Earnings Manipulation in Failing Firms

By

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Abstract

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Prior literature and anecdotal evidence suggest that failing firms are likely to overstate earnings in periods prior to bankruptcy. I expect that bankrupt firms that do not appear to be distressed, first employ within GAAP earnings management techniques that overstate earnings but not materially. I further predict and find that as these firms approach bankruptcy, their financial statements reflect material income-increasing accruals for receivables, inventories, payables, property, plant, and equipment, and sales in non-going concern years. The behavior of a sub-sample of SEC sanctioned bankrupt firms is consistent with the findings of the 1999 COSO study of SEC sanctioned firms. The (non-sanctioned) non-stressed bankrupt firms resemble the sanctioned firms, but the magnitudes of the income-increasing accruals are lower. Finally, I predict and find that financial statements of both SEC sanctioned firms and non-sanctioned non-stressed bankrupt firms reflect evidence, in going concern years immediately preceding or following bankruptcy, of auditor prompted reversal of the previous overstatements.

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To my mother, for the values I live by and her unwaivering confidence in me
To the other special members of my family who always believed in me.

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Earnings Manipulation in Failing Firms

1. Introduction

1.1 Definition of "Earnings Management", "Earnings Manipulation", and "Fraudulent Financial Reporting"

The accounting literature defines **"Earnings management"** and **"fraudulent financial reporting"** (often referred to as **"fraud"**) as subsets of **"earnings manipulation"** (Schipper 1989; Dechow, Sloan, and Sweeney 1996; Statement on Auditing Standards (SAS) No. 54 - 1988; SAS No. 82 - 1997). Both terms refer to techniques managers employ deliberately to achieve a desired level of reported earnings. However, they differ in the kinds of techniques used or the intensity with which they are employed. While earnings management techniques are within the bounds of generally accepted accounting principles (GAAP); fraudulent financial reporting involves techniques that are outside the bounds of GAAP.[1]

Earnings management techniques, as outlined in the literature, include real operating, financing, and investing decisions, changes in accounting

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1 Schipper (1989) defines earnings management as "a process of taking deliberate steps within the constraints of generally accepted accounting principles to bring about a desired level of reported earnings." Dechow, Sloan, and Sweeney (1996) state "While there is no clear consensus in the literature on a definition of earnings management, the term is generally restricted to reporting practices that are within the bounds of GAAP." They further define earnings manipulation to be "both within and outside the bounds of GAAP." The auditing standards (SAS No. 54 - 1988; SAS NO. 82 - 1997) define fraudulent financial reporting as "fraudulent acts that cause a material misstatement of financial statements." Such deliberate acts, that materially overstate the financial statements, are outside the bounds of GAAP. According to SAS 82 (1997), misstatements arising from fraudulent financial reporting are "intentional misstatements or omissions of amounts or disclosures in financial statements to deceive financial statement users."

principles, accelerated adoption of mandatory accounting principles, and adjustments of estimates reflected in discretionary accruals. Securities and Exchange Commission (SEC) Chairman, Arthur Levitt, identified five currently popular earnings management techniques, in a September, 1998 speech entitled "The Numbers Game": "big bath restructuring charges, creative acquisition accounting, cookie jar reserves, the abuse of materiality, and the premature recognition of revenue." Fraudulent financial reporting techniques include *manipulation, falsification, or alteration of accounting records or supporting* documents, intentional misrepresentation in or omission from the financial statements, and intentional misapplication of accounting principles.

Several of the common earnings management techniques mentioned (i.e. real operating financing and investing decisions, accelerated adoption of a mandatory accounting principle, and a voluntary change in accounting principle) represent within-GAAP methods known to both users and auditors of financial statements since they are usually disclosed. Discretionary accruals management, however, may not be as apparent to financial statement users and has generally been considered a within-GAAP technique only if it does not materially misstate the financial statements. Alternatively, most of the fraudulent financial reporting techniques (i.e. falsification, or alteration of accounting records and supporting documents, or intentional misapplication of accounting principles) are clearly <u>not</u> within GAAP. However, intentional misrepresentations or omissions from the financial statements also include discretionary accruals

management. Thus, both earnings management and fraudulent financial reporting techniques include managing discretionary accruals. Therefore, there is likely only a fine line between earnings management and fraud. Earnings management, like fraud can result in over (under) statements to the balance sheet or income statement via discretionary accrual management but presumably will not **materially** misstate them.

The SEC, which has to date primarily investigated and prosecuted fraudulent financial reporting, promised to formally target companies, for review, that appear to engage in earnings management as well. In his September 1998 speech SEC Chairman, Arthur Levitt focused on this fine line between earnings management and fraud. He said " I fear that we are witnessing an erosion in the quality of earnings and therefore the quality of financial reporting. Management may be giving way to manipulation; Integrity may be losing out to illusion." He referred to earnings management as "a gray area between legitimacy and outright fraud. A gray area where managers are cutting corners, and where earnings reports reflect the desires of management rather than the underlying financial performance of the company." The SEC is addressing long standing practices that have considered deliberate immaterial over (under) statements to the financial statements to be earnings management, and acceptable under GAAP.

The accounting and auditing standards (FASB Statement of Financial Accounting Concepts No. 2; SAS No. 47 as amended by SAS No. 82) define

materiality not in terms of intent to deceive, but rather in terms of the significance of the resulting potential distortion to the financial statements. Statement of Financial Accounting Concepts No. 2, states that materiality is "the magnitude of an omission or misstatement of accounting information that in the light of surrounding circumstances makes it probable that the judgment of a reasonable person relying on the information would have changed or been influenced by the omission or misstatement." Levitt, however, says "I reject the notion that the *concept of materiality can be used to excuse deliberate misstatements of* performance. .... Materiality is not a bright line cutoff of three or five percent, it requires consideration of all relevant factors that could impact an investor's decision."[2]

The SEC followed up on this and clarified its views on the criteria for evaluating materiality by issuing Staff Accounting Bulletin (SAB) 99 in August 1999. The SAB provides guidance in applying materiality thresholds when preparing and/or auditing SEC filed financial statements. SAB 99 offers an example that illustrates the "abuse of materiality". During the course of the year-end financial statement preparation or audit, management and/or the auditor are

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2 In response to the SEC's concerns about materiality, a new task force, "The Big Five Audit Materiality Task Force" has been formed at the direction of the then "Big Six" professional practice partners to review the materiality issue. It has produced a paper entitled " Status Report and Initial Recommendations" (August, 1998). This paper includes four recommendations that would require auditors to place more emphasis on immaterial misstatements than they have in the past. Auditors should: (1) encourage clients to record all proposed audit adjustments even immaterial ones, (2) consider qualitative factors when evaluating materiality, (3) commit to enhancing the auditor consultation process, so that when issues of materiality arise, the auditor can seek advice from other practitioners and, the profession should (4) sponsor auditing research to examine whether the auditor's current evaluation of materiality needs updating.

aware of misstatements in the financial statements that when combined, overstate net income by 4% and earnings per share by $.02 (4%). Managers and auditors have to date been likely to conclude that since no one financial statement item is overstated by more than 5% (a commonly used measure of materiality) "the deviation from generally accepted accounting principles ("GAAP") is immaterial and that the accounting is permissible." However, if management deliberately materially overstated receivables, for example, by setting the bad debts estimate at 1% rather than 6.5%, most would agree that this constitutes fraud. Therefore, we can view the intentional discretionary accrual manipulation magnitudes as forming a continuum. We are likely to consider low (immaterial) discretionary accruals magnitudes as earnings management, but would consider material magnitudes as fraud.

However, although the SEC is now emphasizing the intent to deceive rather than the magnitude of the deception, it is difficult for a researcher to infer intent by merely examining the numbers in the financial statements.[3] Researchers have studied the manipulation of discretionary accruals mainly in the earnings management context. This may be due to the difficulty in identifying

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3 The SEC notes in newly released SAB 99 that "The staff is aware that certain registrants, over time, have developed quantitative thresholds as "rules of thumb" to assist in the preparation of their financial statements, and that auditors also have used these thresholds in their evaluation of whether items might be considered material to users of a registrant's financial statements. One rule of thumb in particular suggests that the misstatement or omission of an item that falls under a 5% threshold is not material in the absence of particularly egregious circumstances, such as self-dealing or misappropriation by senior management.... The staff has no objection to such a "rule of thumb" as an initial step in assessing materiality. But quantifying, in percentage terms, the magnitude of a misstatement is only the beginning of an analysis of materiality..."

fraud. Fraud identification, in a specific firm, requires knowledge about the firm's intent to deceive, as well as identification of the manifestations of fraud in the financial statements. Errors or irregularities can produce materially misstated financial statements. SAS 53 (1988) and SAS 82 (1997) define errors as "unintentional misstatements" and irregularities as "intentional misstatements", i.e. distortions including misrepresentations by management and fraud. While researchers can identify potential material misstatements in the financial statements, they cannot determine intent to deceive, in firms other than those in fact sanctioned by the SEC for fraudulent financial reporting.[4]

Throughout this study I refer to within-GAAP earnings manipulation as **earnings management** (as has been the practice in the accounting literature). I refer to potentially material financial statement misstatements (i.e. non-GAAP earnings manipulation) as **material earnings manipulation,** and to material financial statement misstatements in SEC sanctioned firms (where the SEC has established intent to deceive) as **fraud.**

In addition, conservatism, which considers overstatements to be more serious than understatements, has been a fundamental concept underlying generally accepted accounting principles. "The concept of conservatism has evolved over the years because accountants preferred that estimates or errors in

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4 As discussed in Appendix A (Literature review -Section A-1), SAS 82 points out that it is often difficult to determine intent: "particularly in matters involving accounting estimates and the application of accounting principles. For example unreasonable accounting estimates may be unintentional or may be the result of an intentional attempt to misstate the financial statements."

judgment result in an understatement rather than an overstatement of net income and/or net assets." (GAAS Guide 1999, p. 3.06). The courts have also treated deliberate overstatements to income as more harmful to financial statement users than understatements because it is difficult to determine or prove opportunity costs (St. Pierre and Anderson 1984; Kellogg 1984). This has resulted in increased conservatism in GAAP (Basu 1997). Therefore, I focus on material **overstatements** and distinguish material earnings manipulation and fraud from earnings management by the magnitudes of the overstatements.

1.2 Relevance of This Study

Anecdotal evidence suggests that **failing firms** engage in **fraud**, but researchers have not examined this empirically.[5] This study does. I define failing firms as firms that experience financial difficulties, leading to ultimate failure i.e., bankruptcy.

Researchers have also not specifically examined whether **failing** firms ***manage earnings.*** They have, however, addressed the broader question of whether firms that experience financial difficulties manage earnings.[6] Their results are mixed.

Financial statement users are more likely to be concerned about fraud and material earnings manipulation than earnings management because of the potentially greater monetary losses they incur by acting on materially misstated information. For example, firm stock prices tend to fall sharply in response to allegations by the press and/or the SEC that the firm has engaged in fraud.

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5 Argenti (1976), SAS 53 (1988), and SAS 82 (1997) offer this hypothesis. In addition, there are many publicized cases of fraud by failing firms e.g. Crazy Eddie, The Phar-mor Corporation, America West Airlines, Cambridge Biotech, General Technologies Group, etc. The Committee of Sponsoring Organizations (COSO) study (Beasley, Carcello, and Hermanson 1999) analyzes firms sanctioned by the SEC between 1987-1997, and states that one of the most commonly cited reasons for having committed the fraud is to "avoid recording a pre-tax loss and to bolster other financial results." (Other reasons include bolstering the stock price, covering up misappropriation of assets, and obtaining national stock exchange listing status, or avoiding delisting.)

6 Studies include Beneish (1997), Burgstahler and Dichev (1997), Kerstein, Lee, Lilien, and Ghicas (1996), Dechow, Sloan, and Sweeney (1995), DeAngelo, DeAngelo, and Skinner (1994), DeFond and Jiambalvo (1992), Elliot and Shaw (1988), Lilien, Mellman, and Pastena (1988). These studies examine various samples of firms experiencing some kind of financial difficulty. This is explained in detail in the literature review section (Appendix A, section A-2)

(Feroz, Park, and Pastena 1991). This adversely affects current investors. Financial analysts and auditors are concerned with fraud as well. Analysts face reputation loss if they base their predictions of future firm performance on overstated numbers.[7] Auditors risk exposure to litigation, SEC sanction, and reputation loss if they issue an unqualified opinion on materially misstated financial statements (Kellogg 1984; St. Pierre and Anderson 1984; Palmrose 1987; Stice 1991; Carcello and Palmrose 1994; Bonner, Palmrose and Young 1998). The 1998 U.S. Fraud Survey conducted by KPMG and evaluated by its Forensic and Litigation division surveyed 5,000 leading U.S. companies and organizations and found that the average loss from false financial statements increased since their 1994 fraud survey.

Regulatory interest in fraud and material earnings manipulation is also high. The Committee of Sponsoring Organizations (COSO) of the Treadway Commission sponsored a research study on fraudulent financial reporting that analyzed U.S. public companies sanctioned by the SEC for fraudulent financial reporting subsequent to the release of the 1987 Treadway Commission report, i.e., 1987-1997 (Beasley, Carcello, and Hermanson 1999). COSO commissioned this research to "provide COSO and others with information that can be used to guide future efforts to combat the problem of financial statement fraud..." and to "provide a basis for recommendations to improve the corporate

7 Financial statements of failing firms that engage in fraud often do not appear troubled and are likely to mislead financial analysts. Moses (1990) finds that over-optimistic forecasts are

financial reporting environment in the U.S." The Auditing Standards Board recently demonstrated its continued concern with fraudulent financial reporting by issuing SAS 82 in February 1997. This standard provides expanded operational guidance on the auditor's consideration of fraud in conducting a financial statement audit. The National Association of Securities Dealers Automated Quotation System (NASDAQ) created a new unit whose function is to identify companies that have inflated assets, revenues, or other qualifications that must be met to be listed on NASDAQ (Lohse 1997). The SEC continues to investigate and sanction fraudulent financial reporting in its Accounting and Auditing Enforcement Releases (AAERs). In his September 1998 speech SEC Chairman Levitt emphasized that "recent headlines of accounting failures have led some people to question the thoroughness of audits." He also spoke about the prevalence of earnings management and expressed concern about the misuse of current materiality standards to ignore intentional misstatements considered immaterial.

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observed for failing firms.

1.3 Contributions of This Study to the Literature

Given (1) financial statement users' and regulators' continued concern about fraudulent financial reporting, (2) scarcity of empirical studies relating to fraud or material earnings manipulation in financially distressed firms, and (3) the SEC's current concern about even immaterial misstatements (if they are deliberate), this study contributes to the literature. I find that the accrual behavior in financial statements of failing firms that do not appear stressed resembles that of SEC sanctioned firms in non-going concern years prior to bankruptcy. Like sanctioned firms, the non-stressed bankrupt firms display material and significantly greater increases in receivables, inventory, payables, property, plant, and equipment, sales, and operating expenses in non-going concern years prior to bankruptcy than control firms. At the same time these firms do display significantly more negative changes in cash flows from operations and net cash than control firms do, in those periods. I also find that both SEC sanctioned and non-sanctioned firms that do not appear stressed display significantly greater and material **decreases** in these variables in going concern years, possibly representing a reversal of the previous overstatements. A going concern year is one in which the auditor expresses a going concern opinion. That is, the auditor's report discusses the firm's poor financial condition and expresses substantial doubt about the its ability to continue as a going concern or mentions that the firm intends to or has filed for bankruptcy. Thus, this study provides insight into the financial reporting behavior of failing firms as

well as empirical evidence of such behavior. This can potentially help investors, financial analysts, auditors, regulators, and others to detect fraud, material earnings manipulation, and immaterial earnings manipulation and/or financial distress when management has concealed it.

This study makes several additional potential contributions to the literature: It extends the earnings management literature relative to financially troubled firms by examining firms that ultimately went bankrupt. This sample has not, to my knowledge, been previously examined in this context. Although samples with other definitions of trouble have been studied, the results are mixed as to whether earnings management has taken place. I examine the sequence of earning manipulation actions some managers take several years prior to bankruptcy. I expect income-increasing earnings management to take place in years -4 and -5 prior to bankruptcy and eventually lead to material income-increasing earnings manipulation in years -3, -2, and -1 prior to bankruptcy, followed by reversal of the overstatements in going concern years. Results of this examination as it relates to earnings management in years -4 and -5 are inconclusive while those relating to material manipulation in years -3, -2, and -1 and reversals in going concern years are consistent with the hypotheses.

I also connect the SEC alleged fraud by sanctioned firms with a firm's failing state and examine a subset of firms that have both been SEC sanctioned and have failed. Although many studies have examined SEC sanctioned firms, none have examined this subset of firms. I further contrast these firms with non-

sanctioned failing firms hypothesized to engage in earnings manipulation. Researchers have studied firms publicly shown to have engaged in fraudulent financial reporting (Palmrose 1987: Feroz, Park, and Pastena 1991; Stice 1991; Davis and Simon 1992; Beasley 1996; Beneish 1995,1997; Dechow, Sloan, and Sweeney 1996; Fanning and Cogger 1997; Bonner, Palmrose, and Young 1998; Summers and Sweeney 1998; Beasley, Carcello, and Hermanson 1999). This study contrasts these firms with non-sanctioned failing firms hypothesized to engage in material earnings manipulation.

This study also extends the work of Hopwood, McKeown, and Mutchler (1994) and McKeown, Mutchler, and Hopwood (1991). They differentiate between non-stressed failing firms and those appearing stressed and focus on bankruptcy prediction in the going concern opinion context rather than identification of earnings manipulation. McKeown, Mutchler, and Hopwood (1991) used a qualitative variable for fraud, to enhance their bankruptcy prediction model.[8] This study verifies the presence of earnings manipulation in the financial statements using quantitative proxy variables.. Also McKeown, Mutchler, and Hopwood (1991) assigned a single stressed/non-stressed state to

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8 McKeown, Mutchler, and Hopwood (1991) use a qualitative fraud indicator variable to improve their bankruptcy prediction model. The variable is an ex-post variable taken from announcements in the press relating to any kind of fraud that took place in that company, even if it involved employee fraud against management. In the 1994 study, Hopwood, McKeown, and Mutchler do not address the issue of management fraud. In one of their endnotes they point out "Research is needed in determining differences between stressed and non-stressed bankrupt companies and in developing models to predict non-stressed bankruptcy. These models no doubt would include variables correlated with management fraud. The development of such models is beyond the scope of this research."

each bankrupt and non-bankrupt firm. In contrast, this study also classifies individual firm-years as stressed or non-stressed. I also disaggregate and test the individual receivables, inventory, payables, and accrued expense accruals in addition to total accruals. Kerstein et al. (1996) disaggregate accruals and study them in the context of earnings management and bond rating downgrades. This study disaggregates the accruals for the purpose of detecting material earnings manipulation. Disaggregation of total accruals is advantageous since firms often overstate their financial statements by either overstating accounts receivable and/or inventory, understating liabilities, or any combination of these (Kreutzfeldt and Wallace 1986; DeFond and Jiambalvo 1991; Feroz, Park, and Pastena 1991; Houghton and Fogarty 1991; Stice 1991; Entwistle and Lindsay 1994; Asare and Davidson 1995; Groveman 1995; Dechow, Sloan, and Sweeney 1996; Fanning and Cogger 1997; Beasley, Carcello, and Palmrose 1999). We can more easily detect these misstatements if we break accruals down. In addition to disaggregating accruals, I also separate going-concern opinion years from non-going concern opinion years and treat them as separate sub-samples. One of the reasons that the previous earnings management studies have not been able to conclusively verify whether or not earnings management does indeed take place in distressed firms may be that these studies have treated all firm-years equally. This study shows that the same firm exhibits substantially different behavior in non-going concern years relative to going-concern years. Thus it is imperative to study non going-concern years and going concern years separately. The literature review section notes that DeFond and Jiambalvo (1994) removed going concern opinions and changes in firm managers from their sample and found that negative changes in total accruals turned to positive

changes in total accruals. This study's contributions result from the combined effect of separating out three firm characteristics: (1) separating non-stressed firms from stressed firms, (2) separating going concern years from non-going concern years, and (3) disaggregating accruals into their components. Thus, we can more easily identify material earnings manipulation taking place in ex-post-bankrupt firms prior to bankruptcy.

2. Research Questions

Managers of failing firms are motivated to manipulate earnings upward so as to window dress the firm's financial statements, and thus conceal the deteriorating financial condition until it improves (Argenti 1976; SAS 53, AICPA 1988; SAS 82, AICPA 1997). Optimistic managers that expect their firm's troubles to be temporary will employ income increasing earnings management techniques to increase earnings. In the past the SEC has been less likely to sanction firms for immaterial earnings management. However, if earnings management cannot sufficiently disguise a failing firm's condition, and the firm's troubles no longer seem to be temporary, the manager may resort to fraud and proceed to materially overstate earnings. Argenti points out that the crossover into fraud is a risky measure taken out of desperation. He states:

" The top managers know.... long before anyone else knows that their company is not doing so well. ... if this becomes generally recognized the bank will tighten its credit terms, customers will begin to sidle away, suppliers will begin to demand cash on or before delivery. But worse than this the managers themselves will be seen to have failed.... They convince themselves that the stocks in the factory are worth so much more than last year, that the value of the building has risen remarkably, that bad debts will be much less, and that next year things will be very much better. Next year things are not better. Yet they cannot further revalue the stocks or exaggerate the value of the buildings and they have now to resort to some of the more intricate devices.... things become worse still and the managers may then have to step over that ill-defined boundary between optimism and fraud..... the steps across successive bands of untruth are probably taken quickly and without qualm.... all businessmen are optimists and really do believe that ... the firm must be kept alive until "better times come."

Argenti also asserts that signs of earnings manipulation can be signals of

impending distress. He says "While I imagine it might occasionally happen that a company so confuses itself by juggling with its figures that it fails, I believe that creative accounting is generally a symptom of failure, not a cause." Argenti, however, does not test these theories empirically. This study does so by examining the following three research questions:

> **RQ1**: Are failing firms more likely to engage in material income increasing earnings manipulation than non-failing firms? That is, are the financial statements of failing firms materially overstated in periods prior to bankruptcy?
>
> **RQ2**: Do failing firms engage in material income increasing earnings manipulation after first exhausting their income increasing earnings management options?
>
> **RQ3**: Do auditors detect material income increasing earnings manipulation in firms they perceive to be failing? That is, do the financial statements in going-concern opinion years reflect reversals of previous overstatements?

Empirical evidence that reveals failing firms engage in material income increasing earnings manipulation after exhausting their earnings management alternatives can help auditors, regulators and others detect such manipulation in similar firms' financial statements.

In addressing these research questions, this study examines the time series of income increasing earnings manipulation, i.e., earnings management followed by material income increasing earnings manipulation. Several studies have examined the time series of earnings management. Appendix A discusses these.

3. Hypothesis Development

3.1 " Failing Firms" Versus "Stressed Firms"

Kida (1980), Mutchler (1985), McKeown, Mutchler, and Hopwood (1991), Hopwood, McKeown, and Mutchler (1994), Kane, Richardson, and Graybeal (1996), and Mutchler, Hopwood, and McKeown (1997) study bankrupt and non-bankrupt firms. They define a bankrupt firm as stressed if its financial statements revealed signs of stress prior to bankruptcy, and as non-stressed if its financial statements did not appear stressed prior to bankruptcy.[9] They divide their sample into four groups based on whether a given sample firm appeared stressed and on whether the firm ultimately declared bankruptcy: (I) non-stressed/non-bankrupt (NSNB), (2) non-stressed/bankrupt (NSB), (3) stressed/non-bankrupt (SNB), and (4) stressed/bankrupt (SB). The bankrupt/non-bankrupt designation corresponds to the state of ex-post failed or not, and the stressed/non-stressed designation corresponds to ex-ante signs in the financial statements of impending failure or not. The same terminology is used in this study. According to these definitions, it is possible for a firm to show signs of stress in its financial statements, yet not ultimately fail (declare bankruptcy). Alternatively, it is possible for a firm not to show signs of stress in its financial statements yet ultimately fail (declare bankruptcy). This study examines whether financial

9 They define a firm as stressed if it exhibits any of the following four symptoms: (1) negative working capital in the current year, (2) a loss from operations in any of the three years prior to bankruptcy, (3) a retained earnings deficit in year Y-3, where Y-1 is the last financial statement date preceding bankruptcy, and, (4) a bottom line loss in any of the three years preceding bankruptcy

statements of failing firms that appear to be non-stressed seem to engage in income increasing manipulation to conceal signs of failure. It is also possible, however, that some firms experience distress very quickly, possibly due to some catastrophic event that pushes them into bankruptcy. Such firms would not appear stressed prior to bankruptcy yet would show no signs of manipulation.

