

# The Effects of Moral Reasoning on Financial Reporting Decisions in a Post Sarbanes-Oxley Environment

**James J. Maroney**  
*Northeastern University*

**Roselie E. McDevitt**  
*Fairfield University*

**ABSTRACT:** Our study examines whether the certification requirements under Section 302 of the Sarbanes-Oxley Act of 2002 affect financial reporting decisions. Using 74 part-time MBA students as a proxy for corporate managers, we find that the participants' level of moral reasoning and their assessed influence of the Sarbanes-Oxley Act were significantly positively associated with the amount of loss recognized through their financial statement adjustment decisions. Consistent with expectations, there was also a significant interaction whereby the influence of the Sarbanes-Oxley Act was significantly positively associated with the adjustment decision for those participants at lower levels of moral reasoning, but not with the adjustment decision for those participants at higher levels. Thus, the findings from our study suggest that the Sarbanes-Oxley Act may be an effective deterrent for an overstatement of financial statement income by individuals at lower levels of moral reasoning. These results should be of considerable interest to regulators as they attempt to assess the effects of the Sarbanes-Oxley Act.

**Keywords:** Sarbanes-Oxley Act; moral reasoning; defining issues test; financial statement adjustment decisions.

**Data Availability:** Data are available from the first author upon request.

## INTRODUCTION

The purpose of the Sarbanes-Oxley Act of 2002 was to implement law which would protect the financial markets in the United States. The Act was intended to motivate corporate officers to become more involved in financial reporting decisions by imposing stringent criminal sanctions that strengthened the civil and criminal sanctions which already existed. Another important part of this legislation is Section 302, which requires that each CEO and CFO must certify as to the fairness of the presentation of the company's financial reports, in addition to the independent auditing firm's certification. While some CEOs have financial backgrounds, many do not. An important issue is whether the

---

The authors gratefully acknowledge comments from Jean Bedard, Paul Caster, Ganesh Krishnamoorthy, Dawn Massey, Tim Rupert, and participants at the Fairfield University School of Business Research Workshop. Additionally, we are especially grateful for the insightful comments received from the editor and two anonymous reviewers.

Sarbanes-Oxley Act has had significant, if any, impact on individual decision-makers with respect to making GAAP decisions.

In the past two decades, many CEOs have risen to their positions with little training in accounting or finance (Geiger and Taylor 2003). Yet, Sarbanes-Oxley requires both CEOs and CFOs to certify their companies' annual reports with the expectation that executives will get more involved with major accounting issues than in the past. Given the new certification requirement imposed by Section 302 of the Sarbanes-Oxley Act, it is important to increase our understanding of the decision process used by nonaccountants in making financial reporting decisions. Though a number of research studies have examined the pressures auditors have to face when making accounting adjustment decisions (e.g., Balsam 1998; Bouwman et al. 1995; Jones and Hillebeitel 1995; Lord and DeZoort 2001), little is known about how individuals without extensive accounting training respond when faced with financial statement adjustment (FSA) decisions. Thus, this research examines how individuals without extensive accounting expertise make financial reporting decisions. More importantly, our study begins to address the critical question of whether the Sarbanes-Oxley Act is likely to affect managers' financial reporting decisions and thereby improve the quality of the financial reporting process.

While the Sarbanes-Oxley Act may affect financial reporting decisions due to the strengthened civil and criminal sanctions, it is possible that individuals at differing levels of moral maturity may be influenced differently by these sanctions. In fact, research on moral reasoning (e.g., Graham 1995; Patterson 2001; Trevino 1986) would suggest that individuals at lower levels of moral reasoning may be more influenced by a fear of punishment through legal sanctions and penalties than individuals at higher levels of moral reasoning. We conduct an experimental study in order to examine the potential interaction between the influence of the Sarbanes-Oxley Act and the level of moral reasoning on a financial reporting decision that involves a material adjustment. Given that moral reasoning is not a readily observable trait, experimentation is the only viable means to examine this potential interaction. We control for other potential influences on the FSA decision process identified by researchers. These potential influences include internal influences represented by self-interest (Carson 2003; Guerra 2004) and stockholders' interests (Ruf et al. 2001) and an external influence represented by generally accepted accounting principles (Ashbaugh 2004; Wyatt and Gaa 2004; Colson 2004).

We used 74 part-time MBA students as a proxy for corporate managers in our study. They completed a financial reporting case that required them to decide the amount of loss that should be recognized in the financial statements (if any) in a hypothetical asset impairment scenario. The case was constructed so that the larger the amount of loss recognized through the FSA decision, the more likely the decision was in conformity with GAAP. Subsequent to completing the financial reporting case, the participants also completed the Defining Issues Test, a well-known psychometric instrument that has been used extensively in ethics research to assess participants' level of moral reasoning.

The results of the study indicate that the participants' perceived influence of the Sarbanes-Oxley Act and their level of moral reasoning were significantly positively associated with the amount of loss recognized through their FSA decision. Further, there was a significant interaction between the participants' level of moral reasoning and the assessed influence of the Sarbanes-Oxley Act. Consistent with expectations, further examination indicated that the influence of the Sarbanes-Oxley Act was significantly positively associated with the amount of loss recognized through the FSA decision for those participants at lower levels of moral reasoning, but not with the amount of loss recognized through the FSA decision for those participants at higher levels of moral reasoning. The participants at

higher levels of moral development were most strongly influenced by the interests of the stockholders, a finding that is consistent with the characteristics of the post-conventional level of moral development where adults are concerned with universal moral principles (Graham 1995). However, the association between the influence of the stockholders' interests and the amount of loss recognized through the FSA was a negative association for the participants at both the lower and higher levels of moral reasoning. The negative association indicates that as the participants' assessed influence of the stockholders' interests increases, the amount of loss recognized through their FSA decreases. Thus, the participants in our study appear to be equating a smaller recognition of loss through the FSA, and consequently a higher reported net income, as being in the best interests of the stockholders.

The remainder of the paper is organized as follows. The next section develops the research hypotheses. The third section develops a regression model of the FSA process that controls for other influences on the decision process. The fourth section presents the methodology. The results are presented and discussed in the fifth section. The final section presents and discusses conclusions, limitations, and implications for future research.

## **BACKGROUND AND HYPOTHESES**

### **The Sarbanes-Oxley Act and FSA Decisions**

The Sarbanes-Oxley Act was passed by Congress in 2002 in an effort to stem the tide of corruption in the financial markets by creating stringent sanctions for senior officers who file false certifications (Geiger and Taylor 2003). The Act "reaffirms that the CEO and CFO carry a primary responsibility for company reports filed with the SEC and institutes a requirement for them to report on the completeness and accuracy of information contained in the reports, as well as the effectiveness of underlying controls" (PricewaterhouseCoopers 2002, 4). The responsibility of enforcing the provisions of Sarbanes-Oxley has been assigned to the Public Company Accounting Oversight Board (PCAOB).

The Sarbanes-Oxley Act can be separated into two major categories. The first category requires a certification of the truthfulness and accuracy of the contents of financial reports, and the second requires certification of the effectiveness and composition of internal and disclosure controls (Rosen and Kramer 2003). This study is concerned with the first of these requirements. More specifically, Section 302 requires CEOs and CFOs of publicly traded companies to: (1) review the covered report, (2) affirm that the report does not contain any untrue statement of a material fact or omit a material fact necessary to make sure that the statements are not misleading with respect to the period covered, and (3) to attest that the financial statements and other financial information are presented fairly in all material respects (Rosen and Kramer 2003). These certification requirements create significant civil and criminal risks for senior officers who do not comply (Rosen and Kramer 2003; Geiger and Taylor 2003).

Prior literature argues that punishment increases the costs associated with a cost-benefit analysis and thereby may deter misconduct (Trevino 1992). Similarly, enforcement procedures, such as expulsion or license revocation, are perceived as effective and are major deterrents to unethical behavior (Bommer et al. 1987). Additionally, legal penalties in the form of fines and sanctions are considered strong deterrents to unethical behavior, since most individuals do not want to be known by their illegal behavior (Tenbrunsel and Messick 1999). More specifically, the possible decision consequences (e.g., fines or legal sanctions) perceived by managers affect their decision processes (Tenbrunsel and Messick 1999). If individuals believe that risk is increased by the threat of legal punishments, sanctions, and fines, then it may be expected that the influence of the Sarbanes-Oxley legislation will increase the perceived risk. To test the relationship between the increased risk introduced

by the Sarbanes-Oxley Act and the quality of the financial reporting process, we pose the following research hypothesis:

- H1:** The perceived influence of the Sarbanes-Oxley Act will be positively associated with the amount of loss recognized through the participants' FSA decisions.

