk sub-samples. Such evidence is consistent with Beaulieu (2001) and extends the literature by demonstrating that auditor fraud risk assessments take into consideration integrity risks and audit evidence source credibility. Although integrity risks are considered in audit standards and prior literature,
the strength of the relationship between the integrity risks and fraud risk suggests that the overall credibility of financial statements may be largely contingent on having managers in-place with integrity. As fraud generally involves collusion and senior managers have means to override internal controls, the importance of safe-guards against unethical management behaviour appear to be of significant importance. To counter such integrity risks, it would appear warranted for auditors to question management representations of those managers where there are integrity concerns and perhaps insist other safe-guards to mitigate such heightened fraud risk (e.g., better Audit Committee and regulator vigilance).

The second hypothesis posits that senior management behavioural anomalies and aggressiveness towards financial reporting increases fraud risk. After applying regression and structural equations modelling, this study finds general support for this hypothesis, thereby replicating the findings of Bell and Carcello (2000) and Loebbecke et al. (1989) in a non-American setting (Table 5). The statistical results suggest that the effect of managerial attitudes and behaviours are considered by auditors as important across the full sample and the higher and lower risk sub-samples. However, all types of managerial attitudes and behaviours are not considered to have equal effect. For example, aggressive accounting behaviour do not appear to consistently impact auditor judgments at the higher risk levels, suggesting that auditors are focused on tangible indications of senior management misconduct as a critical catalyst in categorizing higher fraud risk clients. This finding is important because it suggests that auditors are – in practice – looking beyond accounting practices and focusing on managerial intentions as suggested by SAS 99 and ISA 240. Perhaps, internationally, it would appear warranted to follow American guidance (SAB 99) which considers intentional misstatements as potentially material, regardless of the amounts involved.

As of 2006, there are 37 different international standards, 9 interpretations, and many more publications defining the accounting principles
that apply and providing guidance on how to apply them. Few of these standards define the managerial attitudes (including ethical standards and principles) that should be embraced by organizations, nor guidance on how to specifically address breakdowns in trust.\(^{38}\) Instead, the focus has been placed on general codes to be followed by accountants and auditors alone.

The third hypothesis posits that management behaviour and attitudes towards accounting practices has a significant effect on auditor fraud risk perceptions. Although all \(R^2\) are significant across the statistical analyses, the amount of variability explained by managerial behaviour and attitudes is 82% for the total sample analysis and of smaller magnitude across the lower and higher-risk sub-samples. Such a finding, therefore, generally supports the hypothesis (Table 5) and suggests that the “fraud triangle” described in audit standards may not necessarily be equilateral (i.e., that managerial attitudes may have a higher explanatory power than managerial incentives and opportunities in relation to fraud). This should be subject to further study and is also explored by Hernandez and Groot (2006a).

This study has analyzed auditor risk assessments in the Netherlands across a broad spectrum of audit clients who differ in industry, size, jurisdictional requirements (included US multi-national subsidiaries), and ownership structure. Due to data confidentiality and data limitations, such differences could not be fully reported, although the presence of certain regulated industries and institutional variables did not significantly affect the results. In addition, this study has extrapolated auditor views and perceptions of risk, as a proxy for control elements observed within organizations.\(^{39}\) Thus, the results cannot be readily generalized to instances of fraud in various countries. Although, the general findings are that ethical conduct and

\(^{38}\) Audit standards generally call for increased professional scepticism, communication with those charged with governance, and auditor resignation as the main alternatives available to the auditor.

\(^{39}\) Note that auditors were found to be more conservative in their acceptance between 2003 and 2004. The justification is that this is the period after all the scandals in the United States and the Ahold accounting scandal in the Netherlands hit in 2003.
aggressive accounting perceptions and observations are important for auditor fraud risk assessments, it is questionable whether an organizational focus on these elements will reduce instances of fraud. In addition, the non-linear weighing of risk factors cannot be necessarily attributable to auditor thinking, as the instrument’s framed statements tap into various dimensions of auditor experiences, perceptions, observations, suspicions, and recall of past incidents. Lastly, the data used for this study relates to companies in one country only and may not necessarily be valid in other institutional settings.

One potential avenue for future research is to understand the non-linear weighting of trust indicators, within a fraud context to further explain the negative interaction effects across SEM models. Much more research needs to be performed to examine the different aspects of ethics, especially those involving how organizations and other stakeholders should address moral reasoning levels, locus of control, moral philosophy, and the influence of the external work environment. For aggressive accounting factors, a critical review of how judgments are formed and how companies apply accounting conventions is necessary. There currently is little research on how to deal with systematic or structured transactions on the edge of accounting rules. Rather than wait for regulators to impose their views, directors and managers should proactively set a strategy addressing what they consider proper and improper behaviour, to avoid heading towards a slippery slope of inconsistencies, relativism, and, potentially, fraud. Little is know about how to shape ethical judgments and ethical concerns in a financial reporting context. This study is a first step towards understanding a different institutional setting than the United States on a topic which is difficult to research.

In order for modellers to conduct practical analyses and to make strategy recommendations, they need access to data that are often hard to collect. Information is often considered to be proprietary and withheld for select usage. Access to a large data base, at a Big Four accounting firm, provided the ideal situation for building a mathematical model on which to
base predictions and gain insight into auditor thinking. The results of the investigation may permit inferences that could permit policy makers to consider those factors most critical in preventing fraud. Even though many auditors could have identified these risk factors, the mathematical model clarifies and adds precision. The research should help to establish a structure for dialogue between the academic community and practice, both of which will benefit.\textsuperscript{40}

It is known that most managers operate at lower levels of reasoning in business contexts than in non-business contexts, and that managers typically reason at the “conventional level” (Weber 1990). Therefore, organizations need to address the factors most important at this level. Moral reasoners at this level will intend to act to make the company look better in the eyes of investors and creditors (Uddin and Gillette 2002) and these managers will tend to support fixed rules and authority levels. Therefore, to prevent forms of illegal and unethical actions, organizations need to codify their principles and values in rules (policies, procedures, and controls) and discourage all misconduct. More importantly, to mitigate and properly address the danger posed by unethical senior managers, an adequate “tone-at-the-top” and Audit Committee vigilance would appear warranted.

\textsuperscript{40} In an ideal world, policy would be based on data and models, where possible. Mathematics is a science based on accuracy, and herein lies a danger. Modellers need to understand the limitations of their work, but the investigator also needs to have access to large amounts of data in order to make predictions that are as precise as possible. Policy based on data is on a surer footing than policy that relies on belief or intuition or isolated observations made by individuals. It has been the purpose of this investigation to provide the accuracy which will confirm what was already known by auditors from their day-to-day work. This study provides empirical support to principles developed in the U.S. for Management Anti-Fraud Program and Controls (AICPA 2001) in a European setting.
REFERENCES


Appendix 1: Variable Definition

<table>
<thead>
<tr>
<th>#</th>
<th>MODEL VARIABLE</th>
<th>FRAMING OF INSTRUMENT</th>
</tr>
</thead>
</table>
| Y | MgtInclin2IntentMisstate | Management inclination to intentionally misstate financial reporting:  
  - Lowest Risk: Management attaches great importance to achieve fair and accurate financial statement presentation.  
  - Low Risk: Management makes a reasonable effort to achieve fair and accurate statement presentation.  
  - Some Risk: Management is not particularly interested in financial statement presentation but there has been no evidence of intentional misstatement.  
  - High Risk: Management sometimes shows a disregard for fair and accurate financial statement presentation.  
  - Highest Risk: Management has in the past attempted to distort or hide information relevant to the entity’s financial condition or operating results. |
| X₁ | IntegrityAndEthics      | Integrity and Ethics:  
  - Lowest Risk: Management has an excellent reputation for integrity and ethics. High ethical standards are evident—for example, a code of conduct exists and fully communicated and is enforced throughout the organization.  
  - Low Risk: Management has a good reputation for integrity and ethics.  
  - Some Risk: There is no reason to question management’s integrity and ethics.  
  - High Risk: Management’s commitment to integrity and ethics is in some doubt.  
  - Highest Risk: There are indications based on employee allegations, regulatory inquiries, adverse publicity, or other sources that management has engaged in unethical activity. |
| X₂ | MgtExperienceSkill      | Management’s Experience and Skill:  
  - Lowest Risk: The management team is very experienced and has excellent functional skills in all key positions.  
  - Low Risk: Good management team has good experience and is skilled in all key functions.  
  - Some Risk: The management team has average experience and functional skills.  
  - High Risk: The management skill lacks experience or functional skills in a key area.  
  - Highest Risk: The management team lacks experience and functional skills in more than one key area. |
<table>
<thead>
<tr>
<th>#</th>
<th>MODEL VARIABLE</th>
<th>FRAMING OF INSTRUMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_3$</td>
<td>AcctgEstimateReliability</td>
<td>Reliability of accounting estimates:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Lowest Risk: Consistent History of accurate estimates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Low Risk: Accounting estimates have usually been reasonable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Some Risk: Accounting estimates have been conservative.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- High Risk: Accounting estimates have usually been optimistic.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Highest Risk: Accounting estimates have often been unreasonable.</td>
</tr>
<tr>
<td>$X_4$</td>
<td>RevenueRecognition</td>
<td>Revenue Recognition:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Lowest Risk: Revenue transactions have relatively standard terms and conditions and revenue recognition policies are applied consistently. The entity has few, if any, post-sale contingent obligations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Low Risk: Significant non-standard revenue transactions occur occasionally but the entity is proactive in discussing with the auditors the transactions and their revenue recognition attributes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Some Risk: Significant non-standard revenue transactions occur occasionally. The entity is not always proactive in discussing with the auditors the transactions and their revenue recognition attributes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- High Risk: Significant non-standard revenue transactions occur regularly. The entity is not proactive in discussing with the auditors the transactions and their revenue recognition attributes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Highest Risk: Significant transactions are structured to achieve revenue recognition objectives that would otherwise not be achieved.</td>
</tr>
</tbody>
</table>
Audit Relationship:

- **Lowest Risk**: Management regularly initiates discussion with us on accounting issues. We have effective and candid communication with the board and, where applicable, the audit committee. Management does not question our audit scope. We have free access to people and information.

- **Low Risk**: Management initiates discussion with us on accounting issues as they arise. Our communications with the board and audit committee are structured and substantive. Management occasionally questions our audit scope; Management sometimes requires discussion before allowing access to people and information; Management accepts audit findings.

- **Some Risk**: Management is open to our advice on accounting issues but does not initiate discussion. Our communication with the board and audit committee is somewhat limited in time and format; There have been some attempts by management to limit our audit scope; Access to people and information is closely monitored. Management accepts audit findings but tries to downplay their importance.

- **High Risk**: Management sometimes disputes our advice on accounting issues and does not initiate discussion. We have very limited opportunity for substantive communication to the board and audit committee; Management attempts to reduce our audit scope; Access to people and information is granted but only after challenge and delay; Management often challenges audit findings and does not initiate discussion on accounting issues. Management typically disputes and it is very difficult to reach agreement with them.

- **Highest Risk**: Management does not initiate discussion on accounting issues and when the issues arise, is less than forthright in describing the relevant facts patterns; we have no opportunity to substantive communication with the board and audit committee; There are sometimes attempts by management to dictate audit scope or intimidate us. There are formal or informal restrictions on access to people or information; Management typically disputes audit findings and disclosures and it is very difficult to reach agreement with them.
CHAPTER 3

Paper II - Is the Fraud Triangle Equilateral
Is the Fraud Triangle Equilaterial*

ABSTRACT

This study weighs the relative importance that auditors place on fraud conditions, motivations, and attitudes in assessing the risk of fraud of their clients, from the perspective of audit partners across 5,600 entity audits, and draws inferences on the most important mitigating controls.

The use of incentive systems, unethical management attitudes, and opportunities for fraudulent reporting are associated with higher fraud risk assessments. These relationships do not remain stable across different fraud risk levels. Fraud-inducing incentive systems and opportunities for fraudulent reporting (provided by the governance and accounting control environment) were perceived by auditors to be important only at the lower fraud propensity levels, but had no influence on fraud risk at the highest fraud propensity levels. Auditors do not attribute past indications or observations of fraud to neither internal control nor incentive compensation issues. Rather, auditors consider (based on recall and experience) that two of the most important fraud cues are senior management ethical attitudes and dishonest communication from management with the external auditor. In summary, evidence suggests that the fraud triangle is not equilaterial and management attitudes are found to be the most important leg.

Keywords: fraud; controls; ethics; compensation incentives; corporate governance; risk assessment.

Data availability: Data used for this paper are derived from a proprietary source.

* A previous version of this paper was presented at the annual meetings of the British Accounting Association (April 2007) and American Accounting Association (August 2007). A debt of gratitude is owed to the participants and discussants at these sessions.
Introduction

This study examines auditor experiences, observations, and perceptions on the most important fraud cues (and associated risks and controls) which auditors consider as associated with increased fraud risk levels at their clients, using the conditions, motivations, and attitudes model of Loebbecke et al. (1989) and belief function formulas suggested by Srivastava et al. (2005). Specifically, this study weighs the relative importance of fraud conditions, motivations, and attitudes in determining the risk of fraud, from the perspective of audit partners across 5,600 entity audits, examines whether the fraud triangle is equilateral. Using belief functions in a fraud setting, as suggested by Srivastava et al. (2005), this study models the effect of mitigating controls, their relative importance, and help shed insight on the most important fraud cues perceived by audit partners at their clients.\(^{41}\) This study focuses on fraud conditions or opportunities (accounting and corporate governance controls), motivations (compensation incentive and pressures), and attitudes (manager ethical conduct and lies or evasiveness towards the external auditor), referred to as “fraud triangle elements”.

The United States Securities and Exchange Commission (SEC) recently called for more internal control guidance on developing a “top down, risk-based” approach for Corporations fulfilling their Sarbanes-Oxley Section 404 requirements (SEC 2006). In Europe, the Eighth Company Law directive was recently passed, requiring that “the statutory auditor or audit firm must report to the audit committee on key matters arising from the statutory audit, in particular on material weaknesses in internal control in relation to the financial reporting process, and shall assist the audit committee in fulfilling its tasks.” It is well known that control weaknesses have been associated before with corporate fraud (Caplan 1999; Loebbecke et al. 1989; Bell and Carcello 2000). However, there is little research on the areas of internal control which

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\(^{41}\) This study is focused on financial reporting fraud and does not consider the broader definition of fraud which covers embezzlement, corruption, and other channels of opportunism, or, illegal behaviour.
are most important for fraud prevention and in applying a “top down, risk-based” approach. Senior management misconduct and aggressive accounting are often noted across fraud cases in the United States (SEC 2003) and have been noted as significant fraud elements with auditors (Loebbecke et al. 1989, Bell and Carcello 2000, Hernandez and Groot 2006). In Europe, fraud research is very limited, especially exploring the fraud triangle components.

Auditors have incentives to properly identify and address risk of intentional misstatements (Zimbelman and Waller 1999). Practitioner guidelines, as codified in audit standards, have outlined auditor responsibilities in relation to fraud and the three conditions generally present when material misstatements due to fraud occur (also referred to as fraud triangle elements): (a) incentive and pressures on managers; (b) an opportunity to engage in fraud; and (c) managers, and the organization, have an attitude or method of rationalization which justifies their behaviour (ISA 240, SAS 99). The empirical analysis documented in this paper finds that audit partners consider that managerial attitudes (represented by managerial ethical conduct and lies or evasiveness towards the external auditor) to be the most important element affecting the risk of fraud (consistent with Apostolou et al. 2001; Heiman-Hoffman et al. 1996).

Motivators for fraud (represented by compensation pressures) are perceived to be the second most important factor affecting the risk of fraud within this study. In addition, organizational conditions or opportunities which could deter fraud from occurring (represented by accounting controls and entity governance) are found to be of least importance. These findings are important, in a European setting, as prior empirical studies of fraud have been mainly restricted to United States sanctioned firms (Accounting and Auditing Enforcement Releases issued by the Securities and Exchange Commission). The US research sample has been extensively investigated, but virtually nothing is known about the characteristics of fraud outside the United States and whether non-US populations would respond differently to ethical matters (Merchant and Rockness 1994).
To validate the consistency of these findings across the various fraud propensity levels, the overall sample of 5,600 audit partner assessments of their clients was split into lower and higher fraud risk observations. Fraud inducing incentive systems and opportunities for fraudulent reporting, provided by the governance and accounting control environment, were perceived by auditors to be important only at the lower fraud propensity levels, but had no influence on fraud risk at the highest fraud propensity levels. Auditors believe management’s ethical attitude and management dishonesty towards the external auditor as the two most important red flag indicators of fraud risk. Common fraud prevention measures, such as corporate governance and accounting controls, disappear as influential determinants of fraud risk in the high risk sub-sample, leaving as important red flags management integrity and attitude concerns, thus suggesting that the fraud triangle is not equilateral.

The remainder of the paper is organized as follows. The next section covers a review of the literature and development of the empirical model which will be studied. The third section describes the risk assessment sample and the research design. The empirical results are discussed in the fourth section. In the final section, this paper discusses the conclusions, recommendations, and implications for future research.

**LITERATURE REVIEW AND EMPIRICAL MODEL**

This section develops the framework for the empirical analysis. Following the work of Loebbecke et al. (1989), guidance from audit standards (SAS 99; ISA 240), and regulator research (AICPA 2001), there is broad

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42 The American Institute of Certified Public Accountants (AICPA 2001) issued guidelines on management, anti-fraud programs and controls. Three criteria were integral to preventing, deterring and detecting fraud:

1. Creation and maintenance of a culture of honesty and high ethics
2. Evaluation of the risks of fraud and implementation of the processes, procedures, and controls needed to mitigate the risks, and to reduce, the opportunities for fraud
3. The development of an appropriate oversight process.
Consensus that fraud has its roots in opportunities, incentives, and attitudes. On this premise, the next section presents the empirical model design for this study, which outlines specific research questions of concern. The second section covers the literature which addresses the proxy elements of this study in relation to fraud: corporate governance, accounting controls, ethical conduct, and compensation controls. Finally, hypotheses are generated to understand whether the fraud triangle is equilateral.

**Empirical Model Framework**

Loebbecke et al. (1989) introduces a model where the probability of material irregularities is a function of conditions (opportunities), motivations (incentives), and attitudes. Following this model, Srivastava et al. (2005) used a belief function approach in order to arrive at a set of fraud formulas. They noted that the two most important functions for financial statement fraud assessment are the total belief, Bel_{Total}(f), that an assertion may contain fraudulent information and the total plausibility, Pl_{Total}(f), that the assertion may contain fraudulent information. The total plausibility that fraud exists in an assertion, Pl_{Total}(f), is given as follows:

\[
Pl_{Total}(f) = \frac{1}{K} \times \frac{Pl(ir)Pl(~im)}{K_i} \times \frac{Pl(ar)Pl(~am)}{K_a} \times \frac{Pl(or)Pl(~om)}{K_o} \times \frac{Pl_{FP}(f)Pl_{OP}(f)}{K_F}
\] (1)

Where, Pl_{FP}(f) and Pl_{OP}(f), respectively, represent the plausibility that fraud is present based on the results of the forensic procedures (FP) and the other audit procedures (OP). Pl(·) represents the plausibility that the variable in the argument is present. Pl(ir) represents the plausibility that risk factors pertaining to incentives are present; Pl(ar) that risks pertaining to attitudes are present; and Pl(or) represent the plausibility that opportunity risks are present. Similarly, Pl(~im) represents the plausibility that effective mitigating factors related to risk factors pertaining to incentives are absent; Pl(~am) that mitigating factors related to attitudes are absent; and Pl(~om) represent the plausibility that effective opportunity mitigating factors related to risk are
absent. $K$ represent coefficients of normalization, determined based on belief functions, which are described in Appendix 2.

$$K_1 = 1 - m(\text{im})m(\text{ir}), \text{ where } m(\text{ir}) \text{ represents the belief that } \text{incentive risk factors are present and } m(\text{im}) \text{ the belief that } \text{incentive risk-mitigating factors are present;} \quad K_A = 1 - m(\text{am})m(\text{ar}), \text{ where } m(\text{ar}) \text{ represents the belief that } \text{attitude risk factors are present and } m(\text{am}) \text{ the belief that } \text{attitude risk-mitigating factors are present.} \quad K_O = 1 - m(\text{om})m(\text{or}), \text{ where } m(\text{or}) \text{ represents the belief that } \text{opportunity risk factors are present and } m(\text{om}) \text{ the belief that } \text{opportunity risk-mitigating factors are present.}$$

A first research question considers, for given fraud propensity or plausibility levels, whether various incentives, attitudes, and opportunities are perceived to contribute equally to the risk of fraud. Model (1) is simplified by assuming that there are no interrelationships between incentives, opportunities, and attitude risk factors ($1/K=1$). In addition, it is assumed that there are no observable mitigating factors at work, and the plausibility for fraud is reduced to a manageable level through evidence obtained from forensic and other audit procedures exclusively (i.e., an exhaustive, hypothetical, zero control-reliance audit). Such constraints allow for this study to evaluate the risk elements which contribute most to the propensity for fraud. As a second step, such information can be used to draw inferences on the mitigating factors which are most important ($Pl(\text{im}), Pl(\text{am}), Pl(\text{om})$).

RQ1A: $Pl(\text{ir}) = Pl(\text{ar}) = Pl(\text{or}) \quad \text{By holding } Pl_{\text{Total}}(f) \text{ constant}$

By holding all relationships between risk factors constant, ignoring the potential costs or efforts required to implement mitigating controls, this study aims to determine whether all mitigating controls are of equal importance in deterring the risk of fraud. This question is explored by considering RQ1A findings into research question 1B.
RQ1B: \( \text{Pl}(im) = \text{Pl}(am) = \text{Pl}(om) \)

By holding \( \text{Pl}_{\text{Total}(f)} \) constant and considering the plausibility of risk conditions.

Under the constraints previously outlined, a regression model is used to quantify the independent estimates which proxy for \( \text{Pl}(ir) \), \( \text{Pl}(ar) \), and \( \text{Pl}(or) \). The model is estimated using the function below.

**Corporate governance and accounting controls**

Loebecke et al. (1989) found that two primary factors – dominated decisions and weak internal controls – occurred and were relevant in over 75% of the cases of management fraud. In addition, they note that internal controls are important but do not, by themselves, contribute to fraud. Caplan (1999) notes that managers with strong incentives to commit fraud prefer weak controls in order to disguise their fraudulent behaviour. Bell and Carcello (2000) noted that weak control environment and an aggressive attitude toward financial reporting contributed significantly to fraud. Baucus (1994), in her model of the corporate illegality process, found that organizational characteristics create a predisposition to commit illegal actions. Baucus (1994) noted that firms with highly committed employees, a corporate culture reinforcing illegal activities, and high levels of executive succession, will also behave illegally due to conditions of predisposition. Baucus’ observations point to the importance of the “tone at the top” and the internal culture within an organization as an important fraud prevention control.

Academic research has found an association between weaknesses in governance and poor financial reporting control quality, earnings management, financial statement fraud, and weak internal controls (Dechow et al. 1996; Beasley 1996; McMullen 1996; Beasley et al. 2000; Carcello and Neal 2000). Current standards of governance in the United States (through the Sarbanes-Oxley Act and NYSE requirements, as an example) and in Europe (with the Eighth Directive), emphasize the role the Audit Committee plays in
overseeing the integrity of financial reporting. However, weaknesses and lack of relative expertise appear associated with current Audit Committees. Vafeas (2001) found that members appointed to the Audit Committee have significantly less board tenure with the firm, serve on fewer other committees, and are less likely to serve on the compensation committee.\(^4\)

McKendall et al. (2002) found that in the presence of significant levels of motive and opportunity, the choice to engage in corporate illegality will be a function of the existence of effective controls that induce desired behaviour and deter unethical behaviour. However, external controls cannot eradicate corporate, illegal behaviour by themselves. McKendall et al. (2002) assert that internal controls are also needed.\(^5\) These consist of organizational

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\(^4\) Cohen et al. (2004) suggests that financial reporting quality is a function of various players and relationships, including the Audit Committee, Board of Directors, Internal and External Auditors, and management, in addition to outside stakeholders. Therefore, in addition to a strong Audit Committee, Board of Directors, and external auditors, proper governance protecting against fraud must include an adequate internal audit function and good standards of control set by senior management. Studies suggest that internal audit potentially can interact with audit committees to play an important role in effectively monitoring management and improving financial reporting quality (see Cohen et al., 2004). Internal audit departments have also been found to be important to fraud prevention (Beasley et al. 2000). In general, however, there is little research on how the corporate governance mosaic suggested by Cohen et al. (2004) works together, can complement or substitute each other, to address ethical and compliance risks, as well as aggressive accounting. For example, should there be strong external regulator enforcement units which oversee senior management conduct and illegal acts? Should Supervisory Boards and Audit Committees have the statutory or legal power (and allocated resources) to appoint an independent investigation into serious misconduct allegations? How active should the Internal Audit department be, especially on matters of misconduct and major areas of risk (ethics and compliance, as well as critical accounting areas)?

\(^5\) The authors suggest that controls can function in several ways: (1) they can make information and expectations about legal behaviour clear; (2) they can increase the likelihood of detection; (3) they assure the punishment of transgressions; and (4) they reward desired behaviour. McKendall et al. (2002) also stated that controls can be external to an organization. Examples of controls that can prompt firms to behave legally include: (1) vigilant regulatory agencies; (2) substantial monetary penalties for non-compliance; (3) standards and enforcement by professional and accrediting bodies; and (4) media attention. The Committee of Sponsoring Organizations (COSO) of the Treadway Commission Report, Internal Control – Integrated Framework, focuses on the importance of an adequate tone at the top and control environment. As noted in the COSO framework, it is not sufficient only to set an adequate tone and to impose internal controls in an organization. It is also necessary to adequately communicate these policies and norms and to monitor compliance. Lere and Gaumnitz (2003) asserted that enforcement provisions can increase the likelihood that an individual will select the action that a code of ethics requires. Consistent with Kohlberg’s theory on moral reasoning, higher penalties/punishments will influence people with lower levels of reasoning. Nelson et al. (2002) found that external auditors are more likely to require changes when managers adjust earnings that the auditors identify as material, or, when the client is small. This would indicate that external auditors are cognizant of earnings
mechanisms, that inform and encourage employees to behave ethically and legally, that detect transgressions and reward desired behaviour through raises and promotions, and that discipline those who engage in illegal behaviour. Hegarty and Sims (1978) have found that punishment for ethical behaviour, and rewards for unethical behaviour, are associated with unethical decisions. Doeringer (1991) found that the perceived fairness of the compensation system will contribute to the ethical climate of a company. In summary, this study predicts that strong governance and accounting controls are important mechanisms for mitigating the risk of fraud.

**Ethical conduct of senior managers and degree of honesty and openness with the external auditor**

In a review of SEC enforcement actions from 1997 to 2002 (SEC 2003), the United States regulator noted that the majority of the persons held responsible for the accounting violations were members of senior management. From a legal perspective, firms with executives who ignored, condoned, rewarded, or participated, in past instances of wrongdoing, will likely be recidivists due to the predisposition of their behaviour and attitude (Baucus 1994). The legal view also reconciles with the view found in the audit literature. Managers, who are generally dishonest and are evasive towards their auditors, are more likely to engage in financial fraud (Loebbecke et al. 1989). Other audit studies – such as Bell and Carcello (2000) – have found, through matched-fraud and no-fraud samples, that overly-evasive or dishonest management is an important fraud red flag.

Empirical research suggests that fraud red flags associated with management attitudes and behaviours carry more weight than motivation and condition red flags (Deshmukh and Talluru 1998; Heiman-Hoffman et al. 1996). There is also evidence that the ethical tone in an organization is largely derived from Senior Management attitudes (Cohen 2002). Research notes that management attempts and may act as a monitoring mechanism to influence manager behaviour.
a focus on long-term gains and idealist principles (rather than short-term gains and relativism) should have a positive contribution on reducing earnings manipulations (Elias 2002). Further, organizations should promote idealist values and have these be re-enforced through a long-term focus on the business. In an audit setting, management integrity assessments and concerns have been shown to impact the persuasiveness of evidence sought and the auditor's assessment of management integrity improved the likelihood of detecting misstatements (Kizirian et al. 2005).