Several of the past earnings management studies examined samples of firms that displayed some signs of stress in their financial statements (Elliott and Shaw 1988; DeFond and Jiambalvo 1994; DeAngelo, DeAngelo, and Skinner 1994; Dechow, Sloan, and Sweeney 1995; Kerstein, Lee, Lilien, and Ghicas 1996; Beneish 1997; Burgstahler and Dichev 1997). Such samples differ from samples of firms that are, in fact, financially distressed, but display financial statements that appear non-stressed. Firms that appear stressed are less likely to have successfully engaged in earnings management and/or fraud. Therefore, researchers examining firms that appear stressed will be more likely to find that such firms did not manage earnings upward.[10] This study examines firm-years, prior to bankruptcy, since presumably ex-post bankrupt firms began failing prior to bankruptcy regardless of what their financial statements indicated.

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10 Researchers have previously noted this selection bias. DeAngelo, DeAngelo, and Skinner (1994) note that their findings of negative accruals for troubled firms that include firms with multiple losses that also reduced dividends, may be a reasonable expectation since low accruals tend to correspond to low earnings. Also DeFond and Jiambalvo (1994) and Sweeney (1994) note that the firms in their sample are known to have violated debt covenants, and firms that successfully avoided violation by manipulation are not in their sample. Therefore, it is possible

3.2 Firm Types

Managers of failing firms often have incentives to manipulate earnings upward. Perceived benefits to the firm include avoiding: inability to obtain financing, debt covenant violation, stock price decline, and bankruptcy.[11] Perceived benefits to the manager include long-term benefits such as keeping the firm alive until the financial position improves and short-term benefits such as increasing the manager's personal wealth by taking advantage of performance compensation plans and/or insider trading on private information (Beneish 1996, 1997). Costs associated with material income increasing earnings manipulation or fraud include stockholder lawsuits, loss of reputation, the threat of SEC sanction, and manager's personal liability.[12] Whether or not a manager chooses to engage in earnings manipulation is also influenced by personal characteristics such as honesty, aggressiveness, and risk tolerance, and by external factors such as how highly monitored the firm is by auditors, creditors, large investors, audit committee, and financial analysts. Ultimately the cost/benefit tradeoff affects whether a specific manager attempts to materially overstate the firm's

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that the firms remaining in the sample are less likely to manage earnings upwards because they perceive that no reasonable amount of earnings manipulation can facilitate avoiding the violation.

11 Aharony, Jones, and Swary (1981) find that on average bankrupt firms begin earning negative abnormal returns five years before bankruptcy.

12 The COSO study (Beasley, Carcello, and Hermanson 1999) examined consequences of the SEC sanction and found that the average (median) fine or settlement paid by an individual company was $12 million ($4 million) and the cumulative amount paid by the thirty-five firms

financial statements. Managers of failing firms that choose to materially overstate earnings perceive that the benefits to the firm and/or to themselves exceed the costs associated with such actions. How much emphasis a manager places on benefit to the firm versus personal benefit is likely to depend on the manager's ownership percentage. If the manager has a substantial interest in the firm, then the manager's personal interest will be congruent with the firm's interest. Anecdotal evidence supports this. Many of the high profile fraud cases such as Crazy Eddie and ZZZ Best involved a manager/owner who founded the firm and had a substantial interest in the firm.[13] Beasley et al (1999) found that typically the chief executive officer was the founder of the sanctioned firm, and in 72% of the cases was also the driver of the fraud.

We should observe two broad types of failing firms: a stressed bankrupt firm (SB) that did not succeed in concealing its distress and a non-stressed bankrupt firm (NSB) that concealed its distress in periods prior to bankruptcy. These terms are based on the McKeown, Mutchler, and Hopwood (1991) definitions described earlier.

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examined was $348 million. The average (median) fine paid by senior executives was $5.5 million ($456 thousand) and the cumulative amount of fines paid by senior executives was $25 million.

13 Beasley (1996) examined a sample of firms found to have engaged in fraud and concluded that as the percentage of outside members on the board increases, the likelihood of financial statement fraud decreases. In contrast, Chen et. al. (1997) find that ownership percentage is negatively associated with the magnitude of discretionary accruals. They argue that increased ownership reduces manager's incentives to signal to outside shareholders via discretionary accruals because of the non-relevance of agency problems. However, they note that Warfield et. al. (1995) report that excessive ownership, i.e. over 55% may lead to increased discretionary

3.2.1 Stressed Bankrupt Firms - Type SB.

An SB firm is a failing firm that may engage in income increasing earnings management in one or more financial statement periods prior to bankruptcy, but is reluctant to cross over into material income increasing earnings manipulation.[14] Factors such as close monitoring by creditors and others, a new, honest, or risk averse manager, or a new manager's decision to take an earnings bath may prevent the manager from materially manipulating earnings upwards.[15] Limitations on the number and composition of income increasing earnings management techniques available to the firm will also affect the manager's decision. For example, a firm that is already using income increasing accounting principles such as straight line depreciation or FIFO has nothing to gain by switching accounting principles (Dechow, Sloan, and Sweeney 1996). The 1996 Accounting Trends and Techniques survey found that 572 out of 600 firms used straight line depreciation and approximately fifty percent of firms already used FIFO (Kieso and Weygandt 1997- page 548). An SB firm is likely to

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accruals' magnitudes. This suggests a non-linear relationship similar to Morck, Shleifer, and Vishny (1988).

14 Ex-post examination of financial statements makes it difficult to distinguish between firms that did not intend to engage in fraud, and those that attempted fraud but, were unsuccessful, i.e., the auditor detected it prior to the issuance of the financial statements.

15 Bell (1994) in his discussion of the Carcello and Palmrose (1994) paper, points out that some bankruptcies are the results of "strategic choices" of management, rather than an "economic imperative". Managers choosing bankruptcy will either not try to manage earnings, or choose bankruptcy only after other strategies have failed. Some troubled firms engage in income decreasing earnings management for reasons other than to appear healthier. Hypotheses that have been offered as explanations for this are the big bath theory (Bernstein 1967; Copeland and Moore 1972), political cost hypothesis (Zmijewski and Hagerman 1981; Wong 1988; Cahan

exhibit the stressed state beginning several years (perhaps as many as five) prior to bankruptcy.[16] An SB firm is also likely to receive an auditor's going concern opinion one or more periods prior to bankruptcy.

3.2.2 Non-stressed Bankrupt Firms -Type NSB and SEC Sanctioned Bankrupt Firms - Type BR_{SEC}:

An NSB firm is a failing firm that initially engaged in income-increasing earnings management and later crossed over into material income increasing earnings manipulation when its financial condition continued to deteriorate. The SEC may investigate and ultimately sanction an NSB firm that engages in earnings manipulation. The SEC sanction can occur prior to or subsequent to bankruptcy. Examination of SEC AAERs reveals that sanctions often occur after bankruptcy. This may be due to either the normal SEC lag in processing leads or the bankruptcy announcement and/or resulting stock price decline triggering the SEC's investigation.

This firm may or may not have received a going concern opinion prior to bankruptcy.[17] We would expect the SEC to sanction only management, and not

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1992) and other special reasons outlined in the literature review section (Appendix A). However, this study focuses on income increasing manipulation

16 Altman (1968) points out that firms sometimes display evidence of failure five years prior to bankruptcy. However, his model predicts bankruptcy most accurately within two years prior to the event.

17 The COSO study (Beasley, Carcello, and Hermanson 1999) reports that in 29% of the cases (56 out of 195), the SEC named the external auditor in the AAER. In 54% of the cases where the auditor was named (30 out of 56), the auditor was charged with aiding and abetting the firm in its violations. In the remaining 46% (26 out of the 56 cases) the SEC accused the auditor of performing a flawed audit.

the auditor, of a firm that received a going concern opinion prior to bankruptcy. However, the SEC is likely to sanction the auditor and management of a firm that did not receive a going concern opinion prior to bankruptcy. Also the magnitude of the fraud in this firm tends to be high since the SEC prefers to pursue high magnitude/high profile cases. The firm's overstated financial statements, however, are unlikely to reveal its troubled state in the SEC alleged fraud years (NSB).[18]

Alternatively there are NSB firms that may have engaged in material income increasing earnings manipulation prior to bankruptcy, but the SEC did not investigate or chose not to sanction the firm. The auditor may or may not have detected the fraud. This NSB firm is likely to receive a going concern opinion in a year when the auditor did detect the fraud and presumably the auditor insisted on the reversal of the overstatements in the going concern year. This firm's financial statements may not reveal signs of failure in the periods in which it successfully manipulated earnings. This study, however, does not include firms that engaged in material income increasing earnings manipulation and succeeded in concealing their troubles until they recovered. The previously troubled position may never be revealed. These firms would most likely reflect the non-stressed

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18 This is not always the case. According to the COSO study (Beasley, Carcello, and Hermanson 1999), 19 out of 141 financial statements with audit reports available for review (13%) received a going concern opinion on the financial statements of the last fraud year. In other words in cases where there were several fraud years, the earlier fraud years did not exhibit the stressed state. However, in the last fraud year the firm's stressed state was revealed to the auditor despite the income increasing manipulation. In this study 10 fraud years out of 97 sample fraud years (10%) of SEC sanctioned firms received going concern opinions.

state even during the troubled years. Thus, they resemble healthy firms that did not engage in material earnings manipulation. Such firms are difficult to identify and are not studied here since they did not ultimately fail and are therefore not in the bankrupt sample.[19] However, it is conceivable that such firms may end up in the control sample of NSNB firms. If so they would bias the tests against finding the hypothesized results.

Figure A and Table 1 outline the hypothesized scenario for firms that do not engage in material income increasing earnings manipulation (SB), those that do (NSB), and those that engage in high magnitudes of material income increasing earnings manipulation and are sanctioned by the SEC (BR_{SEC}). Table 1 depicts the year of bankruptcy (year 0) and the five years preceding bankruptcy (year -1 to -5), relative to manipulation, stress, and auditor's opinion. In each year, manipulation can take on the value X, EM, MM, R_{EM}, R_{MM}, or R_F. X represents no manipulation of any kind, EM represents income increasing earnings management, MM represents material income increasing earnings manipulation, F represents fraud, (as determined by the SEC), and R_{EM}, R_{MM}, and R_F represent reversal of previous earnings management, material manipulation, or fraud (hypothesized to be auditor and/or SEC initiated). For

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19 These firms represents a selection bias in this study. However, there should be fewer firms that successfully engaged in fraud and avoided bankruptcy, than firms that successfully avoided debt covenant violations by earnings management (i.e., the selection bias of the Sweeney 1994 and DeFond and Jiambalvo 1992 studies). This is evidenced by the fact that Beneish and Press (1995) found that 70% of the bankrupt firms they examined had no prior default announcement. This may be true because such firms may have successfully avoided violating their debt

NSB and BR_{SEC} firms hypothesized to engage in material earnings manipulation and fraud, respectively, the material earnings manipulation or fraud is preceded by income increasing earnings management, and succeeded by the reversal of the manipulation or fraud in years receiving going concern opinions.

The stress category can take on either the value S or NS, representing a stressed or non-stressed appearance in the financial statements. I define stress, as operationalized in this study, in the Methodology section (section 4.2.1). SB firms that either do not engage in any kind of manipulation or engage only in earnings management are likely to appear stressed in periods preceding bankruptcy, perhaps beginning five years prior to bankruptcy. NSB and BR_{SEC} firms, that engage in earnings management and then material income increasing manipulation or fraud are likely to appear non-stressed in years in which they engage in manipulation/ or fraud, until the manipulation or fraud is identified by the SEC and/or the auditor. However, they may appear non-stressed or stressed in years -4 and -5 prior to bankruptcy.[20] The opinion category can take on the

covenants by earnings management but were unsuccessful in avoiding bankruptcy. These firms will end up in the bankruptcy sample but not in the debt covenant violation sample.

20 Rosner (1995) found that for a small sample of SEC sanctioned firms, the mean Altman Z - score in the year prior to the first SEC alleged fraud year was in the bankruptcy range, while the mean Z -score for the first alleged fraud year was in the non-bankruptcy range. Most of the SEC alleged fraudulent financial statements were of year -3 prior to bankruptcy, and in the current study the most frequently SEC alleged fraud years were years -1, -2, and - 3 prior to bankruptcy. It is, therefore, likely that the financial statements of firms that engage in material earnings manipulation will appear stressed in year –4 and –5. The COSO study (Beasley et. al. (1999)) found that most companies had assets and revenues less than $100 million preceding the fraud, and some of the firms were financially stressed in the year preceding the fraud. They analyzed pre-fraud financial statements for some of the firms and found that the twenty- two firms experienced a downward trend in net income in the year preceding the fraud, while thirty

value O representing an opinion other than a going concern opinion, or GC representing a going concern opinion. A firm that has filed for Chapter 11 that still issues audited financial statements at the subsequent year-end will always have that event mentioned in the auditor's opinion. Therefore, all bankrupt firms are expected to receive a going concern opinion in year 0, which represents the financial statement year-end following bankruptcy filing. This year-end can range anywhere from less than a month to over eleven months subsequent to bankruptcy filing.

Most years have only one value indicated for manipulation, stress, or opinion. However, some have two entries. For example, NSB firms have two entries in each category in years –1 and -2. This is because some of the NSB firms receive going concern opinions one or two years prior to bankruptcy, while others do not. The ones that do not receive a going concern opinion in year –1 or -2 are likely to display signs of material income-increasing manipulation in their financial statements in that year, and thus appear non-stressed. The ones that did receive a going concern opinion are likely to display a reversal of previous overstatements. This reversal is hypothesized to be auditor initiated after the auditor detected the manipulation, discovered the firm's distressed condition, and thus issued a going concern opinion. Although the SB firms are not expected to engage in anything more serious than earnings management, they are noted in

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experienced an upward trend. They interpret this as suggesting that the frauds were designed to reverse downward trends for some of the firms and to preserve upward trends for others.

going concern years with either X or R_{EM} indicating either no manipulation of any kind or a reversal of previous earnings management. Going concern years usually contain write-downs of assets such as inventory, receivables, fixed assets, goodwill, etc. These can result from sudden changes in the asset values or reflect an adjustment of assets previously overvalued as a result of some degree of earnings manipulation. Therefore the magnitude of the reversal is expected to be the smallest for SB firms, larger for NSB firms, and largest for SEC sanctioned firms.

3.3 Analysis of Case Studies

I analyzed the accruals of four SEC-sanctioned bankrupt firms and two randomly chosen non-bankrupt firms to gain insight into the accrual behavior of firms materially overstating their earnings relative to the accrual behavior of healthy firms. This analysis (detailed in Appendix B) contributed to the development of the hypotheses. The results showed that total accruals and changes in receivables and inventory, or both, are consistently income increasing (in non-going concern opinion years) from period -5 to period -1 prior to bankruptcy, for the four SEC sanctioned firms but not for the two control firms. The tendency for firms to manipulate receivables and inventory is consistent with prior literature (Kreutzfeldt and Wallace 1986; Feroz, Park and Pastena 1991; Houghton and Fogarty 1991; Stice 1991; Entwistle and Lindsay 1994; Asare and Davidson 1995; Dechow, Sloan, and Sweeney 1996; Fanning and Cogger 1997;

Beasley, Carcello, and Palmrose 1999; etc.). Going concern opinion years prior to bankruptcy exhibited a reversal of this trend for the four SEC-sanctioned firms. These results influenced the hypothesis development in this study. I present the data relating to these six firms in tables B1–B6 which follow Appendix B.

3.4 Sample Selection.

I collected samples of bankrupt and non-bankrupt firms as follows:

I. **Bankrupt firms (BR)** - This sample includes:

A. **SEC sanctioned bankrupt firms (BR_{SEC})** that materially overstated their financial statements. I identified SEC sanctioned firms by a Lexis-Nexis search of SEC Accounting and Auditing Enforcement Releases (AAERs) using search terms such as bankrupt, bankruptcy, chapter 11, going concern, and distressed. I used these search terms individually, and also combined with overstated or overstatements. I chose only sample firms that have both been sanctioned by the SEC for materially overstating their financial statements and also declared bankruptcy subsequent to the overstatement periods.

B. **Non-sanctioned bankrupt firms (i.e. BR_{NONSEC} firms classified as type SB or NSB)** I identified non-sanctioned bankrupt firms from the Lexis Bankruptcy Data Source (BDS) database.[21] I checked each firm against the Lexis SEC AAERs file to verify that the firm is a non-sanctioned firm. However,

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21 The February 1998 BDS database contained 339 firms that filed for Chapter 11. These firms were listed on one of the major exchanges, had assets of over $50 million, and filed for Chapter 11 since 1984.

since there is often a lag between bankruptcy filing and SEC sanction, it is possible that the SEC will sanction some of these firms in the future. I broke the bankrupt sample down into the following sub-samples relative to firm type based on the descriptions outlined in section 3.2, and table 1.

1. **Stressed bankrupt (non-sanctioned) firms (SB)** that are not hypothesized to have engaged in material income increasing earnings manipulation (but may or may not have engaged in earnings management). I classified firms as SB if they exhibited the SB state in two or more years prior to the first going-concern opinion before bankruptcy, or exhibited the SB state in two or more years immediately preceding bankruptcy (if the auditor did not issue a going concern opinion before bankruptcy). SB firms are expected to receive going concern opinion(s) in the one or two years preceding bankruptcy, since they do not engage in manipulation and look distressed. Theoretically, there should not be many SB firms that did not receive a going concern opinion prior to bankruptcy, but nevertheless appeared stressed in the two years preceding bankruptcy. If this were the case, it would suggest that the auditor was derelict in not issuing the going concern opinion, when the stressed state was obvious. In this study, out of 171 firms classified as SB, (using the McKeown, Mutchler, Hopwood firm model described in greater detail in section 4.2.1.2) 42 firms (25%) contained no going concern opinion prior

to bankruptcy.

2. Non-stressed bankrupt (non-sanctioned) firms (NSB) that are hypothesized to have engaged in income increasing earnings management and then material income increasing earnings manipulation. I classified firms as NSB if they exhibited the NSB state in two or more years prior to the first going-concern opinion before bankruptcy, or exhibited the NSB state in two or more years immediately preceding bankruptcy (if the auditor did not issue a going concern opinion before bankruptcy).

I did not classify firms that exhibited only one distressed (non-distressed) year prior to either bankruptcy or the first going concern opinion year, as SB or NSB and therefore did not include them in testing hypotheses involving SB or NSB firms. Exhibiting a single year of stress or non-stress may be the result of a one-time occurrence of an unusual transaction and does not necessarily represent a trend or identify the firm's true state.

II. Non-bankrupt firms (NSNB). I chose healthy firms that exhibited no net losses during the six years for which I collected data, as control firms. These years correspond to year's -5 prior to bankruptcy until year 0, immediately following bankruptcy based on the bankruptcy dates of the bankrupt firms they are matched to. Their purpose is to provide a benchmark for levels of the material earnings manipulation proxy variables in the absence of material manipulation. I chose only non-stressed/non-bankrupt firms. I excluded stressed,

non-bankrupt firms (SNB) since they have similar incentives to and are likely to exhibit levels of material earnings manipulation proxy variables similar to the bankrupt firms. Thus SNB firms would not serve as an effective benchmark. Since I collected firm data from several sources, a final analysis of the matched firms indicated that 12 firm-years had a net loss, 10 firm years had negative retained earnings, and 4 firm years had negative shareholders equity. This represented 22 match firms out of 293 firms. In addition, when I applied the distress models used to classify bankrupt firms as stressed or non-stressed (defined in section 4.2.1) to the non-bankrupt control firms, some of the control firm years fell into the distressed category. However, most of the firm-years did not. Including distressed firms in the control sample biases against finding the hypothesized results and replacing these matches may spuriously strengthen the results. Therefore, I used the matched sample as is.

I matched each firm by year, asset size in year -5 prior to bankruptcy, and industry. I matched controls first to four digit primary SIC codes, and only if there were no (four, three, or two digits) primary SIC code matches, then I used secondary SIC codes. I used the Compustat four-digit industry classification code for firms with Compustat data.

I obtained financial statements for all sample firms identified from the Disclosure and Compustat databases and from various microfiche sources for six periods prior to bankruptcy (years –1 to –6) and one after (year 0), if available. Six years of financial statement data are needed to calculate accruals for five

years prior to bankruptcy. Financial statements for the year-end subsequent to bankruptcy are useful in calculating accruals for going concern years. I eliminated financial service firms (SIC codes 6000-6999) and firms in regulated industries (SIC codes 4000-4999) consistent with the prior earnings management and bankruptcy literature. I gathered most of the sample firms' financial statements from the Disclosure database that includes primary and secondary SIC codes. I discuss my sample further in section 4.1.

3.5. Hypotheses

3.5.1 Hypothesis Relating to RQ1

(RQ1: Are failing firms more likely to engage in material income increasing earnings manipulation than non-failing firms? That is, are the financial statements of failing firms materially overstated in periods prior to bankruptcy?)

The objective of the hypotheses relating to RQ1 is to examine and contrast the characteristics of three types of firms: (I) bankrupt SEC sanctioned firms publicly shown to have engaged in fraud, (2) NSB firms hypothesized to engage in material income increasing earnings manipulation, and (3) NSNB control firms not expected to have engaged in fraud or manipulation. Several studies examined the SEC AAERs sample in various contexts (Palmrose 1987; Feroz, Park, and Pastena 1991; Stice 1991; Davis and Simon 1992; Beneish 1995, 1997; Dechow, Sloan, and Sweeney 1996; Beasley 1996; Fanning and Cogger 1997; Bonner, Palmrose, and Young 1998; Summers and Sweeney 1998; Beasley, Carcello, and Hermanson 1999). However, these studies have neither

examined the subset of bankrupt and SEC sanctioned firms, nor have they gone on to contrast SEC sanctioned firms with other firms hypothesized to engage in fraud.

I expect to find more significant manifestations of fraud for bankrupt SEC sanctioned firms than for non-sanctioned (non-stressed) bankrupt firms. That is, I expect the (material earnings manipulation) proxy variable magnitudes to be significantly greater for SEC sanctioned bankrupt firms. This is true for two reasons. First, the literature reveals that the SEC tends to investigate high profile and high magnitude cases (Feroz, Park, Pastena 1991). Second, the SEC has verified the existence of fraud in **each** of the firms in the bankrupt SEC sanctioned sample, while I merely hypothesize the manipulation for non-sanctioned (non-stressed) bankrupt firms in ***aggregate***. Therefore, the higher magnitude and significance of the material earnings manipulation proxy variables, I identify in the SEC sanctioned sample, supports their ability to proxy for the existence of material earnings manipulation or fraud in the financial statements. Thus, I use the SEC sample to identify the characteristics and manifestations of material earnings manipulation in the financial statements. I then identify similar manifestations in bankrupt firms that are more likely to engage in material earnings manipulation.

H1: ***Financial statements, prior to bankruptcy, of failing firms, are more likely to exhibit signs of overstatements than those of non-failing firms.*** Specifically, bankrupt (BR) firms exhibit significantly higher levels of material income-increasing earnings manipulation variables in (non-going-concern opinion) firm-years prior to bankruptcy, than non stressed, non-bankrupt (NSNB) control firms matched on year, industry, and size.

I test this prediction by comparing means and medians of earnings manipulation proxy variables in different sub-samples of failing firms as follows: (See Table 2, Panels A and C)

$H1_A$: *All bankrupt (BR), non-going-concern firm-years, prior to bankruptcy versus matched firm-years of non-stressed non-bankrupt control firms (NSNB).* (The means and medians of the material earnings manipulation proxy variables should be greater for sub-sample A than sub-sample P)

$H1_B$: *All SEC alleged fraud years of bankrupt SEC sanctioned firms (BR_{SEC}) versus matched years of non-stressed non-bankrupt control firm-years (NSNB).* (The means and medians of material earnings manipulation proxy variables should be significantly greater for sub-sample F than sub-sample T)

$H1_C$: *All non-stressed non-SEC-sanctioned, bankrupt (NSB), non going-concern firm-years versus non-stressed non-bankrupt control firm-years (NSNB).* (The means and medians of the material earnings manipulation proxy variables should be significantly greater for sub-sample M than sub-sample P).

3.5.2 Hypotheses Related to RQ2.

(RQ2: Do failing firms engage in material income increasing earnings manipulation after first exhausting their income increasing earnings management options?)

The earnings management literature describes common earnings management techniques that include: "real manipulation" via actual operating, financing, and investing decisions, and "accounting based manipulation" via changes in accounting principle, early or delayed adoption of mandatory accounting changes, and discretionary accruals. Since, as discussed earlier, earnings management is likely to be less costly than material manipulation or fraud, bankrupt firms will be likely to engage in earnings management prior to resorting to material earnings manipulation.