### **Moral Development and FSA Decisions**

Differences in moral development can result in systematic differences in ethical appraisals of situations (Patterson 2001). The cognitive-developmental school of psychology theorizes that individuals proceed through a series of stages in reaching moral maturity (Kohlberg 1969; Trevino 1986). Kohlberg (1969) developed a taxonomy of cognitive development that traces the maturation of moral reasoning from middle childhood to adulthood. He defined three levels of development: (1) pre-conventional, (2) conventional, and (3) post-conventional. Each level is comprised of two stages resulting in a six-stage model.<sup>1</sup> Most adults are placed in one of the two stages in the conventional level where society's laws and opinions of significant others are the most important determinants in the individual's reasoning (Trevino 1986). In addition, some studies place leaders at the post-conventional level, a level which encourages respect for universal moral principles (Graham 1995) as opposed to those at the conventional level who are concerned with society's rules.

Prior studies indicate that moral development may result in systematic differences in ethical appraisals of situations (Patterson 2001; Massey 2002; Thorne 2000). In fact, Massey (2002) and Thorne (2000) indicate that there is a positive relationship between auditors' ethical development and their formulation of ethical judgments. In a tax setting, Kaplan et al. (1997) found that taxpayers at higher levels of moral reasoning report lower tax evasion intentions than taxpayers at lower levels of moral reasoning. In an audit setting, Falk et al. (1999) found that student participants at higher levels of moral reasoning were more likely to exercise independent judgment in their review of clients than participants at lower levels of moral reasoning. The importance of the decision and the materiality of the ethical dilemma have also been discussed. Jones (1991) suggests that participants will spend more time considering the consequences of "important" (material) decisions and make a choice more in accord with their true level of ethical development. Our study incorporates these ideas and extends these prior studies by examining material FSA decisions made by individuals in a post-Sarbanes-Oxley environment. This issue is particularly important due to the requirements imposed under Section 302 of the Sarbanes-Oxley Act. We extend these prior studies by examining whether individuals at higher levels of moral development make different FSA decisions than those at lower levels, by testing the following hypothesis:

- H2:** The participants' level of moral reasoning will be positively associated with the amount of loss recognized through their FSA decisions.

Research has also found that individuals at higher levels of ethical development seem to be more sensitive to ethical cues than those at lower levels of development (Bernardi

---

<sup>1</sup> Simply explained, the stages represent the following behaviors by conforming: (1) to the rules to avoid punishment, (2) to obtain rewards and have favors returned, (3) to avoid disapproval of others, (4) to avoid censure by legitimate authorities and the resultant guilt, (5) to maintain the respect of the impartial spectator judging in terms of community welfare, and (6) to avoid self-condemnation (Kohlberg 1971).

1994; Ponemon 1993). Further, research findings indicate that individuals at lower levels of moral development rely primarily on a rule orientation and those at the higher level will rely on universal moral principles (Graham 1995; Patterson 2001; Trevino 1986). In fact, several research studies in accounting suggest that individuals at lower levels of moral reasoning may be more influenced by a fear of punishment through legal sanctions and penalties than individuals at higher levels of moral reasoning. For example, Ponemon and Gabhart (1990) found that auditors at lower levels of moral reasoning were more sensitive to penalty factors for misconduct than auditors at higher levels of moral reasoning. Arnold and Ponemon (1991) had similar results for their sample of internal auditors. In a tax setting, Kaplan et al. (1997) found that a legal sanctions communication was most effective in reducing tax evasion intentions for taxpayers at low moral reasoning levels. McDevitt and Van Hise (2002) found that the influences representing law and punishment become more important to decision makers as the materiality of an ethical dilemma increases. Given the enhanced legal sanctions included with the recently enacted Sarbanes-Oxley Act of 2002 and the findings from prior research, it is likely that the Act may have a stronger effect on individuals at lower levels of moral reasoning than those at higher levels of moral reasoning. We examine this potential interaction between the influence of the Sarbanes-Oxley Act and corporate managers' level of moral reasoning through the following research hypothesis:

- H3:** The perceived influence of the Sarbanes-Oxley Act will have a greater effect on the amount of loss recognized in FSA decisions for those participants at lower levels of moral reasoning.

The preceding hypothesis is not intended to imply that participants at higher levels of moral reasoning will make smaller financial statement adjustments. Instead, it is hypothesizing that the adjustment decision for participants at lower levels of moral reasoning (rule orientation) will be more influenced by the Sarbanes-Oxley Act than participants at higher levels of moral reasoning (universal moral principles).

## **FSA DECISION REGRESSION MODEL**

### **Other Decision Influences**

Complex decisions often require the decision maker to consider multiple environmental and individual influences before choosing a solution (McDevitt and Van Hise 2002; Trevino 1986). In cases where there are multiple parties with conflicting interests, ethical dilemmas may also arise. For example, CEOs may encounter accounting problems that require them to weigh the impact of their decisions on themselves (e.g., effect on their company stock holdings and/or bonuses) and other stakeholder groups (e.g., effect on stockholders' investment returns). Further, the CEOs must be cognizant of the rules guiding the financial reporting decision (e.g., GAAP), as well as laws that regulate the decision (e.g., Sarbanes-Oxley Act). In order to control for the effects of these other potential influences, we develop a model of the decision process that a manager might use when making a financial reporting decision. This model allows us to control for other factors, in addition to the participants' level of moral reasoning and their perceived influence of the Sarbanes-Oxley Act, that are likely to affect financial reporting decisions. We discuss each of these potential factors as follows.

### ***Generally Accepted Accounting Principles (GAAP)***

The starting point for any FSA decision should be the GAAP guiding the transaction, since GAAP defines how assets and liabilities, as well as revenues and expenses, are measured and recognized. In fact, most research seems to indicate that the rules codified in GAAP are considered early in the decision-making process by preparers, auditors, and users of financial information (Ashbaugh 2004; Wyatt and Gaa 2004; Colson 2004). In investigating how important GAAP is to the non-accountant, Bouwman et al. (1995) report that GAAP-based information serves as a screening mechanism that quickly eliminates unattractive investment candidates. Therefore, we propose GAAP as one of the primary influences in our decision model.

### ***Individuals' Self-Interest versus Stockholders' Interests***

In addition to the external influences affecting FSA decisions (GAAP and Sarbanes-Oxley), internal factors will likely vary among individuals and also affect their decision processes. Among the possible internal factors are the individual's motivation mechanisms and self-concept which can result in systematic differences in ethical appraisals of situations among decision makers (Patterson 2001). Any number of things can motivate a decision maker. For instance, one decision maker may be interested in doing what is best for the stockholders (Ruf et al. 2001), while another is concerned with the size of this year's bonus (Guerra 2004).

A review of the earnings management literature by Healy and Wahlen (1999, 367) indicates that "in general, the evidence is consistent with firms managing earnings to ... increase managers' compensation and job security." In fact, a number of empirical studies have found that corporate managers adjust earnings in order to meet various benchmarks (Burgstahler and Dichev 1997; Defond and Park 1997). Reward programs often create perverse incentives for individuals to engage in unethical conduct (Carson 2003). For example, Matsunaga and Park (2001) suggest that CEOs have economic incentives to meet analysts' earnings forecasts since it may affect their annual bonus. Given that the prior research suggests that corporate managers may consider their own self-interest when making financial reporting decisions, we include the individual's self-interest as an influence in our decision model.

Though CEOs may consider their own self-interest when making FSA decisions, ethical leadership also includes being perceived as having a concern for multiple stakeholders (Trevino et al. 2003). Further, Section 302 of the Sarbanes-Oxley Act of 2002 is primarily intended to benefit the corporations' stockholders and creditors by improving the quality of a company's financial reporting system. Klein (2003, 353) argues that "these laws should have positive effects on improving financial reporting as they place responsibility for a firm's financial reports squarely on the shoulders of the firm's senior officers." While corporate officers may be influenced by the criminal and civil sanctions included with the Sarbanes-Oxley Act of 2002, they may also be influenced by a primary motivation of this Act, which was to protect stockholders' and creditors' interests. Thus, we propose stockholders' interests as an additional influence in our FSA decision model.