Research in psychology and organizational behaviour has demonstrated that individuals make egocentric interpretations of fairness and ethics. In situations such as earnings management, where no consensus on acceptable behaviour exists, multiple interpretations of ethical actions are likely to arise (Kaplan 2001). Ethical conduct controls within an organization generally are associated with the actions and control practices of organizations which shape the ethical climate. An organization’s ethical climate refers to the ethical meaning which employees attach to organizational policies, practices, and procedures that determine the ethical conflicts that are to be considered, the process by which such conflicts are resolved, and the characteristics of the resolution (Dallas 2003). Schnatterly (2003) notes that clarity of policies and procedures and formal cross-company communication significantly reduces the likelihood of a crime. It is important to consider the relationship between ethics and the law. Generally, illegal behaviour is a subset of unethical behaviours, as laws are a means for society to capture our moral standards (Baucus 1994). Therefore, given the importance of the matter, one would have expected that regulators and industry would have detailed best practice guidance on how to organize the ethical and legal compliance functions (shaping organizational attitudes) within an organization. Such lack of guidance is also an issue in the academic literature.

The ethics and conduct of senior managers in a corporation determine, to a large extent, the overall, ethical tone within an organization. After all, it is not corporations that commit financial fraud; rather fraud is perpetrated by
the people in the corporation. It is generally understood that the primary reasons why people commit fraud, especially white-collar crime, are money (from bonuses or options linked to the appreciation of stock prices), power, advancement, and hubris. The sample of audit partner assessments of firms investigated in this study, provides a unique opportunity to discover whether firms, with a higher propensity to commit fraud, are more likely to have indications of ethical misconduct. In summary, this study predicts that attitudes, especially those reflecting on the integrity, ethics, honesty, and openness of senior management, are important factors associated with fraud risk.

Compensation incentives and pressures

In a study of SEC enforcement actions, Dechow et al. (1996) did not find that compensation was a significant motivator for earnings manipulation actions,\(^{46}\) in contradiction to the bonus hypothesis and the work of Healy (Healy 1985; Healy and Wahlen 1999). However, DeGeorge et al. (1999) suggest that meeting targets and thresholds are important to the capital markets and can increase manager pressure to engage in manipulative actions. They suggest that a threshold hierarchy arises, where earnings per share, previous period’s earnings, and analyst forecasts, in respective order, are important determinants of earnings manipulation actions. Internal pressures on performance have been found to be associated with illegal acts (Baucus 1994).

Nelson et al. (2002) found that manager attempts to manipulate earnings were motivated by a variety of incentives, including the need to meet analysts’ estimates and influence the stock market, to reach targets set by compensation contracts or debt covenants, to communicate information to

\(^{46}\) Dechow et al. (1996) studied firms subject to SEC enforcement actions for overstating earnings and noted that they desired to (1) raise external financing at low cost; (2) avoid violations of debt covenant restrictions; (3) were less likely to have an audit committee; (4) were more likely to have a company founder as CEO; (5) were more likely to have a board dominated by insiders, and (6) were less likely to have an external stockholder monitoring management. The results did not support the notion that managers manipulate earnings to obtain larger earnings-based bonuses or to sell their stockholdings at inflated prices.
stakeholders, and to smooth income or improve future income, as well as a combination of incentives. Cheng and Warfield (2005) found that managers with high equity incentives sell more of their stake after meeting analysts’ forecasts than after missing analysts’ forecast. Further, high equity-incentivised managers are more likely to engage in earnings management relative to low equity incentive managers. Johnson et al. (2003) have also found that compensation pressures and incentives are significantly associated with fraud firms; a similar finding was also corroborated by Denis et al. (2006). Bartov and Mohanram (2004) have found clear evidence that senior executives time abnormal exercises following manipulated earnings that increase their payout.

Baucus (1994) noted that certain characteristics were present in firms when they behaved illegally in response to conditions of pressure or need. Theories of corporate illegality, in general, suggest that there must be a motivating tension for an organization to break the law in order to achieve goals, or to ensure survival. Healy and Wahlen (1999) performed a literature review and have summarized earnings, management incentives into four groups: (1) capital market motivations; (2) contracting motivations – including management compensation contracts, in which accounting information is used to help monitor and regulate the contracts between the firm and its stakeholders; (3) regulatory motivation; and (4) firm-specific motivation.

More specifically, Baucus postulated that: (1) firms operating in an environment characterized by intense competition, heterogeneity, and scarce resources, behave illegally in response to conditions of pressure or need; (2) firms operating in a legal or regulatory environment characterized by high costs related to the need to respond to regulations, frequent changes in laws, or stricter interpretation and enforcement of laws, behave illegally in response to conditions of pressure or need; and (3) firms characterized by a high degree of internal pressure for performance or output, poor performance, and few slack resources, behave illegally in response to conditions of pressure or need.

Specific earnings management motivation by Healy and Wahlen (1999): (1) Capital markets motivation, in which managers attempt to influence short-term, stock price performance by meeting (or exceeding) the expectations of investors and financial analysts (at least for some firms). Studies have analyzed unexpected, accrual behaviour in periods when capital market incentives to manage earnings are likely to be high. (2) Contracting motivation, in which accounting information is used to help monitor and regulate the contracts between the firm and its stakeholders. Examples of these contracts include management compensation contracts and lending contracts. Studies suggest that compensation and lending contracts induce some firms to increase bonus awards, improve job security, and mitigate potential
Merchant (1985) found that managers’ propensities to create budgetary slack are affected by the budgeting system and the technical context. Further, Merchant (1990) noted that managers acknowledged manipulative behaviours (accrual manipulation) and short-term orientation/thinking while simultaneously discouraging new ideas. This was positively associated with the felt impact of financial controls. Merchant also found that managers operating in relatively, uncertain environments were significantly more likely to react to budget pressure by pulling profits from the subsequent year into the current year, than were those operating in relatively certain environments.

**Hypotheses**

This study assesses three hypotheses which address prior gaps in the literature: (1) auditors have increased sensitivity to opportunity and incentive cues in low fraud risk situations – Wilks and Zimbelman (2004) supported this finding in an experiment with 52 US audit managers although this has not been replicated in the evaluation of actual auditor risk assessments of their clients; (2) fraud red flags impact auditor fraud risk perceptions equally – Loebbecke et al. (1989) relied on auditor recall to determine the most frequently observed fraud red flags, while Bell and Carcello (2001) studied 77 a fraud-no fraud sample and found seven specific groups of fraud red flags as significant predictors of 77 auditor fraud engagements, but neither have explicitly weighed *ex ante* auditor fraud risk observations and assessments; and (3) auditors perceive attitude risk factors as more important than opportunity and incentive risk factors – Heiman-Hoffman et al. (1996) support this finding in their survey of 130 practicing US auditors, although it was not specifically linked to a specific auditor-client setting.
SAMPLE AND RESEARCH DESIGN

This section is composed of three subsections. The first section discusses the auditor acceptance and continuance process undertaken by a Big Four accounting firm in the Netherlands. The second section gives the sample composition and presents some high-level, descriptive analytics on the sample. Finally, the third section describes the empirical proxies for fraud, unethical management conduct, excessive compensation pressures, and a poor control environment.

**Auditor Acceptance and Continuance Process**

Risk assessment processes are critical to an auditor’s design of procedures to detect material, financial statement misstatements, whether caused by fraud or otherwise. International audit standards require that an auditor obtain an understanding of audit risk and its components: inherent risk, control risk, and detection risk (ISA 400). Risk assessment systems at Big Four accounting firms generally consider all key audit and fraud risk indicators, as suggested by audit standards, either in isolation or through separate questionnaires (Shelton et al. 2001). This study closely the approach employed by Bedard and Johnstone (2004) who used engagement partners’ assessments of their clients, as part of their client acceptance and annual audit, continuance, risk assessment, process to examine the relationship between earnings manipulation and corporate governance variables.

The data used in this study was derived from audit partner assessments of their clients during the acceptance and audit continuance process, performed during the years 2002 to 2004, at a Big Four Dutch accounting firm. During this process, partners at the firm perform their preliminary assessments of the various risk factors affecting the probability of an inadequate, audit opinion for particular clients. The risk assessment is completed on a standardized, electronic form which requests that the audit
partner select from a range of choices, or risk judgements, based on uniform definitions (adequacy of Big 4 risk assessments discussed by Shelton et al 2001). Once the acceptance and continuance form is completed by an audit manager or the audit partner, the partners must sign the form, and, in certain instances, the form is subject to additional internal, Firm reviews in accordance internal quality, review guidelines. Once the form has been approved, audit partners and managers then proceed to design an audit plan based on any heightened risk conditions identified through the process.

Sample Selection and Description

In total, 5,600 acceptance and continuance risk evaluations were included in this study with only 3% of the assessments discarded due to missing information. These risk assessments include public and private companies, foreign and domestically-owned entities, and cover multiple industries. They are a sub-set of all the audit engagements performed by the Big Four firm for the years 2002 through 2004. Excluded within the sample were all assessments preformed for very small clients (total audit hours less than 500), assessments for non-financial audits, and other services. The remainder of the populations, covering the assessments of an audit partner group of approximately 150, was included as part of this study. In the Netherlands, there is a general statutory audit requirement, unless entities qualify for a “small entity” exception, (approximately €8 million revenues and €4 million in assets). Due to confidentiality limitations, information such as the client name, size, audit fees, and other sensitive information was removed from the data provided to the researcher. The Big Four firm uses a proprietary algorithm to arrive at a risk score, and to identify the indicators of increased risk, which are to be considered by the auditor as part of the planning, execution, and completion of the audit. The outputs of such an algorithm, and the ultimate performance of the auditor, were not observable nor the subject of
this study.\textsuperscript{49} However, all risk evaluation judgements were captured as part of this study.

\textit{Variable Measurement}

The participating Big Four accounting firm’s client acceptance and audit continuance risk assessment process requires audit partners to answer questions on a large number of risk factors. These risk factors are the focus of this study (described in Appendix 1). They are:

(i) risk associated with the ethical conduct of managers based on perceptions and known instances of potential misconduct (\textit{IntegrityAndEthics}), a fraud-related \textit{ATTITUDE}.

(ii) risk associated with perceived, excessive, compensation pressures based on the compensation system and the achievability of the set targets (\textit{IncentiveIntentionMisstmt}), a fraud-related \textit{INCENTIVE}.

(iii) risk associated with a poor control environment from a supervisory board (\textit{GovernanceOversightMgt}) biased accounting estimates (\textit{AcctgEstimateReliability}), and reliability of accounting controls and data generated from accounting systems (\textit{AccountingControl}); all are fraud-related \textit{OPPORTUNITIES}.

(iv) risk arising from the lack of openness, trust, and transparency between an auditor and its audit client (\textit{AuditRelationship}), reflecting a fraud-related \textit{ATTITUDE}.

(v) the risk from management inclinations to intentionally misstate financial statements – the proxy for fraud risk (\textit{MgtInclin2IntentMisstate}).

Evaluation is based on fully-anchored, framed statements, on a five-point risk level instrument based on standardized set of framed statements.

\textsuperscript{49} Note that auditors are required to perform specific risk evaluations and design appropriate procedures to meet SAS 99 and ISA 240 requirements dealing with fraud. The evaluations at the sampled Big 4 firm are based on initial risk indications arising from the acceptance and continuance system.
The empirical proxy used to measure the propensity for fraud is derived from one question in the auditor acceptance and continuance questionnaire. This specific variable measures management inclinations to intentionally misstate financial statements. It is based on the client’s approach to financial reporting and past experience which the auditor may have had, or observed, with the client. The first two risk levels of the dependent measure captures the importance managers place on financial reporting; the highest risk levels capture manager disregard or observed attempts to distort or hide material information.

To validate whether auditors were conscious of their fraud risk assessments (dependent variable construct reliability; responses to the dependent variable in this study - MgtInclin2IntentMisstate) and acted upon such assessments through additional audit safe-guards, two groups of sample ANOVA mean comparison tests were performed. The first test examined whether audit opinions were significantly affected by higher fraud risk assessments. It was found that higher risk assessments had the following statistical differences (1% level) with the rest of the sample: (i) more modified audit opinions; (ii) more explanatory paragraphs within audit opinions; (iii) there was more communication by the auditors to the Board of potential fraud or illegal acts; (iv) there had been more prior auditor disagreements, resignations, and prior auditor limitations of responses; and (v) there were more prior year errors and account restatements. In addition, a second group of tests for external validity of the dependent variable (using ANOVA means comparison, at the 1% level of significance) suggest that auditors respond to higher fraud risk assessments by refusing to have their audit scope changed.

All risks are measured on a fully-anchored five point scale, from lowest to highest, with framed statements to assist the auditor in the process. Following economic principles, the risk of a particular action plus the risk of that particular action not occurring, should add to 100%. In turn, excluding any conditional probability effects, the research proxy for the propensity to commit financial, reporting fraud uses the conjugate of the risk of intentional misstatement.
having more complex negotiations with their clients, and by implementing additional internal Firm quality controls (e.g., use of concurrent partners). In summary, there is evidence to suggest that auditors act on their fraud risk assessments and it establishes the external validity of the dependent variable for this study.

RESULTS OF EMPIRICAL TESTS

The discussion of the results is presented in three sections. The first section provides a risk profile of the variables under study, and evidence of the positive association between the various elements influencing fraud elements. The second section presents evidence that unethical management actions, excessive compensation pressures, poor accounting control environments, and strained auditor relations are important elements influencing fraud. The last section provides evidence of the relative importance of ethical manager conduct, compensation pressures, and the accounting control environment in relation to the varying levels or propensities to commit fraud.

Fraud incentives, opportunities, and attitudes

Table 1 provides descriptive statistics on fraud-related risk factors in the 5,600 sampled, firm assessments performed by audit partners. Descriptive results of the sampled population indicate that relatively few clients were assessed as having high-risk levels in the variables measured in this study. More specifically, 1.1% was perceived as exhibiting lower levels (high and highest risk) of integrity and ethical behaviour and 1.6% was perceived as having significant compensation pressures. For the variables capturing poor accounting control environments, 13.8% were assessed as having lower levels of governance and oversight over senior management; 1.3% was assessed as having biased accounting estimates, and 6.4% were assessed as having poor accounting controls. In addition, 0.4% of entities were considered to have strained audit-management relationships.
TABLE 1: DESCRIPTIVE STATISTICS

<table>
<thead>
<tr>
<th></th>
<th>TOTAL SAMPLE</th>
<th>HIGHER RISK SUB-SAMPLE</th>
<th>LOWER RISK SUB-SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td><strong>Y1 fraud proxy</strong></td>
<td>5,600</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Mglncln2IntentMisstate</td>
<td>5,600</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>Incentive risk factors</strong></td>
<td>5,600</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>IncentiveIntentionMisstatement</strong></td>
<td>5,600</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>Attitude risk factors</strong></td>
<td>5,600</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>GovernanceOversightMgt:</strong></td>
<td>5,600</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>AccountingControl</strong></td>
<td>5,600</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: The Acceptance and Continuance process at the sampled Big 4 firm asks the auditor for an assessment of specific risk conditions. For each of these questions the auditor is requested to provide an assessment across five categories: Lowest Risk, Low Risk, Some Risk, High Risk, and Highest Risk. Each of these risk categories contains a brief description of what is meant by each of the particular risk levels, which frames the assessment for the auditor. Generally, the framing statement associated with the low and lowest risk level contains positively framed statements representing good qualities that the auditor believes to be present. The high and highest risk generally refer to specific (more tangible) auditor indications of negative qualities associated with the question and perceived to pose risk of issuing an incorrect audit opinion. For the purpose of this study, a 5-point ordinal Likert Scale [1-5] is used to represent lowest to highest risk conditions respectively.
Table 2 provides the Pearson correlation table for all fraud-related risk factors. Consistent with the literature, all fraud factors have a strong positive association with the risk of fraud (significance at the 1% level). Surprisingly, however, is the magnitude of the correlations recorded by auditors, generally ranging between 0.26 and 0.47 (Table 2). This finding supports the consistency in auditor assessments and corresponding fraud elements as suggested by the theory. Governance and accounting controls are found to be statistically associated with all fraud elements and the variable capturing fraud risk, suggesting that these controls are important for corporate fraud prevention. In addition, the ethical integrity and conduct of senior management is seen as the single most significant element in fraud risk (0.47), followed by the quality of the audit relationship (0.4).

The accounting control and governance variables were found to be of highest incidence at the highest fraud risk levels (6.4% and 13.8%, respectively). In addition, these two variables exhibited the highest variance across all variables under investigation, as well as both were found not to be correlated with fraud risk (at the highest risk level); the latter result is also corroborated by regression results at the higher fraud risk sub-sample. Considering that one of the primary objections of the Sarbanes Oxley Act of 2002 and the upcoming EU Eighth Company Law Directive is to improve corporate governance and accounting controls, this study’s findings may suggest that improved governance and accounting controls are not perceived by auditors as capable elements which, by themselves, can lower fraud risk at the highest levels. However, these may be important secondary variables which help address other risks, such as that posed by integrity concerns of senior management. That is, perhaps accounting governance variables do not lower perceived fraud risk, but may act as important signals to shape the “tone-at-the-top” in an organization and mitigate incentive and behavioural risks. This phenomenon will be studied in a future research paper.
Table 3 provides results of the linear regression between the various fraud-related risk factors – unethical management conduct, excessive compensation pressures, biased accounting estimates, poor governance and oversight over senior management, poor accounting controls, and strained audit relationship – and the propensity for fraud. The results confirm that there is a positive association between these fraud risk elements and the propensity for fraud observed by auditors. The model is significant \((F: 502; p<0.01)\) and the explanatory potential is fairly high (Adjusted \(R^2: 0.35\)). All the betas are positive and statistically significant at the 1% level.

Regression results confirm that dimensions capturing governance and accounting control environment aspects are important opportunities or restraints observed by auditors as associated with heightened fraud risk. More specifically, biased accounting estimates are found to be important and a statistically significant fraud contributor \((\beta_{\text{TOTAL}}: 0.10; p<0.01)\). This finding also holds for poor senior management governance and oversight \((\beta_{\text{TOTAL}}: 0.08; p<0.01)\) and general accounting control reliability \((\beta_{\text{TOTAL}}: 0.12; p<0.01)\), notwithstanding the previous discussion of these variables. These findings do lend support to the fact that elements of the accounting control environment are important factors for auditors to detect fraud. Note that the governance and oversight variable is the least important of the three control variables in the model. Other control frameworks – such as COSO – put such governance controls at the top of the pyramid in terms of importance. However, auditors appear to believe that senior managers’ ability to circumvent accounting controls may be more important avenues for fraud.
TABLE 2: PEARSON CORRELATION COEFFICIENTS (FULL SAMPLE; N: 5,600)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
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<tr>
<td>(1) MgtIncln2IntentMisstate</td>
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<td>(2) IncentiveIntention\IntentMisstmt</td>
<td>.310(**)</td>
<td>1</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>(3) IntegrityAndEthics</td>
<td>.472(**)</td>
<td>.257(**)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(4) AuditRelationship</td>
<td>.403(**)</td>
<td>.242(**)</td>
<td>.334(**)</td>
<td>1</td>
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<td></td>
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<tr>
<td>(5) AccountingControl</td>
<td>.339(**)</td>
<td>.138(**)</td>
<td>.338(**)</td>
<td>.229(**)</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>(6) GovernanceOversightMgt</td>
<td>.267(**)</td>
<td>.151(**)</td>
<td>.298(**)</td>
<td>.189(**)</td>
<td>.291(**)</td>
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<tr>
<td>(7) AcctgEstimateReliability</td>
<td>.336(**)</td>
<td>.269(**)</td>
<td>.325(**)</td>
<td>.276(**)</td>
<td>.338(**)</td>
<td>.145(**)</td>
<td>1</td>
</tr>
</tbody>
</table>

Pearson correlation coefficients; (***) denotes significance of correlation coefficient at 1% level (2-tailed test); N: 5,600

Note: Consistent with the above table, Pearson correlation coefficients at the lower risk sub-sample (N: 5,036) are all positive, amounts consistent, and all correlations remain significant. At the higher fraud risk sub-sample (N: 565), all correlation coefficients are lower (but continue to be significant at the 5% level); however, there is no significant correlation between MgtIncln2IntentMisstate and either AccountingControl and GovernanceOversightMgt (i.e., the accounting control environment and the level of governance and oversight at an organization are not related to the risk of fraud, at the highest propensity level; this may suggest that governance and accounting controls can be circumvented by managers intending to engage in fraud); there is also no correlation (at the highest fraud propensity level) between AccountingControl and IncentiveIntention\IntentMisstmt; also no correlation between AcctgEstimateReliability and GovernanceOversightMgt.
### TABLE 3: MULTIPLE REGRESSION RESULTS ACROSS FULL SAMPLE AND HIGHER/LOWER RISK SUB-SAMPLES

<table>
<thead>
<tr>
<th>Risk Factors (Independent variables) grouped by Fraud Triangle Elements</th>
<th><strong>TOTAL SAMPLE REGRESSION</strong></th>
<th><strong>HIGHER RISK SUB-SAMPLE REGRESSION</strong></th>
<th><strong>LOWER RISK SUB-SAMPLE REGRESSION</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INCENTIVES</strong></td>
<td>Unstandardized Coefficients</td>
<td>Standardized Coefficients</td>
<td>Unstandardized Coefficients</td>
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<tr>
<td>Incentive Intention</td>
<td>0.29</td>
<td>0.03</td>
<td>0.13</td>
</tr>
<tr>
<td>Misstatement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ATTITUDES</strong></td>
<td>Unstandardized Coefficients</td>
<td>Standardized Coefficients</td>
<td>Unstandardized Coefficients</td>
</tr>
<tr>
<td>Integrity and Ethics</td>
<td>0.24</td>
<td>0.01</td>
<td>0.27</td>
</tr>
<tr>
<td>Audit Relationship</td>
<td>0.18</td>
<td>0.01</td>
<td>0.21</td>
</tr>
<tr>
<td><strong>OPPORTUNITY</strong></td>
<td>Unstandardized Coefficients</td>
<td>Standardized Coefficients</td>
<td>Unstandardized Coefficients</td>
</tr>
<tr>
<td>Governance Oversight Mgt.</td>
<td>0.05</td>
<td>0.01</td>
<td>0.08</td>
</tr>
<tr>
<td>Accrual Estimate Reliability</td>
<td>0.09</td>
<td>0.01</td>
<td>0.10</td>
</tr>
<tr>
<td>Accounting Control</td>
<td>0.10</td>
<td>0.01</td>
<td>0.12</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.29</td>
<td>0.03</td>
<td></td>
</tr>
</tbody>
</table>

Dependent Variable: Misstatement

Note 1: Amounts in ( ) and italics represent t-statistics. *** denotes significance at the 1% level; ** denotes significance at the 5% level (* for 10% level)

Note 2: No evident multi-collinearity issue noted: Variance inflation factors ranged from 1.0 to 1.4; tolerance values ranged from 0.7 to 0.93

Note: The high risk sample contains cases for which the auditor has indicated that the management’s inclination to misstate is 3 or higher on the five-point Likert scale, representing some to highest risk.
The regression results also confirm that manager, ethical conduct is the most important element associated with fraud ($\hat{B}_{\text{TOTAL}}^{\text{IntegrityAndEthics}}$: 0.27; $p<0.01$). This finding indicates that the ethical profile of senior managers and their internal rationalizations are critical to fraud decisions and therefore supports the need for better manager, ethical profiling. In turn, these results suggest that more focus on managerial ethics is crucial in the design of an effective fraud prevention strategy. In addition, this also justifies auditor concerns, which are raised when they have indications of management misconduct, to question management representations which are made to them during the course of the audit (for example, Section 10A requirements for SEC registrants).

Compensation pressures are found to be another important factor affecting fraud risk ($\hat{B}_{\text{TOTAL}}^{\text{Compensation}}$: 0.13; $p<0.01$). This finding is significant because it re-enforces the call for balanced compensation systems and re-confirms the need to put less pressure on manager compensation to prevent or deter fraud. The relationship between auditors and their clients, determined largely by the openness and cooperation of clients and their auditors, is found to be the second most significant variable in the model ($\hat{B}_{\text{TOTAL}}^{\text{AuditRelationship}}$: 0.21; $p<0.01$). This could indicate that the model used in this study is sensitive to auditor views of management, or, that there is an element of management culture that is being captured by the audit relationship.

In summary, this study provides evidence that manager ethical conduct, compensation pressures, the accounting control environment, and the audit relationship are all very important elements determining the risk of fraud. However, the hypothesis that fraud risk factors have a similar effect does not appear to be supported. More specifically:

$\hat{B}_{\text{IntegrityAndEthics}} > \hat{B}_{\text{AuditRelationship}} > [\hat{B}_{\text{IncentiveIntentionalMisstmt}} - \hat{B}_{\text{AcctgEstimateReliability}} - \hat{B}_{\text{AccountingControl}}] > \hat{B}_{\text{GovernanceOversightMgt}}$
Consistency of results across various fraud propensity levels

To validate the consistency of these findings across the various fraud propensity levels, the overall sample of 5,600 entity assessments was split into lower and higher fraud propensity observations. The lower, fraud propensity sub-sample contained assessments scored as Low and Lowest Risk in approximately 5,036 assessments (90% of the population). Conversely, the higher propensity sub-sample assessments which scored as Some, High, and Highest Risk included 564 assessments (See Table 3, second column).

In examining a smaller sub-sample of higher, fraud propensity assessments (Table 3; F: 6.36; p<0.01; Adjusted $R^2$: 0.05 which is low but continues to be statistically significant), the quality of the auditor-management relationship is not found to be statistically significant. This finding appears unusual, as practitioner and academic guidance suggests that strained auditor-client relationships are an important element identified in past frauds. The single, most important, fraud risk factor, perceived and observed by auditors, remains the ethical profile of managers ($\beta^{HIGH}$. 0.19; p<0.01) followed by biased accounting estimates ($\beta^{HIGH}$. 0.09; p<0.05). Interestingly, only the ethical conduct of managers and biased accounting estimates are important factors affecting fraud at the highest propensity levels for fraud. Contrary to theory, compensation pressures appear to be a significant component at the lower fraud propensity levels (Table 3; $\beta^{LOW}$. 0.14; p<0.01) but not at the higher propensity levels ($p>0.10$). This suggests that in the Dutch environment, auditors believe that the decision to engage in financial reporting fraud appears motivated by manager ethics rather than by compensation pressures, and controls and governance factors play no significant primary role in fraud prevention (at the higher fraud-risk levels).

Generally, regression results differ between the full sample and the sub-sample containing only the higher, fraud propensity assessments. Whereas the quality of the audit relationship is, overall, the second most important element found in the model, its significance disappears at the
higher, fraud propensity levels. To isolate the audit relationship variable and to focus on three elements of the fraud triangle, this study employs a structural equations model (“SEM”).

The main advantage of SEM over multiple regressions is the ability to test a set of relations among variables, simultaneously. This cannot be done using standard regression, due to the complex set of simultaneous relations. SEM has been used and discussed in previous studies and in a similar context (Johnstone 2000; Dusenbury et al. 2000; Wilks and Zimbelman 2004). For this study, AMOS version 6 is used as the vehicle to model the structural relationships between ethical conduct of managers and biased accounting practices.

The SEM model uses five constructs, following Loebbecke et al. (1989):

1. an “Attitude” construct for the ethical conduct of managers, which is derived from the variable capturing the ethical conduct of senior management (λ:1);
2. an “Incentive” construct for compensation pressures derived from a variable measuring the nature of the compensation system and pressure on targets (λ:1);
3. an “Opportunity” construct for the accounting control environment derived from variables capturing the quality of accounting controls (λ:1), the reliability of accounting estimates, and the level of governance and oversight over senior management;

Results from sensitivity tests (not presented) indicate the consistency of findings after controlling for Financial Services (banks; insurance companies; regulated industry) client assessments. In addition, results of acceptance and continuance assessments are consistent, with the exception of acceptance assessments in 2003/4 being more conservative (perhaps a time effect from the Ahold scandal announced in February 2003 and others such as Enron and Worldcom (2002). A second analysis took the logarithm of the regression model and finds that, for the higher risk sub sample, only Integrity and Ethics are found to be important. Using the log function for the complete model yields similar results than without the log function.