H2.1*: Financial statements of failing firms are more likely to exhibit signs of*

earnings management in the two years prior to the income increasing earnings manipulation years than those of non-failing firms. Specifically, bankrupt firms, hypothesized in H1 to engage in income increasing earnings manipulation prior to bankruptcy, exhibit significantly higher levels of income-increasing earnings management proxy variables in the two years prior to the alleged earnings manipulation years than non-stressed non-bankrupt control firms (NSNB) matched on year, industry, and size.[22]

I test this prediction by comparing means and medians of earnings management proxy variables on two different sub-samples of failing firms as follows:

H2.1$_A$: *Two years prior to all SEC alleged fraud years of bankrupt SEC sanctioned firms (BR_{SEC}) versus matched years of non-stressed non-bankrupt control firm-years (NSNB).* (The means and medians of the earnings management proxy variables should be significantly greater for sub-sample E than sub-sample S)

H2.1$_B$: *Years -4 and -5 prior to bankruptcy for NSB (non -sanctioned, non-stressed, bankrupt firms) versus years -4 and -5 for non-stressed non-bankrupt control firm-years (NSNB).* (The means and medians of the earnings management proxy variables should be significantly greater for sub-sample O than sub-sample R)

H2.2: *Financial statements of failing firms are likely to exhibit higher magnitudes of earnings manipulation variables in non going concern years, -3 to -1 prior to bankruptcy than in years -4 and -5 prior to bankruptcy.* Specifically, financial statements in non-going-concern years -1, -2,and -3 prior to bankruptcy, for non-stressed bankrupt firms (NSB), are more likely to exhibit signs of material overstatements in both earnings manipulation and earnings management proxy variables than years -4 and -5 prior to bankruptcy. (The means and medians of both the earnings management and material earnings manipulation proxy variables should be significantly greater for sub-sample M minus sub-sample O than sub-sample O)

3.5.3 *Hypotheses Relating to RQ3*

(RQ3: Do auditors detect material income increasing earnings manipulation in firms they perceive to be failing? That is, do the financial statements in going-concern opinion years reflect reversals of previous overstatements?)

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22 The two years prior to the alleged earnings manipulation years are expected to be, on the average, years –4 and -5 prior to bankruptcy as shown in table 1.

The objective of RQ3 and related hypotheses is to examine the auditor's role in detection of the fraud. There have been many highly publicized cases of fraud in failing firms where audit failure has been alleged, i.e., the auditor is considered to have been deficient in not discovering the fraud. This continues to occur since the SEC continues to sanction auditors in AAERs. SAS no. 82 provides expanded guidance for the auditor to aid in the discovery of fraud. Many of the SEC sanctioned firms temporarily succeeded in concealing their poor financial condition from the public and from the auditor via massive collusion. For example everyone, including the auditors, thought Crazy Eddie and the Phar-mor Corporation were doing well. Ultimately it was discovered that they deceived the public as well as the auditors. RQ3 examines whether the auditor is able to detect fraud in companies that have been identified as potentially failing. It is also possible that the auditor does not discover the fraud the first year it takes place, but discovers it in later years. We would expect an auditor who discovers a fraud to require that the overstatements be reversed. The financial statements would then reveal the firm's stressed state and the auditor is likely to issue a going concern opinion. This can take place either prior to bankruptcy, or in the financial statement period immediately following bankruptcy (year 0). Therefore, the going concern opinion years of SEC sanctioned firms (NSB non-sanctioned firms) should reveal a reversal of the

fraud (material manipulation).[23] This reversal would manifest itself in the form of income decreasing levels of material earnings manipulation proxy variables that had been hypothesized to be income increasing in the non-going concern opinion firm-years.[24]

H3: *Financial statements of failing firms, are more likely to exhibit signs of overstatement reversals in going-concern opinion years prior to bankruptcy than in non-going concern years of these firms.*
Specifically, going concern opinion firm-years of bankrupt firms (BR) exhibit significantly lower (and usually income decreasing) levels of earnings manipulation and earnings management proxy variables than non-going concern firm-years of these firms.

I test this prediction by comparing means and medians of material earnings manipulation and earnings management proxy variables on various different sub-samples of failing firms as follows:

$H3_A$: *Non-going-concern firm-years of all bankrupt (BR) firms versus going - concern firm-years such firms.* (The means and medians of the material earnings manipulation proxy variables should be significantly greater for sub-sample A than sub-sample B)

$H3_B$: *Alleged-fraud-years of bankrupt SEC-sanctioned firms (BR_{SEC}) versus going -concern firm-years.* (The means and medians of material earnings manipulation proxy variables should be significantly greater for sub-sample F than sub-sample D)

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23 Bell (1994) points out that SAS No. 53 requires the auditor to insist on reversal of the financial statement misstatements when (s)he discovers an irregularity. Otherwise (s)he must express a qualified or adverse opinion. A going concern opinion is not allowed as a vehicle for the auditor's reporting of irregularities. What is being hypothesized in this study is that the auditor discovers the firm's distressed condition and thus audits the financial statements more carefully, discovers the misstatements, insists on their reversal, and the reversal shows up in the earnings manipulation proxy variables. A going concern opinion is issued to disclose the firm's stressed state.

24 DeFond and Jiambalvo (1994) note that for a sample of firms which reported debt covenant violations, those with management changes or going concern qualifications showed significantly more negative mean unusual items (e.g. write-downs of fixed assets, goodwill, inventory and receivables) than violation firms without management changes or going concern opinions. They interpret the evidence as being consistent with "increased monitoring by auditors concerned wit continued existence and with new managers taking an earnings bath."

$H3_C$: *All non -SEC -sanctioned, non-stressed bankrupt (NSB), going-concern firm-years versus non-going-concern years for such firms.* (The means and medians of material earnings manipulation proxy variables should be significantly greater for sub-sample M than sub-sample N)

4. Research Design

4.1 Sample

Table 2 - Panel A, lists all the various samples described in section 3.4 in column 1 and relates them to the firm types, BR, BR_{SEC}, BR_{NONSEC}, SB, NSB, NSNB, in column 2. Columns 3-7 depict the various firm-year categories (A-T). For example, bankrupt firms contain some going concern opinion firm-years and some non-going concern firm-years. As indicated in table 1, I hypothesize that earnings manipulation takes place only in non-going concern firm-years since presumably the auditor scrutinizes the financial statements more carefully when there is doubt as to the firm's ability to continue as a going concern. In going concern years I expect a reversal of the fraud hypothesized to have taken place prior to the going concern opinion. Therefore, if I wish to examine firm-years where fraud is hypothesized, I must include only non-going concern opinion years. Similarly, for SEC sanctioned firms (BR_{SEC}), another firm-year category is needed for the years in which the SEC alleged fraud. $H1_C$ hypothesizes that higher magnitudes of fraud are likely to be evident in the SEC alleged fraud years. The entries in the various cells of the table range from A to T, and represent twenty different sub-samples. Table 2 panel C shows how the sub-samples are paired together in testing the various hypotheses outlined above in section 3.5. Table 2, Panel B shows the sample selection criteria. The sample includes 293 bankrupt firms (51 SEC sanctioned firms and 242 non-sanctioned firms) and 293 control firms matched on year, size, and industry. These

represent about 2800 firm-years in total.

Typically, the sample sizes in other related studies are similar to or smaller than the sample studied here. For example, McKeown, Mutchler, Hopwood (MMH 1991; HMM 1994) studied sample sizes of 134 bankrupt firms and 160 control firms. Begley, Ming, and Watts (1996) reevaluated the Ohlson and Altman bankruptcy prediction models on 165 firms (330 firm-years). Several studies examined SEC sanctioned firms. Summers and Sweeney (1998) studied a sample of 51 SEC sanctioned firms. Beneish (1997) studied a sample of 64 firms either sanctioned by the SEC or publicly admitted to violating GAAP. Dechow, Sloan, Sweeney (1995) studied, among other samples, 32 firms subject to SEC enforcement releases (56 firm-years). Dechow, Sloan, and Sweeney (1996) studied 92 sanctioned firms and 92 control firms. DeFond and Jiambalvo (1994) studied 94 firms that violated debt covenants, and DeFond and Jiambalvo (1991) studied 41 firms that corrected their earnings in a later period.

4.2 Methodology

I define and operationalize three concepts in order to test the predictions of the hypotheses: (1) stressed/non-stressed classification for BR_{NONSEC} firms (2) material earnings manipulation proxies (3) earnings management proxies. I define stressed and non-stressed in order to classify firm-years and/or firms to create sub-samples of SB and NSB firms. I define material earnings manipulation proxies in order to identify material income increasing earnings

manipulation in the firm-years hypothesized to contain such manipulation. These material earnings manipulation proxies are financial statement variables I expect to be satisfactory proxies for the presence of material income increasing earnings manipulation in the financial statements. I define earnings management proxies in order to identify earnings management in the pre-material manipulation years.

4.2.1 Stressed/Non-stressed Classification

I use one of four different stressed-firm identification techniques to classify each pre-bankruptcy **firm-year** or each bankrupt **firm** as either stressed (SB) and unlikely to engage in material earnings manipulation, non-stressed (NSB) and likely to engage in material earnings manipulation, or unable to be determined. I refer to these classification techniques as the (1) McKeown, Mutchler, Hopwood (MMH) firm-year model. (2) MMH firm model (3) Ohlson firm-year model (4) Ohlson firm model.

4.2.1.1 McKeown, Mutchler, Hopwood firm-year model

I classify each firm-year as stressed (SB) or non-stressed (NSB) based on adapting the MMH (1991) criteria. MMH assigned a single state to each bankrupt firm (from among SB, NSB, SNB and NSNB). They assigned the SB state to a bankrupt firm that exhibited any of the following four symptoms: (1) negative working capital in the current year (2) a loss from operations in any of the three years prior to bankruptcy (3) a retained earnings deficit in year Y-3

(where Y-1 is the last financial statement date preceding bankruptcy) (4) a bottom line loss in any of the three years preceding bankruptcy. Actually, the stressed or non-stressed state can change from year to year. For example, a bankrupt firm that engages in material earnings manipulation three years prior to bankruptcy may not appear stressed in year -3 and thus the firm should be classified, in that year, as non-stressed/bankrupt. However, as the firm approaches bankruptcy, the auditor may discover the manipulation in the year prior to bankruptcy and insist on the reversal of the overstatements, and render a going concern opinion. Thus the state of the firm in years –2 or –1 should most likely be stressed/bankrupt. If we were classifying based on the McKeown, Mutchler, and Hopwood (1991) criteria, the firm would be classified as stressed/bankrupt, and the non-stressed state, and associated earnings manipulation occurring three years prior to bankruptcy would be ignored. Therefore in this study I first assign a stressed or non-stressed state to each **firm-year** individually. I identify each firm-year prior to bankruptcy as SB (NSB) if it exhibited (did not exhibit) at least one of four symptoms: (1) negative working capital (2) loss from operations (3) retained earnings deficit and (4) net loss. I refer to this system of classification as the MMH firm-year model. Thus, each firm can conceivably exhibit a combination of stressed and non-stressed states in various firm-years prior to bankruptcy.

4.2.1.2 McKeown, Hopwood, Mutchler firm model

In addition to identifying each firm-year as stressed or non-stressed using the MMH firm-year model, I also identify each **firm** as SB or NSB using an adaptation of the MMH criteria. I refer to this as the MMH firm model. The MMH (1991) model, described in the preceding section (4.2.1.1) cannot be used as is to classify a firm as SB or NSB since it does not remove the going concern years prior to determining distress. Thus, any firm that received a going concern opinion prior to bankruptcy would most likely be classified as distressed using the MMH criteria. Therefore, I adapted the MMH criteria as follows: If a firm exhibits two or more years of the SB (NSB) state prior to its first going concern opinion I classify the firm as SB (NSB), and consider **all** of its non-going concern years as SB (NSB). As described in section 3.4, I did not classify firms that exhibited only one stressed (non-stressed) period prior to either bankruptcy or the first going concern opinion year as either SB or NSB, and therefore did not include them in tests that involved SB or NSB firms. A one-time occurrence of an unusual transaction may cause a firm to appear stressed or non-stressed in a single period but does not necessarily represent a trend or identify the firm's true state.

4.2.1.3 Ohlson firm-year model

I classify each firm-year as stressed or non-stressed based on the computation of a composite P score using the Ohlson (1980) bankruptcy

prediction model.[25] Accounting researchers often use the Altman (1968), Altman and McGough (1974), and Ohlson (1980) bankruptcy prediction models to identify financial distress. Begley, Ming, and Watts (1996) reestimated both Altman's (1968) and Ohlson's (1980) bankruptcy prediction models using 1980s data. They found that Ohlson's original model displayed the strongest performance. Therefore, I use the Ohlson (1980) model as one of the two financial distress indicators in this study. The Ohlson P value (i.e. estimated probability of bankruptcy in the next one or two years) is computed as follows:

P = -1.320 - .407 SIZE + 6.030 TLTA - 1.430 WCTA + .0757 CLCA - 1.720 OENEG - 2.370 NITA - 1. 830 FUTL + .285 INTWO - .521 CHIN

Where
SIZE = log [total assets/price level index] (I used the U.S. Department of Labor, Bureau of Labor Statistics Consumer price index (CPI-U) with 1982-1984 as the base period (index = 100).)
TLTA = total liabilities/total assets
WCTA = working capital/total assets
CLCA = current liabilities/current assets
OENEG = 1 if total liabilities > total assets, else 0
NITA = net income/total assets
FUTL = funds provided by operations/total liabilities (funds from operations are either the number from the statement of changes in working capital, pre 1987, or following Begley et al. (1996) computed as cash flow from operations (from the post 1987 statement of cash flows) + the net change in current operating assets and liabilities.
INTWO = 1 if net income < 0 for the last two years, else 0
CHIN = (net income current year - net income prior year)/[absolute value of net income current year + absolute value of net income prior year)

Ohlson found a cut-off value of P = .038 minimizes type I and type II errors. The higher the P value, the greater the probability of bankruptcy. Therefore, I classify firm-years with a computed P value less than .038 as non-stressed

25 Researchers have estimated several models in the literature to calculate a composite score for a given firm-year to determine whether the firm is approaching bankruptcy. Such models include Altman (1968), Altman and McGough (1974), Ohlson (1980), Zmijewski (1984), Mutchler (1985), Koh (1991) etc.

(NSB), and those with a P value greater than or equal to .038 as stressed (SB).[26]

4.2.1.4 Ohlson firm model

After classifying each firm-year as stressed or not, I classify each sample firm as SB if it had two or more stressed years prior to the first going-concern-opinion year and as NSB if it had no stressed years prior to the first going-concern-opinion year. If it had only one identified stressed firm-year prior to the first going concern firm-year, then I did not classify the firm as stressed or non-stressed, and thus did not include it in the related sub-samples when testing the hypotheses.

There are other alternative definitions of distress as well that can be used to identify a specific firm-year or firm as stressed or not, based on data from its financial statements.[27]

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26 Begley, Ming, and Watts (1996) found that the cut-off value that minimized errors when the model was estimated on 1980s data was .061. However, using this cutoff and applying the re-estimated model to 1980s data resulted in a combined error rate of 22.1% relative to a combined error rate of 18.7% from applying the original Ohlson model and cut-off of .038 to the 1980s data.

27 DeAngelo, DeAngelo, and Skinner (1994) identify a firm as troubled if it reported at least three annual losses in a six-year period and also reduced cash dividends. An alternative proxy for distress is poor stock market performance. Lilien, Mellman and Pastena (1988) categorize firms as successful or unsuccessful based on their stock market performance in the past ten years. A firm-year can be considered stressed if the percentage change in stock price since the prior year is substantially negative. Burgstahler and Dichev (1997) identify earnings management in firms trying to avoid losses and earnings decreases. They argue that there is much anecdotal evidence suggesting that managers have many incentives to maintain a pattern of increasing earnings or to avoid breaking a pattern of consistent earnings growth. Therefore earnings decreases, especially in firms with previous consistent earnings increases, can be considered a sign of distress. The hypotheses can also be tested on samples corresponding to the different firm types (NSB, SB, BR_{SEC}), classified using either the Ohlson firm model or the MMH firm model, and creating only two observations per firm. This could be implemented by calculating mean values for variables over all non-going concern opinion years and mean values for variables over all going concern opinion years, for each firm.

4.2.2 Variables Used to Identify Material Income Increasing Earnings Manipulation.

As outlined in Appendix A researchers cite certain financial statement accounts that are more likely to be subject to error or manipulation (Kreutzfeldt and Wallace 1986; DeFond and Jiambalvo 1991; Feroz, Park, and Pastena 1991; Houghton and Fogarty 1991; Entwistle and Lindsay 1994; Asare and Davidson 1995; Groveman 1995; Dechow, Sloan, and Sweeney 1996; Fanning and Cogger 1997; Beasley, Carcello, and Hermanson 1999). The related balance sheet accounts are receivables (especially for credit granting institutions), inventory (especially for manufacturing firms), property, plant, and equipment, payables, liability reserves (of insurance companies), and accrued expenses. The related income statement accounts are sales, cost of goods sold, general and administrative expenses, other expenses and revenues.

Based on the above-mentioned research, I use several related variables as material earnings manipulation proxies. Table 3 contains a description of these variables that are grouped in eight categories: receivables overstatement, inventory overstatement, property, plant, and equipment overstatement, payables understatement, accrued expenses understatement, net accruals overstatement, sales overstatement and ratio fluctuation, and poor cash flow indicators.

As discussed in section 1.1, there may be only a fine line between earnings management and fraud, or earnings management within reasonable limits and material earnings manipulation. Earnings management can result in

overstatements or understatements to the balance sheet or income statement, but presumably will not materially misstate them.

I argue that both earnings management, and material earnings manipulation (and its subset fraud) typically show up in the changes in balances of working capital accounts. However, they can be distinguished by their magnitudes. The earnings management literature refers to such changes in balances as accruals and considers positive total and/or discretionary accruals to be an indicator of earnings management. This study disaggregates total accruals into its components and focuses primarily on working capital accruals, e.g. changes in receivables, inventories, payables, and accrued expenses. I examined the accrual behavior of four bankrupt firms that were sanctioned by the SEC for overstating inventory, receivables, and/or income (discussed in Appendix B and summarized in section 3.3). I found that receivables and inventory accruals, of bankrupt firms sanctioned for overstating inventory, receivables, and/or income, constitute much higher percentages of beginning of the year assets than do those of healthy firms. Therefore, in this study I deflate the changes in these accounts by beginning of the year assets e.g. receivables change magnitude (RECMAG) and inventory change magnitude (NVMAG) or alternatively by the beginning of the year balance in the same account e.g. receivables percentage change (RECPC) or inventory percentage change (INVPC). I interpret the existence of significantly higher (mean) levels of such variables in sample firm-years hypothesized to contain overstatements versus

firm-years hypothesized not to contain overstatements as providing evidence consistent with income increasing earnings manipulation.

The receivables and inventory overstatement categories also include variables representing the difference between the percentage change (i.e. growth) in receivables or inventory, from the prior year, and the percentage change in sales from the prior year (RECSLSPC and INVSLSPC). A significantly positive percentage for firms hypothesized to engage in income increasing earnings manipulation would indicate that receivables and/or inventories are growing at a faster rate than sales, which according to Schilit (1993), is often an indicator of financial statement fraud.

The 1999 COSO study (Beasley, Carcello, and Hermanson 1999) found that property plant and equipment was the third most frequently overstated account by sample firms (15 firms). Only inventory and receivables were overstated by more firms (23 and 21 firms respectively). Therefore, I include the changes in net property, plant, and equipment as a percentage of beginning of the year assets (NPPEMAG) and as a percentage of beginning of the year property, plant, and equipment (NPPEPC) as material earnings manipulation proxy variables, and expect them to be positive and income increasing. I expect changes in payables and accrued expenses variables (PAYMAG, PAYPC, ACCEXPMAG, ACCEXPPC) to be negative, and thus also income increasing.

I also include variables related to overstatement of sales and ratio volatility. According to Kinney (1987) and Groveman (1995), overstatements of

inventory and/or credit sales, and/or omitted credit purchases are likely to increase the gross profit ratio. Therefore, I include the percentage changes in gross profit ratio. I also include the absolute value of the percentage change in gross profit ratio because overstatements of inventory or credit sales or both are likely to cause volatility in the gross profit ratio. The direction of the impact on the gross profit ratio may depend on the kinds of transaction being carried out.

The last group of variables includes three poor cash flow indicators. I examine cash flow from operations (CFFO), net change in cash (CASHCH), and percentage change in operating expenses (OPERPC) for failing firms hypothesized to engage in material earnings manipulation or fraud. The purpose is to determine if despite the overstatements manifested in the accrual data, the firm's troubled state is revealed through cash flows since it is harder to manipulate cash than other assets. I include net cash flow since Argenti (1976) points out that failing firms may reclassify cash coming in from other types of transactions (e.g. from sale of assets) as cash from operations. I expect the percentage change in operating expenses to be negative in failing firms. Riley, Behn and Pany (1997) find that firms that received going concern qualifications reduce unnecessary selling, general, and administrative expenses in attempting to resolve their going-concern problems. Argenti (1976) asserts that troubled firms will often avoid making much-needed repairs to their buildings in order to improve their cash flows. Other techniques include reducing expenditures on research and development, delaying payment of invoices, and accelerating

collection of receivables by a more aggressive policy of collection.

I interpret significant differences in means and medians of these proxies in the hypothesized direction for sub-sample firm years with incentives to manipulate earnings relative to control firms, as providing evidence consistent with earnings manipulation.[28] Table 3 lists twenty material earnings manipulation variables grouped in eight categories of variables. Each one of the variable categories contains related variables measuring the over (under) statement in a given account in different ways. To simplify the results of testing the predictions hypothesized, I use only one variable of each kind. I note these variables in table 3 with a superscript of H following the variable, indicating that this variable is used in testing the hypotheses. I note the remaining variables in table 3 with a superscript of R following the variable, indicating that this variable is used as an alternative to the "H" variables in testing their robustness.

4.2.3 Variables Used to Identify Earnings Management

H2.1 (A, B) predict the existence of earnings management in firm-years prior to the years in which the firm is hypothesized to have engaged in material earnings manipulation. I identify the existence of earnings management by the significance of the within-GAAP earnings management proxies listed in table 4.

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28 For example, the mean material inventory change magnitude (i.e. increase in inventory as a percentage of beginning of year assets) for sample firm-years hypothesized to contain fraud should be significantly greater than that for sample firm-years not hypothesized to contain material earnings manipulation or fraud.

Such firm-years should have significantly higher magnitudes of cumulative effect of changes in accounting principle (collected only for sample firms with Compustat data), extraordinary items (collected only for sample firms with Disclosure data), total accruals, and discretionary accruals than matched non-bankrupt firms. Evidence of earnings management would be consistent with material earnings manipulation/fraud being the path taken as a last resort after attempting within-GAAP techniques. However, the cumulative effect of a change in accounting principle contains both mandated and voluntary changes. While voluntary changes and accelerated adoption of mandatory changes in accounting principle are likely to represent earnings management, the timely adoption of mandated changes does not represent earnings management, since management cannot exercise discretion over these changes. Since all accounting changes, discretionary and mandated ones are included in the cumulative affect of accounting changes variable, the cumulative affect of change in accounting principle variable may be an imperfect indicator of earnings management. Alternatively, this may be somewhat mitigated by the fact that presumably the control sample firms are also likely to be making these mandated accounting changes in the same periods. Given that the control firms are matched by year, industry, and size, and thus likely to be making these same changes in accounting principle, it is possible that the variable may still be an indicator of additional earnings management taking place.

The total accruals and discretionary accruals variables used in the

earnings management literature are likely to include both earnings management and earnings manipulation. They would be differentiated by their magnitudes.

4.2.4 Tests of Hypotheses

I test my hypotheses on various combinations of sub-samples by using parametric two sample t-tests, and non-parametric median tests and Wilcoxon (rank sum) tests. Table 2 panel C depicts the sample pairs to be tested relative to the related hypotheses. The last column shows the predicted sign of the difference between sub-sample pairs being tested for each hypothesis for most of the variables.

I test predictions relating to the existence of fraud (for SEC sanctioned firms) or material earnings manipulation (for NSB non-sanctioned firms) prior to bankruptcy on non-going concern opinion years over a five year window prior to bankruptcy. Beneish (1996) examines how managers benefit from earnings overstatements. He estimates that, on average, financial statements contain reporting violations for twenty-nine months before the market discovers the violation. Additionally, the analysis of the SEC AAERs for the 51 BR_{SEC} sample firms shows that firms are sanctioned most often for overstatements that took place in years -1, -2, and -3 prior to bankruptcy. Although I use a five-year window prior to bankruptcy in most hypotheses, H2.2 predicts that non-going concern years -1 to -3 will display evidence consistent with significantly greater material earnings manipulation than years -4 and -5.

5. Summary Results

In this study, I argue that failing firms have incentives to materially manipulate earnings upward in the five years prior to bankruptcy. First, the failing firms engage in immaterial income increasing earnings management. As the firms' financial condition deteriorates and they run out of earnings management options they engage in material income increasing earnings manipulation. The material manipulation manifests itself in significantly greater magnitudes of income-increasing earnings manipulation proxy variables than control firms. Finally, if the auditor discovers the manipulation, insists on its reversal, and renders a going concern opinion on the financial statements, the going concern years reflect reversals of the previous overstatements. These reversals manifest themselves as significantly lower (and income-decreasing) magnitudes of the material earnings manipulation proxy variables in going concern years of bankrupt firms than in non-going concern years of bankrupt firms or non-bankrupt control firms. I expect this behavior to be true for SEC sanctioned bankrupt firms (BR_{SEC}) and in lower magnitudes for non-stressed bankrupt (NSB) firms. Overall, the results are consistent with significantly greater magnitudes of material income increasing earnings manipulation proxy variables in SEC fraud years and in non-going concern years of NSB firms than in control firm-years matched on year, industry, and size. As expected, the NSB non-going concern years resemble the SEC fraud years, but display lower levels of earnings manipulation proxy

variables than the NSB firms. Also, as hypothesized in H3, the going concern years of SEC sanctioned firms and NSB firms reflect significantly lower and income-decreasing magnitudes of the material manipulation proxy variables that were income-increasing in the non-going concern firm-years.