### ***Gender***

Gilligan (1982) argues that men and women are different in terms of their moral development and in their approach to ethical decision making. For example, Gilligan (1982) suggests that men use a hierarchy of rules when they make their ethical decisions while women consider broad interlocking social networks when making similar decisions. However, while a number of studies have examined the effects of gender on ethical

decision-making in business, the results of these studies have been mixed. For example, Ford and Richardson (1994) reviewed the decision-making literature that examines the effects of gender on ethical decisions. Of the 14 studies reviewed, seven were found to have differences in the ethical decision-making process due to gender, and the remaining seven found no difference. In a more recent discussion of the effects of gender on ethical decision-making, Elm et al. (2001) also conclude that the results of studies that examine the effect of gender on moral reasoning have produced mixed results and that “there appears to be equal support for both the presence and absence of differences between men and women” (Elm et al. 2001, 246).

While the results of prior studies make it difficult to make a directional prediction on how gender will affect our participants’ FSA, these studies do suggest that it is important to include the gender of the participants as a control variable in our FSA decision model.

### Model of FSA Decision Process

Based on the preceding discussion, we develop a regression model of the decision influences likely to affect the decision process used by individuals when making a financial reporting decision. We extend the literature by creating a model which incorporates environmental influences into the post-Sarbanes-Oxley FSA decision process. The model allows us to examine the hypothesized effects of government regulation (Sarbanes-Oxley Act) and the individual’s level of moral reasoning, as well as control for other factors that are likely to affect financial reporting decisions such as personal interest, stakeholders’ interests, GAAP, and gender.

The amount of the loss recognized in the financial statements through the FSA decision serves as the dependent variable (*Adjustment*) in the regression model. The first independent variable relates to H1 and represents the participants’ influence ratings for the Sarbanes-Oxley Act (*SOX*). The second independent variable relates to H2 and the participants’ level of moral reasoning (*Moral*). The third independent variable relates to H3 and represents the interaction between the participants’ level of moral reasoning and their influence rating for the Sarbanes-Oxley Act (*Moral* × *SOX*). Based upon our previous discussion, we control for other potential influences on the FSA decision by including control variables for the influence of the rules of the accounting profession (*GAAP*), self-interest (*Personal*), the interests of the stockholders (*Stockholders*) and the participants’ gender (*Gender*). The resulting regression model is as follows:

$$\begin{aligned} Adjustment = & a + b_1SOX + b_2Moral + b_3Moral \times SOX + b_4GAAP \\ & + b_5Personal + b_6Stockholders + b_7Gender + e \end{aligned} \quad (1)$$

## METHOD

### Participants

Seventy-four part-time MBA students registered in a part-time MBA program located in the northeast participated in our study.<sup>2</sup> Though very few of the participants had upper-level managerial experience, all of them had some business-related work experience. Also,

<sup>2</sup> Prior research has found that MBA students make managerial decisions in a similar fashion as corporate managers. For example, Remus (1996) reports no differences in decisions of graduate business students and managers, but did report differences between managers and undergraduate students. He suggests that graduate students are often close in age, education, and experience to managers and that this is the reason that no differences were found. In addition, many graduate business students are the middle managers who generate the information used by CEOs in their decision-making. It is expected that their work will be held to as high a standard as that of the CEO.

as we describe in more detail below, all of the participants had the requisite knowledge to complete the task. Thus, our participants' behavior should help us to understand current managerial decision-making behavior. Further, some of our participants may assist CEOs in making similar financial decisions in the future, or may even serve as CEOs of public corporations themselves. Therefore, it is also important to understand what our participants believe is acceptable financial reporting behavior since it will help us understand the factors that are likely to affect their future financial reporting decisions.

Eighty-nine percent of the part-time MBA students were under 40 years of age and 57 percent were male. All of the participants held positions in business, with 44 percent having more than five years of work experience. Further, all of the participants had completed the financial accounting course required in their part-time MBA program. This introductory financial accounting course covered several concepts relevant to completion of the case materials including the concepts of "materiality," "fair value," and "earnings management." This fundamental accounting knowledge, combined with the explanations of the relevant GAAP provided to the participants, ensured that the participants had the appropriate knowledge and information required to complete the case. Each participant was asked to complete the test instruments during regularly scheduled class time. Table 1 provides the relevant demographic data for the participants.<sup>3</sup>

### Task and Procedures

The participants were first provided with general instructions that briefly described the certification responsibilities of the CEO and CFO under Section 302 of the Sarbanes-Oxley Act. The instructions also indicated that if "officers knowingly violate the provisions of this Act, they can be held personally liable." After being given these general instructions, the participants were next provided with a hypothetical case (see the Appendix) involving an impairment loss on the company's computer system.<sup>4</sup> The participants were told that significant improvements in technology had rendered the company's existing computer system obsolete. Thus, the company planned to replace the existing computer system with new computer equipment.

The experimental materials indicated that both the controller and the treasurer agreed that an impairment "loss should be recorded" and that "the loss is equal to the amount by which the carrying amount of the asset exceeds the fair value of the asset." Though they both agreed on the carrying value of the computer system, they disagreed on its fair value. The participants were informed that the carrying value of the older equipment was \$9

---

<sup>3</sup> Though Table 1 indicates that only 29 percent (22 participants) of our participants had middle or senior managerial experience (two participants did not respond), additional data and analyses suggest that the remaining participants responded in a similar fashion to the case materials as did these more experienced managers. A comparison of the responses to each of the dependent and independent variables in our regression model between the 52 participants without middle or senior management experience and those 22 participants with such experience indicate no significant differences ( $p < .10$ ). In fact, the means of the responses for the two groups were very similar with no  $p$ -value less than .40. This suggests that the 52 participants without middle or senior management experience responded similarly to the case materials as the 22 participants with such experience. Further, all of the 52 participants without middle or senior managerial experience had some work experience and are currently receiving business training at a graduate level, providing them with the relevant knowledge to perform the task. Taken together, these data suggest that the participants in our study without middle or senior managerial experience represent a reasonable proxy for more experienced managers.

<sup>4</sup> The test instrument was evaluated by seven faculty members (six from accounting, one from marketing) from two universities. Improvements based on the input from these faculty members were incorporated into the next draft of the instrument. The test instrument was then administered to 22 senior undergraduate accounting majors to test it for readability and clarity. Feedback from the pilot test indicated that in general, the instruments and instructions were clear and easily understood. Some minor improvements were made to the instrument, with the final version of the instrument being approved by the Institutional Review Board.



**TABLE 1**  
**Demographic Data**

<u>Age</u>	<u>Percentage of Participants<sup>a</sup></u>
30 or under	66
31–40	23
41–50	8
Over 50	3
 <b><u>Gender</u></b>	
Female	43
Male	57
 <b><u>Years of Work Experience</u></b>	
No response	2
< 1	4
1–2	19
3–5	31
6–10	20
11 or more	24
 <b><u>Managerial Level</u></b>	
No response	4
Nonmanagerial	45
Entry-level management	21
Middle management	25
Senior management	4
 <b><u>Taken Accounting Courses at the College Level?</u></b>	
Yes	100
 <b><u>Own Investments in Stocks or Mutual Funds?</u></b>	
No	8
Yes	92

<sup>a</sup> Totals may not add to 100 percent due to rounding.

million and that the treasurer of the company recommended that the company should recognize the full \$9 million as an impairment loss, since he believed the equipment was essentially worthless. However, the participants were also informed that the controller of the company recommended that even though the company was purchasing new computer equipment, they could continue to hold the older equipment and recognize depreciation expense of \$3 million over each of the next three years (based on the original expected life). The controller indicated that since he had an insurance appraisal for \$6 million that could be used to estimate fair value, the write-down from the carrying value of \$9 million would only be \$3 million, the same as depreciation expense. The controller also said that if the equipment had to be sold, he believed the company might be able to sell the equipment for \$1 to \$1.5 million.