Construct reliability set at 90%

Both the AccountingControl and AccntgEstimateReliability variables capture the degree of organizational controls over information accuracy. The former variable captures degree of accuracy and control stemming from information provided by the accounting systems. The latter variable captures accuracy and control over estimates and judgments employed by management. Both of these variables would be considered, under COSO, as internal controls.
(4) a construct for audit relationship which has one variable linked to it;\textsuperscript{55}

(5) a construct for propensity to engage in fraud which is measured by the variable measuring management inclination to intentionally misstate financial statements.\textsuperscript{56}

Results of the overall model confirm that the ethical conduct of senior management ($\gamma^{\text{TOTAL}}$: 0.53; $p<0.01$; Table 4; Figure 1) is approximately 1.7 times more important than compensation incentives ($\gamma^{\text{TOTAL}}$: 0.31; $p<0.01$; refer to Figure 1); that is, managerial attitudes are found to be more important than fraud motivators. In addition, the accounting control environment is also significant ($\gamma^{\text{TOTAL}}$: 0.17; $p<0.01$) but of lower relative importance than compensation pressures and ethics. The model is significant and acceptable (AGFI: 0.95; RMR: 0.03; TLI: 0.89; NFI: 0.94; all acceptable levels per the literature, particularly observations of Hu and Bentler 1999; construct reliability above 0.6).\textsuperscript{57} The explanatory power of the model is significantly higher than regression (equivalent squared multiple correlation or $R^2$: 0.84).\textsuperscript{58}

rather than control environment controls. On the other hand, \textit{IntegrityAndEthics} is an element of the control environment category within COSO, and therefore considered as a separate construct capturing management attitudes.

\textsuperscript{55} For latent variables within the SEM model which have only a single indicator variable (constructs for audit relationship risk and accounting control risk), these are represented like any other latent variable, except the error term for the single indicator variable which constrained to have a mean of 0 and a variance fixed at an ‘arbitrary’ value times its variance (Jöreskog et al. 1993 suggest that using an arbitrary value, or estimate based on reliability, is a more reasonable assumption than the assumption of a zero error). For Audit Relationship, the assumed variable reliability has been set at 50%; therefore the error variance mapped in the model is represented by 50% times the variance of the underlying variable across the relevant sub-sample. This ‘random’ percentage was chosen based on the stability of the model (increasing the reliability of other constructs) and the plausibility that audit relationship risk is a difficult-to-measure metric of trust and honesty.

\textsuperscript{56} Construct reliability has been set at 90%.

\textsuperscript{57} There is no consensus as to the set of indices which work best as each test statistic poses advantages and disadvantages, just as there is no consensus on the effect of factors such as sample size and normality violations on different fit indices. Kline (1998: 130) recommends at least four tests: (1) chi-square ($\chi^2$); (2) goodness of fit (GFI), normed fit index (NFI), or comparative fit index (CFI); (3) the Tucker-Lewis Index (TLI), also called the NNFI (nonnormed fit index); and (4) root mean square residual (RMR). For the $\chi^2$ statistic, obtaining a probability of greater than 0.05 indicates a good fit. The value of the $\chi^2$ statistic is limited because it is very sensitive to sample size and distributional assumptions (Hu and Bentler 1999). For other statistics (GFI, NFI, CFI, TLI) a cut-off value of 0.9 is often used, however some argue that the cut-off value should be greater than 0.95 for TLI, IFI, and CFI (Hu and Bentler 1999). For the use of RMR, a cut-off value of 0.08 appears an adequate cut-off value and a value of 0.06 for root mean square residual statistic (RMSEA). McDonald et al. (2002) have outlined four problems with fit indices which included an observation that there is no established mathematical basis for using them, no compelling ground for using
These findings are important as they provide evidence of the importance auditors perceive on ethics, compensation pressures and the accounting control environment as fraud risk factors affecting the propensity to engage in fraud. These findings are similar to Loebbecke et al. (1989), Bell and Carcello (2000), and Baucus (1994) but extend that research by providing quantification of the relative importance of three, critical risk factors. More importantly, they suggest that the fraud triangle is not equilateral, thereby motivating the need for further future research.
### TABLE 4: SUMMARY OF REGRESSION AND SEM RESULTS

<table>
<thead>
<tr>
<th>Fraud Triangle Elements</th>
<th>OLS Regression Standard Betas</th>
<th>Structural Equations Model Standard Load Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta_j^{\text{LOW}}$</td>
<td>$\beta_j^{\text{HIGH}}$</td>
</tr>
<tr>
<td>INCENTIVES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IncentiveIntentionMistmt</td>
<td>0.14</td>
<td>-</td>
</tr>
<tr>
<td>ATTITUDES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IntegrityAndEthics</td>
<td>0.23</td>
<td>0.19</td>
</tr>
<tr>
<td>AuditRelationship</td>
<td>0.18</td>
<td>-</td>
</tr>
<tr>
<td>OPPORTUNITIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GovernanceOversightMgt</td>
<td>0.03</td>
<td>-</td>
</tr>
<tr>
<td>AcctgEstimateReliability</td>
<td>0.11</td>
<td>0.09</td>
</tr>
<tr>
<td>AccountingControl</td>
<td>0.11</td>
<td>-</td>
</tr>
</tbody>
</table>
In order to go further in understanding fraud, risk factors at differing, fraud propensity levels, SEM was applied to a sub-sample of lower, fraud propensity assessments (Figure 2) and one with higher, fraud propensity assessments (Figure 3). Interestingly, the strength of the ethical conduct of senior management construct ($\gamma_{\text{LOW}}$: 0.44; $p<0.01$; Table 4; Figure 2) is approximately the same as manager compensation pressures ($\gamma_{\text{LOW}}$: 0.42; $p<0.01$) in the lower, fraud propensity, sub-sample (5,036 or 90% of the sampled population). In addition, accounting controls remain approximately of the same significance as in the overall model. The model shows a similar fit and significance for the lower, fraud propensity sub-sample as the overall model. This indicates that predisposition from manager, ethical conduct and compensation pressures tends to contribute equally to fraud at lower propensity levels, while the control environment is not a sufficiently strong deterrent.

For the high fraud propensity sub-sample (Figure 3) the only variable affecting fraud is manager ethics ($\gamma_{\text{HIGH}}$: 0.98; $p<0.01$; Table 4); the accounting control environment and manager compensation pressures are not found to be significant, fraud-risk factors. Although the model fit statistics are not optimal at the high-risk level, the SEM results are consistent with those found in the multiple regression model.

The effect of risks associated with ethical manager conduct appears to have an increasing slope rate: $\gamma_{\text{TOTAL}}$ (0.53) between $\gamma_{\text{HIGH}}$ (0.98) and $\gamma_{\text{LOW}}$ (0.44). Therefore, the ethics function in relation to fraud likely follows an “S” shape function. Similarly, accounting controls and manager compensation pressures appear to follow a truncated function with no slope at the highest fraud propensity levels. A comparison of $\gamma_{\text{TOTAL}}$ (0.17) versus $\gamma_{\text{LOW}}$ (0.13) may indicate that the slope of accounting control risks is slightly increasing (concave) between lowest and some risk levels. In contrast, the manager compensation function follows a convex function, with a decreasing slope between $\gamma_{\text{LOW}}$ (0.42) and $\gamma_{\text{TOTAL}}$ (0.31) and a zero slope between the ‘some’ and ‘highest’ fraud risk levels.
In summary, the elements of the fraud triangle do not appear to move in symmetry and are not perceived by auditors to equally influence the risk of fraud. Overall, evidence appears not consistent with the hypothesis that the fraud triangle is equilateral. Surprisingly, however, auditors consider that neither governance, accounting controls nor compensation pressures have any effect at the higher fraud propensity levels. Instead, auditors react to signals indicating a lack of integrity, ethical values, and management biased judgements.

Using the fraud risk formulas presented by Srivastava et al. (2005), incentives and opportunity risk factors have no effect at the higher fraud risk levels and therefore, such risks, can be considered fully mitigated. Assuming that there are no interrelationships between risk factors, and ignoring the effect of forensic and other audit procedures, the plausibility of fraud, at the higher risk level, can be reduced to the following equation based on this study’s results:
\[
\text{Pl}_{\text{Total}}^\text{HIGH}(f) = \frac{\text{Pl}(ar)\text{Pl}(-am)}{K_A} \quad \text{or} \quad \frac{[1-\text{m}(-ar)][1-\text{m}(am)]}{1-\text{m}(am)\text{m}(ar)} \quad (3)
\]

Therefore, the mitigating factors that appear most effective in reducing the risk of fraud (at an organizational level) are control procedures over attitude-related risks \([\text{m}(am)]\). The literature contains very broad principles on how to design such controls, generally covering how Supervisory Boards and related committees oversee Senior Management and the procedures, structures, and practices which Senior Management set within their organizations to embrace anti-fraud control guidance (AICPA 2001; PCAOB AS 2; SAS 99; ISA 240; SAS 54; ISA 250; US Federal Sentencing Guidelines; and COSO). However, such guidance remains relatively vague and more research is required, for the benefit of organizations, investors, and auditors. For auditors, the mitigating factors which are most effective, from an audit perspective, are those which seek out evidence on management attitudes to more accurately shape their beliefs and, consequently, adequately evaluate fraud risk. This may entail the usage of forensic procedures to seek out allegations of misconduct and preventive procedures that gauge the ethical climate within an organization.

An alternative approach would invest in mitigating controls which reduce belief of opportunity risks first [the lowest risk element; \(m(or)=0.16\)], followed by belief of incentive risks [\(m(ir)=0.31\)], and finally the belief of attitude risks [\(m(ar)=0.53\)]. That is, \textit{ceteris paribus}, a one unit of effort invested in mitigating the lowest risk element (opportunity risk or \(m(or)=0.16\)), will impact the plausibility of fraud more than the equivalent investment at the highest risk element [attitude risk or \(m(ar)=0.53\): the effect on the denominator \([K_1 = 1 - m(im)m(ir)]\) is greater. This approach and logic may be followed, but it would not work at the higher fraud propensity levels, as the only risk which would need to be mitigated relate to managerial attitudes, not opportunity nor incentive risks. Therefore, the preliminary conclusion that is drawn is that auditors consider all mitigating controls
important, but perceive that those addressing managerial attitude risks as most important across all fraud propensity levels.

CONCLUSIONS AND IMPLICATIONS FOR FUTURE RESEARCH

This study investigates auditor experiences, observations, and perceptions on the most important fraud risk factors shaping the fraud triangle. The results indicate that auditors consider management attitudes (captured through the ethical conduct of senior managers and management honesty and openness towards the external auditor) as more important than fraud incentives and opportunities, in determining the risk of fraud. Fraud incentives (compensation-related) and opportunities (covering the governance and accounting control environment) were also perceived to be important, albeit their effect appeared mainly pronounced at the lower fraud propensity levels. Finally, the results are consistent with the suggestions from practitioner guidance (SAS 99; ISA 240), audit literature (Loebbecke et al. 1989), and corporate illegality studies (Baucus 1994) that emphasize the role of incentives, opportunities, and attitudes as critical fraud elements. Further, the fraud triangle is not perceived by audit partners as equilateral.

The first hypothesis posits that auditors have increased sensitivity to opportunity and incentive cues in low fraud risk situations (Table 5). Consistent with Wilks and Zimbelman (2004), this study finds support for the hypothesis and extends this research by examining actual auditor risk assessments of their clients (rather than in an experimental setting). Generally, auditors do not appear to find opportunity and incentive cues as important in their higher risk client evaluations, although important for the lower risk clients (the exception is the risks noted through biased accounting estimates). This finding appears troubling at first because it suggests that governance and accounting controls have a minor role to play in auditor risk assessments of their higher risk clients, as well as compensation incentives.
<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Method</th>
<th>Variables/ Constructs</th>
<th>Population Test Results</th>
<th>Test of Hypothesis</th>
<th>Is Hypothesis Supported?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A - Auditors have increased sensitivity to opportunity cues in low fraud risk situations</td>
<td>Regression</td>
<td>GovernanceOversightMgt, AcctgEstimateReliability, AccountingControl</td>
<td>GovernanceOversightMgt: 0.03, Nil, n/a; AcctgEstimateReliability: 0.11, 0.09, n/a; AccountingControl: 0.11, Nil, n/a</td>
<td>Is $B_{LOW} &gt; B_{HIGH}$?</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>SEM</td>
<td>Accounting Control (Opportunity)</td>
<td>Accounting Control (Opportunity): 0.13, Nil, n/a</td>
<td>Is $\gamma_{LOW} &gt; \gamma_{HIGH}$?</td>
<td>Yes</td>
</tr>
<tr>
<td>1B - Auditors have increased sensitivity to incentive cues in low fraud risk situations</td>
<td>Regression</td>
<td>IncentiveIntentionMistmt</td>
<td>IncentiveIntentionMistmt: 0.14, Nil, n/a</td>
<td>Is $B_{LOW} &gt; B_{HIGH}$?</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>SEM</td>
<td>Compensation Pressure (Incentive)</td>
<td>Compensation Pressure (Incentive): 0.42, Nil, n/a</td>
<td>Is $\gamma_{LOW} &gt; \gamma_{HIGH}$?</td>
<td>Yes</td>
</tr>
<tr>
<td>2 - Fraud red flags impact auditor fraud risk perceptions equally</td>
<td>Regression</td>
<td>IncentiveIntentionMistmt, IntegrityAndEthics, AuditRelationship, GovernanceOversightMgt, AcctgEstimateReliability, AccountingControl</td>
<td>IncentiveIntentionMistmt: n/a, n/a, 0.14; IntegrityAndEthics: n/a, n/a, 0.27; AuditRelationship: n/a, n/a, 0.21; GovernanceOversightMgt: n/a, n/a, 0.08; AcctgEstimateReliability: n/a, n/a, 0.10; AccountingControl: n/a, n/a, 0.12</td>
<td>Is $B_i = B_{i+1}$?</td>
<td>No</td>
</tr>
<tr>
<td>3A - Auditors perceive attitude risk factors as more important than opportunity risk factors</td>
<td>SEM</td>
<td>Management Ethics (Attitude)</td>
<td>Management Ethics (Attitude): 0.44, 0.98, 0.53</td>
<td>Is $\gamma_{ATTITUDE} &gt; \gamma_{OPPORTUNITY}$?</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accounting Control (Opportunity)</td>
<td>Accounting Control (Opportunity): 0.13, Nil, 0.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3B - Auditors perceive attitude risk factors as more important than incentive risk factors</td>
<td>SEM</td>
<td>Management Ethics (Attitude)</td>
<td>Management Ethics (Attitude): 0.44, 0.98, 0.53</td>
<td>Is $\gamma_{ATTITUDE} &gt; \gamma_{INCENTIVES}$?</td>
<td>Yes</td>
</tr>
</tbody>
</table>
(greed does not appear to be a driver of fraud in the Netherlands). Sceptics may argue that all the efforts and focus on internal controls by the regulators in the US and Europe would appear unnecessary (Sarbanes-Oxley 404 and the Eighth Directive). However, audit standards note that senior managers are generally capable of overriding controls and therefore able to engage in fraud. In the United States, the most egregious frauds are committed by senior managers (SEC 2003) and it is known that frauds generally involve collusion (Baucus 1994). The general involvement of senior management in frauds, coupled with this study’s findings that the integrity and conduct of senior managers is the most important fraud risk factor, would appear to suggest that controls over senior management conduct are of highest importance and therefore suggesting that Audit Committees would be well advised to oversee such conduct with vigilance. And this is where regulators and auditors ought to focus their internal control verification efforts. The fact that the governance variable is not found to be significant in the higher risk sub-sample and was the variable of highest variability will be subject to a future study.

Notwithstanding the above findings, the importance of related accounting and governance controls is corroborated by an ex post analysis of control conditions noted by audit partners at their higher-risk clients. Whereas this study focused on accounting control conditions and the oversight of the Audit Committee and Supervisory Board, it appears that control conditions that may be problematic from a fraud perspective stem from organizational structures, managerial monitoring choices, and target pressures imposed on managers which have an indirect effect on the financial reporting environment, as supported by the following ANOVA mean comparison results:59 (i) higher-risk clients tended to have more opaque ownership structures, with few individuals controlling the organization (µ\text{low}: 0.26; µ\text{high}: 0.55; \ p < 0.01), and with a larger proportion of significant related party transactions (µ\text{low}: 0.14; µ\text{high}: 0.31; \ p: 0.01); (ii) higher-risk clients demonstrated some problematic internal control indications, such as over-

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59 This analysis was performed using ANOVA mean comparisons, comparing the ‘higher’ and ‘highest’ fraud risk assessments with the remainder of the population; all results were significant at the 5% level.
reliance on the Internal Audit department as a primary organizational mechanism for control effectiveness ($\mu_{low}: 0.06; \mu_{high}: 0.19; p: 0.01$), entities lacking a strong CFO that prevents management override of controls ($\mu_{low}: 0.04; \mu_{high}: 0.29; p< 0.01$), and entities lacking adequate budget monitoring controls ($\mu_{low}: 0.05; \mu_{high}: 0.19; p< 0.01$); (iii) managers of higher-risk clients appeared to be under pressure, from growth or downsizing targets ($\mu_{low}: 0.07; \mu_{high}: 0.24; p< 0.01$), unrealistic expectations of stakeholders on management performance ($\mu_{low}: 0.01; \mu_{high}: 0.12; p< 0.01$), and pressures to manipulate profits to protect their own compensation ($\mu_{low}: 0.01; \mu_{high}: 0.12; p< 0.01$), reduce tax liabilities ($\mu_{low}: 0.01; \mu_{high}: 0.12; p< 0.01$), or protect their investments or guarantees ($\mu_{low}: 0.00; \mu_{high}: 0.05; p< 0.01$); and (iv) managers of higher-risk clients were more likely to be arrogant ($\mu_{low}: 0.03; \mu_{high}: 0.31; p< 0.01$). These areas should be further studied in future empirical research, as it will be important in exploring the optimal nature and types of controls which can prevent fraud.

The second hypothesis posits that fraud red flags impact audit risk perceptions equally. Generally, there is no evidence that this is the case (Table 5). All betas in the regression analysis are different from zero and mainly differ from each other. Such a finding would then suggest that there is a hierarchy of fraud risk cues that should be subject to future study. Audit standards and the audit literature list fraud cues but provide little insight into their relative weight. Regression results in this study suggest that audit partners place high importance on the integrity and conduct of senior management, as well as the level of openness of senior managers with their auditors. One possible explanation is that auditors consider the integrity of financial reporting to be largely a function of senior management integrity and the bond of trust between managers and their auditors is an important cue for auditors.

The third hypothesis posits that audit partners perceive attitude risk factors as more important than opportunity and incentive risks. Structural equation results demonstrate that this hypothesis can be supported (Table 5),
consistent with the survey results of Heiman-Hoffman et al. (1996). Further, for higher fraud risk clients, audit partners perceive that only managerial attitudes are important cues affecting such heightened risk. This evidence suggests that the fraud triangle is not equilateral and that the shape of the fraud triangle differs between the full population, the higher and lower fraud risk. In summary, evidence suggests that the fraud triangle is not equilateral and management attitudes are the most important leg of such a triangle.

This study has analyzed auditor risk assessments in the Netherlands across a broad spectrum of audit clients who differ in industry, size, jurisdictional requirements (included US multi-national subsidiaries), and ownership structure. Due to data confidentiality and data limitations, such differences could not be fully reported, although there is evidence that the presence of certain regulated industries and institutional variables do not alter the results. In addition, this study has extrapolated auditor views and perceptions of risk, as a proxy for control elements observed within organizations. This study has analyzed factors considered important for auditor fraud risk assessments. It is questionable whether an organizational focus on these elements will reduce instances of fraud. In addition, the non-linear weighing of risk factors cannot be necessarily attributable to auditor thinking, as the instrument’s framed statements tap into various dimensions of auditor experiences, perceptions, observations, suspicious, and recall of past incidents. Lastly, the data used for this study relates to companies in one country only and may not necessarily be valid in other institutional settings.

One potential avenue for future research is to understand the effect of other incentives, pressures, and opportunities on fraud propensity. It is likely that the consideration of other incentives, pressures, and opportunities may shift and perhaps re-balance the elements of the fraud triangle. In addition, one could model the relation between the fraud triangle elements in order to fully test the Srivastava et al. (2005) model. Preliminary research, using this

60 Note that auditors were found to be more conservation in their acceptance between 2003 and 2004. The justification is that this is the period after all the scandals in the United States and the Ahold accounting scandal in the Netherlands hit in 2003.
study’s data and SEM model, after introducing interaction terms \((r_1, r_2, r_3)\), suggests that interaction terms are significant, and that certain risk factors (e.g., compensation pressures) may interact with other fraud triangle elements and, in turn, have a direct, negative (relative) effect on fraud risks (a possible reflection of meeting performance targets as a good manager trait, and one which may raise the risk of improper conduct per Jensen 2003; Figure 4).

Figure 4 shows that the interaction of better management ethics and better accounting controls is moderating the fraud risk effect. After applying a general linear model to test all main and two-way interaction effects, a negative \(r_2 (\gamma^{r2_{Tot}}: -0.89)\) appears to be driven by four interactions of lower integrity risk levels (‘low’ and ‘some’ risk per Appendix I) with more accounting control reliability (at ‘lowest’ and ‘some’ risk level). That is, the variable capturing reliable accounting estimates, interacts with lower management integrity and ethical risks to produce a significant, negative fraud risk impact. Therefore, it would appear that there is a compounding effect of having better managerial ethics and accounting controls in lowering fraud risk (consistent Hernandez and Groot 2006). Similarly, the compensation pressure construct is found to be negative \((\gamma^{Comp_{Tot}}: -0.38)\), after taking into account all interactions. After reviewing the insight provided by a general linear model, it appears that the variable capturing incentive compensation pressure (from a balance of financial and non-financial metrics, as well as performance goal achievability) has a negative, direct main effect on fraud risk at the ‘lower’ and ‘some’ risk level. These results suggest that achievable targets may prevent fraud, but also increase pressures which compound the risk of lapses in management integrity \((\gamma^{r1_{Tot}}: 0.29)\) and accounting controls \((\gamma^{r3_{Tot}}: 0.31)\). In summary, these negative effects should be the subject of future research, as it may affect the definition and perceptions of traditional risk factors. Additional research can play an important role in understanding more thoroughly how mitigating controls may be structured and shed additional insight into corporate fraud. Little is understood about how frauds work, or how interaction between different risk factors affects the propensity for fraud.
FIGURE 4: STRUCTURAL EQUATION MODEL DEPICTING INTERACTION TERMS (N: 5,600)

Figure 4: Structural Model Results under Maximum Likelihood Method (MLE) for the total sample (N: 5,600). $X^2=17$, AQI=0.90. Amounts between arrows indicate standardized regression weights (all amounts significant at 1% level, except $r_3$ interaction path to fraud propensity, which is significant at the 5% level).

Model fit statistics. RMRE: 0.01; NFI: 0.99; RFI: 0.96; IFI: 0.99; TLI: 0.96; CFI: 0.99; RMSEA: 0.05. Standardized total effect of Audit Relationship construct on Risk of Fraud: 0.58; Accounting Control on risk of fraud: 0.56; Ethical tone on risk of fraud: 0.87; and Compensation Incentive on risk of fraud: -0.38. Similarly, $r_1$: 0.43; $r_2$: -0.03; and $r_3$: 0.36.

Note that the Accounting Control construct contains only one variable – AccountingControl – in its measurement model, in order to simplify the model and improve fit statistics.
REFERENCES


Appendix 1: Variable Definition

<table>
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<tr>
<th></th>
<th>MODEL VARIABLE</th>
<th>FRAMING OF INSTRUMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>MgtInclin2IntentMisstate</td>
<td>Management inclination to intentionally misstate financial reporting:</td>
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<tr>
<td></td>
<td></td>
<td>• Lowest Risk: Management attaches great importance to achieve fair and accurate financial statement presentation.</td>
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<td></td>
<td>• Low Risk: Management makes a reasonable effort to achieve fair and accurate statement presentation.</td>
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<td>• Some Risk: Management is not particularly interested in financial statement presentation but there has been no evidence of intentional misstatement.</td>
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<td></td>
<td>• High Risk: Management sometimes shows a disregard for fair and accurate financial statement presentation.</td>
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<tr>
<td></td>
<td></td>
<td>• Highest Risk: Management has in the past attempted to distort or hide information relevant to the entity’s financial condition or operating results.</td>
</tr>
<tr>
<td>X1</td>
<td>IntegrityAndEthics</td>
<td>Integrity and Ethics:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lowest Risk: Management has an excellent reputation for integrity and ethics. High ethical standards are evident—for example, a code of conduct exists and fully communicated and is enforced throughout the organization.</td>
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<tr>
<td></td>
<td></td>
<td>• Low Risk: Management has a good reputation for integrity and ethics.</td>
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<td></td>
<td></td>
<td>• Some Risk: There is no reason to question management’s integrity and ethics.</td>
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<td></td>
<td></td>
<td>• High Risk: Management’s commitment to integrity and ethics is in some doubt.</td>
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<td></td>
<td></td>
<td>• Highest Risk: There are indications based on employee allegations, regulatory inquiries, adverse publicity, or other sources that management has engaged in unethical activity.</td>
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<tr>
<td>$X_2$</td>
<td>IncentiveIntentionMistmnt</td>
<td>Incentive for intentional Misstatements in financial reporting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Lowest Risk: Incentive compensation is balanced between financial and non-financial measures and limits the opportunity for extraordinary gain or hardship. Management’s performance goals appear achievable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Low Risk: Incentive compensation system is balanced between financial and non-financial measures. Management’s performance goals are high but achievable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Some Risk: Incentive compensation system is focused on accounting-based measures. Management is under some pressure to achieve targeted results.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- High Risk: A substantial portion of management compensation is dependent on accounting-based measures. Management is under substantial pressure to achieve targeted results.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Highest Risk: Poor performance threatens either the viability of the enterprise or management’s continued employment with it.</td>
</tr>
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<td>MODEL VARIABLE</td>
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<tr>
<td>X3A</td>
<td>GovernanceOversightMgt</td>
<td>Governance and oversight of management</td>
</tr>
<tr>
<td></td>
<td>Lowest Risk:</td>
<td>There is an independent supervisory board with broad and deep expertise and experience. It takes an active role in the entity’s strategic direction, and receives detailed information to monitor closely the performance of management. There is an audit committee with well-qualified supervisory board members, and it has the authority and resources to provide vigilant oversight of financial matters.</td>
</tr>
<tr>
<td></td>
<td>Low Risk:</td>
<td>There is an independent supervisory board with good expertise and experience, and it receives timely information with which to monitor management performance. There is an audit committee with well-qualified supervisory board members that provides oversight of financial matters.</td>
</tr>
<tr>
<td></td>
<td>Some Risk:</td>
<td>There are some supervisory board members, who are independent of management, and they have average expertise and experience. The supervisory board has adequate information with which to monitor management performance. There is an audit committee/supervisory board meets regularly and responds to issues that are raised with it.</td>
</tr>
<tr>
<td></td>
<td>High Risk:</td>
<td>Senior management comprises a single person or a small group. Only a minority of board members are independent of management. The outside board members are relatively passive and are provided with only limited information with which to monitor management’s performance. There is no audit committee, or there is one but it is not effective.</td>
</tr>
<tr>
<td></td>
<td>Highest Risk:</td>
<td>Senior management comprises a single person or a small group. The supervisory board is made up of people who lack expertise, information or independence to do anything other than rubber stamp approval of management’s decisions. There is no audit committee.</td>
</tr>
<tr>
<td>X3B</td>
<td>AcctgEstimateReliability</td>
<td>Reliability of accounting estimates:</td>
</tr>
<tr>
<td></td>
<td>Lowest Risk:</td>
<td>Consistent History of accurate estimates</td>
</tr>
<tr>
<td></td>
<td>Low Risk:</td>
<td>Accounting estimates have usually been reasonable.</td>
</tr>
<tr>
<td></td>
<td>Some Risk:</td>
<td>Accounting estimates have been conservative.</td>
</tr>
<tr>
<td></td>
<td>High Risk:</td>
<td>Accounting estimates have usually been optimistic.</td>
</tr>
<tr>
<td></td>
<td>Highest Risk:</td>
<td>Accounting estimates have often been unreasonable.</td>
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<tr>
<td>$X_{3c}$</td>
<td>AccountingControl</td>
<td>Accounting Control:</td>
</tr>
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<td></td>
<td></td>
<td>• Lowest Risk: Accounting systems and controls are highly effective; Accounting</td>
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<tr>
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<td>personnel are always capable of handling the issues that arise; Financial reports</td>
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<tr>
<td></td>
<td></td>
<td>are always timely and reliable.</td>
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<td></td>
<td></td>
<td>• Low Risk: Accounting systems and controls are effective; Accounting personnel are</td>
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<tr>
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<td></td>
<td>able to handle the issues that arise; Financial reports are reliable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Some Risk: Accounting systems and controls are generally effective. In most cases</td>
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<tr>
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<td></td>
<td>the accounting personnel are able to handle issues; financial reports are usually</td>
</tr>
<tr>
<td></td>
<td></td>
<td>timely and reliable.</td>
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<td></td>
<td></td>
<td>• High Risk: Accounting systems and controls need improvement; Accounting personnel</td>
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<tr>
<td></td>
<td></td>
<td>struggle to deal with some of the issues that arise; Financial reports are</td>
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<td></td>
<td></td>
<td>sometimes late or unreliable.</td>
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<td></td>
<td>• Highest Risk: Accounting systems and controls are inadequate to provide for the</td>
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<tr>
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<td>entity’s needs and our audit requirements are inadequate for an entity of this size</td>
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<tr>
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<td>and complexity; There is a history of late or unreliable financial reporting.</td>
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</table>
| $X_4$ | AuditRelationship | Audit Relationship:  
- **Lowest Risk:** Management regularly initiates discussion with us on accounting issues. We have effective and candid communication with the board and, where applicable, the audit committee. Management does not question our audit scope. We have free access to people and information.  
- **Low Risk:** Management initiates discussion with us on accounting issues as they arise. Our communications with the board and audit committee are structured and substantive. Management occasionally questions our audit scope; Management sometimes requires discussion before allowing access to people and information; Management accepts audit findings.  
- **Some Risk:** Management is open to our advice on accounting issues but does not initiate discussion. Our communication with the board and audit committee is somewhat limited in time and format; There have been some attempts by management to limit our audit scope; Access to people and information is closely monitored. Management accepts audit findings but tries to downplay their importance.  
- **High Risk:** Management sometimes disputes our advice on accounting issues and does not initiate discussion. We have very limited opportunity for substantive communication to the board and audit committee; Management attempts to reduce our audit scope; Access to people and information is granted but only after challenge and delay; Management often challenges audit findings and does not initiate discussion on accounting issues. Management typically disputes and it is very difficult to reach agreement with them.  
- **Highest Risk:** Management does not initiate discussion on accounting issues and when the issues arise, is less than forthright in describing the relevant facts patterns; we have no opportunity to substantive communication with the board and audit committee; There are sometimes attempts by management to dictate audit scope or intimidate us. There are formal or informal restrictions on access to people or information; Management typically disputes audit findings and disclosures and it is very difficult to reach agreement with them. |
Appendix 2: Notation from Srivastava et al. (2005) on fraud formulas

Extract from Srivastava et al. (2005).

$$K = 1 - [r_2 + r_1 r_3(1 - r_2)] m_1^+ (m_A^- m_0^+ + m_A^+ m_0^-) - [r_3 + r_1 r_2(1 - r_3)] m_1^T (m_I^- m_0^+ + m_I^+ m_0^-)$$

- $$[r_1 + r_2 r_3(1 - r_1)] m_0^T (m_I^- m_A^+ + m_I^+ m_A^-) - (r_1 + r_2 - r_1 r_2)(m_I^- m_A^+ m_0^- + m_I^+ m_A^- m_0^-)$$
- $$- (r_2 + r_3 - r_2 r_3)(m_I^- m_A^+ m_0^- + m_I^+ m_A^- m_0^-) - (r_1 + r_3 - r_1 r_3)(m_I^+ m_A^- m_0^- + m_I^- m_A^+ m_0^-)$$

Where, $$r_1$$ represents the relational node between ‘Incentive’ and ‘Attitude’; $$r_2$$ represents the relational node between ‘Attitude’ and ‘Opportunity’; and, $$r_3$$ represents the relational node between ‘Opportunity’ and ‘Incentive’. The signs ‘+’ indicates that the risk factor is present; ‘-’ indicates that the presence of the risk factor is negated; and ‘T’ indicates any remaining ambiguity, which can be represented as an unassigned belief function.