In summary, these results are consistent with failing firms being more likely to engage in material income increasing earnings manipulation in periods prior to bankruptcy than non-failing firms. Specifically, they are more likely to manipulate receivables, inventory, payables, property, plant, and equipment and sales upwards. Financial statements in going concern years appear to reflect reversals of previous overstatements.

5.1 Net Working Capital Accruals Magnitude

Table 3 lists twenty material earnings manipulation proxy variables used in testing the hypotheses. Most of the variables represent manipulation of a specific account. However, the net working capital accruals change magnitude (NWCACMAG) variable, computed as the net increase in receivables, inventory, payables and accrued expenses deflated by beginning of the year assets, represents the net effect of any earnings management and/or material earnings manipulation of receivables, inventory, payables, and accrued expenses. According to the prior literature mentioned earlier and the COSO study of sanctioned firms, receivables and inventory are the most frequently manipulated balance sheet accounts. Therefore NWCACMAG is a useful summary measure

of the magnitude of manipulation in firm-years hypothesized to contain manipulation.

Figure 2 depicts NWCACMAG graphically. The highest level of mean NWCACMAG (34%) is found in the SEC fraud years (sub-sample F). This sample included 10 going concern opinion years. When these are excluded, the magnitude is 36%.[29] As expected, the next highest level of NWCACMAG (18%) is that of the non-going concern firm years of NSB firms (classified in Figure 2 using the MMH firm-model - sub-sample M1). The NSB firms exhibit mean net working capital accrual magnitudes that are closest to the SEC sample, and significantly (as determined by statistical analysis discussed below) greater than the control firms that have a mean magnitude of .05. This is as predicted in $H1_C$. Sub-sample A (non-going concern years of all bankrupt firms) has the next highest mean NWCACMAG of 10%. Sub-sample A includes sub-sample F (SEC fraud years), sub-sample M1 (non-going concern years of NSB firms) and sub-sample J1 (non-going concern years of SB firms not hypothesized to engage in material manipulation). However, the fraud years and NSB years have substantially higher magnitudes than the SB sub-sample that has positive, yet lower, mean

29 One would not expect to find overstatements in going concern years because of greater auditor scrutiny once the firm's tenuous condition is revealed, and this study hypothesizes that going concern years will contain reversals of previous overstatements, i.e. income decreasing accruals. What seems to be the case in these 10 firm-years is that the SEC had also sanctioned prior non-going concern period(s) for these firms and thus scrutinized the going concern year financial statements as well. Beasley et al (1999) find that 19 SEC sanctioned firms (13% of the financial statements examined) received going concern opinions in the last fraud year. Many of these years have income decreasing accruals, and removing them from the SEC fraud-year sample raises the means of the fraud proxy variables for these firms as depicted in Table 7, row 4. Nevertheless, regardless of the income decreasing nature of the accruals, income was

magnitudes of NWCACMG (3%) than the control sample (5%). In fact the SB firms, sub-sample J1, have the lowest mean magnitude of NWCACMAG in non-going concern years. Therefore it is beneficial to break the bankrupt firms down into sanctioned firms, non-sanctioned NSB, and SB firms as a way of isolating the firms with the greatest manifestations of material earnings manipulation.

H3 predicts significantly lower, and income decreasing, accruals in the going concern years. In Figure 2, the magnitude of the income decreasing mean NWCACMAG in the going concern years (hypothesized to represent reversals of previous fraud or earnings manipulation) is roughly proportional to the income increasing mean NWCACMAG in the non-going concern years. For example, as expected, the greatest mean decrease in NWCACMAG is in the going concern years of SEC-sanctioned firms (sub-sample D), while the next greatest decrease is in the going concern years of the NSB firms (sub-sample N1) followed by the decrease of the non-going concern years of all bankrupt firms (sub-sample B), and last the decrease in the going concern years of SB firms (sub-sample K1).

Figures 3A - 3D graphically depict the magnitude of net working capital accruals (NWCACMAG) over the five years prior to bankruptcy and contrasts non-going concern firm-years and going concern-firm years with those of NSNB control firms. Panels A - D correspond to all bankrupt firms, SEC firms, NSB firms, and SB firms, respectively. BR firms, SEC sanctioned firms, and NSB firms display income-increasing behavior in non-going concern years prior to

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apparently overstated according to the SEC, and the accruals should most likely have been even

bankruptcy that is higher than those of the control firms and income-decreasing behavior in going-concern years that is lower than those of the control firms. Only the SB firms (figure 3D) do not display any activity consistent with income increasing material earnings manipulation in non-going concern years that is higher than that of control firms. In fact in years -5 through -2 the mean NWCACMAG in the non-going concern years is very slightly lower than that of the control firms and in year -1 it is appreciably lower. I discuss these graphs further in section 6.4. The foregoing analysis of mean levels of NWCACMAG summarizes this study's conclusions that financial statements of NSB firms display income-increasing levels of material manipulation proxy variables in non-going concern years and income-decreasing levels in going-concern years similar to those of SEC fraud firm years.

more income decreasing.

6. Detailed Results and Conclusions

Section 6.1 analyzes the reasons for bankruptcy as reported on the Lexis Nexis Database (BDS file) for sample firms. Section 6.2 discusses the descriptive statistics for various sub-samples as depicted in Table 6. Section 6.3 compares the means of key proxy variables for various sub-samples as presented in table 7 and section 6.4 compares the means of key proxy variables presented graphically for various sub-samples. Sections 6.5 through 6.7 analyze the results of statistical tests relating to each of the hypotheses. Section 6.8 analyzes the robustness checks. Section 6.9 concludes.

6.1 Reasons for Bankruptcy

Table 5 reports the reasons given for the bankruptcy filing for 185 out of the 293 sample bankrupt firms, reported on the BDS (Bankruptcy Data Source) Lexis/Nexis database. I classified the reasons into 13 categories, listed in column 1. Many of the firms reported two and even three reasons. The most frequently reported reason was recurring losses/ liquidity problems (20% of the time). These firms include 13 SEC sanctioned firms that had reasons for bankruptcy filing available on the BDS database. The two most frequently cited reasons, for sanctioned firms, were recurring losses, and SEC investigation of accounting irregularities. The COSO study (Beasley et. al. 1999) reports bankruptcy as a frequent consequence of the sanction. Thirty six percent of their sample of 204 sanctioned firms filed for chapter 11 bankruptcy, were described

as defunct, or were taken over by a Federal or State regulator. However, this leaves open to interpretation, whether the adverse consequences of the sanction forced the firms into bankruptcy; or whether they were headed towards bankruptcy, which is why they committed the fraud. This study hypothesizes the latter.

6.2 Descriptive Statistics for Various Sub-samples

Table 6 - Panels A through E reports the means, standard deviations, and medians of descriptive variables for all firm-years of non-bankrupt (NSNB) firms, and non-going concern and going concern firm-years for bankrupt firms (BR), bankrupt SEC sanctioned firms (BR_{SEC}), non-stressed bankrupt (NSB) and stressed bankrupt (SB) firms. These descriptive statistics include size variables such as total assets and sales and distress indicators such as net income, cash flow from operations, the Altman Z score, Ohlson P value, debt to assets ratio and percentage change in stock price and others.

The non-bankrupt firms display healthy levels of all variables. As we would expect, the mean debt to assets ratio (DDE equal to 42%) is lower for the non-bankrupt firms than for any of the others and the Altman Z-score and Ohlson P-value are in the non-bankrupt range. The non going concern years of bankrupt firms (panel B1) look healthy except for the mean net loss while the going concern years appear distressed (panel B2). These firms, however, include SEC sanctioned firms, NSB, and SB firms; thus the statistics for the individual sub-

samples are more meaningful. Panels C1 and C2 show SEC fraud years and going concern years of sanctioned firms, respectively. As we would expect the SEC firms look healthy during the fraud years except for the mean negative cash flow from operations and mean decrease in net income. Panels D1 and D2 show non-going concern and going concern years of NSB firms using the MMH firm model. They look healthy in the non-going concern years except for the decrease in net income, and distressed in the going concern years. The SEC firms and NSB firms exhibit similar behavior in terms of the Altman and Ohlson scores. Both scores are in the non-bankruptcy range for the SEC fraud years (NSB non-going concern years) and in the bankruptcy range for the going concern years. The debt to asset ratio is also substantially higher, for both sub samples in the going concern years. This may be due to one of two reasons: the declining equity base has increased the ratio or the firm took on additional debt to help combat their cash flow problems. I examined the means and medians of total liabilities, current liabilities, debt included in current liabilities, long-term debt, and total assets over non-going concern years and going concern years for both the SEC and NSB sub-samples. I found that for SEC firms the mean and median total liabilities, current liabilities, and current portion of long term debt increased from the fraud years to the going concern years while long term debt and assets decreased. For the NSB firms mean and median total liabilities, current liabilities, and debt included in current liabilities increased, and while the median of long-term debt increased the median decreased from the

non-going concern years to the going concern years. The mean (median) assets increased. This suggests that both factors: additional short-term debt and a declining equity base, contributed to the increase in debt to asset ratio in going concern years. The percentage change in stock price is positive for both the sanctioned and NSB sub-samples in the fraud years (non-going concern years) and negative in the going concern years, possibly indicating that these firms concealed their distress from investors before receiving going concern opinions.

Panels E1 and E2 show the descriptive statistics for the SB firms. They display mean net losses, retained earnings deficit, and a decrease in net income from the previous year in both the non-going concern and going concern years. Both the Altman and Ohlson scores are in the bankruptcy range even in the non-going concern years. These descriptive statistics verify to some degree the effective construction of the samples.

6.3 Comparison of Key Proxy Variables for Various Sub-samples

Table 7 compares the magnitudes of a few key material earnings manipulation and earnings management proxies for various firm-year sub-samples. The control firms, sub-sample P, shown in row 14 of table 7, represent the benchmark. They are NSNB (non-stressed non-bankrupt) firms and are not expected to have strong incentives to manipulate earnings. Mean magnitudes for key variables for NSNB control firms are 5%, 5%, 4%, 5%, 0, -1%, and 5%. These percentages correspond to the magnitude of the change in net working

capital (NWCACMAG), current accruals (CURACMAG), receivables (RECMAG), inventory (INVMAG)), total accruals using the Healy definition (TOTACMAG), total accruals using the Thomas and Zhang definition (TTOTACM), current accruals using the Thomas and Zhang definition (TCURACM).

If we examine specific companies known to be healthy, (see Tables B1 and B2 in the case study section - Appendix B) we find that Johnson and Johnson's and Campbell Soup's total accruals are lower than those of the matched sample firms and are often negative. Total accruals range from -1% to -9%, the receivables accrual magnitude (RECMAG) ranges form -2% to 3%, and the inventory accrual magnitude ranges from -3% to 4%. Thomas and Zhang (1996) examine several discretionary accruals models and conclude that assuming that total accruals typically equals –5 % of total assets for all firm-years, outperforms all the models they tested.[30] This is the case for Johnson and Johnson and Campbell Soup. However, the matched control firms in this sample have total accruals of about 0. It is conceivable that the control sample firms are engaging in some earnings management as well. This may be because the control sample firms chosen here were non-stressed non-bankrupt firms, which is not necessarily the same as choosing extremely healthy firms, performing at the

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30 Thomas and Zhang (1996) compute total accruals as: Total Accruals = (change in current assets – change in cash) – change in current liabilities - depreciation and amortization). This definition differs from that used to calculate TOTACMAG in that it does not subtract the current portion of long-term debt.

top of their industries. The firms in the control sample did not exhibit obvious signs of stress, nor did they declare bankruptcy within the five-year period. However, it is possible that some were actually managing earnings and will declare bankruptcy at a later date. A possible extension of this study could involve choosing an alternative control sample consisting of extremely healthy firms performing at the top of their industries, to gain further insight into accrual behavior of different types of firms. Dechow, Sloan, and Sweeney (1995) examined several different samples. Among them were firms in the highest and lowest deciles of earnings performance. They found that "firms with high earnings tend to have high cash flows and high accruals and firms with low earnings tend to have low cash flows and low accruals" and that the non-discretionary accruals models do not completely extract the higher accruals. This may be because these firms have not been examined relative to their incentives for earnings management. Additionally, going concern opinion years were not removed from the low earnings sample, which may be what is generating the negative accruals result they got. Therefore, examination of a sub-sample of healthy firms, measured by criteria other than just their earnings, which could have been managed, would be relevant.

Alternatively, the SB firms (stressed-bankrupt, sub-samples J1-J4) shown in rows 6 - 9 display smaller magnitudes of net working capital (NWCACMAG), receivables (RECMAG) and inventory (INVMAG) accruals, than the NSNB benchmark. However, the current, total accruals, and discretionary accruals of

the SB firms are higher than the benchmark, although not as high as those of the NSB (non-stressed bankrupt) firms discussed below.

I calculate discretionary accruals (DAP) using the modified Jones model shown by Dechow, Sloan, and Sweeney (1995) to outperform the other accruals models they compared it against. The discretionary accruals are highest for the fraud years, and next highest for the non-going concern years of NSB firms. Discretionary accruals for non-going concern years of SB firms are substantially lower than for NSB firms, but higher than the controls. However, current literature continues to criticize discretionary accruals models (Guay, Kothari, and Watts 1996; Thomas and Zhang 1996; Dechow, Sabino, and Sloan 1998; Healy and Wahlen 1998 etc.). These researchers agree that existing discretionary accruals models measure discretionary accruals with a high degree of error. According to Thomas and Zhang, total accruals and current accruals are simpler yet superior measures of earnings management than discretionary accruals. In this study, the mean total accruals and current accruals of both the control firms and SB firms are higher than what Thomas and Zhang (1996) consider the norm in the absence of any earnings management. It is therefore possible that both the control firms and SB firms are engaging in earnings management at immaterial levels. For example, the mean magnitudes of total accruals (TTOTACM) and current accruals (TCURACM) variables for NSNB control firms, using the Thomas and Zhang (1996) definition shown in row 14 and columns 8 and 9 of table 7are 1% and 5%. The mean magnitudes of total accruals and current

accruals variables for SB firms classified according to the MHM firm model (shown in row 6 and columns 8 and 9 of table 7), using the Thomas and Zhang (1996) definition are 4% and 9%. These magnitudes are relative to the -5% and 0 accrual magnitudes, expected for these variables, according to Thomas and Zhang (1996). Thomas and Zhang also expect average depreciation expense to be -5% of beginning of the year assets. As shown in the last column of table 7, depreciation expense is roughly -5% to -6% of beginning of the year assets for all sub-samples.

6.4 Graphical Comparison of Key Proxy Variables for Various Sub-samples

Figures 3-10 depict graphically the mean accrual activity of key material earnings manipulation, and earnings management proxy variables, over the five years prior to bankruptcy. They correspond to mean net working capital change magnitude (NWCACMAG - already discussed in section 5.2), receivables change magnitude (RECMAG), inventory change magnitude (INVMAG), payable change magnitude (PAYMAG), accrued expenses change magnitude (ACCEXPMAG, current accruals magnitude (CURACMAG), total accruals magnitude (TOTACM), and discretionary accruals (proxy) magnitude (DAP).

Each set of graphs depicts the activity of the means of these variables in the five years prior to bankruptcy for each of the four major sub-samples: all bankrupt firms, SEC fraud years, NSB firms, and SB firms. They show comparative trend lines for non-going concern years, going concern years, and

the matched control firm-years.

Sub-sample A, all bankrupt firms shown in panel A of figures 3-10 represents the largest sub-sample sizes (2,790 non-going concern firm-years, 1,764 control firm-years, and 560 going concern firm-years). The magnitudes of receivables, inventory, payables (discussed in section 6.5 below), net working capital accruals, current accruals, and discretionary accruals variables are higher for the BR sample than the control sample.

The SEC fraud years, graphically portrayed in the B panel of figures 3-10 for each of the variables, display the greatest magnitudes of the material earnings manipulation and earnings management proxy variables, relative to the control sample. Receivables, inventory, payables, net working capital, current, and discretionary accruals variables all have magnitudes higher than the control firms. The going concern years of the SEC sanctioned firms reflect income-decreasing accruals, below those of the control firms, as expected. The going concern years depicted here include the 10 firm-years that are also SEC fraud years, as discussed earlier, and eliminating them increases the income-decreasing nature of many of the manipulation proxies.

The graphs in panel C depict the accrual behavior of NSB firms, classified using the MMH firm model, during non-going concern years prior to bankruptcy, and represents the non-sanctioned sub-sample hypothesized to contain the highest accrual levels in non-going concern years. As predicted, the behavior of most of the proxy variables, especially receivables, inventory, net working capital,

current, total and discretionary accruals is income increasing during the non-going concern opinion years, and income decreasing, during the going concern years and substantially above (below) that of the control firms. The accrual behavior of NSB firms resembles that of the SEC fraud years.

It is also useful to examine the graphs by variable. Figures 4, 5, and 6 (A-D) represent receivables, inventories, and payables. They indicate that the NSB firms display similar behavior to the to the SEC fraud years but in lower magnitudes. Years -2 and -3 prior to bankruptcy seem to contain the highest levels. This is consistent with the hypothesized scenario, depicted in Table 1. An analysis of the frequency of the frauds in the 51 sample SEC sanctioned firms showed that year -2 prior to bankruptcy contained the most fraud years, followed by year -3 prior to bankruptcy. However the SEC fraud years and non-going concern years of NSB firms depict years -2, -3, and -4 prior to bankruptcy and years -2 and -4 prior to bankruptcy, respectively, as containing the highest magnitude of these variables. This validates the appropriateness of the five-year window used in this study, but suggests that the year -4, -5 versus year -1, -2, -3 division for testing H2.2 may not be optimal.

Figure 7 displays accrued expenses change magnitudes and indicates only slightly income increasing behavior (i.e. decreases in the variable) for SEC fraud years in year -3 (panel 7B). This is discussed further in the next section. Figures 8-10 show the net working capital, current, discretionary, and total accruals. The NSB firms display similar behavior for all these variables with the

largest magnitudes being in year -2 prior to bankruptcy. This is not surprising since these variables are all summary measures that would include the net effect of all the manipulations, and thus are likely to be highly correlated. The SEC fraud years show the largest magnitudes for these variables in periods prior to -2. This is consistent with the SEC firms being highly aggressive and instituting material earnings manipulation earlier, while the NSB firms may be more conservative and materially manipulate earnings as a last resort.

The Panel D (3D - 10D) graphs depict the accrual behavior of SB firms not hypothesized to engage in earnings manipulation. The non going concern years show magnitudes of manipulation proxy variables that are very close to those of the control firms and do not really indicate income increasing behavior. The going concern years, however, do indicate some income-decreasing behavior. This may be an adjustment of the less material levels of earnings management, hypothesized to take place in SB firms as well.

6.5 Results Relating to RQ1 ($H1_A$ to $H1_C$)

Table 8, 9 and 10 report the results of parametric t-tests and non-parametric median tests and Wilcoxon (rank sum) tests performed on the various sub-sample-pair combinations (outlined in table 2-panel C) in testing the hypotheses relating to the three research questions. I discuss these in detail relative to each hypothesis.

Hypothesis H1 predicts significantly higher magnitudes of earnings

manipulation proxy variables for bankrupt firms in the non-going concern years prior to bankruptcy. Table 8, panels 1-3 provides evidence relating to $H1_A$ - HI_C. It reports the mean and median magnitudes of the earnings manipulation proxy variables, as well as the results of parametric t-tests and non-parametric median and Wilcoxon tests for the three bankrupt sub-samples contrasted with the control sample. The sub-samples shown in panels 1-3 correspond to all bankrupt firms, SEC alleged fraud years, and non-stressed bankrupt firms classified using the MMH firm model.

Table 8, panel 1 shows the results for all bankrupt non-going concern years. They represent the largest sample of bankrupt firms. However, since they include SEC fraud years, NSB, and SB firm-years with differing incentives, this creates a confounding effect, and we cannot be certain which set of firms dominates the means of the material manipulation proxy variables. The high magnitudes of the SEC fraud years and NSB firm-years appear to dominate, since the bankrupt sample seems to exhibit income increasing behavior.

Table 8, panel 2 contrasts SEC fraud years with control firms. The results are not surprising since these represent firm-years of bankrupt firms that the SEC has alleged are materially overstated. These firms are known to have engaged in fraud prior to bankruptcy. The importance of the evidence in panel 2 is that it validates the earnings manipulation proxy variables. Statistical significance of these variables in firms we already know have materially overstated their financial statements lends credibility to using the same proxy variables to detect

behavior consistent with material income-increasing earnings manipulation in other sub-samples. The magnitudes of the change in: receivables (RECMAG), inventory (INVMAG), net working capital (NWCACMAG), current accruals (CURACMAG), sales (SLSPC), and the absolute value of the percentage change in gross profit ratio (GPRPCAV) variables, are significantly greater for SEC fraud years than control firm-years (mostly within the .01 level). The mean and median magnitude of the change in net property, plant, and equipment (NPPEMAG) is greater for the SEC fraud years than the controls but not significantly. The percentage change in net property, plant, and equipment (NPPEPC) (an alternate variable and shown in table 12), however, is significantly greater for SEC fraud years than control firms. The percentage change in gross profit, (GPRPC) is not significantly greater while its absolute value (GPRPCAV) is. This is most likely due to the fact that different firms engage in different manipulation techniques of the same financial statement accounts, and may also manipulate different accounts. Since managers do not necessarily plan the changes in key ratios, but rather they could be an unplanned byproduct of manipulation, the ratios can be differently affected in different firms. Thus a combination of several kinds of fictitious transactions can inadvertently affect the gross profit ratio, and we would expect firms engaging in material earnings manipulation to have less stable gross profit ratios. The absolute value of the change in gross profit ratio captures such instability.

The percentage change in sales variable (SLSPC) is significantly greater

for the SEC fraud years than the control firms. This is as expected since sales is an account subjected to fictitious entries in many of the instances of fraud. However, one might expect that healthy growing firms would also have significantly high increases in sales, and thus might mask the effect of the increases in the bankrupt sample. Nevertheless, the SEC fraud years show significantly greater increases in sales.

The evidence does not support the assumption that failing firms significantly under-state their payables and accrued expenses. In fact, Table 8, panel 2 shows that the magnitudes of change in payables (PAYMAG, PAYPC) and accrued expenses (ACCEXPMG, ACCEXPPC) are significantly higher for failing firms than for non-failing firms. There is also no evidence of significant reductions in operating expenses (SGAPC) by the bankrupt firms for the purposes of improving cash flow. In fact, the percentage change in operating expenses is significantly higher in the fraud years. One possible explanation that ties both of these results together may be that these firms do not significantly reduce their operating expenses, but conserve cash by delaying paying their bills. This would result in increased balances in payables and accrued expenses. Since these firms ultimately declared bankruptcy these unpaid bills most likely became bad debts. A recent article (*The Wall Street Journal*, December 2, 1997, B15) relating to a lawsuit against Ernst and Young, hired as consultants to put a failing firm back on its feet, may lend some support to this theory. The accounting firm was sued because it failed to implement an expense reduction program, and

the firm then failed. Apparently management of the firm did not attempt to and/or succeed in implementing an expense reduction strategy either. Although this scenario is specific to this one firm, it is possible that other failing firms, especially those that are optimistic about their future, and thus "temporarily" engage in earnings manipulation do not try to cut costs, but rather neglect paying their bills since their cash flow is poor.

Additionally, since many of these firms have overstated their inventory, the significantly greater magnitudes of payables in the fraud years may have been the result of inventory overstatements carried out by recording fictitious purchases of inventory, which would increase inventory and also payables. Firms with poor or no perpetual inventory system records may overstate inventory by overstating only the value of the year-end physical count. Those with perpetual inventory system records may overstate inventory by recording fictitious inventory purchase throughout the period. They would also have to adjust the year end count by more than the overstatement to purchases since recording fictitious transactions, and overstating the physical count value of inventory by the same amount would have no net effect on gross margin, net income, or net assets. The former technique would not affect payables but would serve to overstate inventory, net income and the gross profit ratio. The latter would overstate payables, but overstate inventory more than payables. Therefore, it is likely that firms overstating inventory by recording fictitious purchases would also show significantly greater magnitudes of payables than

control firms. This theory is supported by the fact that both the magnitudes of changes in inventory, and changes in payables are higher in all the panels, than those of the control firms, however, the magnitudes of the changes in inventory are higher than the magnitudes of the changes in payables. Also, although payables are being increased, the net working capital accrual magnitude, which includes payables, is always significantly greater for bankrupt firms than the control firms. This indicates that despite the possible overstatement of payables and/ or accrued expenses, the even higher overstatements of inventory, receivables, and, perhaps, other current asset accounts causes a net overstatement.