In summary, the more conservative option was presented by the treasurer who believed that the used computer equipment was in fact worthless. He proposed an adjustment of \$9 million. Though this adjustment decision may be viewed as conservative, it is the correct decision based on GAAP if the equipment is in fact worthless. On the other hand, the option presented by the controller can be perceived as aggressive because it would be very difficult to justify on a GAAP basis.<sup>5</sup> His recommendation was based on the use of an insurance appraisal of \$6 million as a measure of fair value, resulting in an adjustment of \$3 million. However, the controller himself acknowledged in the case materials that if the company tried to sell the equipment they “might be able to sell the equipment to a used computer dealer for \$1 to \$1.5 million.” Thus, based on the controller’s own estimate of selling price (a better estimate of fair value than an insurance appraisal),<sup>6</sup> the adjustment for the impairment loss should have been from \$7.5 to \$8 million. Therefore, in order to make an FSA decision that conforms to GAAP, the participants should have made an adjustment from \$7.5 to \$9 million. Further, given that the participants were told that income before tax was \$20 million (assuming an adjustment of only \$3 million), the magnitude of an adjustment conforming to GAAP was clearly material.

Since the participants were not trained accountants, the instrument also included an explanation of the relevant GAAP for accounting for impairment losses. After being provided with a summary of the case information, the participants were asked, “If you were CEO, what amount of depreciation expense and/or loss would you record for the used computer equipment that has been replaced?” The dollar amount of the participants’ response serves as the independent variable used to examine Hypotheses 1, 2, and 3. After providing the dollar amount for their adjustment decision, the participants were asked to rate how important each influence was in making their decision. The influences they were asked to rate included the rules as expressed by generally accepted accounting principles (GAAP), responsibilities under the Sarbanes-Oxley Act (SOX), the interests of the stockholders (Stockholders), and the CEO’s performance evaluation (Personal). The extent to which each factor influenced their decision was measured on a seven-point scale with endpoints labeled “not at all” (1) and “very much” (7). The participants were then asked to respond to various demographic questions and were also asked to assess the confidence they had in making their adjustment decision.

### Defining Issues Test

After completing the case instrument, the participants were asked to complete the Defining Issues Test (DIT), in order to provide a measure of the participants’ level of moral reasoning (Moral). The DIT is a well-known psychometric instrument that has been used

---

<sup>5</sup> We define “aggressive accounting” consistent with the definition used by Mulford and Comiskey (2002, 3). They define “aggressive accounting” as follows: “A forceful and intentional choice and application of accounting principles done in an effort to achieve desired results, typically higher current earnings, whether the practices followed are in accordance with GAAP or not.”

<sup>6</sup> GAAP consistently defines fair value based on an exchange price notion. For example, the Financial Accounting Standards Board defines fair value as follows: “The amount at which the asset (or liability) could be bought (or incurred) or sold (or settled) in a current transaction between willing parties, that is, other than in a forced or liquidation sale.” (Statement of Financial Accounting Concepts No. 7, p. 8). In fact, this is the identical definition of fair value used by the Financial Accounting Standards Board for Statement of Financial Accounting Standards No. 144 (Accounting for the Impairment or Disposal of Long-Lived Assets), the relevant financial accounting standard that describes the GAAP for our hypothetical case. Given that the Financial Accounting Standards Board is the body that develops generally accepted accounting principles in the U.S., financial accounting textbooks describe fair value in a very similar fashion.

extensively in ethics research to assess participants' principled moral reasoning. The newer DIT-2, rather than the original DIT, was used in this study. The DIT-2 produces slightly stronger results than the DIT for validity and reliability (Rest and Narvaez 1998). The DIT-2 contains a measure, the N2 score, which generally outperforms the P Score used in the original DIT (Mudrack 2003, Rest et al. 1997).<sup>7</sup>

## RESULTS

### Data Analysis

The first two research hypotheses posit that the participants' perceived influence of the Sarbanes-Oxley Act (H1) and their level of moral reasoning (H2) will be positively associated with the amount of the impairment loss recognized through their FSA decision. Hypothesis 3 posits that there will be an interaction between the participants' level of moral reasoning and their perceived influence of the Sarbanes-Oxley Act. More specifically, H3 proposes that the perceived influence of the Sarbanes-Oxley Act will have a greater positive effect on the FSA decision for participants at lower levels of moral reasoning than for participants at higher levels of moral reasoning. We examine H1, H2, and H3 through the regression model (see equation 1), described earlier, where the amount of the impairment loss recognized through the FSA decision serves as the dependent variable (*Adjustment*).<sup>8</sup>

### Hypotheses Testing

The mean (standard deviation) for the amount of the impairment loss recognized through the FSA decision was \$6,158,784 (\$2,810,686). The means and standard deviations for each of the influences (*SOX*, *GAAP*, *Personal*, and *Stockholders*) and the participants' level of moral reasoning are presented in Table 2. The results of the performance of the above regression are presented in Table 3. As indicated by Table 3, the overall regression model was significant (adjusted  $R^2 = .252$ ,  $F = 4.52$ ,  $p = .000$ ). An examination of the control variables analyzed in the regression model reveals that the interests of the stockholders ( $\beta = -.28$ ,  $t = -2.72$ ,  $p = .008$ , two-tailed test) and the gender of the participants ( $\beta = -.32$ ,  $t = -3.04$ ,  $p = .003$ , two-tailed test) are significantly associated with the amount of loss recognized through the FSA decision. The negative association between the participants' rating of how much the interests of the stockholders influenced their adjustment decision indicates that as this influence increases, the amount of loss recognized through the FSA decreases. Also, since the gender variable was a dichotomous variable

---

<sup>7</sup> The N2 index has two components: (1) the P score with changes related to the treatment of missing data, and (2) rating data that is not used in the P score. Mudrack (2003) says "the N2 index gauges the degree to which respondents discriminate between ratings for lower stages and ratings for higher stages and agrees with Rest et al. (1997) that a stronger association may exist between N2 scores and other variables than between the P score and the same variables." DIT-2 results were compiled and evaluated at the Center for the Study of Ethical Development at the University of Minnesota (the Center).

<sup>8</sup> In order to determine if any of the demographic variables gathered from the participants should be included as control variables in the regression model used to examine the hypotheses, the correlations between each demographic variable and the FSA decision were determined. Only the gender of the participants, which had already been included as a control variable in our regression model, was found to be significantly associated with the FSA decision ( $p < .05$ ). Therefore, no additional demographic variables were included as control variables in the regression model.

**TABLE 2**  
**Means and Standard Deviations for Influences on Adjustment Decision**  
**(n = 74)**

<u>Influence<sup>a</sup></u>	<u>Mean<sup>b</sup></u>	<u>Std. Dev.</u>
<i>SOX</i>	5.69	1.41
<i>GAAP</i>	5.88	1.06
<i>Personal</i>	3.03	1.81
<i>Stockholders</i>	4.81	1.51
<i>Moral (N2 Score)</i>	31.74	14.38

<sup>a</sup> The influences on the adjustment decision represent the participants' assessment of the extent that the Sarbanes-Oxley Act (*SOX*), generally accepted accounting principles (*GAAP*), the CEO's performance evaluation (*Personal*) and the interests of the stockholders (*Stockholders*) affected their adjustment decision. The participants assessed the extent of each of these influences on a seven-point scale with endpoints respectively labeled "not at all" (1) and "very much" (7). *Moral* represents the participants' N2 score from the Defining Issues Test and is a measure of moral judgment.

<sup>b</sup> Paired-wise t-tests between the various influences indicate that the participants perceived the influence of the Sarbanes-Oxley Act (*SOX*) and generally accepted accounting principles (*GAAP*) to be significantly higher ( $p < .001$ ) than both the stockholders' interests (*Stockholders*) and their personal interests (*Personal*). There were no differences between the participants' perceived influence of *GAAP* or *SOX*. Also, the participants perceived the stockholders' interests to be significantly greater ( $p < .001$ ) than their personal interests.

**TABLE 3**  
**FSA Decision for Impairment Loss Regression Analysis**  
**(n = 74)**

**Dependent Variable<sup>a</sup>:** *Amount of Impairment Loss*

<u>Independent Variables<sup>b</sup>:</u>	<u><math>\beta</math></u>	<u>t-Value</u>	<u>Significance<sup>c</sup></u>
<i>SOX</i>	.96	3.33	.0005
<i>Moral (N2 Score)</i>	1.24	2.70	.005
<i>Moral</i> $\times$ <i>SOX</i>	-1.26	-2.39	.010
<b>Control Variables:</b>			
<i>GAAP</i>	-.16	-1.46	.149
<i>Personal</i>	.13	1.06	.293
<i>Stockholders</i>	-.28	-2.72	.008
<i>Gender</i>	-.32	-3.04	.003

Adjusted  $R^2 = .252$ ,  $F = 4.52$ ,  $p = .000$ .