Lastly, $$K_f$$ is defined as follows:

$$K_f = \Pi(1 - m_j(f)) + \Pi(1 - m_j(\neg f)) - \Pi(1 - m_j^T)$$ for $$j = 1..3$$
CHAPTER 4

The Pursuit of Profits: How Ethics and Targets Influence Financial Reporting Fraud

ABSTRACT

This study investigates the effect of performance targets, profits, and ethics on audit partner fraud perceptions, observations, and experiences across 5,600 client audits. Based on structural equation analyses, this study unexpectedly finds that auditors perceive: (1) higher profitability levels at organizations as associated with higher fraud propensity; (2) the more consistent, talented, and performance target-focused senior managers appear to be most associated with fraud; and (3) senior management ethical concerns are of highest importance in relation to financial reporting fraud. The outcome of the study support the concerns of Jensen (2003) on the gaming and lies triggered by budget processes, and calls for reform on how organizations work with targets. Questions are raised on capital market behaviour, which generally rewards managers for income smoothing (lowers perceived volatility) but may not explicitly consider a fraud risk premium from the erosion of management ethics. This study provides empirical support on potential side effects from the search for profits and usage of targets to focus managerial efforts.

Keywords: fraud, ethics, profits, targets, pressure, incentive compensation, risk assessment

Data availability: Data used for this paper are derived from a proprietary source

A previous version of this paper has been presented at the annual European Accounting Association Congress, in Lisbon on April 2007. This paper has also been presented at a concurrent session at the annual meeting of the American Accounting Association (August 2007). A debt of gratitude is owed to the participants and discussants at these sessions.
Introduction

This paper empirically examines whether processes which organizations put in place to focus managers on performance objectives, can inadvertently cause dysfunctional behaviour within an organization, or worse, an erosion of ethics within managers. Researchers have documented a budget ratchet effect, which motivates managers not to exceed their budget targets in fear of a permanent increase on their future targets (Guidry et al. 1999; Leonne and Rock 2002). Researchers have also found that US firms accused of fraud have had higher incentives to artificially increase the stock price, than did executives of firms not accused of fraud (Johnson et al. 2003; Denis et al. 2006). In Europe (and the United States), there is little empirical research on the effect of targets, profits, and ethics on instances of fraud. This study aims to contribute to this gap in the literature by studying auditor perceptions observations, and experiences with manager attributes and corporate environments that may contribute to an increased likelihood for financial fraud across 5,600 client audits. Jensen (2003) summarized the current issues with targets, profits, and ethics and the management of modern corporations, which will be the central theme for this study.

...paying people on the basis of how their performance relates to a budget or target causes people to game the system and in doing so to destroy value in two main ways: (a) both superiors and subordinates lie in the formulation of budgets and, therefore, gut the budgeting process of the critical unbiased information that is required to coordinate the activities of disparate parts of an organisation; and (b) they game the realisation of the budgets or targets and in doing so destroy value for their organisations. Although most managers and analysts understand that budget gaming is widespread, few understand the huge costs it imposes on organisations and how to lower them.

There are capital market incentives for managers to smooth earnings and project the perception of lower volatility and lower risk, which in turn could lead to a lower cost of capital (Healy and Wahlen 1999; Kirschenheiter and Melumad 2002). Under the capital asset pricing model, lower expected earnings (and stock price) volatility would lead to lower expected cost of capital (Kc). Any additional return over this threshold (Kc) would be
considered an abnormal return for which the market would pay a premium. Using an option pricing approach, such as a Black-Scholes model, the expected value of the underlying security in the future is directly related to the instrument’s volatility. If the “real” volatility of a stock is less than the observed volatility, and market participants have no other information, this would generate an abnormal, positive (arbitrage) benefit, which would accrue to current shareholders at the expense of future shareholders. In turn, this may be considered by company executives as a worthwhile strategy to pursue in order to artificially increase shareholder value.

Three principal research questions will be investigated in this paper. First, are performance targets, profits, and ethical concerns associated with financial reporting fraud? Second, what is the relative importance of performance targets, profits, and ethics in relation to financial reporting fraud? Lastly, is there any guidance or recommendations on how to manage by objectives, whilst minimizing the risk of fraud? This paper extends prior research on auditor fraud risk perceptions, which noted a surprising negative association between the degree of compensation incentives at audit clients and the risk of fraud (Hernandez and Groot 2006b). This paper studies financial reporting fraud and related risk factors from the perspective of external audit partners and does not consider whether capital markets are able to price any potential downfall-risk associated with consistent earnings and entity profitability. Similar to the research of Bedard and Johnstone (2004) and Johnstone (2000), this research study relies on the assumption that auditor acceptance and continuance assessments correctly capture, on average, fraud considerations and indications. This assumption is reasonable since audit standards are explicit about the auditor’s responsibilities to assess the risk of fraud (SAS 99; ISA 240), auditors have incentives to identify such risks (Zimbelman and Waller 1999), and auditors tend to have a multi-year

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61 Bedard and Johnstone (2004), for example, have used auditor acceptance and continuance to study earnings management.

62 Wilks and Zimbelman (2004) used a game theory perspective of fraud settings in order to develop suggestions for audit policy and practice action steps intended to improve fraud detection and deterrence. Their overall summary on fraud risk assessments noted that fraud
mandate which allows them to incorporate their experiences with their clients in their annual, continuance assessments. The large sample used in this study provides a unique opportunity to assess both the relative importance of various hypotheses for fraud decision-making, and the potential trade-offs which may be made by managers as they venture into the unethical and illegal space of financial reporting fraud.

The empirical analysis documented in this study indicates that manager achievement of consistent targets, higher profits, and lower management ethical levels are perceived by audit partners as important fraud risk factors. Although inadequate profits and pressures from targets have been found to be associated with fraud in the past (Loebbecke et al. 1989; Bell and Carcello 2000), there is little research and guidance suggesting the importance of targets, profits, and ethics in an audit setting. It is not generally accepted nor understood that auditors consider organizations with higher profits as more inclined to have higher risk of fraud. Similarly, it is not generally known that the more consistent, experienced, and target-focused organizations are considered by auditors as most associated with instances of fraud. These observations are supported in this study. In addition, there is empirical support for incremental fraud risk levels (assessed by auditors) when organizations have low profit margins and they are consistently meeting their performance targets. These findings are significant as they support US research on the manager incentives to demonstrate an increasing profit trend (Degeorge et al. 1999). Consistent with budget and ratcheting research, managers who are consistent in meeting their targets may be engaging in the activities described by Jensen (2003). That is, managers who are focused on meeting consistent targets, and who are working for profitable entities, may feel more pressure to engage in inappropriate action, either to safeguard their reputations, or they believe that such actions are in the best interests of the

checklist usage may be unreliable; auditors generally overweight cues indicative of management’s character, lowering their fraud risk assessment to a too-low level, even though the opportunity and incentives may be high (Jonas 2001; SAS 99) and these clues may be most unreliable; and audit standards should consider how management may manipulate their perception of fraud cues.
company (demonstrating consistent performance). This argumentation would appear reasonable using finance principles (volatility, the capital asset pricing model, and option pricing), and would signal the negative effect (higher risk of fraud) of manager actions aimed to “manage” earnings volatility.

This study reports that auditors perceive senior management ethical concerns as the most important risk factor associated with financial reporting fraud (Hernandez and Groot 2006a,b; Heiman-Hoffman et al. 1996). This finding holds true across all fraud propensity levels which were examined. In addition, the degree of honesty and openness of senior management with the external auditor was also found to be an important factor directly associated with the risk of fraud. Other important factors perceived by auditors to influence the risk of fraud included compensation pressures on managers and the experience and depth of senior management. Audit standards do not comment on the relative importance of factors contributing to the likelihood of increased fraud potential. Although Hernandez and Groot (2006b) find evidence suggesting that “the fraud triangle” is not equilateral.

Finally, this study shows that the effect of compensation pressure, as an incentive for managers, tends to be mainly pronounced at the lower, fraud propensity levels. This finding indicates that there is a direct, positive association between an increase in compensation pressure and the likelihood of fraud. However, at the higher, fraud propensity levels, financial compensation pressures have limited importance in contributing to the risk of fraud. As noted previously, this finding may indicate that manager hubris may be a more important contributor to fraud than incentive compensation pressures (greed) at the highest, fraud propensity levels. This research finding is important as most empirical studies of fraud have been restricted to United

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63 Previous research has found that managerial attitudes significantly (and disproportionately) affect audit partner fraud risk perceptions (Hernandez and Groot 2006a), and further evidence exists indicating that the fraud triangle is not equilateral (Hernandez and Groot 2006b), are significant factors associated with auditor fraud perceptions. This study provides further evidence that the softer components of management, such as ethics, integrity, and experience, play an important and significant role in fraud situations.
States SEC sanctioned firms and little research focuses on whether non-US populations would respond differently to ethical financial reporting matters (Merchant and Rockness 1994).

The remainder of the paper is organized as follows. The next section covers a review of the literature and development of the empirical model which will be studied. The third section discusses the risk assessment sample and describes the research design. The empirical results are reported in the fourth section. In the final section, this paper discusses the conclusions and implications for future research.

LITERATURE REVIEW AND EMPIRICAL MODEL

This section develops the framework for the empirical analysis. First, the empirical model design for this study is presented, which outlines the model under study and the hypotheses being considered. Secondly, the literature which addresses the role of performance targets, profitability, and compensation is reviewed. Third, the literature on ethics and morality is reviewed. Finally, hypotheses are generated on the relevant importance of an organization’s ethics, profits, and performance targets on corporate fraud.

Empirical Model Design

This study extends the work of Hernandez and Groot (2006a,b) who used regression and structural equation models to demonstrate how managerial attitudes are the most important leg of the fraud triangle. In addition, this research extends the work of Bell and Carcello (2000) and Loebbecke et al. (1989), and responds to Jensen’s (2003) concerns over the effects of budgets and targets. There is a substantive amount of research covering the subject of
fraud. However, there is limited research on how fraud indicators can be weighted or put into a model (Hackenbrack 1993; Bell and Carcello 2000).

Bell and Carcello (2000) presented a model useful in predicting the existence of fraudulent financial reporting which correctly classified 80 percent of the fraud cases while only misclassifying 11 percent of the non-fraud cases. The significant risk factors included in the model were: weak internal control environment, rapid growth, inadequate/inconsistent profitability, undue emphasis on meeting earnings projections, dishonest or overly evasive management, ownership status (private vs. public), and an interaction between a weak control environment and an aggressive attitude toward financial reporting. Bell and Carcello’s work shows that there are several risk factors presented in the authoritative guidance and elsewhere in the literature that are not particularly effective in discriminating between fraud and non-fraud engagements. Apostolou et al. (2001) found that management characteristics and influence over the control environment red flags were approximately twice as important as operating and financial stability characteristics red flags and about four times as important as industry conditions using an analytic hierarchy process.

Albrecht and Romney (1986) found that one-third of the 87 red flags studied were found to be significant predictors of fraud, which generally

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64 Academic literature, in the fields of psychology, accounting, auditing, law, and economics, provide various complementary theories, which explain why financial fraud arises in business. These disciplines provide alternative hypotheses to control mechanisms, that may help prevent such irregularities. For example, social and cognitive psychology gives insight into human thinking, rationalization, and behaviour at the individual level and within a social context. Management accounting and control literature, particularly literature related to reliance on accounting performance measures (RAPM) and budgeting, gives insight into the behaviour of managers in an accounting performance measurement, control, and evaluation system. Financial reporting research has studied capital market responses to accounting earnings and, in the area of earnings management, provided a wealth of knowledge into manager motivations and conditions that lead to earnings manipulation behaviour. The auditing literature has been studying auditor experiences and application of knowledge in the area of accounting fraud. Legal, criminal, and corporate governance research provide insight into the constraints and behaviours which affect individual managers, executives, boards, and audit committees and the repercussions (from regulators and litigation) of the failure of these groups to exercise their legal and fiduciary duties. Economics has contributed the principal-agency theory, the concept of utility as the basis for explaining behaviours that lead to accounting fraud, and the concept of contracts as a means to control agent behaviour.
included personal characteristics of management. Loebbecke et al. (1989) presented the results of a survey of audit partners from KPMG who have had experiences with fraudulent financial reporting and with asset misappropriations. This research established that there were general conditions, motivations and attitudes, which could predict the probability of material irregularities. For example, they found the primary conditions that encouraged fraud included dominated decisions by senior management and weak internal controls. Finally, Loebbecke et al. (1989) compiled the primary set of attitudes, or ethical values, of persons with positions of authority that would allow them to seek out, or partake in, management fraud which included dishonest management, personality anomalies, and lies or evasiveness, particularly to auditors.

This paper explores three hypotheses which address prior gaps in the literature: (1) entities that are more profitable and more consistent in meeting performance targets have reduced auditor fraud risk perceptions – Loebbecke et al. (1989), as well as Bell and Carcello (2000), have noted that inadequate profits are an important fraud red flag; there is conflicting evidence on the role of thresholds in the capital markets from DeGeorge et al. (1999) and Dechow et al. (2003); (2) entities with more talent and depth in their senior management teams are more likely to engage in fraud – Nieschwitz et al. (2000) have noted that fraud is often carried out by highly motivated, clever teams of knowledgeable managers; over 80% of SEC enforcement actions involve a member of senior management (SEC 2003); however, the depth and talent of a management team has generally not been empirically associated with fraud; and (3) higher compensation incentives are associated with higher fraud risk conditions – supported by executive compensation studies such as Denis et al. (2006) but not by SEC enforcement action studies of Dechow et al. (1996).

65 Other primary conditions included: (i) major transactions were taken advantage of; (ii) there were business dealings with related parties; (iii) internal controls were weak; and (iv) transactions were difficult to audit.

66 Other primary attitudes / rationalizations included: (i) emphasis on earnings projections; (ii) prior-year irregularities; and (iii) aggressive attitude to financial reporting.
Performance Targets, Pressures on Profits, and Compensation Systems

Jensen (2003) notes that almost every company in the world uses a budget or target-setting system and that it is not unusual for budgetary games to turn fraudulent. The use of budgets and targets can create dysfunctional behaviour which is reflected through budgetary slack (Merchant 1985). The amount of pressure to meet financial targets is associated with short-term myopic orientations and manipulation of figures (Merchant 1990). Perhaps managers are concerned with budgeting games due to the ratchet effect on targets for subsequent periods. Leone et al. (1999) note that favourable performance variances are followed by larger absolute changes in the following year’s target compared to changes associated with unfavourable performance variances (ratchet effect). Guidry et al. (1999) finds that managers manipulate earnings to maximize their short-term bonus plans using discretionary accruals. Leone and Rock (2002) find evidence consistent with ratcheting, where favourable budget variances result in performance budget increases that are larger than decreases associated with unfavourable variances of the same magnitude. Their results suggest that managers consider how reported performance will influence future budgets, at least with respect to transitional earnings, when making discretionary accrual choices. The suggestion is made that budgets ratchet because managers expect positive increases in profitability to be more permanent and these promote incentives for permanent earnings increases. In sum, budget ratcheting (and usage of performance incentive systems) is a plausible explanation why target achievements may be associated with fraud.

In the field of economics, Goldman and Slezak (2003) found that stock-based compensation can act as a double-edged sword, inducing managers to exert productive effort, but also to divert valuable firm resources to misrepresent performance. Erickson et al (2004) found that a one standard deviation increase in the proportion of compensation that is stock-based, increases the probability of an accounting fraud by approximately 68%. They note that compensation committees face a trade-off between the positive
incentive effects afforded by stock-based compensation and the negative effect of increasing the probability of fraud. Johnson et al. (2003) found that executives of firms accused of fraud had higher financial incentives to increase the stock price than did executives of firms not accused of fraud.

Castellano and Lightle (2005) note that the current management philosophy of Managing by Objectives and Results (“MBO/R”) has the unintended consequence of encouraging earning manipulation. They note that the entire financial planning and budgeting process can be effective only if companies manage earnings. The consequences of MBO/R and risk factors are directly related to the tone-at-the-top, corporate culture, and a company’s ethical climate.

Prospect theory (Tversky and Kahneman 1981) may help to explain the importance of targets and profits relative to a benchmark or reference point. These references may explain why users over-value the importance of meeting these targets and under-value the pain or loss which may be associated if such targets were not met. The principles of prospect theory are supported by analysts anticipating earnings management to avoid small losses and small earnings decrease, and evidence that analysts are much more likely to forecast zero earnings than firms are to realize zero earnings (Burgstahler and Eames 2003). Understanding management incentives are important to understanding the desire to engage in earnings management, especially to beat a benchmark (Dechow and Skinner 2000). There are also incentives which are demonstrated through a hierarchy of thresholds, which start from the need to report a profit, second to support an increase in profits, and third to meet analysts’ forecasts (Degeorge et al. 1999). Others have supported this observation by suggesting that meeting analyst consensus forecasts is becoming the more important hurdle (Dechow et al. 2003) and that manager attempts to manipulate profits are motivated by the need to meet analysts estimates and influence the stock market, to reach targets set by compensation contracts, and to smooth earnings or improve future income (Nelson et al. 2002). Beneish (2001) provides evidence consistent with managers altering
reported earnings to increase their compensation, although such findings do not appear to hold in all instances (Dechow et al. 1996).

Inadequate or inconsistent profitability and emphasis on earnings projections have often been associated with fraud (Loebbeke et al. 1989; Baucus 1994; Bell and Carcello 2000). Denis et al. (2006) finds that there is a significant positive association between the likelihood of securities fraud allegations and executive stock option incentives. Their findings support the view that stock options increase the incentive to engage in fraudulent activity, and that this incentive is exacerbated by institution and stock ownership. Equity incentives have also been found to be important incentives driving manipulative or fraudulent behaviour. Managers with high equity incentives appear to sell more of their stakes after meeting or beating analysts’ forecasts than after missing analysts’ forecasts, and are more likely to engage in earnings management relative with low equity incentives (Cheng and Warfield 2005). Managers of firms accused of accounting fraud have been found to sell their own shares before these firms are formally subject to SEC enforcement actions (Summers and Sweeney 1998; Beneish 1999). Executives at fraud firms have significantly larger equity-based compensation and greater financial incentives to commit fraud than do comparable executives (Johnson and Ryan 2003) and, similarly, there is evidence consistent with managers selling more after market participants over-price income increasing accruals (Beneish and Vargus 2002). The likelihood of a misstated set of financial statements increases greatly when the CEO has a sizable amount of stock options in-the-money (Efendi et al. 2006) and that there is manipulation to increase senior executive payout (Bartov and Mohanran 2004).

Finance research suggests that managers smooth earnings to convince potential debt-holders that earnings have lower volatility, and hence represent a reduced risk (Healy and Wahlen 1999; Kirschenheiter and Melumad 2002). Since debt can be raised at lower cost, smoothing increases the expected cash flow to shareholders. And current shareholders can, in turn, benefit from lower perceived volatility (and underlying entity risk) and realizing a premium
on the stock price at the expense of future shareholders. Under the capital asset pricing model, the cost of capital is a function of the risk-free rate, market return rate, and the beta (volatility measure) of the stock. Under the Black-Scholes option pricing model, the expected value of a financial instrument is dependent on the stock price, time, strike price, risk-free rate, and the volatility of the underlying instrument (the stock). Under both these models, assuming imperfect information, the capital markets will assign a premium to the value of a stock if the underlying risk and volatility is perceived (or managed) to be lower than reality. This will provide a capital markets incentive for income smoothing. What remains unclear from the literature is if such manager intervention and potentially unethical actions are priced by the capital markets with a risk premium for potential fraud (a market efficiency question).

The markets appear to penalize managers engaging in fraud or having been involved in a restatement. On the one hand, they could be subject to criminal or civil actions in multiple courts. On the other hand, there is evidence that managers suffer reputation damage and face diminished job prospects. Desai et al. (2006) found that 60% of restating firms experience a turnover in at least one top manager within 24 months of the restatement, compared to only 35% among age, size, and industry-matched firms. Further, they report that 85% of the displaced managers of restatement firms are unable to secure comparable employment afterwards, indicating that the labour markets impose significant penalties for accounting violations. Nieschwitz et. al (2000) noted that typical frauds involve scheming by highly motivated, clever teams of knowledgeable managers with the capacity for considerable political persuasion and intimidation of both their own employees and their auditors.

This study therefore predicts that firms with higher compensation pressures may be more likely to have a higher propensity to commit financial reporting fraud. In addition, entities which are more profitable, more consistent in meeting targets, and holding less talented managers may be less
likely to commit fraud due to lower pressure and superior management capabilities.

Senior Management Ethical Conduct

Management fraud has been found to be typically committed by top management (SEC 2003; Loebbecke et al. 1989). From a legal perspective, firms with executives who ignored, condoned, rewarded, or participated, in past instances of wrongdoing, will likely be recidivists due to the predisposition of their behaviour and attitude (Baucus 1994). Further, Baucus 1994 reports that, firms with highly committed employees and a corporate culture reinforcing illegal activities, tend also to be predisposed to illegal behaviour. The legal view also reconciles with the view found in the audit literature. Managers, who are generally dishonest and are evasive towards their auditors, are more likely to engage in financial fraud (Loebbecke, et al. 1989). Other audit studies – such as Bell and Carcello (2000) – have found, through matched-fraud and no-fraud samples, that overly-evasive or dishonest management is an important, fraud red flag.

The ethics and conduct of senior managers, in a corporation, sets the overall, ethical tone in an organization. It is not corporations that commit financial fraud; rather, fraud is perpetrated by the people within the corporation. It is generally understood that the primary reason why people commit fraud – especially white collar crime – is money (usually, from bonuses or options linked to the appreciation of stock prices), power, advancement, and hubris. The sample of auditor assessments of firms investigated in this study, provides a unique opportunity to investigate whether firms with a higher propensity to commit fraud are more likely to have indications of ethical misconduct. This leads to predictions concerning the link between manager, ethical conduct and the likelihood of fraud, as perceived by auditors.
Empirical research suggests that fraud red flags associated with management attitudes and behaviours carry more weight than motivation and condition red flags (Deshmukh and Talluru 1998; Heiman-Hoffman et al. 1996). There is also evidence that the ethical tone in an organization is largely derived from Senior Management attitudes (Cohen 2002). Research notes that a focus on long-term gains and idealist principles (rather than short-term gains and relativism) should have a positive contribution on reducing earnings manipulations (Elias 2002). Further, organizations should promote idealist values and have these be re-enforced through a long-term focus on the business.

Fraudulent financial reporting starts with small ethical transgressions (National Commission on Fraudulent Financial Reporting 1987, Merchant and Rockness 1994). Theory and research suggest that situational effects have a profound effect on ethical behaviour in most people (Dallas 2003). The implication is that it is inappropriate for organizations to rely totally on individual integrity to guide behaviour, and therefore, organizations must provide a context that supports ethical behaviour and discourages unethical behaviour. Trevino and Youngblood (1990) concluded that ethical decision-making behaviour in organizations result from a complex interplay of individual differences, how individuals think about ethical decisions, and how organizations manage rewards and punishment. They found that ethical decision making was influenced directly by cognitive moral development. In their path analysis, they also found (1) evidence that Locus of Control influenced ethical decision making directly and through outcome expectancies; and (2) vicarious rewards affected ethical decision making.

Trevino and Youngblood (1990) note that individuals with internal Locus of Control ("LOC") are more likely to do what they think is right and to tolerate discomfort or penalty for doing so. The concept of internal-external LOC classifies individuals as either attributing the cause of or control over events to themselves ("internals") or to their surrounding situation ("externals"). The characteristics of "externals" are closely related to the surrounding environment. Ashford et al. (1989) compared "externals" vs. "internals" and found that "internals" generally see environmental situations as being less important and believe that they have the power to counteract environmental threats.
indirectly as it influenced outcome expectancy (no significant linkage was found for vicarious punishment).

Moral reasoning is an important element that affects economic decisions, including fraudulent ones (Rutledge and Karim 1999). Uddin and Gillett (2002) found evidence that moral reasoning had some effect on intentions of Chief Financial Officers to report fraudulently on financial statements. They also noted having a greater number of high moral reasoners in an organization can decrease the probability of fraud as these individuals are less influenced by social norms. They suggest that addressing the personal attitudes and subjective norms in an organization can be a critical determinant that prevents fraudulent behaviour. It follows that corporations may affect a person's reasoning at the conventional level through its policies and practices by asserting or establishing the definition of what is socially acceptable within the work environment (Weber 1990).

Merchant and Rockness (1994) studied the morality of earnings management practices (considered to be accounting fraud once legal, GAAP, and ethical barriers are surpassed) using a questionnaire comprised of thirteen, potentially questionable, earnings management activities. They found that the acceptability of a particular, earnings management practice varied with the type, size, timing, and purpose of the actions. More specifically, respondents viewed:

(i) management of short-term earnings by accounting methods as significantly less acceptable than accomplishing the same ends, by changing or manipulating, operating decisions and procedures
(ii) increasing earnings to be less acceptable than reducing earnings, indicating the importance of the direction of the effect on earning management decisions
(iii) short-term, earnings management to be less acceptable if the earnings effect is large rather than small, suggesting that materiality is a significant factor
(iv) the time period to have an effect on ethical judgments, with changes being more acceptable quarterly than at the year-end

68 Kohlberg (1969) developed a theory of moral development in which persons progress in moral reasoning through three levels: (1) Pre-conventional level, where labels of “good” or “bad” are interpreted in terms of physical consequences (punishment, reward) or in terms of physical power; (2) Conventional level, where active support of the fixed rules or authority in a society becomes the reference criteria; and (3) Post-conventional level, where the individual makes clear effort toward autonomous moral principles with validity apart from the authority of the groups or persons who hold them and apart from individual identifications.
69 More specifically, respondents viewed:
among general managers, company managers, and internal auditors on the perceived ethics of earning management activities. In summary, this study predicts that the financial reporting culture in an organization is shaped by the integrity and ethics of Senior Management and, in turn, this influences the propensity for fraud. The ethical tone is hypothesized to be shaped by an individual’s moral reasoning levels, locus of control, moral philosophy, and the influence of the external work environment.