The evidence of significantly higher magnitudes for accrued expenses is not as convincing as it is for payables. Figure 6, panels A-D discussed above, graphically portrays the movement of the earnings manipulation variables over the five years prior to bankruptcy. They do not really show any appreciably higher magnitudes for accrued expenses except in year -4 for all bankrupt firms, years -4 and -5 of the SEC fraud years and year -4 of the NSB firms. Year -3 of the SEC fraud years is the only one that shows mean negative changes in accrued expenses as a percentage of beginning of the year assets. This is consistent with the original expectation that bankrupt firms would understate their accrued expenses. The fact that they are understated, i.e. income decreasing in only one year of SEC fraud years is puzzling. The COSO study (Beasley et al. 1999) reports that half of the 204 sample SEC sanctioned firms overstated their

financial statements via improper revenue recognition such as recording fictitious revenues and recording prematurely recording revenues. Half of the firms also overstated their assets, excluding overstated receivables that were due to the revenue fraud. Thirty seven percent of the firms overstated existing assets, 12% recorded assets not owned, and 6% capitalized items that should have been expensed. The asset accounts most commonly overstated were receivables and inventory. Eighteen percent of the sample firms understated expenses and liabilities. So although individual firms are likely to be understating expenses and liabilities, it appears from the percentages reported by the COSO study that there is a much greater magnitude of asset overstatements that may require the simultaneous overstatement of payables. Thus, the net effect on the mean magnitude of the payables and accrued expenses over all firms would be income increasing.

The results in table 8, panel 2 also show that the cash flow from operations and net change in cash variables are significantly lower for all the bankrupt firms than their matches. These results indicate that although these firms may look non-stressed using accrual data, the cash flow information reveals some of the signs of distress.

The results reported in panel 2 for SEC fraud years, and analyzed above, are consistent with the ability of the manipulation proxy variables to identify earnings manipulation in those firms. Panel 3 reports the results of comparing non-going concern years of NSB firms with control firms using the MMH firm

(distress classification) model. The non-going concern years of NSB firms resemble the SEC alleged fraud years and contain the next highest magnitudes of manipulation proxy variables in a sub-sample that does not include SEC sanctioned firms. The evidence is consistent with income increasing and significantly greater magnitudes of the manipulation proxy variables for NSB (non-stressed bankrupt firms) versus control firms. Specifically those that appear non-stressed (type NSB), display accrual behavior in non-going concern years that is similar to SEC sanctioned bankrupt firms.

6.6 Results Relating to RQ2 (H2)

Table 9, Panels 1-3 reports the results of testing the hypotheses relating to research question two, as to whether firms likely to engage in earnings manipulation, first engage in within-GAAP earnings management. Panel 1 compares the two years prior to the first fraud year of SEC sanctioned firms with control firms. None of the mean earnings management proxy variables are significantly greater for the SEC firms than the control firms, and are typically income-decreasing. The medians however, are income increasing, and the median total accruals (TOTACM) and current accruals using the Thomas and Zhang definition (TCURACM), and discretionary accruals (DAP) are higher, albeit insignificantly, for the SEC firms. The lack of evidence of earnings management, in the two years prior to the first fraud year, may be due to several factors. First the magnitude of the changes in accounting principles variable is inconclusive in

all the panels of table 10 largely due to the small number of observations containing available data for this variable. Second, It is conceivable that since the SEC thoroughly investigated these firms, they uncovered not only material earnings manipulation, but also any deliberate earnings management included in discretionary accruals. Thus, the years identified by the SEC as fraud years could include both earnings management and material earnings manipulation. This would explain why the discretionary accruals variable would not be significantly greater in the two pre-fraud years for SEC sanctioned firms than control firms. Third, as stated in the discussion relating to table 7, control firms are likely to be engaging in earnings management as well and thus may not be substantially different than the sanctioned firms in the two years prior to the first fraud year. Finally, it is possible that many of the firms engaged in high magnitudes of material earnings manipulation as early as five years prior to bankruptcy.

Table 9, panel 2 shows the results of comparing earnings management proxy variables in years -4 and -5 of NSB firms to the control firms, using the MMH firm model ($H2.1_B$). The magnitude of the change in accounting principles variable. (ACCTGCHM) is missing for many of the observations and thus is inconclusive. The mean extra-ordinary items and discontinued operations variable (EIANDDO) is greater than the control sample but not significantly. Total accruals using both the Healy, and Thomas and Zhang definitions (i.e. the short-term portion of current debt is not removed from current liabilities), and

discretionary accruals are significantly greater for NSB firms. This would indicate that there is earnings management taking place in years -4 and -5. H2.2 predicts that this is substantially less than in years -1, -2, and -3.

Table 9, panel 3 provides evidence relating to Hypothesis H2.2 which predicts that NSB firms are likely to exhibit higher magnitudes of earnings manipulation variables in years -1 to -3 prior to bankruptcy than in years -4 and -5. Panel 3 provides the means and medians for the earnings management proxies along with the earnings manipulation proxies of NSB firms using the MMH firm model. The evidence does not support the hypothesis that there are significantly greater magnitudes of earnings manipulation taking place in years -1, -2, and -3 prior to bankruptcy than in years -4 and -5. Figures 3-10 graphically depict each year individually for SEC fraud years and NSB non- going concern years. They show that in some cases there are greater magnitudes for some of the variables in year -4 as well. Therefore, the years -1 to -3 versus the years -4 to -5 division is not optimal and years -5 versus years -4 to -1 may be better.

The use of the years -1, - 2, -3 versus years -4, -5 was based on the results of an analysis of the frequency of SEC fraud years. The sample studied here includes 51 SEC sanctioned firms representing 97 fraud firm-years. The fraud years were distributed as 30 (30.9%) in year -2, 22 (22.7%) in year -1, 20 (20.6%) in year -3, 13 (13.4%) in year -4, 6 (6.2%) in year -5, 5 (5.1%) in a year prior to -5, and 1(1%) in year 0, relative to bankruptcy. Therefore in total, 72 of

the fraud firm-years (74.2%) took place in years -1 to -3, 19 (19.6%) in years -4 and -5, and 5 (5.1%) in years -6 to -9 prior to bankruptcy. However, the magnitude of the frauds in those years may not necessarily be significantly correlated with the frequency of the frauds.

6.7 Results Relating to RQ3 (H_{3A} to H_{3C})

The results relating to RQ3 and H3 are reported in Table 10, Panels 1-3. These are the results of comparing non-going concern firm years to going concern years for all bankrupt firms, SEC sanctioned firms, and NSB firms. In all three cases, there is evidence of significantly lower, and always income-decreasing, earnings manipulation proxy variables such as receivables, inventories, payables, accrued expenses, selling, general, and administrative expenses, net working capital, current, total, and discretionary accruals in going concern years. These results suggest one of two possible scenarios. One possibility is that the auditor scrutinizes financial statements more carefully, and insists on more conservative accounting treatment when (s)he detects a going concern problem. Alternatively, when the auditor detects previous overstatements and insists on their reversal, the firm's distressed state is revealed to the auditor and this triggers a going concern opinion.

It is also interesting to note that the SEC firms (see table 7 and panel B of figures 3-10) have the greatest reversals, followed by those of non-sanctioned non-stressed bankrupt firms (NSB), while the smallest reversals are those of the

stressed bankrupt firms (SB). Given that the SEC sanctioned firms exhibit the highest levels of income-increasing, manipulation proxy variables, this lends support to the hypothesis that the income-decreasing nature of the earnings manipulation proxy variables, in going-concern years, actually represents reversals of previous overstatements. Alternatively, some might argue that the income decreasing nature of the earnings manipulation proxy variables is merely a reflection of the different kinds of transactions taking place in firms close to bankruptcy. However, if this were true, why should SEC sanctioned bankrupt firms show bigger decreases in going concern years than non-sanctioned bankrupt firms, and why are these decreases only being reflected in going concern years? Presumably we would expect to find similar characteristics for most failing firms, one year prior to bankruptcy. Nevertheless, in this study, firms with non-going concern opinions a year before bankruptcy exhibited substantially lower income decreasing or in some cases income increasing accrual behavior than firms with going concern opinions the year prior to bankruptcy.[31]

6.8 Robustness Checks

Tables 11 through 24 report results of three categories of alternative specifications. First, tables 11 through 17 report results relating to tests of

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31 For example, for all non-SEC sanctioned firms (including SB firms, not hypothesized to manipulate earnings upward) the mean magnitude of changes in receivables, inventory, net working capital accruals, total accruals, and discretionary accruals, in non-going concern years immediately prior to bankruptcy were 1%, - 1%, -1%, -8%, and -6% respectively. For those firms

alternate material manipulation proxy variables to the ones displayed in tables 8-10. These confirm the robustness of the material manipulation proxies being used. Second, table 18 reports the associations between alternate distress indicators and distress classifications, using the other three models not shown in the main tables. Tables 19 through 23 report the results relative to $H1_C$, H2.1, H2.2, and $H3_C$ using the three alternate distress models for classifying NSB and SB firms. These confirm the robustness of the results relating to the NSB sub-sample. Third, table 24 shows results for all non-sanctioned bankrupt firms, not reported earlier. This provides additional evidence on the robustness of the conclusions even when non-sanctioned firms are not classified as NSB or SB.

6.8.1 Alternative Measures of Material Manipulation Variables

Tables 11, 12, and 13 report the results of t-tests, median tests, and Wilcoxon tests when comparing BR, SEC fraud years, and NSB sub-samples to controls. These tables provide evidence using material manipulation proxy variables that are alternatives to those reported in table 8, panels 1-3. The variables in table 8 represent the magnitudes of changes in various financial statement accounts measured as a percentage of beginning of the year assets. The alternate variables in tables 11-13 show the percentage change in the given account as a percentage of the beginning of the year balance in that account, rather than as a percentage of beginning of the year assets. Receivables,

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with going concern opinions in year -1 the mean magnitudes were, -4%, -5%, -10%, -21%, and

inventory, payables, and net property, plant and equipment are significantly greater for the BR, SEC fraud years, and NSB sub-samples than for controls. The percentage change in accrued expenses is significantly greater for the BR and SEC sub-samples, but not for the NSB sample. As discussed earlier the results relating to accrued expenses are not conclusive. Considering the evidence on the change in accrued expenses for the bankrupt sub-samples versus the controls shown in table 8, panels 1-3 and in the alternate tables 11-13, it appears that the BR and SEC fraud year samples display evidence of income decreasing accrued expenses behavior. These tables also include two additional variables not shown in table 8: percentage change in receivables less percentage change in sales (RECSLSPC), and percentage change in inventory less percentage change in sales (INVSLSPC). The signs of the RECSLSPC and INVSLSPC variables are in the right direction for all three sub-samples (tables 11-13) and are significant for the BR and SEC fraud year sub-samples. This indicates that for the samples hypothesized to engage in material manipulation or fraud, receivables and inventory are growing at a faster rate than sales which is considered a sign of overstated receivables and inventories (Schilit 1993).

Table 14 reports alternate manipulation proxy variables corresponding to table 9, panel 3. It provides evidence relative to H2.2 that predicts higher magnitudes for earnings manipulation proxy variables in years -3 to -1 prior to

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-16%, respectively.

bankruptcy than in years -4 and -5, for NSB firms. The results, like those of Table 9, panel 3, do not support this hypothesis.

Tables 15-17 report alternate manipulation proxy variables to those shown in table 10, panels 1-3 and similarly provide strong evidence on income decreasing behavior in going concern years suggestive of reversals of previous income increasing manipulation. Thus, the results relative to the alternate variables confirm the robustness of the proxies used in tables 8-10.

6.8.2 *Alternative Distress Models*

Exhibits 2-10 and tables 8-10 include NSB and SB firms which were classified using the MMH firm model. The accurate classification of the non-sanctioned firms into NSB and SB is important, since this study predicts that NSB firms are likely to manipulate earnings upwards in non-going concern years prior to bankruptcy, while SB firms are not likely to do so. Therefore, the results of testing the hypotheses on the NSB sub-sample are strongly related to the contents of the sample and may not be robust to other classification models. Therefore, in section 4.2.1 I present three distress classification models in addition to the MMH firm model: the MMH firm-year model, the Ohlson firm-year model, and the Ohlson firm model. Tables 7 reports values for all four models for SB firms in rows 6-9, and for NSB firms in rows 10-13. Although the mean values for the four models differ, the NSB firms consistently display higher values than the SB firms do.

Table 18 reports the results of univariate logistic regressions using five alternative distress indicators as the independent variable (i.e., debt to equity ratio, change in net income, percentage change in stock price, Altman Z-score, and Ohlson P value) and using each of the four distress classification models (i.e., MMH firm model, Ohlson firm model, MMH firm-year model, and Ohlson firm-year model) as the dependent variable. For each of the four models, the distress variable is a dichotomous variable equal to 1 if the firm-year appears distressed (i.e. classified as SB) and 0 if it does not (i.e. classified as NSB). The sign of the debt to asset ratio (DDE) is in the right direction for all models and significant at better than the .01 level for all models except the MMH firm model. A higher debt to asset ratio, tends to signal a more distressed firm and the Ohlson firm-year model classifies 77% of the NSB firms and 72% of the SB firms correctly using debt to asset ratio and better than the other three. The change in net income variable (NICHANGE) signals distress since firms prefer to preserve upward income trends because a decline in net income is usually viewed negatively by financial statement users. A decrease in net income is associated with a distressed classification for all models but insignificantly. A decline in the percentage change in stock price is associated with distress only under the Ohlson firm-year model. The sign is in the wrong direction for the other three models. However, this may be due to the small number of observations that have stock price data. The Altman Z-score is significantly (negatively) associated with all models except the Ohlson firm-year model, while the Ohlson

P -score is significantly (positively) associated with all models. The negative versus positive association is due to the difference in Altman versus Ohlson classification schemes. The Ohlson model classifies P scores above the cut-off as bankrupt while the Altman model classifies Z-scores above the cutoff as non-bankrupt. The Ohlson firm model and MMH firm year models seem to classify best based on Altman Z-scores. The perfectly accurate classification of the Ohlson firm-year model based on Ohlson P-scores in each firm-year is obvious and irrelevant, and thus not to be considered. In summary we can evaluate these results by model. The MMH firm model is significantly associated with two alternate distress indicators, both the Altman Z-score and Ohlson P-value, however, it would not classify NSB firms (in this sample) in the same way as the other distress indicators. The Ohlson firm model is significantly associated with the Altman model and the debt to asset ratio distress indicator and would classify NSB firms similar to the Altman model. The MMH firm-year model is significantly associated with the Altman and Ohlson models and the debt to asset ratio distress indicator and classifies NSB firms similar to the Altman model. The Ohlson firm-year model is significantly associated with debt to asset ratio (other than itself) and classifies NSB firms similar to all the other distress indicators. I conclude from this analysis that while all four models classify NSB and SB firms differently relative to the five alternative distress indicators presented here, each has some merit and is a viable alternative. Begley, Ming, and Watts find that the original Ohlson model (essentially the Ohlson firm-year model) is superior to the

Altman model, which they compare it to. That is why the Ohlson, rather than the Altman, model was used in this study.

Tables 19-21 report the results relative to H1 for the NSB sub-sample using the MMH firm-year, Ohlson firm, and Ohlson firm-year models and are alternatives to table 8, panel 3 which reports results under the MMH firm model. All three tables display both the material manipulation proxy variables and the alternatives described earlier. The MMH firm-year model shown in table 19 and the Ohlson firm-year model shown in table 21 report substantially similar results to those of the MMH firm model shown in tables 8, panel 3 and its alternative, table 13. Table 20 reports the results for the NSB sub-sample using the Ohlson firm model. The signs for all of the manipulation proxy variables are consistent with those of the other three models and with H1's prediction that NSB firms display higher magnitudes of material manipulation proxy variables in non-going concern periods prior to bankruptcy. However, the magnitudes of the variables are not significantly higher. Tables 22 and 23 report similar results to table 9, panels 2 and 3, which they are alternatives too. In summary the analysis of the robustness of the four distress classification models indicates that most of the time using any of the models will yield similar results. Nevertheless further work on refining the classification of NSB and SB firms would be helpful. Therefore, in summarizing the results in the following section I use the mean values for key proxy variables over all four models.

6.8.3 Results for Additional Sub-sample

Finally, this study generally hypothesizes that failing firms are likely to engage in income increasing earnings manipulation in periods prior to bankruptcy. This prediction is then attributed more specifically to NSB firms. However, since using different classification schemes can sometimes yield different results, it would be useful to verify whether the basic hypothesis is true even if we do not separate NSB firms from SB firms. Table 8, panel 1 and table 10, panel 1 show these results for all bankrupt firms (including sanctioned firms). Table 24, however, shows these results for only non-sanctioned bankrupt firms. (i.e., NSB firms, SB firms, and firms not classified). The results do support the hypothesis and are similar to those shown for NSB firms. Table 7 displays the mean values of key manipulation proxy variables for non-sanctioned bankrupt firms (sub-sample G) in row 5. Examination of these values relative to those in rows10-13, reveals that the values of the manipulation proxy variables are significantly greater for the non-sanctioned bankrupt sub-sample than the controls (as shown in table 24). Nevertheless, the values for the non-sanctioned bankrupt sub-sample are substantially lower than the values for the NSB firms, under any of the classification models. This suggests that separating NSB firms from SB firms helps to isolate the manipulation and to identify, ex-post, the bankrupt firms most likely to have engaged in income increasing manipulation prior to bankruptcy.

6.9 Conclusion

In this study, I argue that failing firms have an incentive and are likely to manipulate earnings upwards in the five years prior to bankruptcy and that this is essentially a three step process. I expect: First, that both SEC sanctioned firms and NSB firms have engaged in earnings management, i.e. immaterial earnings manipulation, in years -4 and -5 prior to bankruptcy (or two years prior to the first fraud year for SEC firms). Second, firms that do not appear stressed (NSB firms) are most likely to engage in material levels of earnings manipulation in non-going concern years -1 to -3 prior to bankruptcy. These NSB firms should display similar accrual activity to, albeit at lower magnitudes than, failing SEC sanctioned firms do during the SEC alleged fraud years. Third, both SEC sanctioned firms and NSB firms will display income decreasing accruals in going concern years prompted by auditors requiring reversals of the previous income increasing accruals.

I test several earnings manipulation proxies on bankrupt SEC sanctioned firms. These proxies represent accruals related to specific accounts that according to the fraud literature are often overstated. I find that the mean and median magnitudes of these proxies are significantly higher (and income increasing) for the SEC fraud years than those of control firms. I further test these same earnings manipulation proxies on non going-concern firm-years of non-stressed bankrupt firms. I find that although their magnitudes are lower than those of SEC sanctioned firms, nevertheless, they are significantly greater (and

income increasing) than control firms. This is confirmed graphically as well. I find weaker evidence (and in the case of the SEC sanctioned firms no evidence), of earnings management taking place in years -4 and -5 prior to bankruptcy for non-stressed bankrupt firms. I also find no evidence of significantly greater earnings manipulation proxy variable magnitudes, for NSB firms, in years -1 to -3 versus years -4 and -5 prior to bankruptcy. The division between years -4 and -5 versus years -1, -2, and -3 may not be optimal. The graphs, depicting the *movement of the mean manipulation proxy variables* over the five years prior to bankruptcy (figures 3-10) reveal that there is significant income increasing accrual activity of fraud proxy variables during year -4 as well. I do find strong evidence, however, that the mean and median earnings manipulation proxies are significantly lower and income decreasing in going concern firm-years for all bankrupt firms and more so for SEC sanctioned firms and NSB firms.

Finally, I argue that earnings management can be distinguished from earnings manipulation by the mean and median magnitudes of the earnings manipulation proxy variables. While lower (immaterial) magnitudes of the earnings manipulation proxy variables might be considered earnings management, substantially higher magnitudes are more likely to be considered material earnings manipulation. This would require quantifying the immaterial versus the material levels. As discussed earlier, Thomas and Zhang (1996) assert that typically firms that do not have incentives to manage earnings should have total accruals equal to -5% of beginning of the year assets and current

accruals of 0. The negative characteristic of total accruals is driven by the depreciation accrual, expected to be about -5% of total beginning of the year assets. The rest of the accruals are all current accruals. The control firms in this study have 0 total accruals and current accruals of 5%. According to Thomas and Zhang, therefore, the control firms would appear to be engaging in earnings management at the magnitude of 5% of beginning of the year assets. Given that 5% is a frequently used benchmark of materiality, this accrual behavior is likely to be considered borderline or immaterial. On the other hand, we can conservatively consider that the control firms have no apparent incentives to manage earnings and were chosen because they looked healthy for all sample periods. We would therefore consider their accrual behavior to represent normal accrual behavior. Even if we use this higher benchmark of 0 and 5% for total and current accruals, the SEC fraud years and NSB firms display significantly higher accruals than the benchmark. SEC firms display total accrual magnitudes of 13% and current accrual magnitudes of 17%, and the NSB firms display total accruals of 10% and current accruals of 14%. These represent accrual magnitudes that are higher by around 13% of beginning of the year assets for SEC fraud years and by 10% for NSB non going-concern firm-years, than the benchmark.

The accounting and auditing standards define materiality qualitatively. However, Appendix C of FASB Statement of Concepts No. 2 does provide some

guidance on quantifying materiality.[32] Given commonly used benchmarks for materiality such as 5% of assets and 10% of the individual account, the substantially higher magnitudes of SEC fraud years and non going-concern years of NSB firms are likely to be considered material by the SEC and/or the auditor. Furthermore, not only are the magnitudes of total accruals and current accruals materially higher than those of the controls, but the fraud proxy variables relating to individual accounts are as well. For example the control firms have mean receivables, inventory, net working capital, and net property, plant, and equipment change magnitudes of about 4%, 5%, 5% and 6% and percentage changes in receivables, inventory, net property plant and equipment, and sales of 28% 20%, 29%, and 21%. In contrast, the magnitudes of these variables for SEC sanctioned firm fraud years are 29%, 21%, 34%, and 34% respectively and percentage changes of 90% 53%, 72%, and 93% respectively. Therefore the material manipulation proxy magnitudes for the SEC fraud years (measured as a

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32 FASB Statement of Concepts No. 2, Appendix C entitled "Quantitative Materiality Considerations" points out that although each FASB Statement states that "the provisions of this statement need not be applied to immaterial items" the statements do not define materiality quantitatively. Therefore Appendix C provides some guidance by offering examples of what might be considered to be a material amount based on the discussion memorandum on materiality, other literature, and the courts. Some of the following examples given may be relevant to defining materiality in this study. According to SEC Accounting Series Release No. 41 separate disclosure of balance sheet items is needed if they are 10% or more of their immediate category or 5% or more of total assets. SEC regulation S-X - Rule 5-04 states that receivables from officers or stockholders should be disclosed if they equal $20000 or 1% or more of total assets. SFAS No. 16 requires recognition of a reportable segment if revenue is 10% or more of combined assets. Appendix C also cites that 5-10% of net income has been a widely used rule of thumb, based on some studies in the 1970s. In addition, errors tend to take on greater significance if they change the trend in income. Although, the SEC has asserted in SAB 99 that exclusive use of quantitative benchmarks such as the 5% rule of thumb without qualitative analysis of the resulting misstatement is unacceptable, it nevertheless did not change the currently used quantitative guidelines.

percentage of beginning of the year assets) are higher than the controls by 25%, 16%, 29%, and 28% of beginning of the year assets, for receivables, inventory, net working capital, and property, plant, and equipment. Relative to a materiality benchmark of 5% or more of assets these increases in the respective accounts are highly material. The material manipulation proxy variables measured as a percentage change in the individual accounts for the SEC fraud years are higher than the controls by 62%, 33%, 72%, and 43% for receivables, inventory, property, plant, and equipment, and sales. Relative to a materiality benchmark of percentage changes in the individual account of 10% or more of that account, these increases are also highly material. Clearly one would expect these changes in the accounts to be material, since they represent material misstatements, that were investigated and sanctioned by the SEC.

It is useful to apply the same standards to NSB firms to determine if we could consider the mean increases in these accounts for NSB firms to be material, thus signaling potential material earnings manipulation. The magnitudes of these variables for non going-concern years of NSB firms prior to bankruptcy are on the average (over the four distress classification models) 10%, 10%, 13%, and 9% for receivables, inventory, net working capital, and property, plant, and equipment, respectively. These magnitudes are greater than the controls by 6%, 5%, 8%, and 3%. Relative to a materiality benchmark of 5% or more of assets, the increases in receivables, inventory, and net working capital are material. The material manipulation proxy variables measured as a percentage change in the

individual accounts for the non-going concern years of NSB firms prior to bankruptcy are on the average (over the four distress classification models) 203%, 48%, 51%, and 39%. These are greater than the controls by 175%, 28%, 22%, and 18% for receivables, inventory, property, plant, and equipment, and sales. Relative to a materiality benchmark of percentage changes in the individual account of 10% or more of that account, these increases are certainly material.

Healy and Wahlen (1998) point out that according to Teoh, Wong, and Rao (1998) discretionary accruals for firms making initial public offerings are "surprisingly large", 4-5% of assets and according to Erickson and Wang (1998) they are 2% of assets in the quarter's stock acquisitions. Based on this benchmark, the discretionary accrual numbers as shown in table 7, i.e., 19% (23% if going concern opinion years are removed) for SEC fraud years and 11% (over the four NSB models) are substantially higher. Although the discretionary accruals models are considered to measure discretionary accruals with error and often overstate them, nevertheless the discretionary accruals numbers for SEC fraud years and NSB firms are substantially higher than the benchmark and thus consistent with material manipulation.