<sup>a</sup> The dependent variable represents the amount of depreciation expense and/or loss that the participants would have recorded for certain obsolete computer equipment owned by a hypothetical company.

<sup>b</sup> The influences on the adjustment decision represent the participants' assessment of the extent that the Sarbanes-Oxley Act (*SOX*), generally accepted accounting principles (*GAAP*), the CEO's performance evaluation (*Personal*) and the interests of the stockholders (*Stockholders*) affected their adjustment decision. The participants assessed the extent of each of these influences on a seven-point scale with endpoints respectively labeled "not at all" (1) and "very much" (7). *Moral* represents the participants' N2 score from the Defining Issues Test and is a measure of moral judgment. *Gender* is a dichotomous variable coded as 1 for males and 2 for females.

<sup>c</sup> The significance levels for *SOX*, *Moral*, and *Moral*  $\times$  *SOX* are based on one-tailed tests, since they are based on directional predictions. The significance levels for the control variables are based on two-tailed tests.

coded 1 for males and 2 for females, the negative association indicates that females made smaller FSAs than males.<sup>9</sup> Finally, the control variables for the influence of the rules of the profession (*GAAP*) and personal interest (*Personal*) based on the assessed importance of the performance evaluation, were not significant at conventional levels.

The first hypothesis (H1) posits that the participants' perceived influence of the Sarbanes-Oxley Act (*SOX*) will be positively associated with the amount of loss recognized through their FSA. The results support H1 since *SOX* is significantly positively associated ( $\beta = .96$ ,  $t = 3.33$ ,  $p = .0005$ ) with the FSA decision. The second hypothesis (H2) posits that the participants' level of moral reasoning (*Moral*) will also be positively associated with the amount of loss recognized through their FSA decision. The results also support H2 since the participants' N2 scores (*Moral*) were significantly positively associated ( $\beta = 1.24$ ,  $t = 2.70$ ,  $p = .005$ ) with the FSA decision. Finally, H3 posits that there will be an interaction between the participants' level of moral reasoning (*Moral*) and their perceived influence of the Sarbanes-Oxley Act (*SOX*). As indicated in Table 3, the interaction variable (*Moral*  $\times$  *Sox*) is significant ( $\beta = -1.26$ ,  $t = -2.39$ ,  $p = .01$ ), providing support for H3.<sup>10,11</sup>

In order to further analyze the significant interaction between the participants' level of moral reasoning (*Moral*) and their perceived influence of the Sarbanes-Oxley Act (*SOX*) on the amount of loss recognized through their FSA decision, we partition our sample based on the median score on the Defining Issues Test. Participants who have a score more (less) than the participants' median score of 32.26 on the Defining Issues Test are partitioned into the higher (lower) levels of moral reasoning group. The following regression equation is performed for each of the partitioned groups, in order to further understand the differential effects of the various influences on participants at differing levels of moral reasoning.

$$\begin{aligned} \text{Adjustment} = & a + b_1\text{SOX} + b_2\text{GAAP} + b_3\text{Personal} + b_4\text{Stockholders} \\ & + b_5\text{Gender} + e \end{aligned} \quad (2)$$

A review of the regression results presented in Panels A and B of Table 4 provides some interesting insights. First, the influence of the recently enacted Sarbanes-Oxley Act is significantly positively associated with the adjustment decision for those participants at lower levels of moral reasoning ( $\beta = .56$ ,  $t = 3.46$ ,  $p = .001$ ), but is not significantly associated with the adjustment decision for those participants at higher levels of moral

<sup>9</sup> Unlike Bernardi and Arnold (1997), the mean score on the defining issues test for the female participants (mean = 34.49) in our study was not significantly higher ( $t = 1.44$ ,  $p = .153$ , two-tailed test) than the mean score of the male participants (mean = 29.65). Further, it is not clear why the female participants in our study made smaller financial statement adjustments than the male participants. A possible explanation for this finding is that the female participants did not view the financial statement adjustment decision for the asset impairment case as an ethical-type decision. This issue warrants further research.

<sup>10</sup> Additional analyses were performed to determine if any of the other FSA decision influences (GAAP, personal interest, or stockholders' interest) interacted with the participants' level of moral reasoning. The additional interaction terms with the participants' level of moral reasoning for GAAP ( $t = -.045$ ,  $p = .965$ ), personal interest ( $t = -.302$ ,  $p = .763$ ) and stockholders' interest ( $t = -.564$ ,  $p = .575$ ) were not significant.

<sup>11</sup> Given that one could argue that any financial statement adjustment from \$7.5 to \$9 million is equally acceptable since it would be in conformity with GAAP, we also performed a logistic regression analysis using a dichotomous variable for the financial statement adjustment decision. The dependent variable was coded as 1 for an FSA from \$7.5 to \$9 million (conformity with GAAP) and as 0 for an FSA less than \$7.5 million (not in conformity with GAAP). The results of this additional analysis are virtually identical to those reported using the size of the adjustment as the dependent variable.

**TABLE 4**  
**FSA Decision for Impairment Loss Regression Analysis by Level of Moral Reasoning**

<u>Independent Variables<sup>a</sup>:</u>	<u><math>\beta</math></u>	<u>t-Value</u>	<u>Significance<sup>b</sup></u>
<b>Panel A: Participants at Lower Levels of Moral Reasoning (n = 37)</b>			
Influences on Adjustment Decision:			
<i>SOX</i>	.56	3.46	.001
<i>GAAP</i>	.06	.33	.744
<i>Personal</i>	.16	.94	.353
<i>Stockholders</i>	-.28	-1.92	.064
<i>Gender</i>	-.34	-2.41	.022
Adjusted R <sup>2</sup> = .296, F = 4.03, p = .006.			
<b>Panel B: Participants at Higher Levels of Moral Reasoning (n = 37)</b>			
Influences on Adjustment Decision:			
<i>SOX</i>	.07	.42	.338
<i>GAAP</i>	-.21	-1.23	.226
<i>Personal</i>	.01	.07	.942
<i>Stockholders</i>	-.29	-1.81	.080
<i>Gender</i>	-.27	-1.69	.101
Adjusted R <sup>2</sup> = .099, F = 1.79, p = .143.			

<sup>a</sup> The influences on the adjustment decision represent the participants' assessment of the extent that the Sarbanes-Oxley Act (*SOX*), generally accepted accounting principles (*GAAP*), the CEO's performance evaluation (*Personal*) and the interests of the stockholders (*Stockholders*) affected their adjustment decision. The participants assessed the extent of each of these influences on a seven-point scale with endpoints respectively labeled "not at all" (1) and "very much" (7). *Gender* is a dichotomous variable coded as 1 for males and 2 for females.

<sup>b</sup> The significance level for *SOX* is based on a one-tailed test, since it is based on a directional prediction. The significance levels for *GAAP*, *Personal*, *Stockholders*, and *Gender* are based on two-tailed tests.

reasoning ( $\beta = .07$ ,  $t = .42$ ,  $p = .338$ ). This finding supports H3, since H3 posits that the perceived influence of the Sarbanes-Oxley Act will have a greater positive effect on the FSA decision for participants at lower levels of moral reasoning than for participants at higher levels of moral reasoning. Our finding is also consistent with prior research on moral reasoning which indicates that individuals at lower levels of moral reasoning are more concerned with obeying rules and may be more influenced by a fear of punishment through legal sanctions and penalties than individuals at higher levels of moral reasoning (Graham 1995; Patterson 2001; Trevino 1986).

A further review of the regression results for the participants at lower levels of moral reasoning indicates that similar to the full sample results, the interests of the stockholders ( $\beta = -.28$ ,  $t = -1.92$ ,  $p = .064$ , two-tailed test) and the gender of the participants ( $\beta = -.34$ ,  $t = -2.41$ ,  $p = .022$ , two-tailed test) are significantly associated with the FSA decision. As indicated earlier, since the gender variable was a dichotomous variable coded 1 for males and 2 for females, the negative association indicates that females made smaller FSAs than males for those participants at a lower level of moral reasoning.