SAMPLE AND RESEARCH DESIGN

This section is composed of three subsections. The first subsection discusses the auditor acceptance and continuance process undertaken by a Big Four accounting firm in the Netherlands. The second subsection gives the sample composition and presents some high-level, descriptive analytics on the sample. Finally, the third subsection describes the empirical proxies for fraud risk factors.

**Auditor Acceptance and Continuance Process**

Risk assessment processes are critical to an auditor’s design of procedures to detect material, financial statement misstatements, whether caused by fraud or otherwise. International audit standards require that an auditor obtain an understanding of audit risk and its components: inherent risk, control risk, and detection risk (ISA 400). Risk assessment systems at Big Four accounting firms generally consider all key audit and fraud risk indicators, as suggested by audit standards, either in isolation or through separate questionnaires (Shelton et al. 2001). This study closely the approach employed by Bedard and Johnstone (2004) who used engagement partners’

(v) increasing profits by offering extended credit terms to be less acceptable than accomplishing the same end by selling excess assets, or using overtime to increase shipments (in other words, the method of managing earnings had an effect on earnings management decisions) manipulation to benefit the business unit/group/organization to be more acceptable than manipulation for personal gain (e.g., bonus payments)
assessments of their clients, as part of their client acceptance and annual audit, continuance, risk assessment, process to examine the relationship between earnings manipulation and corporate governance variables.

The data used in this study was derived from audit partner assessments of their clients during the acceptance and audit continuance process, performed during the years 2002 to 2004, at a Big Four Dutch accounting firm. During this process, partners at the firm perform their preliminary assessments of the various risk factors affecting the probability of an inadequate, audit opinion for particular clients. The risk assessment is completed on a standardized, electronic form which requests that the audit partner select from a range of choices, or risk judgements, based on uniform definitions (adequacy of Big 4 risk assessments discussed by Shelton et al 2001). Once the acceptance and continuance form is completed by an audit manager or the audit partner, the partners must sign the form, and, in certain instances, the form is subject to additional internal, Firm reviews in accordance internal quality, review guidelines. Once the form has been approved, audit partners and managers then proceed to design an audit plan based on any heightened risk conditions identified through the process.

Sample Selection and Description

In total, 5,600 acceptance and continuance risk evaluations were included in this study with only 3% of the assessments discarded due to missing information. These risk assessments were for public and private companies, foreign and domestically-owned entities, and from multiple industries. They are a sub-set of all the audit engagements performed by the Big Four firm for the years 2002 through 2004. Excluded within the sample were all assessments preformed for very small clients (total audit hours less than 500), assessments for non-financial audits, and other services. The remainder of the populations, covering the assessments of an audit partner group of approximately 150, was included as part of this study. In the
Netherlands, there is a general statutory audit requirement, unless entities qualify for a “small entity” exception, (approximately €8 million revenues and €4 million in assets). Due to confidentiality limitations, information such as the client name, size, audit fees, and other sensitive information was removed from the data provided to the researcher. The Big Four firm uses a proprietary algorithm to arrive at a risk score, and to identify the indicators of increased risk, which are to be considered by the auditor as part of the planning, execution, and completion of the audit. The outputs of such an algorithm, and the ultimate performance of the auditor, were not observable nor the subject of this study. However, all risk evaluation judgements were captured as part of this study.

**Variable Measurement**

The participating, Big Four accounting firm’s client acceptance and audit continuance risk assessment process requires audit partners to answer questions on a number of risk factors. These risk factors are the focus of this study (described in Appendix 1). They are:

(i) risk associated with the ethical conduct of managers based on perceptions and known instances of potential misconduct (*IntegrityAndEthics*).

(ii) risk associated with perceived, excessive, compensation pressures based on the compensation system, weight placed on accounting metrics, and the achievability of the set targets (*IncentiveCompPressure*).

(iii) risk associated with consistency in which past performance targets have been met (*PastPerformance*).

(iv) risk associated with the consistency of past profits have been achieved by the entity (*Profitability*).

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70 Note that auditors are required to perform specific risk evaluations and design appropriate procedures to meet SAS 99 and ISA 240 requirements dealing with fraud. The evaluations at the sampled Big 4 firm are based on initial risk indications arising from the acceptance and continuance system.
(v) risk arising from the lack of openness, trust, and transparency between an auditor and its audit client (AuditRelationship).

(vi) risk associated with the depth of a management team and the extent to which succession planning is utilized (ManagementDepth).

(vii) the risk from management inclinations to intentionally misstate financial statements – the proxy for actual fraud (MgtInclin2IntentMisstate).

Risk evaluation is based on a fully-anchored, framed statements, on a five-point risk level instrument based on standardized set of framed statements (risk descriptions) and includes an explanation of that particular risk level. Most empirical research has tended to measure fraud red flags using binary variables. Deshmukh and Talluru (1998) note that, in the real world, the differences which exist in particular red flags have been largely ignored in the measurement and research of red flags. For example, during an audit, it becomes necessary to consider internal controls on a continuous or categorical scale, rather than on a dichotomous binary scale.

The empirical proxy used to measure the propensity for fraud is derived from one question in the auditor acceptance and continuance questionnaire. This specific variable measures management inclinations to intentionally misstate financial statements. It is based on the client’s approach to financial reporting and past experience which the auditor may have had, or observed, with the client. The first two risk levels of the dependent measure captures the importance managers place on financial reporting; the highest risk levels capture manager disregard or observed attempts to distort or hide material information.

All risks are measured on a five point scale, from lowest to highest, with framed statements to assist the auditor in the process. This five point scale was subsequently translated into a Likert scale from 1 (lowest risk) to 5 (highest risk) and used as a basis for analysis. Following economic principles, the risk of a particular action plus the risk of that particular action not
occurring, should add to 100%. In turn, excluding any conditional probability effects, the research proxy for the propensity to commit financial, reporting fraud uses the conjugate of the risk of intentional misstatement. Refer to Appendix 1 for full variable definitions.

To validate whether auditors were conscious of their fraud risk assessments (dependent variable construct reliability; responses to the dependent variable in this study - MgtInclin2IntentMisstate) and acted upon such assessments through additional audit safe-guards, two groups of sample ANOVA mean comparison tests were performed. The first test examined whether audit opinions were significantly affected by higher fraud risk assessments. It was found that higher risk assessments had the following statistical differences (1% level) with the rest of the sample: (i) more modified audit opinions; (ii) more explanatory paragraphs within audit opinions; (iii) there was more communication by the auditors to the Board of potential fraud or illegal acts; (iv) there had been more prior auditor disagreements, resignations, and prior auditor limitations of responses; and (v) there were more prior year errors and account restatements. In addition, a second group of tests for external validity of the dependent variable (using ANOVA means comparison, at the 1% level of significance) suggest that auditors respond to higher fraud risk assessments by refusing to have their audit scope changed, having more complex negotiations with their clients, and by implementing additional internal Firm quality controls (e.g., use of concurrent partners). In summary, there is evidence to suggest that auditors act on their fraud risk assessments and it establishes the external validity of the dependent variable for this study.

RESULTS OF EMPIRICAL TESTS

The discussion of the results is presented in three sections. The first section addresses the extent to which targets, profits, and ethical concerns associated with corporate fraud. The second section presents on the relative importance of targets, profits, and ethics in relation to corporate fraud. The
last section provides evidence of the targets, profits, and ethical concerns most likely to influence at the highest fraud levels.

**Extent to which targets, profits, and ethical concerns associated with corporate fraud**

Table 1 provides descriptive statistics on the variables capturing targets, profits, and ethical concerns across the 5,600 sampled, firm assessments performed by audit partners. Descriptive results of the sampled population indicate that relatively few clients were assessed as having high, risk levels in the variables measured in this study. More specifically, 1.1% was perceived as exhibiting lower levels (high and highest risk) of integrity and ethical behaviour and 1.6% was perceived as having significant, compensation pressures. For the variables capturing pressures from the target-environment, 1.7% were assessed as having lower levels of past performance; and 2.1% were assessed as having lower-quality, management depth. In addition, 0.4% of the entities were considered to have strained, auditor-management relationships and 11.2% were assessed as having poor profitability.

Table 2 presents the Pearson Correlation table for all variables capturing auditor perceptions of risk across the full sample. Consistent with what the literature suggests, profits, targets, and ethical factors are important and have a strong, positive association with the risk of fraud (significance at the 1% level). Surprisingly, however, is the magnitude of the correlations recorded by the auditors, generally ranging between 0.12 to 0.47 between the fraud elements and fraud risk. This finding suggests that there is a consistency in auditor assessments and the corresponding fraud elements as the theory suggests. Another implication is that the ethical integrity and conduct of senior management is seen as the single, most significant factor in fraud risk (0.47), followed by the quality of the audit relationship (0.4).
TABLE 1: DESCRIPTIVE STATISTICS

<table>
<thead>
<tr>
<th></th>
<th>TOTAL SAMPLE</th>
<th></th>
<th>HIGHER RISK SUB-SAMPLE</th>
<th>LOWER RISK SUB-SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Min</td>
<td>Max</td>
<td>Mean</td>
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<tr>
<td>Y₁ fraud proxy</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>MgtIncln2IntentMisstat</td>
<td>5,600</td>
<td>1</td>
<td>5</td>
<td>1.92</td>
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<tr>
<td>Management Ethics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IntegrityAndEthics</td>
<td>5,600</td>
<td>1</td>
<td>5</td>
<td>2.22</td>
</tr>
<tr>
<td>Compensation Incentive</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>IncentiveIncentn2Mistmt</td>
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<td>5</td>
<td>1.87</td>
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<td>Target-focus</td>
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<td></td>
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<td>PastPerformance</td>
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<td>5</td>
<td>2.18</td>
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<td>Profitability</td>
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<td>5</td>
<td>2.15</td>
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<tr>
<td>ManagementDepth</td>
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<td>2.37</td>
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<tr>
<td>Audit relationship</td>
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<tr>
<td>AuditRelationship</td>
<td>5,600</td>
<td>1</td>
<td>5</td>
<td>1.86</td>
</tr>
</tbody>
</table>

(1) The Acceptance and Continuance process at the sampled Big 4 firm asks the auditor for an assessment of specific risk conditions. For each of these questions the auditor is requested to provide an assessment across five categories: Lowest Risk, Low Risk, Some Risk, High Risk, and Highest Risk. Generally, the framing statement associated with the low and lowest risk level contains positively framed statements representing good qualities that the auditor believes to be present. The high and highest risk generally refer to specific (more tangible) auditor indications of negative qualities associated with the question and perceived to pose risk of issuing an incorrect audit opinion.

(2) Higher risk sample = Risk levels 3 through 5 of the dependent variable (MgtIncln2IntentMisstat) per Appendix I.
**TABLE 2: PEARSON CORRELATION COEFFICIENTS (FULL SAMPLE; N: 5,600)**

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
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</thead>
<tbody>
<tr>
<td>(1) MgtIncln2IntentMisstate</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(2) IntegrityAndEthics</td>
<td>.472(**)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) IncentiveCompPressure</td>
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<td>.257(**)</td>
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<tr>
<td>(4) PastPerformance</td>
<td>.250(**)</td>
<td>.320(**)</td>
<td>.268(**)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Profitability</td>
<td>.115(**)</td>
<td>.172(**)</td>
<td>.233(**)</td>
<td>.438(**)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) ManagementDepth</td>
<td>.307(**)</td>
<td>.382(**)</td>
<td>.180(**)</td>
<td>.403(**)</td>
<td>.208(**)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>(7) AuditRelationship</td>
<td>.403(**)</td>
<td>.334(**)</td>
<td>.242(**)</td>
<td>.246(**)</td>
<td>.129(**)</td>
<td>.206(**)</td>
<td>1</td>
</tr>
</tbody>
</table>

Pearson correlation coefficients; (**) denotes significance of correlation coefficient at 1% level (2-tailed test); N: 5,600

Note: Consistent with the above table, Pearson correlation coefficients at the lower risk sub-sample (N: 5,036) are all positive, amounts consistent, and all correlations remain significant. At the higher fraud risk sub-sample (N: 564), all correlation coefficients are lower but continue to be significant at the 5% level with the exception of three relationships between MgtIncln2IntentMisstate and: (i) PastPerformance, Profitability, and ManagementDepth. That is, past ability to achieve goals, entity profitability, and depth of the senior management team are factors not correlated with the risk of fraud. Perhaps this is attributable to the non-linear relationship (positive effect on low/total sample; negative relationship at high risk sample – refer to Table 3) or second order effects.
As a second step, sample splitting was performed to distinguish between “lower” versus “higher” fraud risk, sub-samples. Table 2 shows the results of the lower risk, sub-sample (Lowest and Low Risk categories from the Liker-scaled answers). Results are consistent with full sample results. However, the “higher” fraud-risk, sub-sample presented also in Table 2 shows markedly different results. For example, past performance, profitability, and management depth were not statistically correlated with fraud risk, but remain significantly correlated with other variables. This finding is unusual and unexpected, as it goes against traditional, audit risk thinking and against what the audit risk model suggests.

In general, findings are consistent with the Loebbecke et al. (1989) model for material irregularities and auditor observations, except for the unexplained effects at the higher-risk levels. In addition, all fraud factors are generally, statistically correlated with each other. These observations suggest that there are common factors embedded in the various, fraud, decision-making elements.

*The relative importance of targets, profits, and ethics in relation to financial reporting fraud*

Table 3 provides the multiple regression results between the various fraud elements under study – unethical management conduct, excessive compensation pressures, inconsistent past performance, inconsistent profitability, inadequate management depth, and strained audit relationship – and fraud risk. The results confirm that there is a positive association with the above fraud factors and the risk of fraud, with the exception of entity profitability. The model is significant ($F$: 451; $p<0.01$) and the explanatory potential is fairly high ($R^2$: 0.32). All the betas are positive and statistically significant at the 1% level (with the exception of past performance, which is only significant at the 10% level).
Table 3 shows that manager ethical conduct is the most important element in the risk of fraud ($\beta_{\text{TOTAL}}^{\text{TOTAL}}$: 0.31; $p<0.01$). This finding indicates that the ethical profile of senior managers and their internal rationalizations are critical to fraud decision-making and therefore support the need for better manager, ethical profiling. In addition, this justifies auditor concerns when there are indications of management misconduct. This also leads to appropriate questioning of management representations which are made during the course of the audit.

Compensation pressures are another important factor affecting manager decisions to commit fraud ($\beta_{\text{TOTAL}}^{\text{TOTAL}}$: 0.16; $p<0.01$). This finding is important because it reinforces calls in the literature for balanced compensation systems. Without this balance, compensation can be an incentive to commit fraud by managers.

Regression results confirm that target-achieving environments, with knowledgeable and talented managers, exhibit traits which can be linked to the risk of fraud. Specifically, the past performance of an entity is found to be an important, and statistically significant, fraud risk contributor ($\beta_{\text{TOTAL}}^{\text{TOTAL}}$: 0.02; $p<0.10$); this is also true for quality of management depth, broadly capturing dimensions of organizational commitment of talented managers through succession planning ($\beta_{\text{TOTAL}}^{\text{TOTAL}}$: 0.11; $p<0.01$).

Surprisingly, entity profitability is found to be statistically significant and negatively associated with the risk of fraud ($\beta_{\text{TOTAL}}^{\text{TOTAL}}$: –0.04; $p<0.01$). This suggests that higher consistency over targets and profitability is associated with a higher propensity for fraud. In contrast, entities which are less profitable have lower, fraud risk levels. A possible explanation is that, if profitability of an organization is in question, creditors may focus more on cash flow and plans for future profitability rather than on single period profits. At the other end of the spectrum, entity profitability may act as an addictive drug. That is, profitability may trigger higher levels of greed and hubris from
managers, and this inter-relationship could explain the connection between profits and fraud.

The quality of the relationship between auditor and client is largely determined by the openness and cooperation between them. It is found to be the second, most significant variable in the model ($\beta_{\text{TOTAL}}: 0.24; p<0.01$). The audit relationship reveals important information about the ethical conduct of managers, the level of targets, and compensation pressures on managers. In summary, this study provides evidence that manager ethical conduct, compensation pressures, and target-achieving environments are very important elements predicting the risk of fraud.\textsuperscript{71}

\textit{The targets, profits, and ethical concerns most likely to influence at the highest fraud levels}

In order to test the relative strength of targets, profits, and ethics across auditor dimensions (Appendix I; Figure 4), the total, sampled population is split between a lower, and a higher, fraud risk level, sub-sample. The lower, fraud risk, sub-sample contained approximately 5,036 assessments that were scored as Low and Lowest Risk; conversely, the higher fraud risk, sub-sample included 564 assessments which were scored as Some, High, and Highest Risk.

Examining the sub-sample (N: 5,036) of lower, fraud risk assessments (Table 4; $F: 245; p<0.01$), the results are generally consistent with those of the full sample. However, whereas the profitability variable is significant and negative in the full sample, in the lower risk, sub-sample, the effect is not significant. The remaining variable effects are relatively consistent with the results of the full sample.

\textsuperscript{71} These findings are consistent with Hernandez and Groot 2006b, although they did not consider the effect of target-focused environments within their study.
<table>
<thead>
<tr>
<th>Risk factors (independent variables)</th>
<th>TOTAL SAMPLE REGRESSION</th>
<th>HIGHER RISK SUB-SAMPLE REGRESSION</th>
<th>LOWER RISK SUB-SAMPLE REGRESSION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unstandardized</td>
<td>Standardized</td>
<td>Unstandardized</td>
</tr>
<tr>
<td>Management Ethics</td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>IntegrityAndEthics</td>
<td>0.28</td>
<td>0.01</td>
<td>0.31</td>
</tr>
<tr>
<td>Compensation Incentive</td>
<td>0.12</td>
<td>0.01</td>
<td>0.16</td>
</tr>
<tr>
<td>Target-focus</td>
<td>0.02</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>PastPerformance</td>
<td>-0.02</td>
<td>0.01</td>
<td>-0.04</td>
</tr>
<tr>
<td>Profitability</td>
<td>0.10</td>
<td>0.01</td>
<td>0.11</td>
</tr>
<tr>
<td>ManagementDepth</td>
<td>0.21</td>
<td>0.01</td>
<td>0.24</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.45</td>
<td>0.03</td>
<td>***</td>
</tr>
<tr>
<td>Adjusted R²:</td>
<td>0.33</td>
<td></td>
<td>F: 431.02</td>
</tr>
</tbody>
</table>

Dependent variable: MgtEthicsIntnt/InstMstst

Note 1: Amounts in () and italics represent t-statistics. *** denotes significance at the 1% level; ** denotes significance at the 5% level; * for 10% level.

Note 2: No evident multi-collinearity issue noted. Variance inflation factors ranged from 1.0 to 1.4; tolerance levels ranged from 0.7 to 0.95.
Generally, regression results differ between the full sample and those of the higher and lower sub-samples, especially in variables related to manager, goal-achieving environments (management depth, profitability, past performance). Although entity profitability was found to be negatively associated with fraud risk, this variable was not found to be significant in either the higher, or lower risk, sub-samples.

After applying a univariate general linear model, profitability risks are found to be individually, positively significant (against fraud risk) under two specific conditions: when profits were consistently earned by an organization (low risk level) and when profits and targets were inconsistently met (high and some risk levels, respectively. However, when consistent target and profit levels are met (interaction term at the low risk level for better variables), this has a negative relationship with the risk of fraud, suggesting that profit thresholds may increase fraud risk. To explore the effect of targets and to focus on three, critical, fraud risk factors – the ethical conduct of managers, compensation pressures, and the attributes of goal-achieving managers – this study employs a structural equations model.

Structural equations modelling (SEM) is a research tool used in the social sciences that combines regression with factor analysis, simultaneously. The main advantage of SEM over multiple regressions is the ability to test a set of relations among variables, simultaneously. This cannot be done using standard regression, due to the complex set of simultaneous relations. SEM has been used and discussed in previous studies and in a similar context: Johnstone (2000); Dusenbury et al. (2000); and Wilks and Zimbelman (2004). For this study, AMOS version 6 is used as the vehicle to model the structural relationships between ethical conduct of managers and aggressive accounting practices.

Note that the detailed statistical results from the univariate general linear model are not reported in this paper but available for review.
## TABLE 4: SUMMARY OF REGRESSION AND SEM RESULTS

<table>
<thead>
<tr>
<th>Fraud Triangle Elements</th>
<th>OLS Regression Standard Betas</th>
<th>Structural Equations Model Standard Load Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta_j^{TOTAL}$</td>
<td>$\beta_j^{HIGH}$</td>
</tr>
<tr>
<td>Management Ethics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IntegrityAndEthics</td>
<td>0.31</td>
<td>0.21</td>
</tr>
<tr>
<td>Compensation Incentives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IncentiveCompPressure</td>
<td>0.16</td>
<td>0.10</td>
</tr>
<tr>
<td>Target-focus Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PastPerformance</td>
<td>0.02</td>
<td>-</td>
</tr>
<tr>
<td>Profitability</td>
<td>- 0.04</td>
<td>-</td>
</tr>
<tr>
<td>ManagementDepth</td>
<td>0.11</td>
<td>- 0.08</td>
</tr>
<tr>
<td>Audit Relationship</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AuditRelationship</td>
<td>0.24</td>
<td>0.08</td>
</tr>
</tbody>
</table>
The SEM uses five constructs:

1. a construct for the ethical conduct of managers derived from the variable which captures the ethical conduct of senior management (λ:1);\(^{73}\)

2. a construct for compensation pressures derived from a variable which measures the nature of the compensation system and the reliance on accounting-based targets (λ:1);\(^{74}\)

3. a construct for the consistency in past performance derived from variables which capture the consistency with which past performance targets\(^{75}\) were met (λ:1) and the quality of management depth;\(^{76, 77}\)

4. a construct for audit relationship which has one variable linked to it;\(^{78}\)

5. a construct for the risk of fraud is measured by the variable which captures management inclinations to intentionally misstate financial statements.\(^{79}\)

In Hernandez and Groot (2006b), a similar model was built by considering the weights within the fraud triangle, without considering the role of targets nor profits. The effect of internal controls was initially modelled in this paper, but later excluded from the results due to model instability. The

\(^{73}\) Construct reliability set at 90%

\(^{74}\) Construct reliability set at 90%

\(^{75}\) Note that within the structural model, the variable of past performance targets is used, instead of the profitability variable. From previous univariate GLM analysis, these two variables are shown to have little interaction with each other, except at certain risk levels. Under the structural model, if the profitability and target variables are used separately (interchangeably), then the results remain consistent.\(^{76}\)

\(^{76}\) Note that the model initially had a Profitability measure as part of the goal-achieving manager construct. However, the additional information added by this variable to the model was limited and it constrained the overall construct reliability. To simplify the model and avoid additional error modelling, this variable was dropped without sacrificing the model structure, reliability, and findings.\(^{77}\)

\(^{77}\) Note that prior research has demonstrated that more skilled managers engage in fraud (Niechwietz et al. 2000); however, in this study, there is positive correlation between past performance and management depth, which also supported by factor analysis.\(^{78}\)

\(^{78}\) For latent variables within the SEM model which have only a single indicator variable (constructs for audit relationship risk and accounting control risk), these are represented like any other latent variable, except the error term for the single indicator variable which constrained to have a mean of 0 and a variance fixed at an ‘arbitrary’ value times its variance (Jöreskog et al. 1993 suggest that using an arbitrary value, or estimate based on reliability, is a more reasonable assumption than the assumption of a zero error). For Audit Relationship, the assumed variable reliability has been set at 50%; therefore the error variance mapped in the model is represented by 50% times the variance of the underlying variable across the relevant sub-sample. This ‘random’ percentage was chosen based on the stability of the model (increasing the reliability of other constructs) and the plausibility that audit relationship risk is a difficult-to-measure metric of trust and honesty.\(^{79}\)

\(^{79}\) Construct reliability has been set at 90%.
findings of the addition of internal control variables yield consistent findings to Hernandez and Groot (2006b), although it produced a lower significance model fit statistics. Therefore, a trade-off was made between extending the previous research and focusing on a more significant model which focuses on the key dimensions of interest: ethics, profitability, targets, and compensation.

Results of the overall model, presented in Figure 1, confirm that the ethical conduct of senior management ($\gamma_{TOTAL}^T$: 0.72; $p<0.01$) is approximately 1.7 times more important than compensation pressures ($\gamma_{TOTAL}^T$: 0.42; $p<0.01$). Consistent with the mixed regression results on consistency in past performance, the related construct is found to be negatively associated with fraud risk ($\gamma_{TOTAL}^T$: –0.23; $p<0.01$). This finding lends support to perceptions that target-setting and profits can be a double-edged sword and contribute to unexpected outcomes. In this particular study, evidence is provided that target-driven environments – characterized as higher-quality managers and those who meet their performance targets consistently – are more likely to engage in fraud. Conversely, lower-quality managers are less likely to engage in fraud, from the perspective of audit partners.

The model (summarized in Figure 1) is significant and acceptable (AGFI: 0.96; RMR: 0.02; TLI: 0.91; NFI: 0.96; all acceptable levels per the literature, particularly observations of Hu and Bentler (1999); construct reliability above 60%). In addition, the explanatory power of the model is

---

80 There is no consensus as to the set of indices which work best as each test statistic poses advantages and disadvantages, just as there is no consensus on the effect of factors such as sample size and normality violations on different fit indices. Kline (1998), p. 130) recommends at least four tests: (1) chi-square ($\chi^2$); (2) goodness of fit (GFI), normed fit index (NFI), or comparative fit index (CFI); (3) the Tucker-Lewis Index (TLI), also called the NNFI (non-normed fit index); and (4) root mean square residual (RMR). For the $\chi^2$ statistic, obtaining a probability of greater than 0.05 indicates a good fit. The value of the $\chi^2$ statistic is limited because it is very sensitive to sample size and distributional assumptions [Hu, et al., (1999)]. For other statistics (GFI, NFI, CFI, TLI) a cut-off value of 0.9 is often used, however some argue that the cut-off value should be greater than 0.95 for TLI, IFI, and CFI [Hu and Bentler 1999]. For the use of RMR, a cut-off value of 0.08 appears an adequate cut-off value and a value of 0.06 for root mean square residual statistic (RMSEA). McDonald, et al. (2002) have outlined four problems with fit indices which included an observation that there is no established mathematical basis for using them, no compelling ground for using absolute or relative indices, alternative measures may lead to inconsistent decisions, and a misfit can occur due to concentrated mis-specified parts of a model.
significantly higher than regression (equivalent squared multiple correlation or $R^2: 0.84$).\footnote{Note that results remain stable across maximum likelihood, generalized least squares, and asymptotically distribution free (or weighted least squares) SEM methods. These are presented in the individual Tables.}

**FIGURE 1: STRUCTURAL EQUATION MODEL FOR THE FULL SAMPLE (N: 5,600)**

In order to go further in understanding fraud factors at differing risk levels, SEM was applied to a sub-sample of lower, fraud risk assessments (Figure 2) and one with higher, fraud risk assessments (Figure 3). Interestingly, the strength of the ethical conduct of senior management construct ($\gamma^{\text{LOW}}: 0.59; p<0.01$) is approximately the same as manager compensation pressures ($\gamma^{\text{LOW}}: 0.55; p<0.01$) in the lower, fraud risk, sub-sample (5,036 or 90\% of the sampled population). In addition, the consistency of past performance construct is approximately of the same significance and
negative relationship as the overall model ($\gamma^{\text{LOW}}$: –0.23; $p<0.01$). The model results for the lower, fraud risk, sub-sample shows a similar model fit and significance as the overall model. This indicates that a predisposition from manager, ethical conduct and compensation pressures, tends to contribute equally to fraud risk, while the perceived, positive traits of a target-focused environment, tends to increase the likelihood for fraud.