Another way to assess the potential misstatements in and related materiality of NSB sample firms is to determine the most frequently sanctioned magnitudes of the key material manipulation proxies. It is then useful to compare these magnitudes for SEC sanctioned firms versus NSB firms versus non-

bankrupt control firms. I examined the frequency distributions of the magnitude of net working capital accruals (NWCACMAG), calculated as a percentage of beginning of the year assets, for all three types of firms. I report the frequency distribution over five intervals: i.e., (1) NWCACMAG below zero, (2) between zero and 5%, (3) between 5% and 10%, (4) between 10% and 15%, and (5) greater than 15%. For 77 SEC non-going concern fraud years the frequency distributions was 17%, 20%, 8%, 5%, and 50% respectively. For 90 NSB firm years (using the MMH firm model) the frequency distribution was 22%, 19%, 16%, 12%, and 31% respectively. For 1,346 non-bankrupt control firms the frequency distribution was 31%, 32%, 16%, 9%, and 12% respectively. It is not surprising that fifty percent of the SEC fraud years, 31% of NSB firm years, and 12% of non-bankrupt firms have NWCACMAG greater than 15% of assets. Clearly the SEC firms and NSB firms have substantially greater frequencies of high magnitudes of NWCACMAG than the control firms. What is perhaps more surprising is that 17% of the SEC fraud years have magnitudes below zero in contrast to the 31% of control firms with magnitudes below zero. One contributing factor might be the fact that the SEC sanctions many firms for multiple years. Therefore, some of the years may have substantially greater overstatements that prompted the investigation and subsequent sanction. Additionally, NWCACMAG represents the net changes in receivables, inventory, payables, and accrued expenses. Therefore, even if a given firm materially overstated inventory, the income decreasing levels of the other variables may mask this. In this example

the overstatement to inventory would cause the NWCACMAG to be less negative than it would otherwise have been.

These results, however, need to be interpreted with a great deal of caution. Clearly in order to classify any accrual activity as earnings manipulation in any given firm, one must have knowledge about the firm's specific motives. Also, surely not all NSB firms manipulate earnings. The magnitudes presented in this study are mean and median magnitudes over all the sub-sample firm-years, and therefore do not apply to every firm in the sample. However, we may be able to assert that there is a likelihood that firms that engage in fraudulent financial reporting, such as those investigated and subsequently sanctioned by the SEC for fraud are likely to come from the NSB population.

Additionally, it would be useful to develop a profile of firms more likely to manipulate earnings, based on the results of this study. Some of the distinguishing characteristics would include a firm that appears to be non-stressed based on its accrual data, but shows decreases in cash flow from operations and in net cash. This is consistent with Dechow (1994) who finds that cash flows and accruals exhibit strong negative correlations. This firm also displays high magnitudes of increases in receivables, inventories, sales, property plant and equipment, coupled with increases in payables and operating expenses. We can add to this other characteristics found in the literature, such as a poor system of internal control, non-independent and inexperienced directors on the audit committee, and substantial ownership in the company by

key officers. Further extensions to this study can add to or expand these characteristics and are described in section 7.

7. Future Extensions

There are several ways to enhance and extend this study. Refining the break down of stressed versus non-stressed firms by using alternative definitions of distress such as stock price decline, or distress models that incorporate stock price would enhance testing of the H1 predictions. Refining the breakdown of firm-years even further by including factors that might contribute differing incentives for some of the sample firms would be useful as well. For example, some of the firms are likely to experience management turnover, which has been shown to result in income decreasing (big bath) behavior. Therefore removing firm-years with new managers from the non-stressed sample, and studying them separately, would be advantageous. Other relevant factors for study are relationship of CEO to firm, composition of board of directors and audit committee and related percentage of ownership, and auditor switching. Finding better earnings management proxy variables would be useful in testing hypotheses relating to research question 2.

Another extension of this study is the examination of firm quarterly financial statements for further insight into the firm's earnings management or material manipulation behavior. Since auditors perform a review of the quarterly financial statements for the first three quarters and audit only the fourth quarter, management may have greater flexibility in managing accruals in the first three quarters than in the fourth quarter. If this were true then we would expect to find income decreasing/reversal behavior in fourth quarters where a going concern

opinion is issued. Basu, Hwang, and Jan (1998) find the highest frequencies and average magnitudes of losses, and negative extraordinary/special items in the fourth quarter. In addition it would be useful to include earnings manipulation proxy variables in bankruptcy prediction models, as suggested by MMH to improve bankruptcy prediction. MMH included a qualitative variable for the presence of fraud in the financial statements, in the bankruptcy prediction model. It would be more useful to include quantitative variables.

Finally, this study distinguishes material earnings manipulation from immaterial earnings manipulation by its magnitude. Clearly material overstatements are likely to be more harmful to financial statement users than immaterial ones. However, the SEC in releasing SAB 99 has asserted its commitment to pursuing intentional manipulation even if it is immaterial. As noted earlier this requires knowledge of intent. The SEC is more easily able to determine intent than researchers can because it can gain access to a firm's books and records. Nevertheless, the profession's changing attitude about materiality has created a need for further research relating to earnings management and fraudulent financial reporting.

FIGURES

FIGURE 1
HYPOTHESIZED SCENARIO

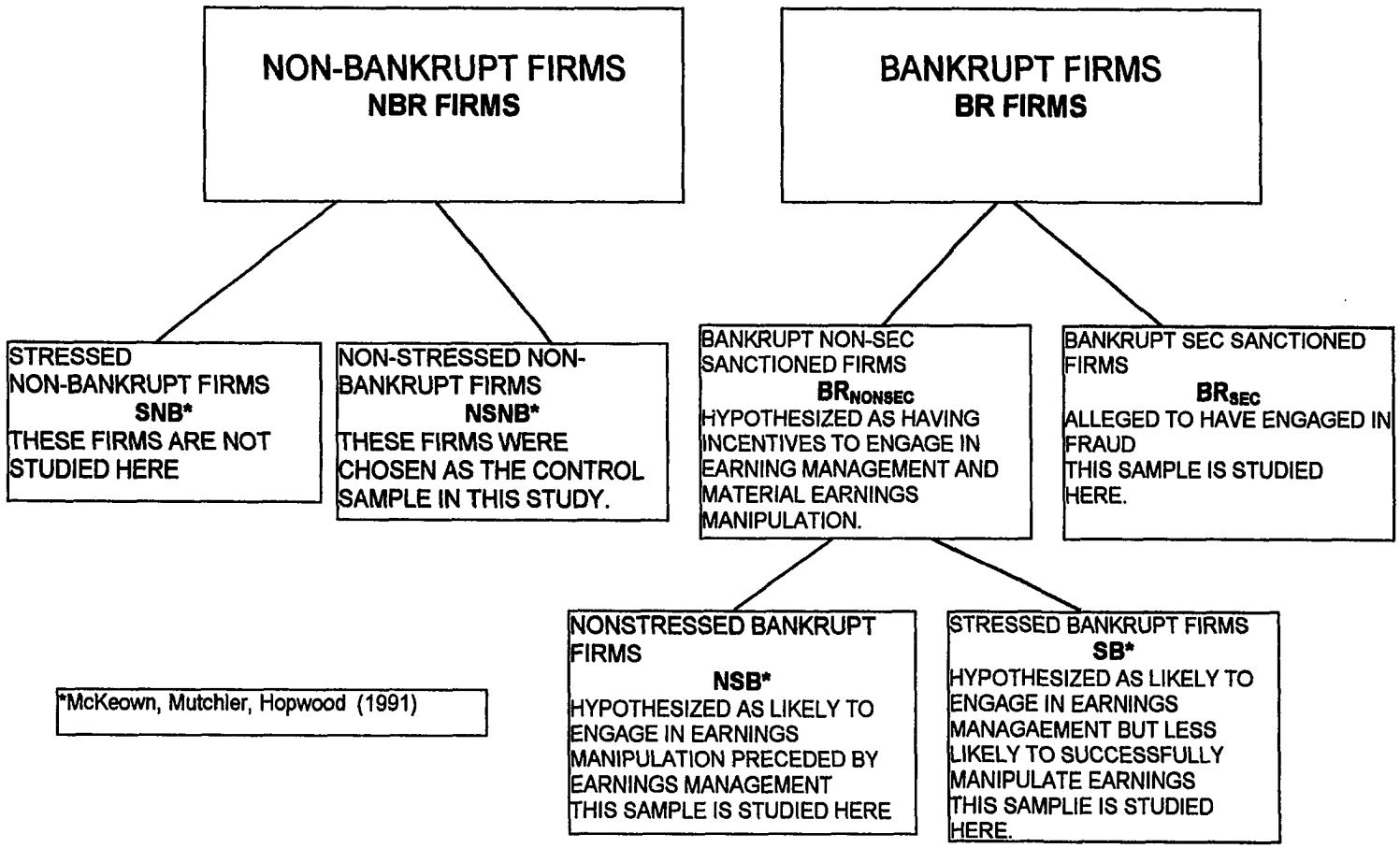
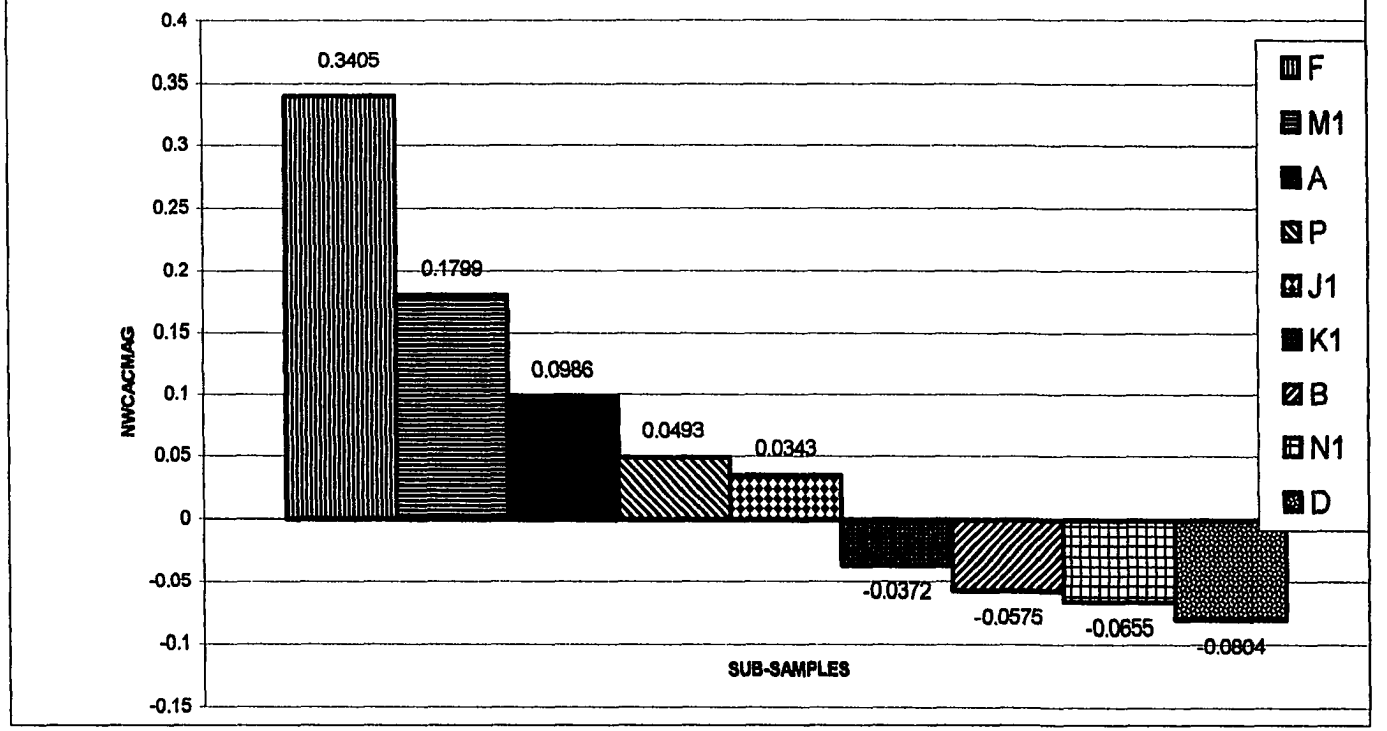


FIGURE 2
COMPARISON OF MAGNITUDE OF NET WORKING CAPITAL ACCRUALS (NWCACMAG) FOR VARIOUS SUB-SAMPLES



NWCACMAG = net working capital accruals magnitude computed as (CHANGE IN RECEIVABLES = CHANGE IN INVENTORY -CHANGE IN PAYABLES - CHANGE IN ACCRUED EXPENSES) /beginning of year assets)
FY = firm-year,
GC = going concern opinion
F = SEC fraud years (includes 10 GC FY) The value of NWCACMAG excluding the GC years is .36
M1 = non-GC FY for NSB firms using MMH firm model
A = non-GC FY for BR firms
P = FY for non-stressed, non-BR control firms
J1 = non-GC FY for SB firms using MMH firm model
K1 = GC FY for SB firms using MMH firm model
B = GC FY for BR firms
N1 = GC FY for NSB firms using MMH firm model
D = GC FY for SEC firms (includes 10 fraud years, if excluded NWCACMAG is (.1225)

FIGURES 3A, 3B, 3C, 3D
COMPARI SON OF NET WORKING CAPITAL ACC RUALS MAGNITUDE (NWCACMAG)
FOR SSA, SSF, SSM1, SSJ1

Figure 3A - Comparison of NWCACMAG for Non Going-concern Firm-years of BR Firms, NSNB Control Firms, & Going concern Years for BR Firms

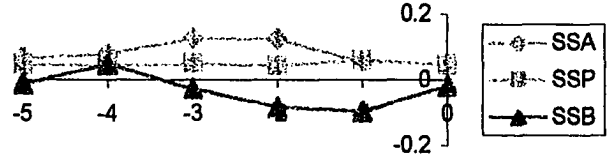


Figure 3B - Comparison of NTWCACMG for SEC Alleged Fraud Years, NSNB Control Firm-years, and Going Concern Firm-years of SEC Fraud Firms

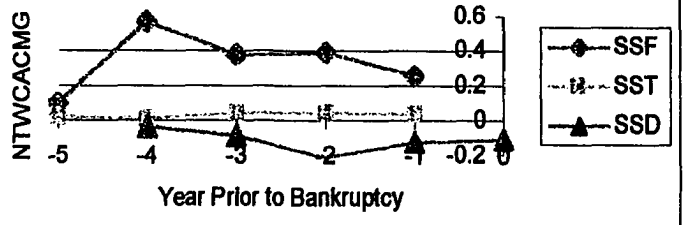


Figure 3C - Comparison of NWCACMG for Non-going Concern Firm-years of NSB Firms, NSNB Control Firms, and Going Concern Firm-years of NSB Firms

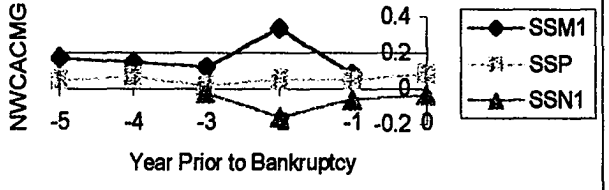
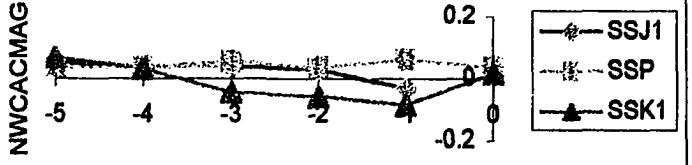
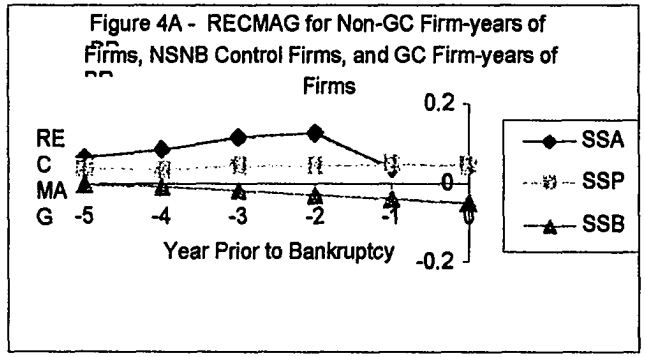


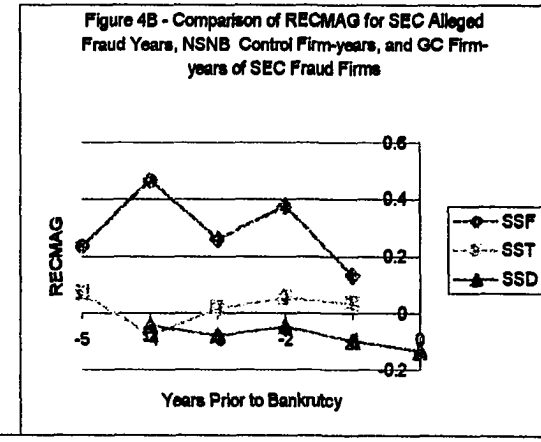
Figure 3D - Comparison of NWCACMG for Non-going Concern Firm-years of SB Firms, NSNB Control Firms, and Going-concern Firm-years of SB Firms

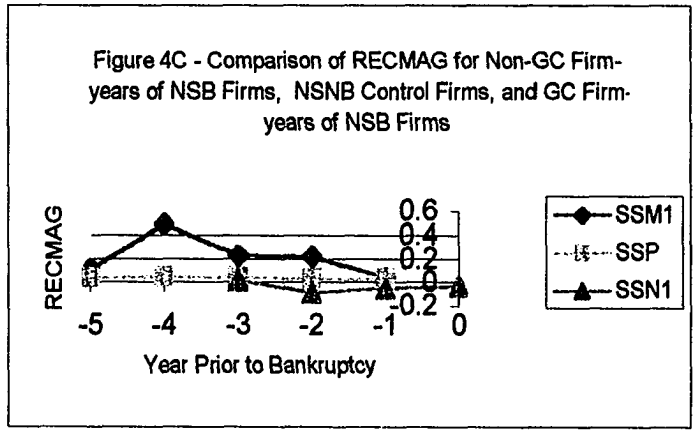


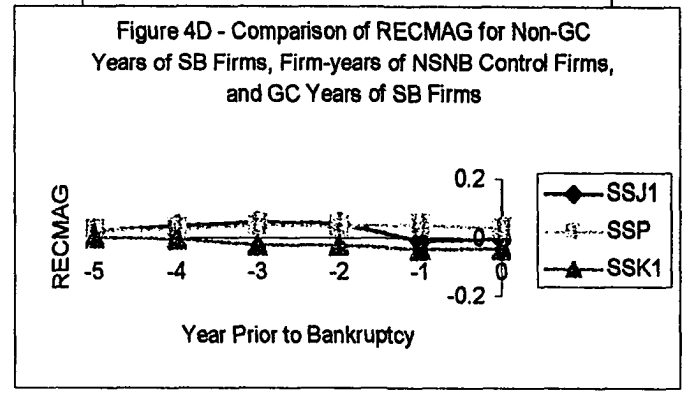
NWCACMAG = net working capital accruals magnitude = (RECMAG +INVMAG -PAYMAG-ACCEXPMAG)/ beginning of year assets
SSA = sub-sample A - non-going concern years of bankrupt firms, SSB = going concern years of bankrupt firms
SSF = sub-sample F - SEC fraud years, SSD = going concern years of SEC sanctioned firms
SSM1 = sub-sample M1 - NSB firms using MMH firm model, SSN1 = going concern years of NSB firms
SSJ1 = sub-sample J1 - SB firms using MMH firm model, SSK1 = going concern years of SB firms

FIGURES 4A, 4B, 4C, 4D
COMPARISON OF RECEIVABLES CHANGE MAGNITUDE (RECMAG) FOR SSA, SSF, SSM1, SSFIGURES 5A, 5B, 5C, 5D



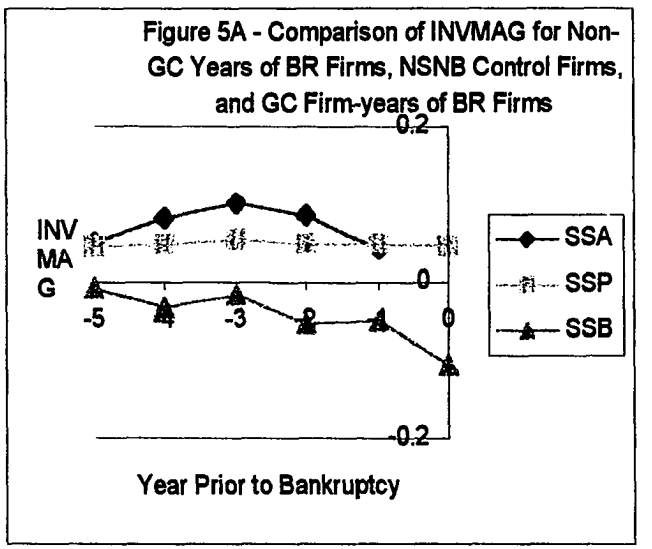


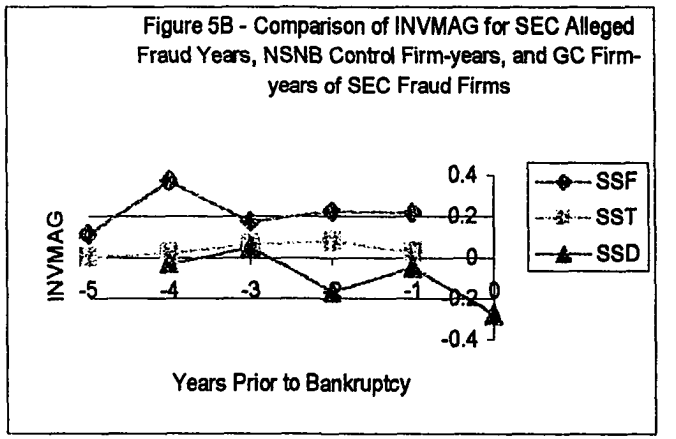


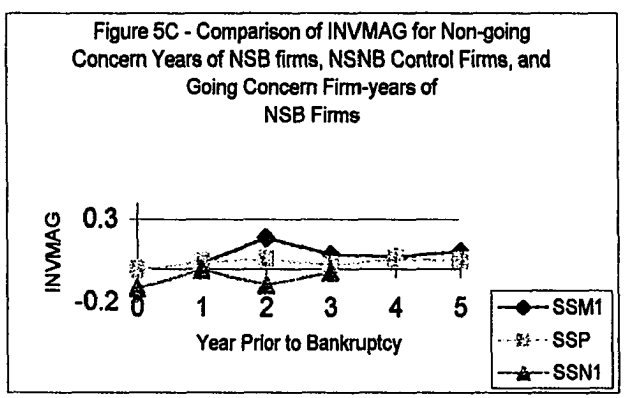


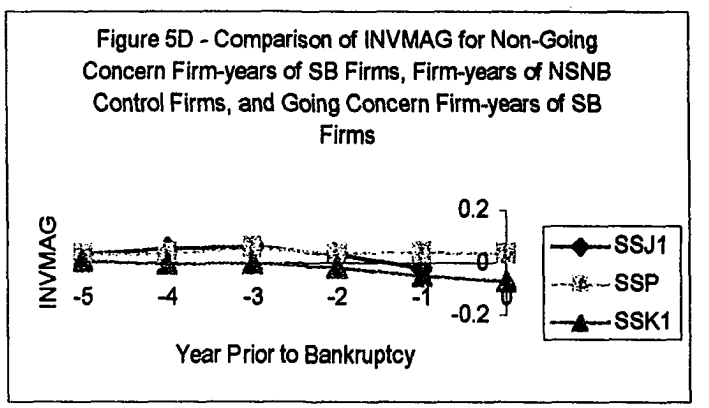
RECMAG = Receivables magnitude = change in receivables/beginning of year assets
SSA = sub-sample A - non-going concern years of bankrupt firms, SSB = going concern years of bankrupt firms
SSF = sub-sample F - SEC fraud years, SSD = going concern years of SEC sanctioned firms
SSM1 = sub-sample M1 - NSB firms using MMH firm model, SSN1 = going concern years of NSB firms
SSJ = sub-sample J - SB firms using MMH firm model, SSK1 = going concern years of SB firms

FIGURES 5A, 5B, 5C, 5D
COMPARISON OF INVENTORY CHANGE MAGNITUDE (INVMAG) FOR SSA, SSF, SSM1, SJ1









INVMAG = inventory magnitude = change in inventory/beginning of year assets
SSA = sub-sample A - non-going concern years of bankrupt firms, SSB = going concern years of bankrupt firms
SSF = sub-sample F - SEC fraud years, SSD = going concern years of SEC sanctioned firms
SSM1 = sub-sample M1 - NSB firms using MMH firm model, SSN1 = going concern years of NSB firms
SSJ = sub-sample J - SB firms using MMH firm model, SSK1 = going concern years of SB firms