Interestingly, the only variable significantly associated with the amount of loss recognized through the FSA decision for the participants at higher levels of moral reasoning was the participants' concern for the interests of the stockholders ( $\beta = -.29$ ,  $t = -1.81$ ,  $p = .080$ , two-tailed test).

= .08, two-tailed test). This finding is consistent with the characteristics of the post-conventional level of moral development where adults are concerned with universal moral principles (Graham 1995). However, the negative association for the participants at higher levels of moral reasoning, as well as the participants at lower levels of moral reasoning, indicates that the participants in our study appear to be equating a smaller FSA, and consequently a higher reported net income, as being in the best interests of the stockholders. This finding is consistent with the earnings management literature. For example, in a review of the earnings management literature, Healy and Wahlen (1999) discuss incentives that managers may have to manage earnings. In addition to the motivation to increase personal compensation, they cite a number of studies that have found incentives to influence stock market performance through earnings management. While the motivation to affect stock market performance can also influence the managers' personal compensation, it is likely that managers believe that stockholders will also benefit from these increased stock prices. In fact, Arya et al. (2003) suggest that earnings management "can be in the best interests of owners."

While approaching significance, the gender variable was not significant at conventional levels for the participants at higher levels of moral reasoning ( $\beta = -.27$ ,  $t = -1.69$ ,  $p = .101$ , two-tailed test). However, given the relatively small sample size for the regression analysis ( $n = 37$ ) reported in Panel B, it is not possible to determine if the lack of significance is due to the limited power of the statistical test, or if in fact there is no significant relationship.

In order to further analyze the significant interaction between the participants' level of moral reasoning (*Moral*) and their perceived influence of the Sarbanes-Oxley Act (*SOX*), we partitioned the participants into six groups based on the effect of these two influences on their FSA decision (see Table 5). Using methodology identical to Table 4, the participants were partitioned into two levels (higher and lower) of moral reasoning. The participants were also partitioned into three groups (high, moderate, and low influence)

**TABLE 5**  
**Mean FSA Decision for Impairment Loss by Participants' Level of Moral Reasoning and Perceived Influence of Sarbanes-Oxley Act<sup>a</sup>**

		Level of Moral Reasoning			
		High	n <sup>b</sup>	Low	n <sup>b</sup>
Influence of Sarbanes-Oxley:	High	\$6,666,667	18	\$7,750,000	7
	Moderate	\$6,250,000	16	\$6,041,667	24
	Low	\$6,166,667	3	\$3,000,000	6
All Participants:		\$6,445,946	37	\$5,871,622	37

<sup>a</sup> The FSA represents the amount of depreciation expense and/or loss that the participant would have recorded for certain obsolete computer equipment owned by a hypothetical company. The participants are partitioned into high and low levels of moral reasoning based on the participants' N2-score from the Defining Issues Test. Participants with a score more (less) than the median score of 32.26 are included in the high (low) level of moral reasoning group. The influence of Sarbanes-Oxley represents the extent to which the Sarbanes-Oxley Act influenced the participants' FSA decision. The influence was measured on a seven-point scale with endpoints respectively labeled "not at all" (1) and "very much" (7). Participants who rated the influence of Sarbanes-Oxley as 7 were included in the "high" influence group, as 5 or 6 in the "moderate" influence group, and as 2, 3, or 4 in the "low" influence group.

<sup>b</sup> n represents the number of participants included in that cell.

depending on their perceived influence of the Sarbanes-Oxley Act.<sup>12</sup> We then performed *t*-tests to compare the mean amounts of the participants' FSA decisions. Consistent with H3, there were no differences in the FSA decisions for those participants in the high, moderate, or low influence groups at higher levels of moral reasoning. However, consistent with H3 there were significant differences in the FSA decisions for those participants at lower levels of moral reasoning. For example, the mean amount of the FSA decision of \$7,750,000 for the high influence group was significantly greater than the mean amount of \$6,041,667 for the moderate influence group ( $t = 1.70, p = .057$ , one-tailed test) and was also significantly greater than the mean amount of \$3,000,000 for the low influence group ( $t = 5.73, p = .0005$ , one-tailed test). Further, the mean amount of the FSA decision of \$6,041,067 for the moderate influence group was significantly greater than the mean amount of \$3,000,000 for the low influence group ( $t = 5.34, p = .000$ , one-tailed test). In summary, the Table 5 data clearly illustrate the interaction effect predicted by H3.<sup>13</sup>

### CONCLUSIONS, DISCUSSION AND LIMITATIONS

Our study finds that the participants' level of moral reasoning and their assessed influence of the Sarbanes-Oxley Act were significantly positively associated with the amount of loss recognized through their FSA decision in an asset-impairment case. More importantly, there was a significant interaction between the participants' level of moral reasoning and the assessed influence of the Sarbanes-Oxley Act. Consistent with expectations, the influence of the recently enacted Sarbanes-Oxley Act was significantly positively associated with the amount of loss recognized through an FSA decision for those participants at lower levels of moral reasoning, but not with the amount of loss recognized through an FSA decision for those participants at higher levels of moral reasoning. Thus, the findings from our study suggest that the Sarbanes-Oxley Act may be an effective deterrent for an overstatement of financial statement income by individuals at lower levels of moral reasoning, but not necessarily for those individuals at higher levels of moral reasoning. As described earlier, this finding is consistent with prior research on moral reasoning which indicates that individuals at lower levels may be more influenced by a fear of punishment through legal sanctions and penalties than individuals at higher levels (Graham 1995; Patterson 2001; Trevino 1986). Further, the finding that FSA decisions of individuals at lower levels of moral reasoning are influenced by the Sarbanes-Oxley Act should be of considerable interest to regulators as they attempt to assess the effects of the Sarbanes-Oxley Act.

Our study is the first study of which we are aware to find a significant positive association between individuals' level of moral reasoning and their FSA decisions. Further, our

---

<sup>12</sup> Because the participants rated how much the Sarbanes-Oxley Act affected their FSA decision on a seven-point scale with endpoints labeled "not at all" (1) and "very much" (7), it was not possible to separate them into two equal groups, since the influence measure was not continuous. We believe that partitioning the participants into three groups based on how much the Act affected their FSA decision provides the most insightful results.

<sup>13</sup> In addition to the asset impairment case, the participants were also asked to complete a short case for a hypothetical company that was the defendant in a patent-infringement lawsuit. The participants were provided with the outside corporate counsel's estimate of the range (both amount and probability) of potential loss from the lawsuit. They were also provided with the relevant GAAP and were then asked to determine whether the lawsuit contingency required an FSA or a footnote disclosure and to indicate the amount of the adjustment or disclosure. As in the asset impairment case, they were then asked to rate how important each influence was in making their decision. Regression equation 1 was used to examine the contingent liability case. However, unlike the asset impairment case, none of the decision influences were significantly associated with the adjustment or disclosure decision. A potential explanation for this finding is that unlike the asset impairment case, the contingent liability case provided an opinion from an outside expert (outside legal counsel) upon which the participants were able to rely. In fact, the opinion from the outside legal expert reasonably supported either a financial statement disclosure or an adjustment decision. The findings may also suggest that managerial decision makers are likely to yield to legal authority over their own interpretation of GAAP.



study proposes a model of the FSA process that identifies a number of potential influences on the decision process. In addition to the level of moral reasoning, our model proposes that the FSA decision will also be affected by the individuals' perceived influence of the recently enacted Sarbanes-Oxley Act, the individuals' concern for the stockholders' interests, the individuals' perceived influence of rules of the accounting profession (GAAP) and the individuals' self-interest based on their own performance evaluation. This model may be used by other accounting researchers when they examine the financial statement adjustment decision process.

Our results also indicate that although the participants rated the rules of the accounting profession (GAAP) as being one of the most important influences in making their adjustment decision, the influence of GAAP was not significantly associated with the FSA decision. Interestingly, as indicated by the Table 2 data, the standard deviation for the GAAP influence was much lower than any of the other three influences. This suggests that there may be a general consensus among the participants that GAAP is a very important influence in making an adjustment decision. Because of the low variance in the perceived importance of this influence, it is more difficult to find a significant association in the regression analyses reported in Tables 3 and 4.<sup>14</sup> Considered together with our other results, it appears that even though GAAP is considered a very important influence for individual decision-makers' adjustment decisions, it is differences in the perceived influence of the Sarbanes-Oxley Act and the interests of the stockholders (as well as the individual's level of moral reasoning) that explain differences in FSA decisions.