The higher fraud risk model shows that ethical manager conduct remains the most important element influencing fraud risk ($\gamma^{\text{HIGH}}$: 0.92; $p<0.01$). In addition, similar with other model results, the construct for consistency of past performance remains negatively associated with the fraud risk ($\gamma^{\text{HIGH}}$: –0.60; $p<0.01$). Further, the manager compensation construct is found not to be statistically significant under all structural model methods (maximum likelihood, generalized least squares, and asymptotic distribution free).82 The squared multiple correlation for the higher risk SEM model is 0.52 compared to a regression $R^2$ of 0.05, indicating significantly more variability explained by SEM over multiple regression.

82 Note that construct reliability for the dependent variable was set at 60% for the smaller subset of higher risk assessments as this provided an optimal construct reliability and improved model stability.
FIGURE 2: STRUCTURAL EQUATION MODEL FOR THE LOWER RISK SUB-SAMPLE (N: 5,036)

Figure 2: Structural Model Results under Maximum Likelihood Method (MLE) for the lower risk sub-sample (N: 5,036). X²=155, AGFI=0.97. Amounts between arrows indicate standardized regression weights (all amounts significant at 1% level).

Results under MLE are consistent with other estimation methods (Generalized Least Squares, Asymptotic Distribution Free); no normality concerns. Model fit statistics. RMR: 0.01; NFI: 0.96; RFI: 0.92; IFI: 0.96; TLI: 0.92; CFI: 0.96; RMSEA: 0.07. Standardized total effect of Audit Relationship construct on Risk of Fraud: 0.77; Consistency of Past Performance on risk of fraud: -0.23; Ethical Tone on risk of fraud: 0.59; and Compensation Pressure on risk of fraud: 0.55.

Circled elements represent constructs, which are part of the structural model; variables in rectangles represent measurement variables. Numbers on top-right of measurement variables and constructs represent squared multiple correlations.
FIGURE 3: STRUCTURAL EQUATION MODEL FOR THE HIGHER RISK SUB-SAMPLE (N: 564)

Figure 3: Structural Model Results under Maximum Likelihood Method (MLE) for the higher risk sub-sample (N: 564). \( X^2=17, \) AGFI=0.96. Amounts between arrows indicate standardized regression weights (all amounts significant at 1% level, except that path of Compensation pressure to fraud propensity, which is not significant).

Results under MLE are consistent with other estimation methods (Generalized Least Squares, Asymptotic Distribution Free); no normality concerns. Model fit statistics: RMSEA: 0.02; NFI: 0.93; RFI: 0.84; IFI: 0.96; TLI: 0.99; CFI: 0.95; RMSEA: 0.05. Standardized total effect of Audit Relationship construct on Risk of Fraud: 0.26; Consistency of Past Performance on risk of fraud : -0.60; Ethical tone on risk of fraud: 0.92; and Compensation Pressure on risk of fraud: -0.92.

Circled elements represent constructs, which are part of the structural model; variables in rectangles represent measurement variables. Numbers on top-right of measurement variables and constructs represent squared multiple correlations.
## Table 5: Hypotheses - Tests and Results

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Method</th>
<th>Variables/Constructs</th>
<th>Population Test Results</th>
<th>Test of Hypothesis</th>
<th>Is Hypothesis Supported?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1A - Entities that are more profitable have reduced auditor fraud risk perceptions</strong></td>
<td>Regression</td>
<td>Profitability</td>
<td>Nil</td>
<td>Nil</td>
<td>-0.04</td>
</tr>
<tr>
<td><strong>1B - Entities that are more consistent in meeting performance targets have reduced auditor fraud risk perceptions</strong></td>
<td>Regression</td>
<td>PastPerformance</td>
<td>0.04</td>
<td>Nil</td>
<td>0.02</td>
</tr>
<tr>
<td>SEM</td>
<td>Consistency of Past Performance</td>
<td>-0.23</td>
<td>-0.60</td>
<td>-0.23</td>
<td>$\gamma &gt; 0$</td>
</tr>
<tr>
<td><strong>2 - Entities with more talent and depth in their senior management teams are more likely to engage in fraud</strong></td>
<td>Regression</td>
<td>ManagementDepth</td>
<td>0.11</td>
<td>-0.08</td>
<td>0.07</td>
</tr>
<tr>
<td><strong>3 - Higher compensation incentives are associated with higher fraud risk conditions</strong></td>
<td>Regression</td>
<td>IncentiveCompPressure</td>
<td>0.16</td>
<td>0.10</td>
<td>0.16</td>
</tr>
<tr>
<td>SEM</td>
<td>Management Compensation Pressure</td>
<td>0.55</td>
<td>Nil</td>
<td>0.42</td>
<td>$\gamma &gt; 0$</td>
</tr>
</tbody>
</table>
CONCLUSIONS AND IMPLICATIONS FOR FUTURE RESEARCH

This study investigates the relative influence of senior management ethical conduct, compensation pressures and performance targets, on the intentions of managers to misstate financial statements, using a sample of 5,600 audit acceptance and continuance forms used by a Big 4 accounting firm in the Netherlands. This study finds that auditors believe: (1) compensation pressures, consistency of past performance, and ethics are important factors affecting corporate fraud; (2) senior management ethical concerns are considered to be most important in relation to corporate fraud; (3) surprisingly, higher profitability levels at organizations appear to be associated with higher fraud risks; and (4) similarly, the more consistent, talented, and target-focused managers are believed to be most associated with instances of fraud. These findings suggest that the most valued elements in a capitalist, developed society – integrity, experience, and performance – may be considered similar drivers of corporate fraud. This study supports the concerns of Jensen (2003) on the gaming and lies triggered by budget processes, and calls for reform on how organizations work with targets. These findings also address the negative, unexpected, relationship between management incentives and fraud noted in Hernandez and Groot (2006b), and confirm that internal controls that prevent fraud need to address ethical and target concerns as matters of first priority.  

The first hypothesis posits that entities that are more profitable and more consistent in meeting performance targets have reduced auditor fraud risk perceptions. Regression and structural model results do not support this hypothesis (Table 5). Although inadequate profits have been found in the past

83 Note: after running the SEM with the four constructs (Audit Relationship, Management Ethics, Consistency of Past Performance, and Manager Compensation Pressure) and the latent with two-way interaction terms, results remain consistent as in Hernandez and Groot (2006b). However, in the full interaction model, the Past Performance (single variable measurement model) construct has a positive, direct relationship with fraud risk (as opposed to the negative association in Figure 1). In contrast, the Compensation Pressure variable changes sign and, consistent with Hernandez and Groot (2006b), results in having a negative, direct association with fraud risk. This would appear to indicate that it is precisely the target pressures dimension on management incentive compensation systems which appear to be of concern vis-à-vis fraud.
as a fraud red flag – Loebbecke et al. (1989) and Bell and Carcello (2000) – this study goes further to suggest that entity profitability pressure may build more fraud risk as profits increase. That is, managers at entities with higher profits may in fact perceive increased pressure to grow such profits and therefore may have a higher propensity to engage in fraudulent activity, either as a result of greed or reputational pressure. Further, whereas the literature is mixed on the role of thresholds and fraud – DeGeorge et al. (1999) and Dechow et al. (2003) – this study finds that more consistent past performance increases fraud risk. Overall, audit partner perceptions and observations appear to suggest that pressure from profits and performance targets are significant factors associated with increased fraud perceptions.

The second hypothesis posits that entities with more talent and depth in their senior management teams are more likely to engage in fraud. This study finds some evidence on this hypothesis at the highest risk levels (Table 5), providing limited support to Nieschwitz et. al (2000) who noted that typical frauds involve scheming by highly motivated, clever teams of knowledgeable managers with the capacity for considerable political persuasion and intimidation of both their own employees and their auditors. Managers who are focused on meeting targets consistently and working for profitable entities, may have superior management talent whilst also being subject to more inherent pressure to engage in inappropriate action (in this study, the variables examined capture succession planning as a proxy for internal organizational pressure), either to safeguard their reputation (leading to hubris), or, because they believe that such actions are in the best interest of the company. More specifically, organizations with significant target focus and those where talented managers are “bred” and have their future career prospects clearly outlined in an organization (through succession planning), are likely to have an increased level of pressure to perform (and conform) in order to not compromise their internal organizational career. Focus on targets, profits and succession planning may act as a double-edged sword, motivating managers for increased shareholder performance whilst escalating the level of organizational commitment that may increase the propensity for fraud, ceteris
paribus. Following from finance theory, manager focus and actions aimed at achieving consistent targets and profitability will likely lead to earnings smoothing, which, in turn, reduces earnings volatility and perceived entity risk. Such actions are likely to then be rewarded by the capital markets with a lower cost of capital (following the capital asset pricing model and assuming semi-efficient markets). However, there is little research to suggest the explicit allocation of a fraud risk premium in pricing models to compensate for the erosion of senior management ethics (playing the numbers game), which can lead to fraudulent financial reporting.

The third hypothesis states that higher compensation incentives are associated with higher fraud risk conditions. This study finds some support for this hypothesis (Table 5), although incentive compensation pressures do not appear pronounced at the higher fraud risk levels. This finding is somewhat surprising as it suggests that managers appear to be prone to fraudulent actions in order to achieve higher profits and meet their performance targets consistently. However, the mixed effect of incentive compensation on fraud risk at the higher risk levels would suggest that managers are not necessarily achieving higher compensation for their actions. Hence, the recurring theme of performance and profit pressure arises which suggests that managers may be more concerned about the organizational or social implications of their failure to meet their targets rather than the direct effect on their compensation.

At the lower fraud risk level, motivations stemming from compensation and past performance appear – on the aggregate – as more important overall cues than ethics. On the other hand, at the higher fraud risk level, ethical risks are much more important than compensation and performance motivators, thus suggesting a non-linear relationship between ethics, motivations for fraud, and fraud risk assessed by audit partners. Thus, there appears to be support for the findings of Heiman-Hoffman et al. (1996), suggesting that managerial attitudes are more important warning signs than situational conditions.
This study has analyzed auditor risk assessments in the Netherlands across a broad spectrum of audit clients who differ in industry, size, jurisdictional requirements (included US multi-national subsidiaries), and ownership structure. Due to data confidentiality and data limitations, such differences could not be fully reported, although the presence certain regulated industries and institutional variables do not change the results. In addition, this study has analyzed auditor views and perceptions of risk, as a proxy for risk factors which may reveal themselves at organizations. Thus, the results cannot be readily generalized. One potential avenue for future research is to try to understand the effect of targets, entity profitability, and conditions, which lead to hubris. This paper has provided evidence that ethics and compensation pressures are important factors affecting the risk of fraud. What remains unclear, and still needs further research, is to consider how level of profits, methods of target setting, and communication mechanisms which might be employed to minimize the risk of fraud, while, at the same time, maximizing the search for profits. In addition, this study has used auditor risk assessments, as a lens, to study manager traits and perceptions by the auditor. Other methods, such as more experimental settings and post-mortem analysis of companies accused of fraud, would be beneficial in validating this paper’s findings and/or extending academic knowledge on the actual drivers of fraud. Certainly, the major constraint lies in sample and data availability.

Finally, the results have implications for parties who have a vested interest in reducing fraud. Recently, the PCAOB criticized auditors for adopting a “checking off the list” approach, not expanding their audit procedures when addressing identified fraud risk factors, and not having pre-conceptions when undertaking fraud “brainstorming” sessions (PCAOB Release No. 2007-001). But how can it be expected that auditors do proper fraud procedures when few individuals ever encounter fraud and there is little fraud training embedded into university curricula or daily activities in the

84 Note that auditors were found to be more conservation in their acceptance between 2003 and 2004. The justification is that this is the period after all the scandals in the United States and the Ahold accounting scandal in the Netherlands hit in 2003.
capital markets? This study has demonstrated how a lack of ethics and rewards-based performance systems can increase the likelihood for fraud from the perspective of audit partners. It is certainly in the best interest of companies to invest in re-enforcing ethics in an organization and to thoroughly investigate any potential, ethical breaches. Not doing so may effectively open the door for organizational acceptance of certain behaviours which may be conducive to fraud. Further, an organizational culture which calls for a “push for profits at all cost” will expose itself to increased fraud risk. Audit Committees and senior management need to constantly ensure that their compliance and ethical programs are the foundation for their business and corporate behaviour, even if it means that profits need to be sacrificed. Failure to follow-through on ethical breaches, to establish adequate compliance and ethical programs, and to blindly push for profits, may inevitably lead to increased instances of fraud. This study has provided evidence that organizations need to maintain a fine balance between increasing shareholder value by employing superior managers who will deliver excellent profits, while, at the same time, safeguarding against ethical breaches, faulty compensation schemes and, most importantly, by promoting *hubris*. 
REFERENCES


## Appendix 1: Variable Definition

<table>
<thead>
<tr>
<th>#</th>
<th>MODEL VARIABLE</th>
<th>FRAMING OF INSTRUMENT</th>
</tr>
</thead>
</table>
| Y | MgtInclin2IntentMisstate | Management inclination to intentionally misstate financial reporting:  
  - Lowest Risk: Management attaches great importance to achieve fair and accurate financial statement presentation.  
  - Low Risk: Management makes a reasonable effort to achieve fair and accurate statement presentation.  
  - Some Risk: Management is not particularly interested in financial statement presentation but there has been no evidence of intentional misstatement.  
  - High Risk: Management sometimes shows a disregard for fair and accurate financial statement presentation.  
  - Highest Risk: Management has in the past attempted to distort or hide information relevant to the entity’s financial condition or operating results. |
| X<sub>1</sub> | IntegrityAndEthics | Integrity and Ethics:  
  - Lowest Risk: Management has an excellent reputation for integrity and ethics. High ethical standards are evident—for example, a code of conduct exists and fully communicated and is enforced throughout the organization.  
  - Low Risk: Management has a good reputation for integrity and ethics.  
  - Some Risk: There is no reason to question management’s integrity and ethics.  
  - High Risk: Management’s commitment to integrity and ethics is in some doubt.  
  - Highest Risk: There are indications based on employee allegations, regulatory inquiries, adverse publicity, or other sources that management has engaged in unethical activity. |
<table>
<thead>
<tr>
<th>#</th>
<th>MODEL VARIABLE</th>
<th>FRAMING OF INSTRUMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>IncentiveCompPressure</td>
<td>Incentive for intentional Misstatements in financial reporting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Lowest Risk: Incentive compensation is balanced between financial and non-financial measures and limits the opportunity for extraordinary gain or hardship. Management’s performance goals appear achievable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Low Risk: Incentive compensation system is balanced between financial and non-financial measures. Management’s performance goals are high but achievable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Some Risk: Incentive compensation system is focused on accounting-based measures. Management is under some pressure to achieve targeted results.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- High Risk: A substantial portion of management compensation is dependent on accounting-based measures. Management is under substantial pressure to achieve targeted results.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Highest Risk: Poor performance threatens either the viability of the enterprise or management’s continued employment with it.</td>
</tr>
<tr>
<td>3</td>
<td>PastPerformance</td>
<td>Past Performance:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Lowest Risk: The entity has a long track record of accomplishing its goals and has adapted well to changing circumstances.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Low Risk: The entity has been successful in accomplishing its goals and seems able to adapt to changing circumstances.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Some Risk: The entity has had mixed success in accomplishing its goals and in adapting to change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- High Risk: The entity has often missed its goals and has not adapted well to change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Highest Risk: The entity has rarely accomplished its goals and often seems to engage in crisis management.</td>
</tr>
<tr>
<td>4</td>
<td>Profitability</td>
<td>Profitability:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Lowest Risk: The entity consistently earns high profit margins.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Low Risk: The entity is consistently profitable, but profit margins fluctuate over the business cycle.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Some Risk: The entity earns low profit margins.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- High Risk: The entity has been essentially a breakeven operation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Highest Risk: The entity has been consistently unprofitable.</td>
</tr>
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|   |                        | - N/A
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<td>(x_5)</td>
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<td></td>
<td></td>
<td>- Lowest Risk: Management regularly initiates discussion with us on accounting issues. We have effective and candid communication with the board and, where applicable, the audit committee. Management does not question our audit scope. We have free access to people and information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Low Risk: Management initiates discussion with us on accounting issues as they arise. Our communications with the board and audit committee are structured and substantive. Management occasionally questions our audit scope; Management sometimes requires discussion before allowing access to people and information; Management accepts audit findings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Some Risk: Management is open to our advice on accounting issues but does not initiate discussion. Our communication with the board and audit committee is somewhat limited in time and format; there have been some attempts by management to limit our audit scope; Access to people and information is closely monitored. Management accepts audit findings but tries to downplay their importance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- High Risk: Management sometimes disputes our advice on accounting issues and does not initiate discussion. We have very limited opportunity for substantive communication to the board and audit committee; Management attempts to reduce our audit scope; Access to people and information is granted but only after challenge and delay; Management often challenges audit findings and does not initiated discussion on accounting issues. Management typically disputes and it is very difficult to reach agreement with them.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Highest Risk: Management does not initiate discussion on accounting issues and when the issues arise, is less than forthright in describing the relevant facts patterns; we have no opportunity to substantive communication with the board and audit committee; there are sometimes attempts by management to dictate audit scope or intimidate us. There are formal or informal restrictions on access to people or information; Management typically disputes audit findings and disclosures and it is very difficult to reach agreement with them.</td>
</tr>
<tr>
<td>#</td>
<td>MODEL VARIABLE</td>
<td>FRAMING OF INSTRUMENT</td>
</tr>
<tr>
<td>---</td>
<td>-----------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>$X_6$</td>
<td>ManagementDepth</td>
<td>Management Depth:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Lowest Risk: Unusually deep management team with comprehensive succession planning. Regarded as an industry leader in developing talent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Low Risk: Good management depth at all key positions and comprehensive succession planning.</td>
</tr>
<tr>
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<td></td>
<td>- Some Risk: Adequate depth with all key positions covered by a qualified individual and some succession planning.</td>
</tr>
<tr>
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<td></td>
<td>- High Risk: Insufficient management depth although the entity is actively trying to deal with the issue.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Highest Risk: Insufficient management depth in key positions represents a significant exposure for the entity.</td>
</tr>
</tbody>
</table>
CHAPTER 5

CONCLUSIONS
AND PRACTICE
RECOMMENDATIONS
CHAPTER 5

Conclusions

This study was motivated by a lack of understanding and empirical research on why financial frauds occur, and preventive strategies thereof, especially those addressing principles, processes and practices. As a step in narrowing the gap in understanding, this dissertation focused on examining the relative importance and influence of certain traditional fraud risk factors including: (i) ethical conduct of senior managers; (ii) experience, skill, and depth of senior management; (iii) the quality of accounting controls and entity overall governance; (iv) the trust and openness between the auditor and the client’s management; (v) pressure on senior management from accounting-based targets; (vi) aggressiveness of management’s past accounting estimates and revenue recognition practices; and (vii) entity past profitability and ability of managers to meet performance targets. The dissertation papers in Chapters two through four were able to explain 85% of the variability across auditor fraud risk assessments (Figure 1), and triangulates results using multiple regression (Table 2) and structural equation statistics (Figures 1 through 4), to arrive at the following themes and conclusions:

**Theme 1: Auditor risk assessment practices are consistent with audit standards (SAS 99; ISA 240) and the literature (Shelton et al. 2001).**

1. For the total population, and in general, traditional fraud risk factors behave consistently to what audit standards and the academic literature would suggest (SAS 99; ISA 240; Loebbecke et al. 1989; Shelton et al. 2001). That is, fraud-related risk factors are positively correlated with each other (Table 1).
2. Auditors rely on perceptions, observations, suspicion, and hard evidence as part of their risk assessment process. For auditors to classify clients at higher risk levels, they require hard evidence, indications of misconduct, or observe fraud “red flags.” That is, auditors need proof before making higher risk assessments, especially in gauging softer areas such as managerial integrity and intentions to misstate (extension of Shelton et al. 2001). In turn, there are significant differences between the weights auditors assign across fraud risk levels (Table 2) and those attributable to auditor situations involving evidence and auditor recall (high risk column on Table 2; Figure 4).

**Theme 2: Senior management attitudes and ethical conduct are considered by auditors as more important than managerial incentives and opportunities for fraud.**

3. Auditor fraud risk assessments place the most reliance on “soft” cues, indications of mistrust, and managerial attitudes: (i) ethical conduct of senior management ($\gamma_{\text{TOTAL}}$: 0.83 per Figure 1; $\beta_{\text{TOTAL}}$: 0.25 per Table 2) and (ii) the relationship of trust between the auditor and senior management ($\gamma_{\text{TOTAL}}$: 0.74 indirect effect on fraud risk per Figure 1; $\beta_{\text{TOTAL}}$: 0.19 per Table 2). These findings extend Loebbecke et al. (1989) and Bell and Carcello (2000).

4. Senior management ethical conduct is perceived by auditors as the most important variable affecting manager intentions to misstate financial statements (Table 2 - $\beta_{\text{TOTAL}}$: 0.25; $\beta_{\text{HIGH}}$: 0.19; $\beta_{\text{LOW}}$: 0.21). This finding extends the work of Kizirian et al. (2005) on the importance of managerial integrity to auditor risk assessments, at all risk levels, especially those at the higher fraud risk level ($\gamma_{\text{TOTAL}}$: 0.83 per Figure 1; $\gamma_{\text{HIGH}}$: 0.92 per Figure 4); and further supports the relevance of CFO moral reasoning work of Uddin and Gillett (2002); and extends Loebbecke et al. (1989).

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85 Note that results used within this section refer to Figures 1, 3, and 4, models which are consistent with other chapters of this dissertation in terms of constructs and model fit acceptability.
Theme 3: Governance and accounting controls are considered by auditors to provide limited effectiveness in deterring fraud.

5. Aggressive accounting practices, whether through biased accounting estimates (Table 2 - $\beta^{\text{TOTAL}}$: 0.09) or aggressive revenue recognition practices (Table 2 - $\beta^{\text{TOTAL}}$: 0.07), are experienced by auditors as important avenues used by senior managers to drive fraudulent financial reporting ($\gamma^{\text{TOTAL}}$: 0.15 per Figure 1; consistent across all fraud risk levels per Table 2 and with SEC 2003; Loebbecke et al. 1989; Bell and Carcello 2000).

6. Auditors believe that internal accounting controls provide limited effectiveness in deterring fraud (not significant construct at higher risk levels, Table 2 - $\beta^{\text{HIGH}}$ and Figure 4), consistent with frauds being driven by managers with deep expertise (Table 2 - $\beta^{\text{HIGH}}$: -0.10, consistent with Nieschwietz et al. 2000) and involving management override of controls (consistent with Treadway report; SEC 2003; SAS 99; ISA 240; somewhat inconsistent with Beasley 1996; Beasley et al. 2000; McMullen 1996; and Bedard and Johnstone 2004).

Theme 4: Auditors consider fraud risk to be more associated with capital market pressures for lower earnings volatility and higher profits, than compensation pressures.

7. Auditors consider that compensation pressures are an important fraud risk factor ($\gamma^{\text{TOTAL}}$: 0.39 per Figure 1; consistent with Bartov and Mohanran 2004 and Efendi et al. 2006), but not an important incentive to engage in fraud at the highest fraud risk levels ($\gamma^{\text{HIGH}}$ not significant effect per Figure 4; consistent with Dechow et al. 1996). Therefore, it would appear that auditors consider that senior managers engage in financial reporting fraud more for reputation or hubris reasons than exclusively for money.

8. Surprisingly, auditors observe organizations with higher profitability levels to be associated with higher (rather than lower) fraud risks ($\gamma^{\text{TOTAL}}$: -0.48 per Figure 2; $\beta^{\text{TOTAL}}$: -0.04 per Table 2). That is, the higher the profits of
an entity, the higher the probability that they may engage in fraudulent financial reporting, suggesting that greed is an important driver of fraud. This effect appears attributable to managerial pressures to maintain consistent profits, meet established profit thresholds, and ability to manage changes from business cycles. The effect of entity profitability on higher fraud risk was most pronounced at organizations with lower (albeit, positive) profit margins and those consistently meeting their performance targets,\textsuperscript{86} as well as those struggling to meet their profit and target objectives. Prior literature has found that inconsistent or inadequate profitability and emphasis on earnings projections are found associated with fraud by Loebbecke et al. (1989), Baucus (1994), and Bell and Carcello (2000).

9. Auditors perceive that higher pressures from achieving performance targets consistently and the presence of managers with higher levels of expertise increase the risk of fraudulent financial reporting ($\gamma_{\text{TOTAL}}^{\gamma}$: -0.67 per Figure 1). Within the overall sample, and at the highest fraud risk levels, this study finds that it is managers with higher levels of expertise ($\beta_{\text{TOTAL}}^{\beta}$: -0.10 per Table 2) and with pressure to achieve consistent targets ($\beta_{\text{TOTAL}}^{\beta}$: -0.03 regression beta per Table 2) who are most inclined to engage in fraudulent activities (consistent with Degeorge et al. 1999). These findings would suggest that capital market focus on targets and lower volatility levels may unexpectedly promote a higher risk of fraud as a “necessary” by-product.

\textsuperscript{86} In Chapter IV (Paper III), the effect of profitability and past performance on fraud risk was found to be mainly isolated to entities with lower profit margins and those consistently meeting performance targets. This analysis was done through the usage of a univariate general linear model, which shows similar results as Table 2. For the profitability and past performance variables (ran as fixed effects), none of the past performance levels were individually significant; only a profitability level of 2 (low risk or consistent profits but somewhat fluctuating margins) was significant at the 10% level; the interaction between profitability 2 (low risk) and past performance 2 (low risk or success in accomplishing goals and adapting to change) produced a significant and negative effect at the 10% level; the interaction between past performance 3 (some risk or mixed success in accomplishing goals) and profitability 3 (some risk or low profit margins) and 4 (high risk or breakeven operations) had a positive and significant effect at the 10% and 5% level, respectively.
FIGURE 1: SEM ON FULL MODEL (N: 5,600)

Figure 1: Structural Model Results under Maximum Likelihood Method (MLE) for the full sample (N: 5,000) X²=1,062, AGFI=0.93. Amounts between arrows indicate standardized regression weights (all amounts significant at 5% level).

Results under MLE are consistent with other estimation methods (Generalized Least Squares, Asymptotic Distribution Free); no normality concerns.

Model fit statistics. RMR: 0.02; NFI: 0.91; RFI: 0.86; IFI: 0.91; TLI: 0.86; CFI: 0.91; RMSEA: 0.08.
Circled elements represent constructs, which are part of the structural model; numbers on top-right of constructs represent squared multiple correlations.
TABLE 1: SEM IMPLIED CORRELATION COEFFICIENTS OF CONSTRUCTS (FULL SAMPLE; N: 5,600)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Audit Relationship</td>
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<td></td>
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<td></td>
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<tr>
<td>(2) Aggressive Accounting</td>
<td>0.88</td>
<td>1</td>
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<td></td>
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<tr>
<td>(3) Accounting Controls</td>
<td>0.92</td>
<td>0.81</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(4) Compensation Pressures</td>
<td>0.79</td>
<td>0.69</td>
<td>0.72</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Consistent Past Performance</td>
<td>0.89</td>
<td>0.79</td>
<td>0.82</td>
<td>0.70</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) Management Ethics</td>
<td>0.89</td>
<td>0.79</td>
<td>0.82</td>
<td>0.70</td>
<td>0.80</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>(7) Fraud Risk</td>
<td>0.74</td>
<td>0.69</td>
<td>0.71</td>
<td>0.73</td>
<td>0.53</td>
<td>0.83</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Construct implied correlation coefficients were extracted from AMOS v 6.0.

FIGURE 2: SEM ON FULL MODEL WITH PROFITS VARIABLE

Figure 2: Structural Model Results under Maximum Likelihood Method for the full sample (N: 5,600) X²=1,705, AGFI=0.90. Amounts between arrows indicate standardized regression weights (all amounts significant at 1% level).

Results under MLE are consistent with other estimation methods (Generalized Least Squares, Asymptotic Distribution Free); no normality concerns.