FIGURES 6A, 6B, 6C, 6D
COMPARISON OF PAYABLES CHANGE MAGNITUDE (PAYMAG) FOR SSA, SSF, SSM1, SSJ1

Figure 6A - Comparison of PAYMAG for Non-going Concern Firm-years of BR Firms, NSNB Control Firms, & Going-concern Firm-years of BR Firms

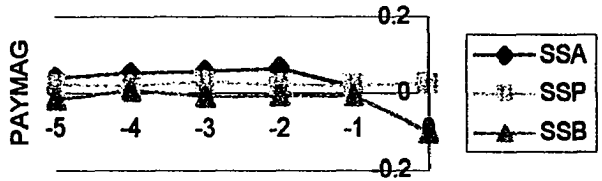


Figure 6B - Comparison of PAYMAG for SEC Alleged Fraud Years, NSNB Control Firm-years, and Going Concern Firm-years of SEC Fraud Firms

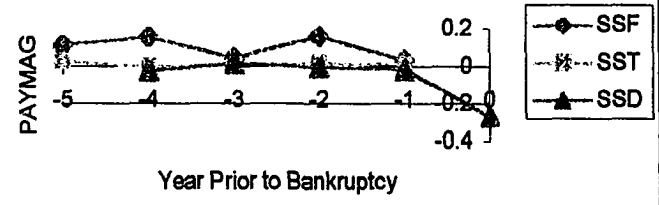


Figure 6C - Comparison of PAYMAG for Non-going-concern Years of NSB Firms, NSNB Control Firms, and Going Concern Firm-years of NSB Firms

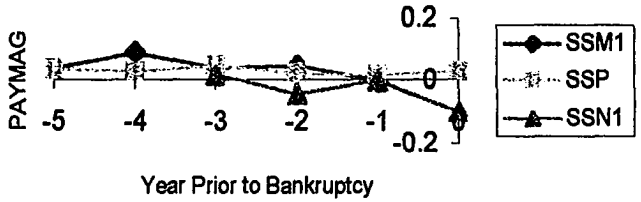
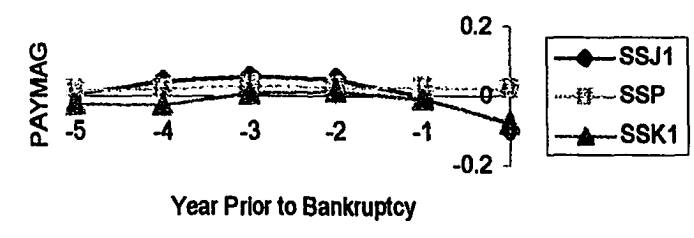
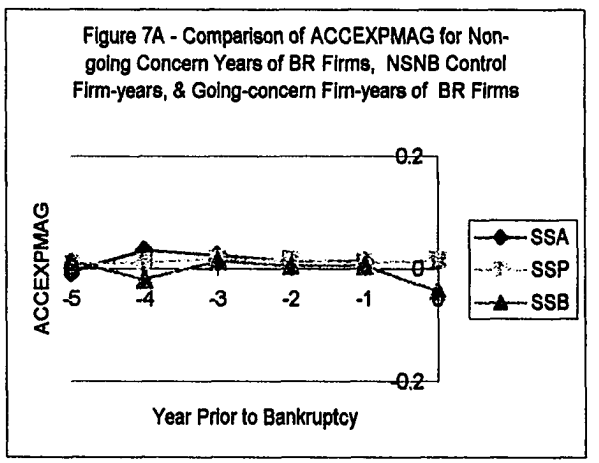


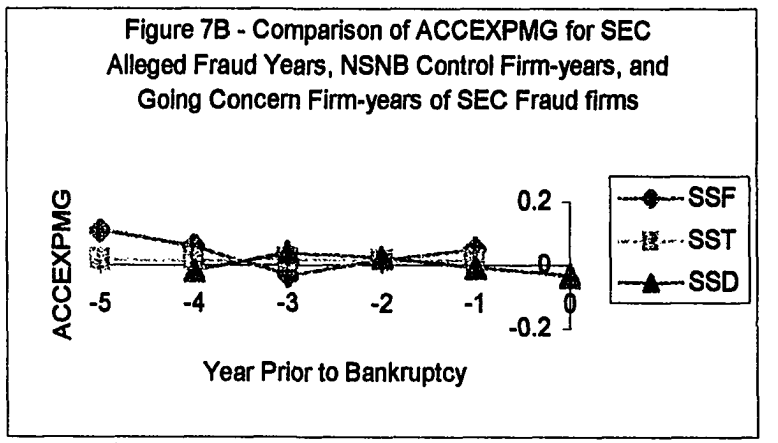
Figure 6D - Comparison of PAYMAG for Non-going Concern Firm-years of SB Firms, NSNB Control Firms, and Going Concern Firm-years of SB Firms

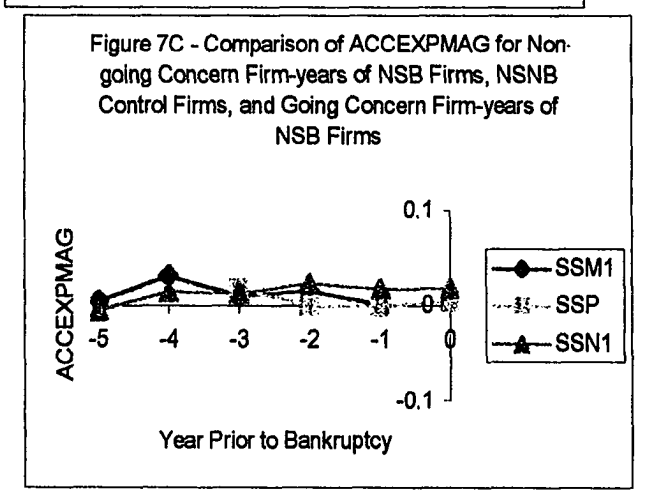


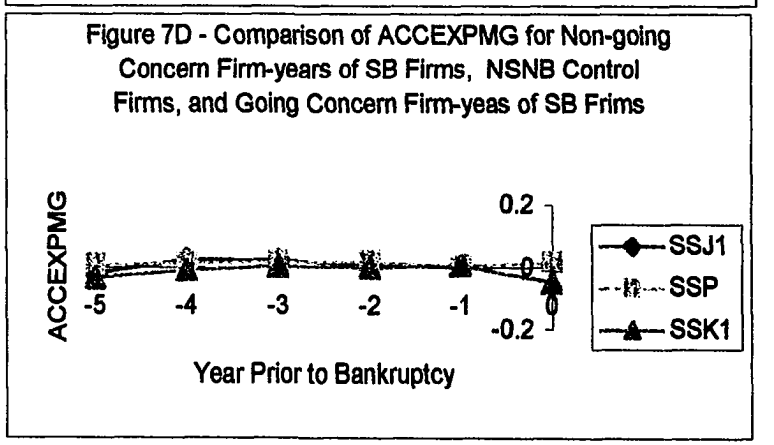
PAYMAG = payables magnitude = change in payables/beginning of year assets
SSA = sub-sample A - non-going concern years of bankrupt firms, SSB = going concern years of bankrupt firms
SSF = sub-sample F - SEC fraud years, SSD = going concern years of SEC sanctioned firms
SSM1 = sub-sample M1 - NSB firms using MMH firm model, SSN1 = going concern years of NSB firms
SSJ = sub-sample J1 - SB firms using MMH firm model, SSK1 = going concern years of SB firms

FIGURES 7A, 7B, 7C, 7D
COMPARISON OF ACCRUED EXPENSES CHANGE MAGNITUDE (ACCEXPMAG) FOR SSA, SSF, SSM1, SSJ1









ACCEXPMAG =accrued expenses magnitude = change in accrued expenses/beginning of year assets
SSA = sub-sample A - non-going concern years of bankrupt firms, SSB = going concern years of bankrupt firms
SSF = sub-sample F - SEC fraud years, SSD = going concern years of SEC sanctioned firms
SSM1 = sub-sample M1 - NSB firms using MMH firm model, SSN1 = going concern years of NSB firms
SSJ = sub-sample J - SB firms using MMH firm model, SSK1 = going concern years of SB firms

FIGURES 8A, 8B, 8C, 8D
COMPARISON OF CURRENT ACCRUALS MAGNITUDE (CURACMAG) FOR SSA, SSF, SSM1, SSJ1

Figure 8A - Comparison of CURACMG for Non-going concern Firm-years of BR Firms, NSNB Control Firms, & Going-concern Years of BR Firms

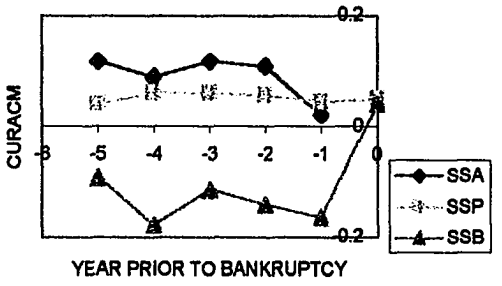


Figure 8B - Comparison of CURACMG For SEC Alleged Fraud Years, NSNB Control Firm-years, and Going Concern firm-years of SEC Fraud Firms

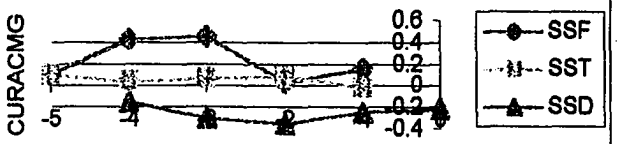


Figure 8C - Comparison of CURACRMG for Non-going Concern Firm-years of NSB Firms, NSNB Control Firms, and Going Concern Years of NSB Firms

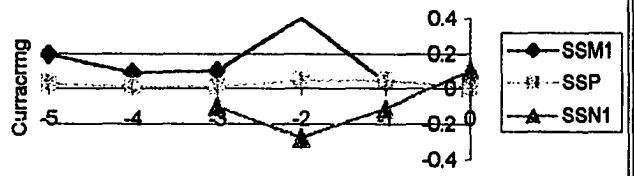
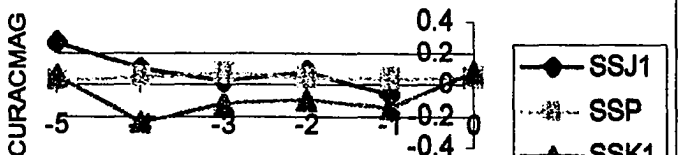


Figure 8D - Comparison of CURACMAG for Non-going Concern Years of SB Firms, NSNB Control Firms, and Going-concern Firm-years of SB Firms



CURACMAG =current accruals magnitude = (current assets - current liabilities - cash - short-term debt)/ beginning of year assets
SSA = sub-sample A - non-going concern years of bankrupt firms, SSB = going concern years of bankrupt firms
SSF = sub-sample F - SEC fraud years, SSD = going concern years of SEC sanctioned firms
SSM1 = sub-sample M1 - NSB firms using MMH firm model, SSN1 = going concern years of NSB firms
SSJ = sub-sample J1- SB firms using MMH firm model, SSK1 = going concern years of SB firms

FIGURES 9A, 9B, 9C, 9D
COMPARISON OF DISCRETIONARY ACCRUAL PROXY (DAP) FOR SSA, SSF, SSM1, SSJ1

Figure 9A - Comparison of DAP for Non-going concern Years of BR Firms, NSNB control firms, and Going-concern Frim-years of BR FIRMs

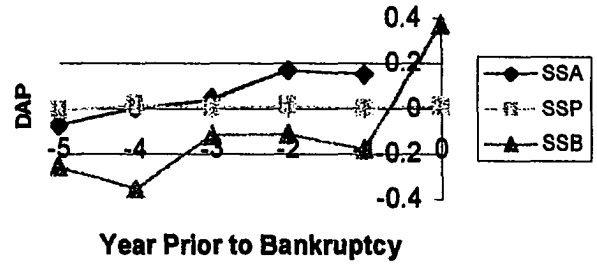


Figure 9B- Comparison of DAP for SEC Alleged Fraud Years, NSNB Control Firm-years, and Going Concern Firm-years of SEC Fraud Firms

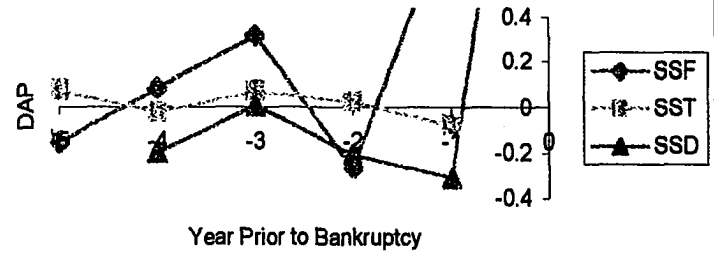


Figure 9C - Comparison of DAP for Non-going Concern Firm-years of NSB Firms, NSNB Control Firms, and Going Concern Firm-years of NSB Firms

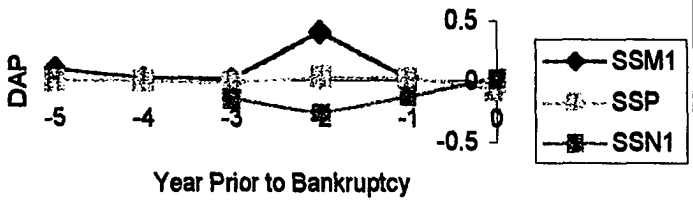
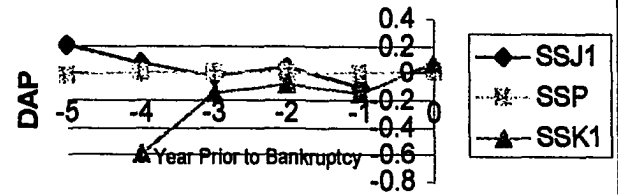
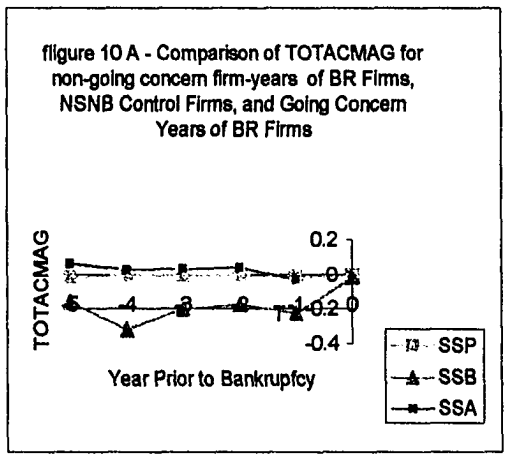


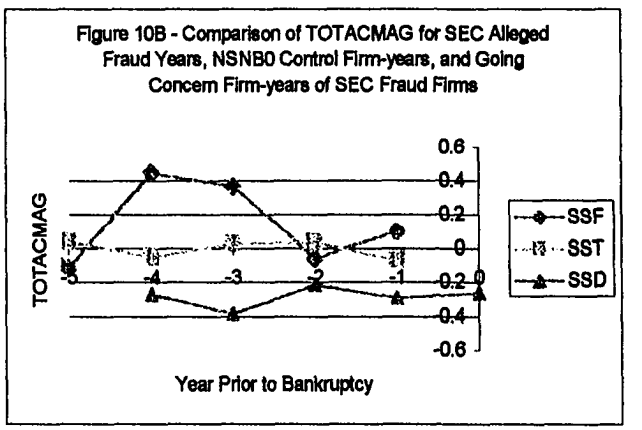
Figure 9D - Comparison of DAP for Non-going Concern Firm-years of SB Firms, NSNB Control Firms, and Going-concern Firm-years of SB Firms

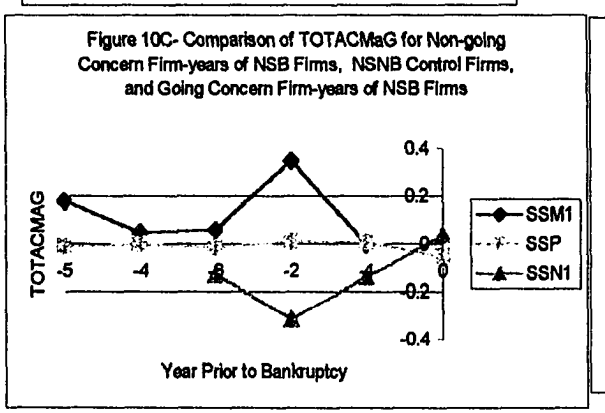


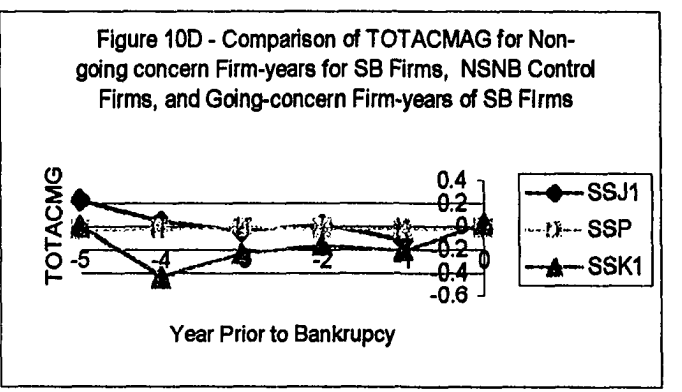
DAP= discretionary accruals proxy calculated using the Modified Jones Model (Dechow, Sloan, Sweeney 1995)
SSA = sub-sample A - non-going concern years of bankrupt firms, SSB = going concern years of bankrupt firms
SSF = sub-sample F - SEC fraud years, SSD = going concern years of SEC sanctioned firms
SSM1 = sub-sample M1 - NSB firms using MMH firm model, SSN1 = going concern years of NSB firms
SSJ1 = sub-sample J1 - SB firms using MMH firm model, SSK1 = going concern years of SB firms

FIGURES 10A, 10B, 10C, 10D
COMPARISON OF TOTAL ACCRUALS MAGNITUDE (TOTACMAG) FOR SSA, SSF, SSM1, SSJ1









TOTACMAG = Total accruals change magnitude computed as (change in current assets - change in current liabilities - change in cash - change in current portion of long term debt - depreciation and amortization expense)/beginning of the year assets
SSA = sub-sample A - non-going concern years of bankrupt firms, SSB = going concern years of bankrupt firms
SSF = sub-sample F - SEC fraud years, SSD = going concern years of SEC sanctioned firms
SSM1 = sub-sample M1 - NSB firms using MMH firm model, SSN1 = going concern years of NSB firms
SSJ1 = sub-sample J1 - SB firms using MMH firm model, SSK1 = going concern years of SB firms

TABLES

TABLE 1
HYPOTHESIZED SCENARIO

	FIRM TYPE								
YEAR	BR_{NONSEC} SB MANIPUL.	STRESS	OPINION	BR_{NONSEC} NSB MANIPUL.	STRESS	OPINION	BR_{SEC} MANIPUL.	STRESS	OPINION
0	R_{EM} X	S	GC	R_{MM}	S	GC	R_F	S	GC
-1	R_{EM} X	S	GC	MM R_{MM}	NS S	O GC	F R_F	NS S	O GC
-2	R_{EM} X	S	GC	MM R_{MM}	NS S	O GC	F R_F	NS S	O GC
-3	EM X	S	O	MM	NS	O	F	NS	O
-4	EM X	NS S	O	EM MM	S NS	O	EM F	S NS	O
-5	EM X	NS S	O	EM MM	S NS	O	EM F	S NS	O

SB = a stressed bankrupt firm that does or does not engage in EM prior to bankruptcy, but does not cross over into MM
NSB = a non-stressed bankrupt firm that engages in EM and then MM prior to bankruptcy and the MM is not detected by the
BR_{SEC} = bankrupt SEC sanctioned firms
Year 0 = year in which bankruptcy occurred, i.e., first financial statement year-end following bankruptcy.
Years -5 TO -1 = years prior to bankruptcy
X = no manipulation (i.e., no income increasing earnings management, material earnings manipulation or fraud)
EM = income-increasing earnings management
MM = material income-increasing earnings manipulation
F = fraud
R = reversal of previous manipulation
R_F = reversal of previous fraud
R_{MM} = reversal of previous material manipulation
R_{EM} = reversal of previous earnings management
S = stressed appearance in financial statements
NS = non-stressed appearance in financial statements

GC = going concern audit opinion, i.e. the opinion mentions that there is substantial doubt about the firm's ability to continue as a going concern, or it mentions that the company has already filed for bankruptcy.
O = an audit opinion other than a going concern opinion i.e. referred to in this paper as a non-going concern opinion

TABLE 2 - PANEL A
RELATIONSHIP OF SAMPLES AND SUB-SAMPLES TO FIRM TYPES

FIRM-YEAR CATEGORY

Sub-samples	*Firm Type*	*Non-GC Opin. Firm Years*	*GC Opin. Firm Years*	*Firm Years -4 & -5 #*	*Two Years Prior to SEC Fraud Years*	*SEC Fraud Years*
I. All bankrupt firms (SEC and Non- SEC)	BR	A	B			
A. SEC sanctioned BR firms	BR_{SEC}	C	D		E	F
B. Non-SEC sanctioned bankrupt firms	BR_{NONSEC}	G	H	I		
1. Firms that exhibit the SB state in two of the years prior to the first GC opinion year or prior to BR if no GC given.	SB	J	K	L		
2. Firms that exhibit the NSB state in two of the years prior to BR or exhibit the NSB in two of the years prior to the first GC opinion year.	NSB	M	N	O		
II Non BR firms (Control Sample matched on Year, industry, and size) NSNB	NSNB	P	Q	R	S	T

BR = bankrupt firms
BR_{SEC} = bankrupt SEC sanctioned firms that engage in earnings management and later cross over into fraud
BR_{NONSEC} = bankrupt, non-sanctioned firms
GC = Going concern opinion
SB = stressed bankrupt firms that may or may not have engaged in earnings management but hypothesized not to cross over into earnings manipulation.
NSB = non-stressed bankrupt non-sanctioned firms hypothesized to engage in earnings management and then cross over into material earnings manipulation
NSNB = non-stressed, non-bankrupt control firms matched on year, industry, and size
Sub-samples A-T = the 20 sub-samples each representing specific firm-years for specific firm types
= Since the most often identified fraud years in the sample of 51 SEC sanctioned firms were years -2, -1, and –3 prior to bankruptcy (30%, 22%, and 20% of the fraud years, respectively), the two periods prior to the alleged fraud years are hypothesized to be years –4 and –5 prior to bankruptcy. Therefore, for sub-samples G, J, M, and P, years – 4 and -5 prior to bankruptcy are used, i.e., sub-samples I, L, O, and R. For sub-sample F, the two years actually prior to the alleged fraud years are used.

TABLE 2, PANEL B
SAMPLE

BANKRUPT FIRMS (NON SEC SANCTIONED) BR_{NONSEC}	
Bankrupt firms on Lexis/Nexis BDS (February, 1998) database*	339
Less firms with no bankruptcy date available	(5)
Less financial services firms (6000 series SIC Code) eliminated, following previous literature	(34)
Less regulated industry firms (4000 series SIC Code) eliminated following previous literature	(41)
Less bankrupt SEC sanctioned firms to be used in a separate sample (included in the 51 SEC sample firms listed below)	(9)
Less firms eliminated because of fiscal year changes and going concern opinions in years -6 or -5 followed by unqualified opinions and then again by going concern opinions prior to bankruptcy. The remaining sample firms have going concern opinions only in the year(s) Immediately preceding bankruptcy.	(8)
Total firms remaining in non-sanctioned sample (BR_{NONSEC})	**242**
SEC sanctioned firms sample (BR_{SEC}) **	**51**
Total bankrupt sample including both BR_{SEC} and BR_{NONSEC} firms	**293**
CONTROL FIRMS (NSNB) - Matched on year, industry, and size***	**293**

* This list provides the bankruptcy date for most of the firms and in some cases reasons for bankruptcy

** SEC sanctioned bankrupt firms found by searching SEC AAERs on the Lexis/Nexis database using terms such as overstatement(s), materially misstated and/or deteriorating financial condition, bankruptcy etc. and by reviewing all AAERs to date.

*** Financial statement data was collected from Disclosure and Compustat. The auditor's opinion was collected from microfiche in various libraries and the Lexis/Nexis database. Seven years of data were collected for each firm (the year-end following bankruptcy and the six years preceding bankruptcy) to provide financial statement variables for years -5 to year 0.

****The control sample consists of healthy firms identified as firms that exhibited no net losses during the six financial statement periods for which data was collected (years -5 prior to bankruptcy to year 0, immediately following bankruptcy). These firms were chosen so as to reduce the likelihood of the control firms having similar incentives to manipulate earnings to the bankrupt firms. Since firm data was often collected from several sources, a final analysis of the matched firms indicated that 12 firm-years had a net loss, 10 firm-years had negative retained earnings, and 4 firm years had negative shareholders equity. This represented 22 control firms out of 293 firms. In addition, when the distress models such as Ohlson and McKeown, Mutchler, Hopwood were applied to the control firms some of the firm-years of the control firms show up as distressed. However, the majority does not. Including distressed firms in the control sample biases against finding the hypothesized results and replacing these matches would spuriously strengthen the results. So the matched sample was used as is.