As with any research study, the findings from this study must be considered along with the limitations of the study. One limitation relates to the participants of the study. The purpose of our study, given the new certification requirement imposed by the Sarbanes-Oxley legislation, was to examine the decision process used by managers in making FSA decisions. Though all of our participants were part-time MBA students who held positions in business, most of our participants do not hold senior-level management positions. Thus, our ability to generalize the results of our study to corporate managers (particularly CEOs) is limited. However, this limitation is mitigated by the fact that our participants, similar to senior-level managers, had the requisite business training and accounting knowledge to complete the task. In addition, there is some indication of "Trickle-Down Accountability" (Koehn and Del Vecchio 2004). In some cases lower and middle managers are being asked to certify the reports they generate for top management, and in other cases third parties are being required to certify such documents.

Another limitation relates to our experimental design. In order for us to assess the influence of the recently enacted Sarbanes-Oxley Act on our participants' FSA decisions, we asked the participants to indicate the extent of this influence by responding on a seven-point Likert-type scale. A preferable experimental design for examining whether the Sarbanes-Oxley Act influences FSA decisions would have been to examine a pre- versus post-Sarbanes-Oxley Act effect on participants' FSA decisions. However, given that the Sarbanes-Oxley Act had already been enacted at the time of our study, it was not possible to conduct such an experiment.

---

<sup>14</sup> There is another potential explanation for the lack of a significant association between the participants' perceived influence of GAAP and the amount of loss recognized through their FSA decision. If the participants believed that GAAP was clearly followed and not violated, that could also explain the lack of a significant association. While this explanation is not consistent with the relatively high mean for the participants' perceived influence of GAAP, it is consistent with the low variance.

An additional limitation relates to the FSA model used in our study. Our model identified factors likely to affect individuals' financial reporting decisions including the individuals' level of moral reasoning, along with other internal (self-interest and stockholders' interests) and external influences (GAAP and SOX). This model was used to empirically examine the FSA decisions made by our participants. However, there may be other influences and factors affecting individuals' FSA decisions (e.g., the corporate culture for each manager's employer), and those of our participants, not identified through our model.

Finally, since we gathered the participants' influence data after they had made their FSA decision, there is the potential for demand effects since the participants may have rationalized their FSA decision through the weights they assigned to the various influences. However, the results of this study suggest that the plausibility of this explanation is limited. For example, it is unlikely that such demand effects would have existed for the Sarbanes-Oxley Act and the stockholders' interest influence variables and not for the GAAP and personal interest influence variables. More importantly, it is very unlikely that we would have obtained the specific interaction predicted by H3 if demand effects had existed since it is improbable that the demand effects would have followed the form of an interaction fitting our theory.

Despite these limitations, our study makes some important contributions to this relatively new area of financial reporting brought about by the Sarbanes-Oxley Act of 2002. Of particular importance are our findings related to the interaction between the participants' level of moral reasoning and their assessed influence of the Sarbanes-Oxley Act. Further, the regression model used in our study to examine the FSA decisions helps to clarify the decision-making process used by individuals in making FSA decisions. It also provides a model that can be used by other researchers to examine additional issues related to this significant new area of financial reporting.

#### **APPENDIX ASSET IMPAIRMENT CASE**

Flint Inc. is a publicly traded company listed on the NASDAQ. Flint installed a new computer network early in 2000 which included \$15 million for computer equipment. The company has depreciated this equipment on a straight-line basis assuming a five-year life, thus annual depreciation expense has been \$3 million. Significant improvements in technology have made the computer components of the network obsolete. As a result, early in 2002 Flint replaced the computers at a total cost of \$10 million. While Flint has decided to depreciate the new equipment over a three-year life, they must also decide how to handle the old computer equipment. They had recorded \$6 million of depreciation on this equipment up until the replacement date, therefore the value of the old equipment remaining on Flint's books is \$9 million (\$15 million cost less the \$6 million depreciation).

Charlie (CEO) is meeting with senior members of financial management to discuss how this situation should be handled for accounting purposes. Mike (controller) argues that since Flint did not trade in or sell the equipment, and will continue to hold the equipment over the next several years, it is okay to take annual depreciation expense of \$3 million until the equipment is fully depreciated. Bob (treasurer) argues that even if they continue to hold the equipment, it will not be used. He further argues that since the equipment is almost worthless in the used computer market, Flint needs to expense the full \$9 million remaining on the books this year.

Charlie realizes that the accounting for the replaced computer equipment is a very important decision. First, he recognizes that there is a significant effect on Flint's income between Bob's and Mike's proposals. If Mike's proposal is accepted and \$3 million of

depreciation is recorded on this old equipment for 2002, the income before taxes will be \$20 million. However, if Bob’s proposal is accepted and the full \$9 million remaining on the books is expensed, the income before taxes will be \$14 million. Charlie knows that the Sarbanes-Oxley Act requires him to certify that Flint’s financial statements are fairly presented in all material respects, and in order to be fairly presented, the financial statements must comply with generally accepted accounting principles (GAAP). Thus, before he makes the final decision on which proposal to accept, Charlie investigates the GAAP for handling equipment that has become obsolete.

Charlie is surprised to find out that both Bob and Mike agree on the applicable GAAP for this situation. GAAP states that if there has been a significant and permanent decrease in the market value of the equipment (impairment), it is necessary to calculate an estimated loss and to determine if that loss should be recorded. The loss is equal to the amount by which the carrying amount of the asset exceeds the fair value of the asset. While both Bob and Mike agree that a loss has occurred, they disagree on how to measure it. Bob believes that the equipment is virtually worthless in the used computer market and therefore the amount of the loss recognized should be the full \$9 million. Mike agrees that if they tried to sell the equipment the sales proceeds would be small, but he believes that Flint might be able to sell the equipment to a used computer dealer for \$1 to \$1.5 million. Further, Mike reveals that he was able to obtain an insurance appraisal which indicates the equipment is worth \$6 million. Thus, Mike argues the loss that Flint should recognize for 2002 is only \$3 million (\$9 million book value minus \$6 million appraised value). Since this is the same as the depreciation expense that would be recognized for the year, Mike believes that it is okay to recognize \$3 million of depreciation for 2002 and for each of the next two years. He said this approach conforms with GAAP if they continue to hold this equipment as back-up equipment over the next few years, even though it is very unlikely it would be needed.

Charlie believes that there are merits to both Bob’s and Mike’s arguments, which are summarized in the table below. He realizes that he must resolve this dilemma so the financial statements can be released by the end of the week. Charlie is concerned because stockholders are expecting \$20 million in income before taxes which reflects the normal charge of \$3 million for depreciation. Any income less than \$20 million is likely to disappoint stockholders and may adversely affect Charlie’s performance evaluation as well as his annual bonus.

**Mike’s and Bob’s Arguments—Summarized**

<b>Position in the Firm</b>	<b>MIKE Controller</b>	<b>BOB Treasurer</b>
Summary Opinion on the Issue	Hold the equipment and depreciate \$3 million a year for this and the next two years.	The equipment is worthless so the write off should be \$9 million, the full book value.
Rationale	<ul style="list-style-type: none"> <li>• Possibility that the equipment can be sold for \$1–\$1.5 million.</li> <li>• The company has an insurance appraisal for \$6 million, so write-down from the book value of \$9 million would be \$3 million, the same as depreciation expense this year.</li> </ul>	<ul style="list-style-type: none"> <li>• Even if held, it is unlikely the equipment will be used.</li> <li>• It will be very difficult to sell the equipment, so the market value is minimal.</li> </ul>
Income Before Tax	\$20 million	\$14 million

While we realize that you do not have access to all of the information you may want, please do your best to respond to the following questions related to the accounting decision to be made:

If you were Charlie (CEO), what amount of depreciation expense and/or loss would you record for the used computer equipment that has been replaced?

Indicate the \$ amount of your answer here. \$\_\_\_\_\_.