Model fit statistics: RMR: 0.03; NFI: 0.87; RFI: 0.80; IFI: 0.87; TLI: 0.81; CFI: 0.87; RMSEA: 0.09.
FIGURE 3: DEPICTION OF SEM RESULTS (FULL SAMPLE: 5,600) CONSISTENT WITH INTRODUCTION AND FIGURE 1

- Paper I - How Trust Underpins Auditor Fraud Risk Assessments
- Paper II - Corporate Fraud: Preventive Controls which Lower Fraud Risk
- Paper III - The Pursuit of Profits: How Ethics and Targets Influence Corporate Fraud

Fraud Risk ($Y_i$)

<table>
<thead>
<tr>
<th>Incentives (Practices)</th>
<th>Opportunities (Processes)</th>
<th>Attitudes (Principles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Compensation Pressure</td>
<td>Management Compensation Pressure</td>
<td>Aggressive Accounting practices</td>
</tr>
<tr>
<td>Consistency of Past Performance</td>
<td>Accounting Control</td>
<td>Audit Relationship</td>
</tr>
<tr>
<td>Management Ethics</td>
<td>Management Ethics</td>
<td>Audit Relationship</td>
</tr>
<tr>
<td>Management Ethics</td>
<td>Management Ethics</td>
<td>Audit Relationship</td>
</tr>
<tr>
<td>Management Ethics</td>
<td>Management Ethics</td>
<td>Audit Relationship</td>
</tr>
</tbody>
</table>

Note: After running the SEM for the lower risk sub-sample (N: 5,036), the accounting control variable is found to be NOT significant, but significantly correlated to all other variables in the model, especially past performance (0.83), ethics (0.79), and aggressive accounting (0.79), which may be capturing the variability in accounting controls. The other scores vary somewhat but do not differ greatly from those of the full sample.
FIGURE 4: SUMMARY DEPICTION OF SEM RESULTS FOR HIGH FRAUD RISK SAMPLE (N: 564)

Paper I - How Trust Underpins Auditor Fraud Risk Assessments

Incentives (Practices)
- Management Compensation Pressure

Opportunities (Processes)
- Accounting Control
  - Consistency of Past Performance
  - Management Compensation Pressure
  - Management Ethics

Attitudes (Principles)
- Management Ethical Tone
- Audit Relationship
- Aggressive Accounting practices

Fraud Risk (Y)
- Management inclination to intentionally misstate financial Reporting
  (R²: 0.52)

Note: Variables with a dashed line were not found to be significant for the SEM on the higher-risk sub-sample (564 assessments). If the insignificant variables are dropped, the result would be as depicted in Figure 3, Chapter IV (Paper III). These regression weights are, therefore, included above.
### TABLE 2: MULTIPLE REGRESSION ON ALL VARIABLES INCLUDED WITHIN THIS DISSERTATION

<table>
<thead>
<tr>
<th>Risk factors (Independent variables)</th>
<th>FULL SAMPLE REGRESSION</th>
<th>HIGH RISK</th>
<th>LOW RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unstandardized</td>
<td>Standard</td>
<td>Unstandardized</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td><strong>Management Ethics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrity&amp;Ethics</td>
<td>0.23</td>
<td>0.01</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>(19.91) ***</td>
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<tr>
<td><strong>Compensation Incentive</strong></td>
<td></td>
<td></td>
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<tr>
<td>IncentiveCompPressure</td>
<td>0.10</td>
<td>0.01</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>(19.96) ***</td>
<td></td>
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<tr>
<td><strong>Target focus</strong></td>
<td></td>
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<tr>
<td>FastPerformance</td>
<td>-0.02</td>
<td>0.01</td>
<td>-0.03</td>
</tr>
<tr>
<td></td>
<td>(-2.00) **</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profitability</td>
<td>-0.02</td>
<td>0.01</td>
<td>-0.04</td>
</tr>
<tr>
<td></td>
<td>(-1.99) ***</td>
<td></td>
<td></td>
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<tr>
<td><strong>Internal Control</strong></td>
<td></td>
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<tr>
<td>AccountingControl</td>
<td>0.01</td>
<td>0.01</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>(7.00) ***</td>
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<tr>
<td>GovernanceOversightMgt</td>
<td>0.05</td>
<td>0.01</td>
<td>0.07</td>
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<tr>
<td></td>
<td>(6.55) ***</td>
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<tr>
<td><strong>Aggressive Accounting</strong></td>
<td></td>
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<tr>
<td>AcidEstimateReliability</td>
<td>0.08</td>
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<tr>
<td></td>
<td>(7.32) ***</td>
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<tr>
<td>RevenueRecognition</td>
<td>0.06</td>
<td>0.01</td>
<td>0.07</td>
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<td></td>
<td>(6.28) ***</td>
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<tr>
<td><strong>Management profile</strong></td>
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<tr>
<td>MgtExperienceSkill</td>
<td>0.06</td>
<td>0.01</td>
<td>0.06</td>
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<tr>
<td></td>
<td>(4.42) ***</td>
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<tr>
<td>ManagementDepth</td>
<td>0.02</td>
<td>0.01</td>
<td>0.02</td>
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<tr>
<td></td>
<td>(1.47)</td>
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<tr>
<td>AuditRelationship</td>
<td>0.17</td>
<td>0.01</td>
<td>0.19</td>
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<td>(16.22) ***</td>
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<tr>
<td>(Constant)</td>
<td>0.24</td>
<td>0.03</td>
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<tr>
<td></td>
<td>(10.23) ***</td>
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<tr>
<td><strong>Dependent Variable:</strong></td>
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<tr>
<td>Adjusted R²:</td>
<td>0.16</td>
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<tr>
<td>HighIntegrity/IntegrityAdverse</td>
<td>F: 28.06 ***</td>
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<td></td>
<td>df: 5, 386</td>
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</tbody>
</table>

Note 1: Amounts in ( ) and italics represent t-statistics. *** denotes significance at the 1% level, ** denotes significance at the 5% level, * denotes significance at the 10% level.

Note 2: Multiple regression on the higher risk sample (564) shows only 4 variables as significant: Integrity&Ethics, ManagementDepth, AcidEstimateReliability, and RevenueRecognition.
TABLE 3: TRIANGULATION OF SEM MODEL RESULTS, HAVING 3 DIRECT CONSTRUCTS ON RISK OF FRAUD

<table>
<thead>
<tr>
<th>Model ($\gamma^{TOTAL}$)</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>6</th>
<th>7</th>
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<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
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<tbody>
<tr>
<td><strong>Main Effects</strong></td>
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<tr>
<td>Compress</td>
<td>-0.41</td>
<td>-0.45</td>
<td>-0.38</td>
<td>-0.43</td>
<td>0.80</td>
<td>0.92</td>
<td>0.84</td>
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<tr>
<td>PastPerf</td>
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<td>ns</td>
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<tr>
<td>Ethics</td>
<td>0.87</td>
<td>0.87</td>
<td>0.88</td>
<td>0.87</td>
<td></td>
<td>0.94</td>
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<tr>
<td>AggrAcc</td>
<td>0.57</td>
<td></td>
<td>0.52</td>
<td>-0.68</td>
<td>0.85</td>
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<tr>
<td><strong>Profits</strong></td>
<td>0.57</td>
<td>0.22</td>
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<td><strong>2-way Interactions</strong></td>
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<tr>
<td>Compress*PastPerf</td>
<td>ns</td>
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<td>Compress*AccCont</td>
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χ² 21 0.7 16 | 0.9 119 101 | 86 73 | 98 | 191 483 | 252 | 66 | 0.22 | 132 | | | | |

R² 0.90 0.90 0.90 | 0.90 0.90 0.89 | 0.90 0.90 0.89 | 0.90 0.90 0.89 | 0.89 0.90 0.90
Is this the whole story?

The results presented in the previous section beg the question: can understanding fraud (or fraud risk) be this simple? The answer is no. There are a significant number of interactions between the variables modelled in this dissertation, and the three research papers presented in this document are just a first step in understanding the complex interplay of fraud and its risk components. There was certainly an attempt to pull all risk factors and interactions into “one master model.” This was a naïve attempt, as there is little theory or empirical work which would assist in this grouping or modelling process. Time and time again, inadmissible models were produced. Instead, all possible SEM models and interactions with three-direct latent variables driving fraud risk were run in AMOS (15 models, summarized in Table 3). This method follows from the interaction modelling documented in the papers in this dissertation (having both two or three direct latent constructs on fraud risk, and two or three interaction terms, respectively). The models in Table 3 were generally stable and had good model fit statistics.

Upon examination of Table 3, certain patterns arise which are of interest. First, all 15 models produce a squared multiple correlation of either 0.89 or 0.90, which means that all models are able to explain the same amount of fraud risk variability. Although model fits differ ($\chi^2$ statistic), it would appear that any three out of the six main effects (risk factors and interactions thereof) are able to explain 90% of fraud risk assessments, suggesting that risk factors are highly complementary, with a significant number of interactions.

Second, each of the 15 models in Table 3 has: (i) at least one of the three main effects has a negative coefficient;\(^{87}\) and (ii) at least one of the interaction terms has a negative coefficient. As was discussed in the three papers of this dissertation, risks can work together in order to compound the level of fraud risk, or act as potential compensatory risks. As there appears to be no evident, emerging patterns, it would appear that most fraud risk factors work together

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87 The only exception is Model 5 that has two positive and one non-significant main effect.
as either compounding or compensation factors. Third, management ethics appears to be the only main effect that has a positive, significant, direct relationship across all 15 models, thus suggesting that there is no “relativity” with matters involving ethics and integrity. As Albert Einstein once said, “relativity applies to physics, not ethics.”

In summary, Table 3 visualizes that there is little theory and empirical research available to understand all 15 models. This dissertation has merely examined three of these models, and much more remains to be explained. However, none of the findings in the three research papers of this dissertation are contradicted by Table 3, but clearly it puts these findings into perspective of the larger challenge: a better framework for understanding fraud risks. Further, these results should be interpreted with caution, as they draw on auditor views, observations, and perspectives, and may not reflect all dimensions which are necessary to understand fraud. Given the scope of importance auditors are playing in the areas of fraud, internal control, and governance, these findings do contribute to the debate over controls which are most effective to fraud prevention, in order to achieve a “top down, risk-based” approach and provide some insight to address current PCAOB auditor criticism (PCAOB Release No. 2007-001).

**Discussion comments for regulators and auditors**

My views as a forensic accountant, and this study’s findings, suggest that arrogance, ethics, and *hubris* by senior managers pose the biggest threat to investors and the capital markets. The examples of recent mega-scandals of Enron, Worldcom, Adelphia, Nortel, Ahold, and Parmalat certainly confirm this. This study corroborates popular knowledge and demonstrates the extent auditors consider that breakdowns in principles of trust and ethics, arrogance by experienced and skilled managers, ethical misconduct, and an aggressive approach to critical accounting areas, as the most critical fraud risk factors which the markets need to pay attention to.

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88 The author works as forensic partner in a Big 4 Accounting firm.
In a world focused on internal control effectiveness and rules such as Sarbanes-Oxley, PCAOB, governance codes such as Tabaksblat, and the European Eighth Company Law directive, amongst others, this study suggests four key messages to the regulators:

1. Process and system controls are important, but experienced managers will find a way to circumvent controls in an effort to achieve their fraudulent goals and auditors will find it challenging to catch this. Instead, the attention should be directed towards organizational structures – with related processes and controls – which can sustain and support an ethical workplace.

2. Focus should be placed on identifying any indications of senior management ethical misconduct, as this is of primary importance. There cannot be any room in the capital markets for illegal acts or senior management misconduct, as they are the tip of a “slippery slope” leading to fraud. Regulatory controls and Audit Committee oversight over management conduct are likely to be more effective than process documentation and controls.

3. Critical accounting judgment areas are likely to be important avenues for financial reporting fraud. Continue to focus on ensuring transparency in critical accounting areas, provide a solid basis for making accounting estimates (which should continue with IFRS standards), and focus on transactions involving revenues, critical accounting estimates, and business combinations, as these are important channels used by fraudulent managers.

4. Regulator oversight and enforcement activities should pay particular attention to those organizations which appear most consistent and successful – in meeting their targets and desired profits level – as these may be the ones most susceptible to fraud or other white-collar crimes.
To auditors, this codification of their thinking is a call to ensure that audit procedures covering critical accounting areas remain focused. But, the most important finding is that all allegations of misconduct by senior managers must be taken seriously regardless of size, amount, or expected impact on the financial statements. It is the managers with higher levels of expertise who may be the most inclined to commit fraud when the incentives and pressures exist. Generally, all fraudulent activity starts small and grows over time; the same applies to ethical misconduct. Auditors should consider reviewing all whistleblower allegations of senior management misconduct and demand thorough procedures by an independent party to assert whether misconduct has occurred. If in fact this misconduct has occurred, it is unlikely that auditors can rely on management representations (per ISA 250; ISA 240; SAS 54; SAS 99) and it would be unwise to “let this one go.” Auditor experience points to ethical misconduct as the most important element driving financial reporting fraud. If auditors “let this one go,” it will happen again, and at that time it may be too late to react. Constant vigilance and a “zero tolerance’ attitude are the safest ways to prevent fraud in the future, although this may not be economically viable in all circumstances.

Discussion comments for independent directors and senior executives

Generally, this study has demonstrated that certain traditional fraud risk factors are important and have a positive directional effect on fraud when the full sample is considered. But at the highest fraud risk levels (riskiest 10% of the sample; a level where auditors rely on recall and tangible evidence, rather than perceptions or suspicions), most traditional, directional and significance effects of fraud risk factors do not hold. Auditor thinking and observations appear to shift unexpectedly. And behind this shift, there are concerning factors which the capital markets associate with “quality” managers and “high performance” organizations, which influence fraud in a counter-intuitive manner. This study calls for a change in paradigm and it may be wise to consider the words of a Hungarian novelist Stephen Vizinczey.
who noted: *And so hubris turns to false certainties, everyone expects to be a winner, and each morning is a mind-blowing surprise.*

There are some indicators to support that innovation which may come from having “quality” managers and “high performance” organizations may act as a “double-edged sword” in turning innovative financial reporting into fraud. This was certainly the case with Enron (once considered one of the world’s most innovative firms in both its accounting and business models) and the accounting for its financial vehicles. The findings of this study provide some preliminary, counter-intuitive evidence toward a new fraud paradigm which considers the following dimensions:

1. Charismatic leaders can become entangled with arrogance and hubris.
2. Accounting-based targets can lead to more accounting games.
3. Managers with more expertise and experience are more capable of sophisticated transactions and accounting tricks.
4. Capital market focus on targets, profits, and lower earnings volatility can result in placing ethical concerns as a lower priority.
5. The pursuit of “shareholder value” can lead to situational ethics where the “end justifies the means.”
6. There may be a relationship between an ethics and compliance culture and environments plagued with politics and bureaucracy.
7. Higher profits incite more fraud propensity, and therefore greed is an important element of fraud.

A breakdown in ethics and trust can be the “last straw that breaks the camel’s back,” especially in organizations with higher levels of talent and succession planning and those considered “high performing”. This study provides evidence that “softer” elements (e.g., ethical conduct of managers, level of trust between managers and the auditor) in an organization, reflected in its culture, as well as its ethical tone, have higher order of importance in their ability to influence the risk of fraud. For example, at the highest fraud propensity levels, accounting controls do not appear to have any significant preventative effect and fraud does not appear to have compensation or reward
structures as a significant incentive. Instead, fraud appears to arise from a breakdown in trust between talented and career-focused managers and the capital markets. Talented managers are generally asked to focus on meeting investor/stakeholder goals and expectations, generally codified in specific performance or profitability targets. The pressure or increased expectations that may build from meeting these targets consistently may create a sense of reliability, potential additional shareholder value (from lower earnings volatility), and an increased perception of trust. It is this same manager consistency and experience elements which appear to contribute to the breakdown in auditor trust, as the propensity for fraud increases. The end result is that manager consistency and experience, tied with aggressive accounting and an ethical breakdown, become the poison pills that may drive financial reporting fraud.
Practice Recommendations

The academic literature and the results presented in the three research papers (chapters two through four) were complemented with selected unstructured interviews with members of the sampled Big 4 firm and certain companies involved in fraud and bribery allegations. The purpose of this exercise was to summarize a list of recommendations stemming from the findings in this study. These recommendations may be applicable to academics, company executives, independent directors, practitioners, and regulators. For academics, these recommendations are a call for future research on the effect of these elements as vehicles that prevent corporate fraud. For other constituents, these recommendations add up to a summary of “best practices” with some empirical and practical basis, which may function as a first step in the development of adequate principles, processes, and practice standards guiding constituents with interests in financial reporting.⁸⁹

The recommendations are presented in four groups geared towards: regulators, parties charged with governance, Senior Executives, and parties playing an important role in financial reporting. The recommendations are summarized below – in a 3Ps concept – and subsequently presented in their full form.

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PRINCIPLES
I. Improve current accounting and control standards
II. Strengthen external regulatory enforcement of securities laws
III. Improve governance over Ethics and Compliance activities
IV. Establish a “zero tolerance” policy for misconduct with disciplinary processes

PROCESSES
V. Establish organizational structures aligned towards Ethics and Compliance
VI. Balance human resource processes with Ethics and Compliance criteria

PRACTICES
VII. Instil training and communication programs on Ethics and Compliance
VIII. Implement critical organizational practices addressing Ethics and Compliance
IX. Periodically measure Ethics and Compliance culture within the organization
X. Create and support an environment to “Just do it right!”

The detailed recommendations are presented below.

For the regulators
I. Improve current accounting and control standards

1. *Audit, control, and materiality standards need to be clarified and examples on how to apply them should be provided, especially covering the following areas:*\(^{90}\)
   1.1. Propensity for fraud arising from compensation arrangements and targets
   1.2. Illegal acts and intentional misstatements

\(^{90}\) The IAASB currently has exposure drafts for Audit Standards covering materiality (IAASB Exposure Draft - ISA 320 (Revised)) and is issued a revised version of ISA 240. The SEC and PCAOB have projects on materiality and controls which are continuing.
1.3. Dealing with biased judgments and aggressively-structured transactions
1.4. Consideration of thresholds from compensation contracts
1.5. Weighing of quantitative and qualitative factors
1.6. Specify nature of procedures that need to be employed in light of issues (audit, forensic, investigations, remediation)

2. Regulators and industry should develop clear, comprehensive, and rigorous internal control standards (with specific and measurable benchmarks) that address critical fraud areas, including:

2.1. The organizational structures which need to be in-place in an organization to oversee Ethics and Compliance matters, create adequate policies and procedures addressing overall business conduct, and designing the control activities that are necessary to promote an ethical climate and culture.

2.2. The manner in which Ethics and Compliance criteria are adequately weighted or factored into performance measurement and evaluation processes and compensation systems within an organization.

2.3. Quality from financial reporting processes, especially those focused on critical accounting areas, information-generation processes, and governance and oversight expected from a Supervisory Board and Audit Committee.

3. Audit standards and securities law enforcement principles need to be developed to assist investors, Boards, managers, and auditors in dealing with “softer” concepts such as ethics, aggressiveness, and dishonesty.

4. Materiality standards need to be made clearer, especially in dealing with matters of “intent” and qualitative aspects.

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91 The need has been expressed by the SEC in its call for a “top down, risk-based” approach to internal control evaluation (SEC 2006).
92 Concepts such as moral reasoning, locus of control, moral philosophy are not fully expanded on within control frameworks such as COSO, audit standards, nor securities laws.
4.1. Materiality and fraud standards need to reflect the importance of financial reporting culture components in a comprehensive and pragmatic fashion as “one-size” does not fit all organizations.

4.2. There needs to be clear indications on how to deal with these “softer” components and their implications. For example, guidance could be developed on the introduction of forensic and investigation procedures, overseen by the Audit Committee, to address management misconduct allegations. As a second example, aggressiveness in accounting could be gauged through the sensitivity of GAAP judgments to changes in critical assumptions, or whether the practice has the propensity to make press headlines or trigger a regulatory investigation.

4.3. Lastly, regulators need to be active in overseeing how companies and auditors handle matters of materiality.

II. Strengthen external regulatory enforcement of securities laws

5. *Academics and practitioners need to put their heads together on the best course of action when the trust bond is broken between directors, auditors, regulators, and managers.* An EU enforcement body (preferable working with US regulators) should spearhead such efforts and consider the following alternatives:

5.1. Giving Supervisory Boards the statutory power to appoint independent investigators to review allegations of misconduct

5.2. Standards should be developed and best practices should be gathered on how to deal with illegal acts and misconduct allegations.

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93 ISA 320 *Materiality* defines intentional errors as fraud. ISA 240 is too generic on how to deal with intent – e.g., mandating forensic-procedures (e-mail reviews, interviews with counsel), corporate investigations, among certain avenues which ascertain intent.

94 The focus on trust and rights of various constituents may be partially addressed through The European Commission’s future priorities for the Action Plan on Company Law and Corporate Governance in the EU.
5.3. There should be a disciplinary committee who oversees misconduct matters and ensures adequate remediation takes place, in compliance with local laws and company policies.

6. *Eighth Directive recommendations should be fully adopted across the EU; however, the majority of the effort should be channelled to Enforcement in the European capital markets.*\(^{95}\)

7. *Strong enforcement of securities laws is an absolute necessity to improve audit effectiveness,*\(^{96}\) not because auditors are ineffective, but because it improves auditor “negotiation” power. This requirement becomes that much more important when principles-based accounting rules are adopted such as International Financial Reporting Standards, compared to rules-based US standards. Aggressive accounting practices need boundaries. These boundaries are set out by Generally Accepted Accounting Principles (GAAP), as well as the interpretations of parties of the corporate governance mosaic: auditors, managers, directors, regulators, investors, and other stakeholders. However, emphasis on interpretations by auditors, directors, and regulators should be placed, as these parties have access to inside information about organizations.

**For those charged with governance**

**III. Improve governance over Ethics and Compliance activities**

8. *Compensation Committees, Audit Committees, and the Supervisory Board should jointly consider the effect of budgets and target ratcheting*

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\(^{95}\) Most of the provisions of the Eighth Directive are well-established principles used in other jurisdictions for many years (e.g., United States).

\(^{96}\) Enforcement and equivalence are key matters being discussed by US and EU regulators. This is reflected in the EU Commission and US Securities and Exchange Commission’s ‘roadmap’ of steps the SEC will take to eliminate the need for companies using IFRS to reconcile to US GAAP (announced in 2005). It is hoped that equivalence can be achieved by 2007, but not later than 2009. A key matter of this ‘roadmap’ are assurances – from EU regulators - of effective implementation of IFRS in practice.
on organizational focus and the culture which they create. Focus on performance needs to be encouraged but never at the expense of ethical or compliance violations. Turning a “blind-eye” on misconduct is equivalent to condoning the practice.

9. Supervisory Board committees should play an active role in overseeing an organization’s Ethics and Compliance program, and have a special focus on the financial reporting process:

9.1. Committees should be cross-chaired, be diligent, competent and work together, especially the Compensation, Audit, and Ethics Committees.

9.2. Board oversight needs to focus on details on Ethics and Compliance: from policies, to programs, to implementation effectiveness, and to on-going remediation efforts.

10. Audit Committees should be made mandatory across multi-nationals in Europe, with a clear mandate to oversee the financial reporting culture

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97 Ultimately, the compensation of the Executive Board is overseen by the Supervisory Board and its Compensation Committee. Reform needs to start at the highest level.

98 US Federal Sentencing Guidelines §8B2.1. Effective Compliance and Ethics Program, paragraph b, states:

(b) Due diligence and the promotion of an organizational culture that encourages ethical conduct and a commitment to compliance with the law …minimally require the following:

(1) The organization shall establish standards and procedures to prevent and detect criminal conduct.

(2) (A) The organization’s governing authority shall be knowledgeable about the content and operation of the compliance and ethics program and shall exercise reasonable oversight with respect to the implementation and effectiveness of the compliance and ethics program.

(B) High-level personnel of the organization shall ensure that the organization has an effective compliance and ethics program, as described in this guideline. Specific individual(s) within high-level personnel shall be assigned overall responsibility for the compliance and ethics program.

(C) Specific individual(s) within the organization shall be delegated day-to-day operational responsibility for the compliance and ethics program. Individual(s) with operational responsibility shall report periodically to high-level personnel and, as appropriate, to the governing authority, or an appropriate subgroup of the governing authority, on the effectiveness of the compliance and ethics program. To carry out such operational responsibility, such individual(s) shall be given adequate resources, appropriate authority, and direct access to the governing authority or an appropriate subgroup of the governing authority.

Governing authority” means the (A) the Board of Directors; or (B) if the organization does not have a Board of Directors, the highest-level governing body of the organization.
within an organization, which encompasses the policies, programs, and controls: (i) designed to shape and guide ethical and compliance behaviour in an organization; (ii) outlining clear financial reporting principles, with examples of what constitutes proper and improper behaviour; and (iii) covering scoping and risk discussions with the external and internal auditors.\textsuperscript{99}

11. \textbf{There should be on-going dialogue between the Audit Committee, senior management, internal auditors, and external auditors on critical fraud prevention areas associated with the financial reporting culture}.\textsuperscript{100}

11.1. The adequacy of policies and structures within an organization overseeing and monitoring ethical conduct and guiding financial reporting judgments.

11.2. Quality of earnings and critical accounting treatments and judgments.

11.3. Whether there is an adequate financial reporting tone embedded in the organization through:

11.3.1. Strong, written financial reporting policies, procedures, and internal control focused on ethics, compliance, and critical accounting judgments.

11.3.2. Guidance on acceptable and unacceptable behaviours and accounting treatments.

11.3.3. Strong Internal Audit and Compliance department programs focused on financial reporting culture and ethical concerns.

\textsuperscript{99} Refer to Section 301 of the Sarbanes-Oxley Act, which lists requirements related to: the independence of audit committee members; the audit committee's responsibility to select and oversee the issuer's independent accountant; procedures for handling complaints regarding the issuer's accounting practices; the authority of the audit committee to engage advisors; and funding for the independent auditor and any outside advisors engaged by the audit committee. Refer also to Federal Sentencing Guidelines (previous footnote).

\textsuperscript{100} NYSE Governance standards call for open communication among management, internal auditors, external auditors, and the audit committee. In addition, The Audit Committee shall assist Board oversight of: (i) The integrity if the company's financial statements; (ii) The company's compliance with legal and regulatory requirements; (iii) The independent auditor's qualifications and independence; (iv) The performance of the company's internal and audit function and independent auditor; and (v) Preparation of the Audit Committee report for the company's proxy statement.
For Senior Executives

IV. Establish a “zero tolerance” policy for misconduct, with disciplinary processes

12. Senior management experience and past success (profitability, budget achievement) should never be used as an excuse to not investigate misconduct allegations nor to waive required remediation actions. Such investigations need to be overseen by the Supervisory Board, employ forensic accountants and lawyers, and be performed rigorously. These requirements should be embedded into securities laws and audit standards.

13. Disciplinary actions, in the event of proven transgressions, need to be transparent, fair, and enforce a “zero tolerance” policy.

14. Organizations need clear standards and protocols to address potential misconduct. This will likely include robust processes and protocols for investigation into misconduct allegation and proper remediation, involving personnel, accounts, and controls.

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101 Entities involved in corruptions scandals, such as ABB, DaimlerChrysler, and Siemens, have subsequently announced the adoption of a zero-tolerance policy towards illegal or unethical behaviour. This view is also the recommendation of the SEC, speech on Nov 2005 by Mary Ann Gadziala, which states: Compliance risks include the risk of legal and regulatory sanctions against the firm and firm personnel, material financial loss, loss to reputation, and actual loss of the franchise. These potential losses are incalculable. Therefore, unlike other risks, such as market and credit risks, which are risks taken as part of the firm’s business, compliance risks are not. Firms would be well-advised not to waste resources measuring the chances of being caught, estimating the effect of a potential sanction, and then deciding whether or not to risk a compliance breach. The compliance function should be focusing on how best to ensure compliance. Zero tolerance is the best policy.

102 The principles of self-policing, self-reporting, remediation, and cooperation are embedded in the SEC’s ACCOUNTING AND AUDITING ENFORCEMENT Release No. 1470 / October 23, 2001, commonly referred to as “Seabord Report”.

103 Refer to DOJ’s “Thompson memorandum”, January 20, 2003, by Larry D. Thompson (Deputy Attorney General), as updated by Deputy Attorney General Paul McNulty in December 2006, noting the importance placed on “the corporation's remedial actions, including any efforts to implement an effective corporate compliance program or to improve an existing one, to replace responsible management, to discipline or terminate wrongdoers, to pay restitution, and to cooperate with the relevant government agencies.”

104 The SEC’s Seabord report credits self-policing efforts, which require organizational policies and structures.
V. Establish organizational structures aligned towards Ethics and Compliance

15. Organizations should align their internal organizational structures to, at least, have the following strong departments which oversee Ethics and Compliance:\textsuperscript{105}

15.1. A legal department ensuring that all laws and regulations are met in a proactive manner.

15.2. An Accounting and Reporting department ensuring that all transactions and arrangements follow GAAP, company policy, and documentary evidence is independently validated before being recorded in the books.

15.3. An Internal Audit department which independently tests and reports to the Supervisory Board on how well Ethics and Compliance risks are addressed by the Company based on a comprehensive Internal Audit examination program.

15.4. The Human Resource department that ensures that its processes and policies are adequately aligned and comprehensively address Ethics and Compliance criteria.

15.5. An Ethics and Compliance department which is responsible for overseeing business conduct in a centralized manner, setting policies, providing consultation support, and assisting with difficult matters.