### REFERENCES

- Arnold, D., and L. A. Ponemon. 1991. Internal auditors' perceptions of whistle-blowing and the influence of moral reasoning: An experiment. *Auditing: A Journal of Practice & Theory* 10 (Fall): 1–15.
- Arya, A., J. C. Glover, and S. Sunder. 2003. Are unmanaged earnings always better for shareholders? *Accounting Horizons* 17 (Annual): 111–116.
- Ashbaugh, H. 2004. Ethical issues related to the provision of audit and non-audit services: Evidence from academic research. *Journal of Business Ethics* 52 (2): 143–148.
- Balsam, S. 1998. Discretionary accounting choices and CEO compensation. *Contemporary Accounting Research* 15 (3): 229–252.
- Bernardi, R. 1994. Fraud detection: The effect of client integrity and competence on auditor cognitive style. *Auditing: A Journal of Theory and Practice* 13 (Supplement): 68–84.
- , and D. F. Arnold, Sr. 1997. An examination of moral development within public accounting by gender, staff level and firm. *Contemporary Accounting Research* 14 (4): 653–668.
- Bommer, M., C. Gratto, J. Gravender, and M. Tuttle. 1987. A behavioral model of ethical and unethical decision making. *Journal of Business Ethics* 6 (4): 265–280.
- Bouwman, M. J., P. Frishkoff, and P. A. Frishkoff. 1995. The relevance of GAAP-based information: A case study exploring some uses and limitations. *Accounting Horizons* 9 (4): 22–47.
- Burgstahler, D., and I. Dichev. 1997. Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics* 24 (1): 99–126.
- Carson, T. L. 2003. Self-interest and business ethics: Some lessons of the recent corporate scandals. *Journal of Business Ethics* 43 (4): 389–394.
- Colson, R. H. 2004. Evolving regulations and oversight in the public interest. *The CPA Journal* 74 (4): 18–24.
- DeFond, M. L., and C. W. Park. 1997. Smoothing income in anticipation of future earnings. *Journal of Accounting and Economics* 23 (2): 115–129.
- Elm, D. R., E. J. Kennedy, and L. Lawton. 2001. Determinants of moral reasoning: Sex role orientation, gender, and academic factors. *Business and Society* 40 (3): 241–265.
- Falk, H., B. Lynn, M. Mestelman, and M. Shehata. 1999. Auditor independence, self-interested behavior and ethics: Some experimental evidence. *Journal of Accounting and Public Policy* 18 (Winter): 395–429.
- Ford, R. C., and W. D. Richardson. 1994. Ethical decision making: A review of the empirical literature. *Journal of Business Ethics* 3 (3): 205–221.
- Geiger, M. A., and P. L. Taylor III. 2003. CEO and CFO certifications of financial information. *Accounting Horizons* 17 (4): 357–369.
- Gilligan, C. 1982. *In a Different Voice: Psychological Theory and Women's Development*. Cambridge, MA: Harvard University Press.
- Graham, J. W. 1995. Leadership, moral development, and citizenship behavior. *Business Ethics Quarterly* 5 (1): 43–54.
- Guerra, J. E. 2004. The Sarbanes-Oxley Act and evolution of corporate governance. *The CPA Journal* 74 (3): 14–15.

- Healy, P. M., and J. M. Wahlen. 1999. A review of the earnings management literature and its implications for standard setting. *Accounting Horizons* 13 (4): 365–383.
- Jones, S. J., and K. M. Hildebeutel. 1995. Organizational influence in a model of the moral decision process of accountants. *Journal of Business Ethics* 14 (6): 417–431.
- Jones, T. 1991. Ethical decision making by individuals in organizations: An issue-contingent model. *Academy of Management Review* 16 (2): 366–395.
- Kaplan, S. E., K. J. Newberry, and P. M. J. Reckers. 1997. The effect of moral reasoning and educational communications on tax evasion intentions. *Journal of the American Taxation Association* 19 (2): 38–54.
- Klein, A. 2003. Likely effects of stock exchange governance proposals and Sarbanes-Oxley on corporate boards and financial reporting. *Accounting Horizons* 17 (4): 343–355.
- Koehn, A. L., and S. C. Del Vecchio. 2004. Ripple effects of the Sarbanes Oxley Act. *The CPA Journal* 74 (2): 36–40.
- Kohlberg, L. 1969. Moral stages and moralization: The cognitive developmental approach. In *Moral Development and Behavior: Theory Research and Social Issues*, edited by T. Lickona. New York, NY: Holt, Rinehart, and Winston.
- . 1971. Indoctrination versus relativity in value education. *Zygon* 6 (4): 285–310.
- Lord, A. T., and F. T. DeZoort. 2001. The impact of commitment and moral reasoning on auditors' responses to social influence pressure. *Accounting, Organizations and Society* 26: 215–235.
- Massey, D. W. 2002. The importance of context in investigating auditors' moral abilities. *Research on Accounting Ethics* 8: 195–247.
- Matsunaga, S. R., and C. W. Park. 2001. The effect of missing a quarterly earnings benchmark on the CEO's annual bonus. *The Accounting Review* 76 (3): 313–332.
- McDevitt, R., and J. Van Hise. 2002. Influences in ethical dilemmas of increasing intensity. *Journal of Business Ethics* 40 (3): 264–274.
- Mudrack, P. E. 2003. The untapped relevance of moral development theory in the study of business ethics. *Journal of Business Ethics*. 42 (3): 225–236.
- Mulford, C. W., and E. E. Comiskey. 2002. *The Financial Numbers Game: Detecting Creative Accounting Practices*. New York, NY: John Wiley & Sons, Inc.
- Patterson, D. M. 2001. Causal effects of regulatory, organizational and personal factors on ethical sensitivity. *Journal of Business Ethics* 30 (2): 123–159.
- Ponemon, L. A., and D. Gabhart. 1990. Auditor independence judgments: A cognitive developmental model and experimental evidence. *Contemporary Accounting Research* 7 (Fall): 227–251.
- . 1993. The influence of ethical reasoning on auditors' perception of management's integrity and competence. *Advances in Accounting* 11: 1–23.
- PricewaterhouseCoopers. 2002. *The Sarbanes-Oxley Act of 2002. Strategies for Meeting New Internal Control Reporting Challenges: A White Paper*. Available at: <http://www.globalbestpractices.com/home/Attachment.aspx?AttachmentID=e9954009-bd3a-425c-b7c9-bedf61bb344d>.
- Remus, W. 1996. Will behavioral research on managerial decision making generalize to managers? *Managerial and Decision Economics* 17 (1): 93–101.
- Rest, J., S. J. Thoma, D. Narvaez, and M. J. Bebeau. 1997. Alchemy and beyond: Indexing the defining issues test. *Journal of Educational Psychology* 89 (3): 498–507.
- , and D. Narvaez. 1998. *Guide for DIT-2*. Minneapolis, MN: Center for the Study of Ethical Development.
- Rosen, R. A., and D. J. Kramer. 2003. Litigation implications of the CEO and CFO certification requirements of the Sarbanes-Oxley Act. *Insights: The Corporate and Securities Law Advisor* 17 (1): 2–8.
- Ruf, B. M., K. Muralidhar, R. M. Brown, J. J. Janney, and K. Paul. 2001. An empirical investigation of the relationship between change in corporate social performance and financial performance: A stakeholder approach. *Journal of Business Ethics* 32 (2): 143–156.
- Tenbrunsel, A. E., and D. M. Messick. 1999. Sanctioning systems, decision frames, and cooperation. *Administrative Science Quarterly* 44 (4): 684–707.

- Thorne, L. 2000. The development of two measures to assess accountants' prescriptive and deliberative moral reasoning. *Behavioral Research in Accounting* 12: 139–169.
- Trevino, L. K. 1986. Ethical decision making in organizations: A person-situation interactionist model. *Academy of Management Review* 11 (3): 601–617.
- . 1992. The social effects of punishment in organizations: A justice perspective. *Academy of Management Review* 17 (4): 647–676.
- , M. Brown, and L. P. Hartman. 2003. A qualitative investigation of perceived executive ethical leadership: Perceptions from inside and outside the executive suite. *Human Relations* 56 (1): 5–37.
- U.S. House of Representatives. 2002. The Sarbanes-Oxley Act of 2002 (H. R. 3763). Washington, D.C.: Government Printing Office.
- Wyatt, A. R., and J. C. Gaa. 2004. Accounting professionalism: A fundamental problem and the quest for fundamental solutions. *The CPA Journal* 74 (3): 22–32.

Copyright of Behavioral Research in Accounting is the property of American Accounting Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.