\textsuperscript{105} Speech by Ms Gadziala on how the SEC undertakes ethics and compliance program examinations, June 23, 2005, state: examiners evaluate the structure and coverage of the compliance program. Adequacy of resources, systems, reports, compensation, expertise and experience of compliance personnel, independence from business units, and access to top management are assessed. The compliance program should effectively cover all aspects of the firm's business activities. The supervisory structure and written supervisory procedures are also reviewed by the examination team. Supervision complements compliance. Compliance staff work with the supervisors - those with day-to-day business line responsibilities - to help ensure that written supervisory procedures are designed and implemented to achieve compliance with all relevant laws. Among areas reviewed by examiners are: the adequacy and coverage of procedures, the processes to keep informed on legal developments and to update procedures, supervisory controls, exception reports, handling of customer complaints, reports to senior management, systems to monitor supervisory activities, and corrective action. Employee supervision is also evaluated. SEC examiners assess hiring, background checks, registration, licensing, continuing education, personal trading, training, and heightened supervision, if appropriate.
15.6. The Supervisory Board, Management Board (composed of senior executives) who oversee ethics and compliance across the organization.

16. Multi-national organizations should seriously consider establishing Ethics and Compliance departments organized and tasked as follows:  

16.1. Structured reporting lines to the Supervisory Board and administrative line to the CEO.

16.2. Acting as the central body responsible for Ethics and Compliance dealing with all facts of business conduct, from policies and procedures, hiring and rewarding practices, investigations on misconduct allegations, and monitoring of all remediation efforts involving personnel, accounting, and internal controls.

16.3. This department works closely with other Compliance-support functions, including the Office of the General Counsel, Accounting and Reporting, Internal Audit, and heads of the various Business Units.

16.4. Compliance with policies and the law is the responsibility of everyone in the organization. But, with the importance of Ethics and Compliance being at the centre of proper corporate responsibility and deterrence of fraud, a central coordinating function – with real power and Board support – is necessary. Many US organizations already

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106 Ethics and Compliance programs are encouraged by the US Federal Sentencing Guidelines, SEC and DOJ positions. SEC examinations (per previous footnote) focus on having the right structures: The comprehensive compliance examination begins with the development of an understanding of the firm's business and organizational structure. This helps define the appropriate scope of compliance coverage and the compliance control structure of the enterprise. Examiners evaluate the compliance "culture"- that is, the overall environment and the way compliance issues are handled. Since the board and top management are those ultimately responsible for overall compliance, examiners will look at compliance policies they issue - the tone from the top. Top management will also be requested to self-report on any material compliance breaches and how they are being addressed. Refer also to the requirements of the BSA/AML Examination Manual, which requires personnel with authority to oversee the Compliance program.
have this type of organization in place and their usage is becoming more pronounced in Europe, especially within the banking sector.

16.5. Ethical and Compliance efforts need to be directed in a “top down, risk-based” manner, with input from the field.

17. For multi-nationals, especially for organizations who are highly decentralized, an Internal Audit department should be mandated but not considered as a sole source of internal control.\(^\text{107}\)

17.1. Structured reporting lines to the Supervisory Board and administrative line to the CEO. Although this is established practice across listed companies in the United States, this is not the case in Europe.

17.2. Internal audit programs and workloads should be focused on:
- Compliance with laws, regulations, and organization policies;
- independently assessing the quality of the financial reporting culture within the organization; structuring compliance risk assessments and Internal Audit work-programs according to risk.

17.3. Internal Audits should be focused on critical compliance areas:

17.3.1.1. Concerns over manager ethical misconduct and conflicts of interest. This information comes from whistle-blowing hotlines, senior management expense reports, reviewing gifts and concession accounts, and other practices.

17.3.1.2. Policies, controls, and sophistication in addressing critical accounting areas, which include revenue recognition, accounting estimates, and other areas which have been noted by the SEC in prior fraud violations.

\(^{107}\) Currently, this requirement to have an Internal Audit Department is found in few places (e.g., NYSE): listed companies must maintain an internal audit function to provide management and the audit committee with ongoing assessments of the company’s risk management processes and system of internal control.
17.3.1.3. Corruption-related policies and practices which may violate established international conventions.

VI. Balance human resource processes with Ethics and Compliance criteria

18. **Budget targets should not be used as a basis for performance awards, but rather a linear function of performance against rewards should be crafted to eliminate the “kinkiness” and ratcheting of targets.**

19. **Compensation contracts and variable compensation rewards need to explicitly include Ethics, Compliance, and Control criteria.** Such inclusions need to be significant and reflect a “zero tolerance” tone, where all ethical breaches have significant consequences and control gaps on critical accounting and fraud areas are discouraged.

20. **The quality of performance target achievement and alignment with Ethics and Compliance targets should be subject to independent review on a periodic basis.**

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108 Refer to Jensen 2003
109 The US Federal Sentencing Guidelines §8B2.1(b)(6) *Effective Compliance and Ethics Program* note: The organization’s compliance and ethics program shall be promoted and enforced consistently throughout the organization through (A) appropriate incentives to perform in accordance with the compliance and ethics program; and (B) appropriate disciplinary measures for engaging in criminal conduct and for failing to take reasonable steps to prevent or detect criminal conduct
110 Refer to Jensen 2003 and The US Federal Sentencing Guidelines §8B2.1(b)(6) *Effective Compliance and Ethics Program* note: (a) To have an effective compliance and ethics program, for purposes of subsection (f) of §8C2.5 (Culpability Score) and subsection (c)(1) of §8D1.4 (Recommended Conditions of Probation - Organizations), an organization shall—

(1) exercise due diligence to prevent and detect criminal conduct; and

(2) otherwise promote an organizational culture that encourages ethical conduct and a commitment to compliance with the law.

Such compliance and ethics program shall be reasonably designed, implemented, and enforced so that the program is generally effective in preventing and detecting criminal conduct.
21. Compensation systems within an organization should be adequately balanced so that they clearly send a signal to the organization on:¹¹¹

21.1. The importance of Ethics and Compliance within an organization and a “zero tolerance” policy that is reflected into compensation contracts.

21.2. Profits are not the only performance criteria; ethical breaches and misconduct cannot be “brushed-off” if managers “produce the profits”. This is the start of a slippery road.

21.3. Need to prevent a relativist tone in the organization, where “the end justifies the means”.

21.4. The importance of internal controls needs to be explicitly weighted into compensation systems, especially those of senior management.

21.5. Internal Audit should independently test to ensure compensation has been aligned to parameters agreed with the Supervisory Board addressing Ethics and Compliance areas.

VII. Instil training and communication programs on Ethics and Compliance

22. A tone of Ethics and Compliance needs to reverberate across the organization through:¹¹²

22.1. CEO regular communication.

22.2. Systematic, rigorous, and Senior-management supported training and continuous education program on Ethics and Compliance.

¹¹¹ Refer to literature review in Chapters 3 and 4 on anti-fraud programs and controls covering hiring and reward policies.

¹¹² Refer to footnote 19 and literature review in chapters 2 through 3. See also FCPA Opinion Procedure Release 04-02 which calls for “A clearly articulated corporate policy against violations of the FCPA and foreign anti-bribery laws and the establishment of compliance standards and procedures to be followed by all directors, officers, employees, and all business partners, including, but not limited to, agents, consultants, representatives, and joint venture partners and teaming partners, involved in business transactions, representation, or business development or retention in a foreign jurisdiction (respectively, "Agents"; and "Business Partners") that are reasonably capable of reducing the prospect that the FCPA or any applicable foreign anti-corruption law of Newco's Compliance Code will be violated.”
22.3. Human resource processes, aligned to Ethics and Compliance criteria, including hiring, promotion, rewarding and disciplinary processes.

23. There should be on-going, focused training and education events tailored to an organization’s environment and delivered on a regular basis. That is, on matters of business conduct and accounting practices, sharing “war stories” as vehicles to learning from the past.

VIII. Implement critical organizational practices addressing Ethics and Compliance

24. Organizations should establish comprehensive programs to identify their Ethics and Compliance risks and proactively strategize how these risks should be mitigated. Some suggestions are as follows:

24.1. Preventative –


24.1.2. Proactive Ethics and Compliance reviews by the Internal Audit department on how well such Ethics and Compliance policies are being implemented.

24.1.3. Continuous training and communication

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113 In terms of training and communication of an organization’s expectations, training programs that centre on ethical dilemmas that are likely to arise within the workplace appear very effective (Pennino 2002; Dallas 2003; Lehman and Okcabol 2005).

114 Recommendation of the SEC, speech on Nov 2005 by Mary Ann Gadziala, which state: There should be a process to identify applicable laws and compliance risks. An effective documented compliance program, based on evaluation of risks and controls, should be established and communicated throughout the firm. The priorities and processes of the compliance function should be consistent with this assessment and the firm’s business and risk management strategy and structure. For example, a firm need not build a strong compliance system to cover variable annuities or hedge funds if it does not offer these products. And a one-person firm that executes a few transactions each day does not need sophisticated technology to ensure compliance, while manual monitoring and surveillance at a large firm with hundreds of branches would hardly seem adequate.
24.1.4. Embedding of Ethics and Compliance criteria within the hiring, promotion, and reward process, with a “zero tolerance” tone.

24.1.5. Monitoring of Ethics and Compliance risks across time.

24.2. Detective –

24.2.1. Thorough, independent corporate self-investigations on all allegations of senior management misconduct, regardless of size or nature.

24.2.2. Implementation of disciplinary actions aligned with a “zero tolerance” tone.

24.2.3. Implementation of control remediation actions to prevent future re-occurrence of the actions.

24.2.4. Proper follow-through to ensure remediation actions are implemented.

25. Internal and external auditors should be mandated to report on Ethics and Compliance standards. These reports should be presented and discussed with the Supervisory Board, Management Board, the Audit Committee, and external stakeholders in a transparent and credible manner.\footnote{Following ISA 260 and Eighth Directive guidance on matters material to financial statement preparation.}

26. Although \textit{whistle-blowing and consultation “hotlines”}\footnote{These are mandated by Section 806 Protection For Employees of Publicly Traded Companies Who Provide Evidence of Fraud of the Sarbanes-Oxley Act.} are not popular in Europe and can conflict with EU data privacy rules, the importance of fraud, bribery, money laundering, ethics, and accounting, and the damage which these can cause, are sufficient motivation for organizations to have such whistle-blower “hotlines” to communicate misconduct. However, this needs to be a properly-structured process, with the right issue identification and conflict-resolution processes, and not be a window-dressing exercise by having:
26.1. Well-documented, structured, and well-staffed whistle-blowing and consultation line to address senior management ethical misconduct and concerns, potential illegal acts, and conflict of interest concerns.

26.2. Proper and thorough investigation processes, conducted by a competent and independent body, within or outside the organization (internal audit or independent investigators), to gather facts surrounding allegations of misconduct.

26.3. Direct oversight of the whistle-blowing and consultation hotline by an independent body of management, for example, the Audit Committee.

26.4. Ensuring procedures for adequate remediation and follow-up, using examples from requirements by the SEC (example, Seabord Report of 2001).

27. Aggressive accounting within an organization can only be curbed by having the right elements in place: 117

27.1. Senior management explicitly embedding their expectations on critical accounting areas and judgments across the organization through clear, unambiguous, and rules-based accounting manuals (or handbooks) tailored to the particular business (with templates and examples). The objective would be to minimize critical judgements within business units and centrally monitor all critical accounting areas.

27.2. Adopting a “zero tolerance” policy towards intentional errors or deviations from organizational policies.

27.3. Accounting departments need to move beyond just bookkeeping. They must have the power and competence to balance pressures from

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117 PCAOB AS 2 notes examples significant control weaknesses: Controls over the selection and application of accounting policies that are in conformity with generally accepted accounting principles; and Controls over the period-end financial reporting process, including controls over procedures used to enter transaction totals into the general ledger; initiate, authorize, record, and process journal entries into the general ledger; and record recurring and nonrecurring adjustments to the financial statements
Sales departments eager to “make the sale” to meet their targets. This balance can only be achieved if the Accounting department has rigorous processes to review contracts, validate judgments, and determine the proper Accounting for critical areas after consultation (citation) of relevant GAAP and company policy.

IX. Periodically measure Ethics and Compliance culture within the organization

28. Periodic measurement and surveys should be conducted. Openness about the state of Ethics, Compliance, and target-design should help reduce politics in an organization, help performance, and allow for ethical measurement, which is necessary to gauge Ethics and Compliance performance in an organization. The specific areas of measurement should include:

28.1. Level of openness in an organization
28.2. Awareness of Corporate policies on Ethics and Compliance
28.3. Perceived ability to raise issues to superiors and get appropriate answers
28.4. Measure – the extent privacy rules permit – the locus of control and moral reasoning indications, in order to determine the policies and practices which are necessary to align manager behaviour

29. Measure and track the financial reporting culture in the organization.

29.1. Ethics.

29.1.1. Identify and measure the risk of ethical misconduct and employee sentiment through: culture surveys of employees and culture audits (addressing moral reasoning, locus of control, and moral philosophies as a gauge of organizational climate); identification of conflicts of interest and review of control design

118 Castellano and Lightle 2005
119 See previous footnote.
effectiveness; identification of potential areas where legality and compliance may be breached.

29.1.2. Measure how well misconduct risk is mitigated through: policies and procedures; internal audits of employee sentiment, culture audits, and other reviews; legal and accounting compliance procedures; investigation and remediation actions.


29.2.1. Identify critical accounting areas / accounts from an investor, stakeholder, and compensation perspective.

29.2.2. Ensure proper levels of authorization, documentation, and transparency on all critical judgments on critical accounting areas.

29.2.3. Ensure that there are stringent policies covering accounting treatments and that these are embedded within organizational systems and practices.

29.2.4. Consider the implications of IFRS, which is becoming more complex and employees may not be trained nor competent to deal with this framework. The US market is more used to complicated GAAP; in Europe, a “loose” principles framework is being replaced by a robust framework, and it is likely that accountants and business persons do not have the educational background and training to easily cope, nor have they actually re-organized themselves to deal with IFRS.

29.2.5. Transparent communication of critical accounting choices between the organization, auditors, and the Audit Committee, aligned with the practices suggested by various corporate governance codes.

29.2.6. Increasing regulator oversight over critical accounting areas.

29.3. Other components such as compensation and targets need to be considered.
For all

X. Create and support an environment to “Just do it right!”

* * *

This study has provided evidence that principles of trust and ethics, processes of control, and performance target practices, play an important role in fraud decisions. Beside the empirical findings documented in this research project, tangible measures to increase fraud prevention efforts at the level of regulators, Supervisory Board, and Boards of Management are presented. A summary of recommended practices for Corporate executives is presented in Table 4. At the end of the day, there are three key areas are suggested that Audit Committees and regulators ought to focus on are: (1) ethical conduct of managers; (2) aggressive accounting practices; and, (3) placing undue trust on managers who meet their (profitability/performance) targets. All these three topics are poorly understood, in a fraud context, and certainly warrant future research.

On 24 July 2006, the CFA Centre for Financial Market Integrity and the Business Roundtable Institute for Corporate Ethics jointly called on corporate leaders, asset managers, investors, and others to break the “short-term obsession” harming shareholders’ interests by reforming practices involving earnings guidance, compensation, and communications to investors. My research provides some empirical support for such a call to action and suggests an ethical dimension addition to positive accounting theory.

José R Hernandez
October 2007.
<table>
<thead>
<tr>
<th>TABLE 4: SUGGESTED CORPORATE PRACTICES FOR FRAUD PREVENTION - Addressing 3Ps (Principles, Process, &amp; Practices)</th>
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<td><strong>PRINCIPLES – A better Tone-at-the-Top</strong></td>
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<td>I. Establish a “zero tolerance” policy for misconduct with disciplinary processes</td>
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<td>II. Improve governance on Ethics and Compliance activities, driven by Supervisory and Management Boards</td>
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<td>III. Promote and enforce compliance with an organization’s Code of Conduct and established policies</td>
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<td>IV. Establish clear and comprehensive accounting and control standards to comply with relevant laws and specifically deter/detect fraud, bribery, and money laundering.</td>
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<td><strong>PROCESSES – Better control and management structures</strong></td>
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<td>V. Establish organizational structures (departments &amp; qualified personnel) aligned to ensure adequate Ethics and Compliance</td>
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<td>VI. Balance human resource processes (hiring, promotion, reward) with Ethics and Compliance criteria (target-setting and measurement processes)</td>
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<td><strong>PRACTICES – A mindset of Ethics &amp; Compliance</strong></td>
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KORTE VOORSTELLING VAN HET PROEFSCHRIFT (In Dutch)

In dit onderzoeksproject worden de verschillende prikkels (praktijk), gelegenheden (processen) en gedragsnormen (principes) voor managers bestudeerd die worden geassocieerd met financiële-verslagleggingsfraude vanuit het perspectief van de beoordeling door de externe accountant van de risico's die hun cliënt loopt. Dit onderzoeksproject-proefschrift bestaat uit drie verhandelingen.

De eerste, getiteld *How Managerial Attitudes Influence Auditor Fraud Risk Assessments*, onderzoekt twee belangrijke aspecten van de mentaliteit van leidinggevenden die bepalend zijn voor de financiële-verslagleggingscultuur in een organisatie: de gedragsnormen van het senior management en de mate van agressiviteit van de financieel-administratieve bedrijfsvoering in een organisatie. Deze studie gaat over de rol die onethisch gedrag en agressieve financieel-administratieve bedrijfsvoering spelen in frauduleuze financiële verslaglegging. Deze verhandeling zou moeten bijdragen aan een beter begrip bij directeuren, managers, toezichthouders en accountants van de relatieve betekenis van de verschillende elementen die de financiële-verslagleggingscultuur in een organisatie bepalen en van de mate waarin deze bijdragen aan fraude in een onderneming. Het blijkt dat maar liefst 50% van de frauderisicobeoordelingen verband houdt met de financiële-verslagleggingscultuur in een organisatie, waarbij de gedragsnormen van senior managers de belangrijkste factor vormen. Deze eerste verhandeling, kortom, belicht het belang van de juiste ethische, wettelijke en financieel-administratieve grondslagen in een organisatie voor het voorkomen van fraude.
De tweede onderzoeksverhandeling is getiteld *Is the Fraud Triangle Equilateral*. Deze bouwt voort op de eerste verhandeling en verkent de belangrijkste matigende en preventieve instrumenten, nadat de druk en prikkels van managementbeloningen onder de loep zijn genomen. Deze verhandeling gaat over het relatieve belang van interne controlemechanismen ten aanzien van de mentaliteit van managers (gedragsnormen en integriteit van het senior management), de prikkels en druk die managers ondervinden van beloningsregelingen en de bedrijfsvoerings- en financieel-administratieve processen, bij het verlagen van het frauderisico. Deze verhandeling is gericht op ondernemingen die een zogenaamde *top down, risk based*-aanpak willen invoeren ten aanzien van controlemechanismen voor financiële verslaglegging voor externe en interne doelen. Het blijkt zelfs dat risicobeoordelingen door accountants niet lineair zijn en dat ethische controlemechanismen in de waarneming van accountants de belangrijkste factor vormen voor de verlaging van de frauderisico’s (op het hoogste risiconiveau).

De laatste verhandeling is getiteld *The Pursuit of Profits: How Ethics and Targets Influence Financial Reporting Fraud*. Deze bouwt voort op de eerste twee verhandelingen en richt zich op prikkels voor managers die voortkomen uit winstgevendheid en bedrijfsdoelstellingen. De verhandeling onderzoekt welke rol prestatiedoelstellingen, winst en ethiek spelen in de ervaringen die accountants met fraude hebben. Dit gedeelte is bedoeld voor senior managers van multinationale organisaties die een evenwicht trachten te bereiken tussen winststreven en fraudepreventie. De gewoonte van de kapitaalmarkt om voorspelbaarheid (doelstellingen met geringere volatiliteit), duurzame winst en nadruk op winst in de onderhavige periode te belonen, kunnen de oorzaak zijn van het ontstaan van fraude. Uit dit onderzoek blijkt dat de druk die het gevolg is van bedrijfsdoelstellingen, in de meest winstgevende bedrijven, wordt geassocieerd met een verhoogde kans op fraude. Dit getuigt van het belang van de opvatting dat hebzucht en hoogmoed een belangrijke redenen zijn voor het tolereren van fraude.
Samenvattend, kwam uit het onderzoek het volgende naar voren:

**Thema 1: De praktijk van de risicobeoordeling door accountants is consistent met de auditnormen (SAS 99, ISA 240) en de literatuur (Shelton et al. 2001).**


2. Accountants gaan in hun risicobeoordelingsproces af op inzichten, waarnemingen, verdenkingen en harde bewijzen. Om een cliënt in een hogere risicogroep te kunnen plaatsen, hebben accountants harde bewijzen of aanwijzingen voor wangedrag nodig, of dienen ze duidelijke fraudesignalen waar te nemen. Dat wil zeggen dat een accountant bewijs nodig heeft voordat hij een risico beoordeelt als hoger, met name bij het meten van 'zachte' gebieden, zoals de integriteit van managers en het met opzet geven van een verkeerde voorstelling van zaken.

**Thema 2: Accountants zijn van oordeel dat de mentaliteit en gedragsnormen van het senior management een grotere rol spelen dan managementincentives en de gelegenheid die managers hebben om fraude te plegen.**

3. Frauderisicobeoordelingen van accountants hebben de meeste fiducie in twee op vertrouwen gebaseerde componenten of leidraden: (i) ethisch gedrag van het senior management en (ii) de vertrouwensrelatie tussen accountant en senior management (voortbouwend op Loebbecke et al. 1989 en Bell and Carcello 2000).
4. Ethisch verantwoord gedrag van het senior management wordt door accountants gezien als het belangrijkste element dat van invloed is op de intentie van managers om financiële overzichten verkeerd voor te stellen. (Dit bouwt voor op het werk van Kizirian et al. 2005 over het belang van de integriteit van managers voor de risicobeoordelingen door accountants, benadrukt eens te meer de relevantie van het werk van Uddin en Gillett uit 2002 over moreel verantwoord denken van CFO's, en bouwt voort op Loebbecke et al. 1989).

Thema 3: Bedrijfsvoorings- en financieel-administratieve controlemechanismen worden door accountants gezien als weinig effectieve middelen voor het ontmoedigen van fraude.

5. Agressieve financieel-administratieve bedrijfsvooringsmethoden, hetzij door middel van gekleurde schattingen, hetzij door agressieve opbrengstverantwoordingsmethoden, worden door accountants gezien als een belangrijk middel voor senior managers ter stimulering van frauduleuze financiële verslaglegging (consistent met SEC 2003; Loebbecke et al. 1989; Bell and Carcello 2000). Accountants zijn van mening dat interne controlemechanismen weinig effectief zijn bij het ontmoedigen van fraude, hetgeen consistent is met het feit dat ernstigere vormen van fraude worden gepleegd door ervaren managers, waarbij managers de controlemechanismen gewoon terzijde schuiven (consistent met het Treadway-rapport; SEC 2003; SAS 99; ISA 240; enigszins inconsistent met Beasley 1996; Beasley et al. 2000; McMullen 1996 en Bedard and Johnstone 2004).

Thema 4: Accountants zijn van mening dat frauderisico's meer verband houden met de druk die de kapitaalmarkt uitoefent ten faveure van lagere winstvolatiliteit en hogere winsten, dan de druk ten gevolge van beloningen.
6. Accountants zijn van mening dat beloningsdruk een belangrijke frauderisicofactor is (Bartov and Mohanran 2004; Efendi et al. 2006), maar niet een dusdanig belangrijke prikkel, dat men fraude pleegt op het hoogste fraudebereidheidsniveau (consent met Dechow et al. 1996). Het lijkt er daarom op dat senior managers financiële-verslagleggingsfraude plegen om redenen van reputatie of hoogmoed en niet louter uit geldelijk gewin.

7. Verbazingwekkend genoeg, concluderen accountants dat organisaties met een hoger winstniveau geassocieerd worden met een hoger frauderisico en niet een lager. Dat wil zeggen dat hoe hoger de (verwachte) winst van een entiteit is, des te groter de kans is dat men daar financiële-verslagleggingsfraude plegt. Dit suggereert dat fraude voortkomt uit hebzucht. Lagere winstniveaus daarentegen worden in verband gebracht met lagere frauderisico's. Dit betekent wellicht dat een grotere controle door stakeholders onbetamelijk gedrag ontmoeidigt. Het effect van de winstgevendheid van een entiteit op het hogere frauderisico was meer uitgesproken bij organisaties met een consistente winst en organisaties die steeds opnieuw hun prestatiedoelstellingen behaalden (inconsistente of onvoldoende winstgevendheid en nadruk op winstramingen worden door Loebbecke et al. 1989, Baucus 1994, en Bell and Carcello 2000 geassocieerd met fraude).
José R. Hernández was born in El Salvador and immigrated to Canada in 1987. He completed his high school diploma at St. Francis Xavier Catholic High School (Canada); a Bachelor of Mathematics and Masters of Accounting degrees at the University of Waterloo (Canada). He started to work at the age of 14 at a seafood processing plan and as a restaurant server. During his university years, he held internships as a cost manager, pension valuations assistant, and then audit associate.

Since 1996, José has worked for PricewaterhouseCoopers, most recently as a securities litigation partner. From 1997 through 2000, he was part of a team assisting Cuban companies in providing credible financial information to Canadian and foreign investors. This work required that he work extensively in Havana (Cuba) with corporations involved in the airline, retail, tourism, and telecommunications sectors. José was part of a team of Canadian and Cuban academics and investors who were playing an active part in developing a “world-class” accounting education program at the University of Havana (co-sponsored by the Ministry of Finance).

In 2000, José moved on a short-term secondment to the United States to work in Silicon Valley (San José, California) and later spent five months in Washington DC. Whilst in DC, he was part of a global leadership development program called Genesis Park. He was exposed to leaders from PwC and industry, and had the opportunity to develop with relationships with talented individuals representing countries around the world.
In late 2001, José moved to Amsterdam (Netherlands), with his wife, Shana. José dedicated the first two years on his “tour” to develop PwC’s thought leadership, and acted as a project manager, implementing strategic initiatives aimed at improving audit methodologies, technological tools, and knowledge management. He also worked on US GAAS/GAAP audits of various multinationals listed on US stock markets.

In 2003, he became involved in one of the largest accounting fraud in recent Dutch (and European) history. He functioned as a forensic investigator in Argentina, the United States, Spain, and the Netherlands. He later became the team leader of this retailer’s global internal control and remediation program, covering 20 operating companies and the Corporate head office. He worked closely with US counsel and the Company’s management in addressing 278 identified control issues. PwC played an integral part of the ultimate settlement with US regulators, leading to no fines by the SEC and Department of Justice (later a $1.1 billion class action settlement was reached with shareholders).

Since 2005, José has been involved in certain Foreign Corrupt Practices Act cases that have engulfed a German automaker and a German engineering and electronics company. José has led teams of over 100 persons addressing accounting and tax remedial actions across a number of countries. He has also been involved in the design of a world-wide internal control remediation and anti-bribery corporate compliance program at such clients. These activities involved placing compliance officers in high-risk countries, the design and implementation of corporate policies that prevent illegal acts, and the creation of a consultation function. He has worked closely in the re-focus of Internal Audit functions in the area of Compliance. In addition, José was an active contributor to the overall design of governance structures overseeing various organizations’ Ethics and Compliance programs. José has also played a limited role in advising leading banks on the design of Ethics and Compliance strategies. Most recently, José was active in assisting an Independent Compliance Advisor in overseeing the effectiveness of an...
organization’s compliance program, and reporting results directly to the Company’s Audit Committee and US regulators.

The papers presented in this dissertation are his first to be considered for publication in American peer-reviewed journals. José’s research highlights the effect of ethics, performance targets, controls, and incentive arrangements on auditor fraud risk assessments. He is a faculty member at the Vrije Universiteit in Amsterdam and member of the Amsterdam Research Centre in Accounting (ARCA). His academic interests are in the area of fraud, ethics, earnings management, and corporate governance.

José holds designations as a Canadian Chartered Accountant, United States Certified Public Accountant, and Chartered Financial Analyst. He is a member of the Institute of Chartered Accountants of Ontario, the Canadian Institute of Chartered Accountants, the CFA Institute, the American Institute of Certified Public Accountants, and the Association of Certified Fraud Examiners.

José resides in Amsterdam (the Netherlands), is married and has a daughter, Bianca (and a second baby arriving in 2008). He enjoys playing tennis, scuba diving, and experiencing different cultures across the world. He enjoys reading and spending time with family and friends. José is also a member of The Hague Metropolitan Rotary Club.