. Each firm was matched by four digit SIC code (where possible, if not then three and sometimes two digit sic code), asset size in year -5 prior to bankruptcy, and by year. In total there should be 3516 firm-years of

data (293 + 293) * 6 years of data each firm plus some additional firm years for SEC firms whose SEC identified fraud years were prior to year -5. However, since for many of the firms some of the six possible years of financial statement data were not available, the overall sample size used is reduced by about 539 firm-years. In addition auditor opinions were not available for an additional 100 firm -years. Thus the number of observations is reduced to 2877. Also, since some financial statement variables are missing from certain firm-years, statistical analysis there are between 2500 and 2800 observations available for use. However, the hypotheses and related tables presented, involve subsets of the data and thus include fewer firm-years.

TABLE 2 - PANEL C
SUB-SAMPLE PAIR COMBINATIONS USED IN TESTING HYPOTHESES $H1_A$ THROUGH $H3_C$

*Hypotheses**	*Sub-sample1 SS1*	*Sub-sample SS2*	*PREDIC-TED SIGN SS1 - SS2*
$H1_A$	A	P	+
$H1_B$	F	T	+
$H1_C$	M	P	+
$H2._{1A}$	E	S	+
$H2._{1B}$	O	R	+
H2.2	(M-O)	O	+
$H3_A$	A	B	+
$H3_B$	F	D	+
$H3_C$	M	N	+

These sub-sample pairs will be compared using two sample T-tests, median tests, and Wilcoxon rank sum tests

SS1 = sub-sample 1 - one of the sum-samples shown in table 2, panel A
SS2 = sub-sample 2 - one of the sum-samples shown in table 2, panel A
A = Non-going concern opinion years for all bankrupt firms (BR_{SEC} +BR_{NONSEC})
B = Going concern opinion years for all bankrupt firms (BR_{SEC} +BR_{NONSEC})
C = Non-going concern opinion years for all SEC sanctioned firms (BR_{SEC})
D = Going-concern opinion years for all SEC sanctioned firms (BR_{SEC})
E = Firm-years two years prior to SEC fraud years
F = SEC fraud firm-years
G = Non-going-concern opinion years for all BR non-SEC sanctioned firms (BR_{NONSEC})
H = Going-concern opinion years for all BR non-SEC sanctioned firms (BR_{NONSEC})
I = Years -4 and -5 for all BR non-SEC sanctioned firms (BR_{NONSEC})
J = Non-going-concern opinion years for all stressed non-SEC sanctioned firms (SB)
K = Going-concern opinion years for all stressed non-SEC sanctioned firms (SB)
L = Years -4 and -5 for all stressed non-SEC sanctioned firms (SB)
M = Non-going-concern opinion years for all non-SEC sanctioned non-stressed firms (NSB)
N = Going-concern opinion years for all non-stressed non-SEC sanctioned firms (NSB)
O = Years -4 and -5 for all non-stressed non-SEC sanctioned firms (NSB)
P = Non-going-concern opinion years for all matched control firms (NSNB)
Q = Going-concern opinion years for all matched control firms (NSNB). Since only non-stressed firms were chosen as control firms there are no firm years in this category. This would be useful for alternate control samples that could have going concern
R = Years -4 and -5 for all matched control firms (NSNB)
S = Firm-years corresponding to the two years prior to SEC fraud years for all matched control firms (NSNB)
T = Firm-years corresponding to SEC fraud years for all matched control firms (NSNB
(M-O) = All non-going concern years of NSB firms excluding years -5 and -4 prior to bankruptcy, i.e. years -1, -2 and -3 are left.

TABLE 3
MATERIAL EARNINGS MANIPULATION PROXY VARIABLES

PROXY VARIABLE	SIGN	VARIABLE DEFINITON
Receivables Overstatement Variables		
RECMAG^{H}	+	Increase in receivables as a percentage of beginning of year assets, computed: $(REC_t - REC_{t-1})/A_{1-1}$
RECPC^{R}	+	Percentage increase in receivables, computed: $(REC_t - REC_{t-1})/REC_{t-1}$
RECSLSPC^{R}	+	Difference in growth between receivables and sales, Computed: *(RECPC – SLSPC)* where $SLSPC$ = percentage increase in sales, computed: $(SLS_t - SLS_{t-1})/SLS_{t-1}$
Inventory Overstatement Variables		
INVMAG^{H}	+	Percentage increase in inventory as a percentage of beginning of year assets, computed: $(INV_t - INV_{t-1})/A_{t-1}$
INVPC^{R}	+	Percentage increase in inventory, computed: $(INV_t - INV_{t-1})/INV_{t-1}$
INVSLSPC^{R}	+	Difference in growth between inventory and sales, Computed: *(INVPC – SLSPC)*
Property Plant & Equipment Overstatement Variables		
NPPEMAG^{H}	+	Increase in net property plant and equipment as a percentage of beginning of year assets, computed: $\{NPPE_t - NPPE_{t-1})/A_{t-1}$
NPPEPC^{R}	+	Percentage increase in net, property, plant, and equipment computed: $(NPPE_t - NPPE_{t-1})/NPPE_{t-1}$

TABLE 3 continued

Payables Understatement Variables		
PAYMAG[H]	-	Decrease in payables as a percentage of beginning of year assets, computed: $(PAY_t-PAY_{t-1})/A_{t-1}$
PAYPC[R]	-	Decrease in payables, computed: $(PAY_t-PAY_{t-1})/PAY_{t-1}$
Accrued Expenses Understatement Variables		
ACCEXPMAG[H]	-	Decrease in accrued expenses as a percentage of beginning of year assets, Computed: $(ACCEXP_t-ACCEXP_{t-1})/A_{t-1}$
ACCEXPPC[R]	-	Decrease in accrued expenses, computed: $(ACCEXP_t-ACCEXP_{t-1})/ACCEXP_{t-1}$
Net Accruals Overstatement Variables		
NWCACMAG[H]	+	Net increase in the four working capital accruals as a percentage of beginning of year assets, computed: $(\Delta REC+\Delta INV-\Delta PAY-\Delta ACCEXP)/A_{T-1}$
CURACMAG[H]	+	Net increase in current accruals as a percentage of beginning of year assets, computed: $(\Delta CA)-(\Delta CL)-(\Delta CASH)+(\Delta LTDCUR)/A_{t-1}$
Income Statement Variables: Sales Overstatement and Ratio Fluctuation Variables		
SLSPC[H]	+	Percentage increase in sales, computed: $(SLS_t-SLS_{t-1})/SLS_{t-1}$
GPRPC[H]	?	Percentage change in gross profit ratio from prior period, Computed: $(GPR_t-GPR_{t-1})/GPR_{t-1}$
GPRPCAV[R]	+	Absolute value of change in gross profit ratio from prior period Computed: $ABS(GPRPC)$
Poor Cash Flow Indicator Variables		
CFFO[H]	-	Cash flow from operations

CASHCH[H]	-	Change in net cash
OPERPC[H]	-	Percentage change** in operating expenses, computed: $(OPER_t - OPER_{t-1}/OPER_{t-1}$

REC = receivables
SLS = sales
INV = inventory
PAY = payables
ACCEXP = accrued expenses
A_t = current year assets
A_{t-1} = prior year assets
RECMAG = receivables change magnitude
RECPC = percentage change in receivables
INVMAG = inventory change magnitude
INVPC = percentage change in inventory
INVSLSPC = percentage change in inventory less percentage change in sales
NPPEMAG = net property plant & equipment change magnitude
NPPEPC = percentage change in net property plant & equipment
SLSPC = percentage change in sales
PAYMAG = payables change magnitude
PAYPC = percentage change in payables
ACCEXPMAG = change in accrued expenses magnitude
ACCEXPPC = percentage change in accrued expenses
NWCACMAG = working capital accruals magnitude
CURACMAG = current accruals magnitude
LTDCUR = current portion of long-term debt
GPR = gross profit ratio computed: (Sales – cost of goods sold)/ sales
GPRPC = percentage change in gross profit ratio
CFFO = cash flow from operations for the year
NETCASH = change in cash for the year
OPERPC = percentage change in operating expenses
[H]= variable will be used in testing the hypotheses
[R]= variable will not be used in testing the hypotheses, but will be used as a robustness check and shown in alternate tables 11-18

TABLE 4
EARNINGS MANAGEMENT PROXY VARIABLES

PROXY	DESCRIPTION
ACCTGCHM	Cumulative effect of changes in accounting principle magnitude, computed: $ACCTGCH / A_{t-1}$.(This variable was available for firms with Compustat data only)
EIANDDOM	Extraordinary items and discontinued operations magnitude, computed: $EIANDDO / A_{t-1}$. This is a field available only for financial statements collected with Disclosure data.
TTOTACM	Total accruals magnitude based on Thomas and Zhang (1998) definition. Computed: $(\Delta CA - \Delta CL - \Delta cash - depreciation\ and\ amortization) / A_{t-1}$, According to Thomas & Zhang should equal -5%.
TCURACM	Current accruals magnitude (i.e. TTOTACM excluding depreciation) computed: $(\Delta CA - \Delta CL - \Delta cash) / A_{t-1}$. According to Thomas & Zhang should equal 0.
TDEPM	The non-current portion of total accruals magnitude computed: $(-depreciation / A_{t-1})$. According to Thomas and Zhang should equal -5%.
TOTACMAG	Total accruals magnitude based on other literature see below * computed: $(\Delta CA - \Delta CL - \Delta cash + \Delta short\ term\ debt - depreciation\ \&\ amortization) / A_{t-1}$
NDAP	*Non-discretionary accruals proxy computed as the fitted value for the dependent variable in a regression using the Modified Jones Model (Dechow et al.1995) where $Total\ accruals / A_{t-1} = \alpha_0 / A_{t-1} + \alpha_1\{\Delta Revenues) / A_{t-1} - \Delta Receivables / A_{t-1}\} - \alpha_2 (PPE) / A_{t-1} +$
DAP	*Discretionary accrual proxy = Total discretionary accruals reported in the pre-fraud firm-years using the Modified Jones Model where $DAP = TOTACMAG - NDAP$

The discretionary accruals proxy is represented in the earnings management literature by a number of different models such as Healy (1985), Jones (1991), modified Jones (Dechow et. al. (1995) who identify this model as being more powerful), Kang and Sivaramakrishnan (1995), and others. These models, however, have recently been criticized and results from the use of this variable should be interpreted with caution (Bernard and Skinner 1996: Guay, Kothari, and Watts 1996: Dechow, Sabino, and Sloan 1998, Thomas and Zhang 1998).

ACCTGCH = the Compustat variable for cumulative effect of a change in accounting principle.
EIANDDO = extraordinary items and discontinued operations (the disclosure variable which includes any effect of accounting changes as well)
CA = current assets
CL = current liabilities
PPE = property, plant, and equipment

TABLE 5
REASONS FOR BANKRUPTCY REPORTED BY FIRM AT THE TIME OF BANKRUPTCY FILING AVAILABLE ON LEXIS/NEXIS DBS DATABASE

Reason	*Description*	*First Reason*	*Second Reason*	*Third Reason*	*Total Firms*	*Percent age*
A	Declining sales / soft demand	35	-	-	35	.11
B	Rising costs	1	5	-	6	.02
C	Continuing losses and liquidity problems	46	13	1	60	.20
D	Increased competition	9	15	1	25	.08
E	Distressed industry	10	16	9	35	.11
F	Company is in default on its debt agreements	12	7	1	20	.07
G	Efforts to restructure debt unsuccessful - Inability to obtain financing	15	7	5	27	.09
H	Need to restructure operations	10	4	1	15	.05
I	Need to restructure debt - filed prepackaged plan of reorganization	19	11	3	33	.11
J	Lawsuits & investigations (questionable accounting practices)	6	4	4	14	.05
K	Increased regulatory constraints	-	2	1	3	.01
L	Creditors filed involuntary bankruptcy petition	4	3	-	7	.02
M	Other	18	6	1	25	.08
TOTAL		185	93	27	305	1.00

185 out of the 293 firms reported reasons for bankruptcy filing. 93 firms reported two reasons. 27 firms reported 3 reasons.
Out of the 185 firms, 13 of the 51SEC firms reported the following reasons:
Reason A = 1, B = 0, C = 5, D =1, E = 1, F = 2, G = 1, H = 0, I = 0, J = 7, K = 0, L = 0, M =3. The most commonly cited reasons for the bankrupt firms therefore were C (continuing losses and liquidity problems) and J (lawsuits and investigations relating to questionable accounting practices)

TABLE 6 - PANEL A
DESCRIPTIVE STATISTICS (IN THOUSANDS) FOR ALL NON-BANKRUPT (NSNB) FIRMS

PANEL A - NON-BANKRUPT FIRM YEARS - SUB-SAMPLE P

Variable	*N*	*Mean*	*Standard Deviation.*	*Median*
ASSETS	1540	422688	1202000	116401
SALES	1559	684333	1913000	154676
NET INCOME	1556	32490	107178	7729
NIFO	1549	57463	188145	13351
WC	1527	76681	198255	28935
CFFO	1146	49421	175246	10259
RE	1471	166609	677593	34963
SE	1526	203941	583755	60158
NICH	1437	4364	25387	1039
ZALTMV	57	7.3078	5.1808	5.1221
P	1174	-4.6043	20.079	-3.1424
DDE	1527	0.4206	.2489	.4012
SPRICEPC	86	0.2681	1.9633	.0311

NIFO = net income from operations
WC = working capital
CFFO = cash flow from operations
RE = retained earnings
SE = stockholders equity
NICH = change in net income from prior year
ZALTMV = Altman market value model Z-score : Z-score < 2..675 indicates bankruptcy range)
P = Ohlson model P score: P score >. 038 indicates bankruptcy range
* indicates a value within bankruptcy range
DDE = (debt / debt + equity) ratio
SPRICEPC = percentage change in stock price since last year

TABLE 6 - PANEL B
DESCRIPTIVE STATISTICS (IN THOUSANDS) FOR ALL BANKRUPT (BR) FIRMS
PANEL B1 - NON-GOING CONCERN YEARS OF BR FIRMS SUB-SAMPLE A

Variable	*N*	*Mean*	*Standard Deviation.*	*Median*
ASSETS	995	274856	63022	71396
SALES	995	392382	963478	94942
NET INCOME	1006	-1206	64655	344
NIFO	993	14819	53017	2299
WC	968	34537	166223	12445
CFFO	693	6279	39278	611
RE	960	11551	211633	1552
SE	991	63864	207741	19693
NICH	965	-3109	88187	-194
ZALTMV	131	3.8016	4.4568	2.8397
P	824	-.1467	3.3896	-.1727
DDE	984	.6661	0.3715	.6617
SPRICEPC	343	.2707	4.8161	-.1500

PANEL B2 - GOING-CONCERN YEARS OF BR FIRMS - SUB - SAMPLE B

VARIABLE	*N*	*MEAN*	*STANDARD DEV.*	*MEDIAN*
ASSETS	375	196588	500250	60071
SALES	368	296454	674179	77533
NET INCOME	372	-56102	143942	-15003
NIFO	367	-14501	66569	-3644
WC	362	1899	154641	176
CFFO	327	5977	159925	278
RE	370	-97692	208887	-29164
SE	373	-30570	-151487	-547
NICH	368	-33937	-151282	-5614
ZALTMV *	28	-.4881	3.2880	.8123
P *	325	4.9849	7.2223	3.1502
DDE	371	1.2099	.8410	1.0000
SPRICEPC	169	-.5013	.5254	-0.6582

NIFO = net income from operations, WC = working capital
CFFO = cash flow from operations, RE = retained earnings
SE = stockholders equity, NICH = change in net income from prior year
ZALTMV = Altman market value model z-score: Z-score <2.675 indicates bankruptcy range (*), P = Ohlson model p score: P score >.038 indicates bankruptcy range (*)
DDE = (debt / debt + equity) ratio
SPRICEPC = percentage change in stock price since last year

TABLE 6 - PANEL C
DESCRIPTIVE STATISTICS (IN THOUSANDS) FOR SEC SANCTIONED FIRMS (BR_{SEC})

PANEL C1 - SEC-ALLEGED FRAUD YEARS-**SUB-SAMPLE F**

Variable	*N*	*Mean*	*Standard Deviation*	*Median*
ASSETS	90	166370	389869	34500
SALES	91	225228	566312	28877
NET INCOME	91	2201	19406	800
NIFO	91	7066	22528	1669
WC	90	37317	77615	7159
CFFO	45	-2062	22440	-384
RE	90	24425	83939	1427
SE	89	56625	131053	11088
NICH	89	-2565	21177	380
ZALTMV	31	4.6634	6.3142	2.7962
P	80	-.2950	3.1730	-0.3975
DDE	90	.6365	.3582	0.6217
SPRICEPC	29	.4884	1.3651	-0.0385

PANEL C2 - GOING-CONCERN FIRM-YEARS OF SEC SANCTIONED FIRMS - SUB-SAMPLE D

Variable	*N*	*Mean*	*Standard Deviation*	*Median*
ASSETS	49	109583	237548	18866
SALES	48	259183	666232	20496
NET INCOME	47	-65293	157797	-4059
NIFO	47	-29887	83741	-2582
WC	49	-12497	104931	-979
CFFO	29	-6947	23051	-554
RE	50	-69827	115165	-23408
SE	51	-28757	66781	-1440
NICH	45	-45949	188172	-2255
ZALTMV *	8	-2.5359	3.8009	-.8232
P *	44	6.9534	7.9719	4.5482
DDE	49	1.4120	1.0132	1.2231
SPRICEPC	24	-.5891	.4184	-.7592

NIFO = net income from operations, WC = working capital
CFFO = cash flow from operations, RE = retained earnings
SE = stockholders equity, NICH = change in net income from prior year
ZALTMV = Altman market value model z-score: Z-score <2.675 indicates bankruptcy range (*),P = Ohlson model P score: P score >.038 indicates bankruptcy range (*)
DDE = (debt / debt + equity) ratio
SPRICEPC = percentage change in stock price since last year

TABLE 6 - PANEL D
DESCRIPTIVE STATISTICS (IN THOUSANDS) FOR FIRMS CLASSIFIED AS NON-STRESSED (NSB) BASED ON THE MMH FIRM MODEL

PANEL D1 - NON-GOING-CONCERN OPINION FIRM-YEARS OF NSB FIRMS - SUB-SAMPLE M2

Variable	*N*	*Mean*	*Standard Deviation*	*Median*
ASSETS	107	252794	342290	127119
SALES	107	456125	684717	168639
NET INCOME	108	8186	15946	3446
NIFO	107	22636	33232	9108
WC	97	49110	50670	31426
CFFO	75	14439	36471	2962
RE	100	36426	69868	10662
SE	107	83606	105747	45617
NICH	100	--18	19444	180
ZALTMV	19	6.6299	6.6995	5.3155
P	76	-1.2865	4.3296	-1.0940
DDE	107	.6727	.6909	.6854
SPRICEPC	48	.1097	.7529	-.0196

PANEL D2 GOING CONCERN OPINION FIRM-YEARS OF NSB FIRMS -SUBSAMPLE N2

Variable	*N*	*Mean*	*Standard Deviation*	*Median*
ASSETS	41	244595	320155	113078
SALES	41	485728	881606	129434
NET INCOME	41	-75623	152302	-19536
NIFO	40	-15498	36791	-7553
WC	37	34002	93719	7248
CFFO	34	9025	32510	2230
RE	40	-88183	189314	-17393
SE	41	-38890	148054	833
NICH	41	-46231	197529	-15010
ZALTMV *	8	1.6546	1.8175	1.5523
P *	31	2.1870	2.2616	2.4036
DDE	30	1.0060	.3373	.9738
SPRICEPC	26	-.5247	.4734	-.6065

NIFO = net income from operations, WC = working capital
CFFO = cash flow from operations, RE = retained earnings
SE = stockholders equity, NICH = change in net income from prior year
ZALTMV = Altman market value model z-score: Z-score <2.675 indicates bankruptcy range (*), P = Ohlson model p score: P score >.038 indicates bankruptcy range (*)
DDE = (debt / debt + equity) ratio
SPRICEPC = percentage change in stock price since last year

TABLE 6- PANEL E
DESCRIPTIVE STATISTICS (IN THOUSANDS) FOR ALL FIRMS CLASSIFIED AS STRESSED (SB) BASED ON THE MHM FIRM MODEL

PANEL E1 - NON-GOING-CONCERN OPINION FIRM-YEARS OF SB FIRMS -SUBSAMPLE J2

Variable	*N*	*Mean*	*Standard Deviation*	*Median*
ASSETS	588	288945	650813	75937
SALES	585	385454	890214	94655
NET INCOME	592	-7904	78191	-1212
NIFO	587	11516	41276	905
WC	578	17975	167977	10375
CFFO	448	5950	42818	484
RE	561	-17286	194788	-1464
SE	586	47397	172328	17629
NICH	578	-4109	111408	-751
ZALTMV *	38	2.5323	2.0807	2.4914
P *	503	.2281	3.3268	.2551
DDE	578	.6770	.2970	.6851
SPRICEPC	196	.3828	6.3294	-.2022

PANEL E2 - GOING-CONCERN OPINION FIRM-YEARS OFSB FIRMS -SUBSAMPLE K2

Variable	*N*	*Mean*	*Standard Deviation*	*Median*
ASSETS	228	172182	423550	48311
SALES	223	249217	599438	65694
NET INCOME	227	-43040	115568	-14276
NIFO	225	-12161	70879	-2623
WC	224	-1093	101538	-311
CFFO	212	11739	194191	386
RE	225	--95988	190745	-35829
SE	224	-28165	137709	-307
NICH	226	-21475	116381	-3790
ZALTMV	8	-.6710	2.9188	.2711
P	202	4.7414	7.0478	3.1487
DDE	225	1.1816	.8037	.9927
SPRICEPC	100	--.4344	.5882	-.6271

NIFO = net income from operations, WC = working capital
CFFO = cash flow from operations, RE = retained earnings
SE = stockholders equity, NICH = change in net income from prior year
ZALTMV = Altman market value model z-score: Z-score <2.675 indicates bankruptcy range (*), P = Ohlson model p score: P score >.038 indicates bankruptcy range (*)
DDE = (debt / debt + equity) ratio
SPRICEPC = percentage change in stock price since last year

TABLE 7
SUMMARY TABLE - COMPARISON OF KEY PROXY VARIABLES FOR VARIOUS SUB-SAMPLES

Sub-Sample	*NWCA CMAG*	*CURAC -MAG*	*REC- MAG*	*INV- MAG*	*TOTAC -MAG*	*DAP*	*NDAP*	*TTOT- ACM[a]*	*TCUR- ACM[b]*	*TDEP- MAG[c]*
A- Non-gc fy for all BR firms	.0986	.1033	.0942	.0793	.0428	.0537	(.0070)	.0322	.0906	(.0577)
C-Non-gc fy for BR_{SEC} firms	.2959	.1024	.2856	.1970	(.0113)	.006	(.0459)	(.0330)	.0758	(.0648)
F- SEC alleged fraud fy (includes 10 gc fy)	.3405	.2074	.2924	.2069	.1270	.1865	(.0481)	.0930	.1786	(.0614)
F1-SEC alleged fraud fy (excluding the 10 gc fy)	.3629	.2549	.3110	.2180	.1789	.2285	(.0541)	.1445	.2263	(.0602)
G-Non-gc fy for BR_{NONSEC} firms	.0585	.1035	.0555	.0576	.0538	.0640	.0020	.0455	.0939	(.0565)
J1-Non-gc fy for SB firms (MMH firm model)	.0343	.1024	.0417	.0438	.0494	.0639	.0032	.0427	.0938	(.0617)
J2-Non-gc fy for SB firms (Ohlson firm model)	.0291	.0807	.0223	.0350	.0315	.0411	.0072	.0310	.0805	(.0569)
J3-Non-gc, SB fy (MMH firm-year model)	.0198	.0892	.0338	.0309	.0349	.0549	.0007	.0242	.0764	(.0614)
J4-Non-gc, SB fy (Ohlson firm-year model)	.0071	.0247	.0237	.0323	(-.0281)	(.0309)	.0082	(.0272)	.0263	(.0580)
M1-Non-gc fy for NSB firms(MMH firm model)	.1799	.1804	.1494	.1071	.1345	.1268	.0070	.1220	.1651	(.0450)
M2-Non-gc fy for NSB firms (Ohlson firm model)	.0986	.1296	.0713	.0917	.0747	.0997	(.0106)	.0732	.1280	(.0527)
M3-Non-gc, NSB fy(MMH firm-year model)	.1271	.1298	.0941	.1002	.0903	.0814	.0030	.0866	.1255	(.0476)
M4-Non-gc, NSB fy (Ohlson firm-year model)	.1046	.1564	.0817	.0810	.1048	.1218	.(0008)	.0924	.1437	(.0542)
P- All fy for all NSNB matched control firms	.0493	.0530	.0420	.0520	(.0040)	.0095	(.0064)	(.0072)	.0509	(.0547)
B-GC fy for all BR firms	(0575)	(.0858)	(.0376)	(.0632)	(.1420)	.0164	(.1434)	(.1492)	(.0863)	(.0601)

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D-GC fy for BR_{SEC} firms	(.0804)	(.2481)	(.0764)	(.1032)	(.2812)	.9356	(1.0296)	(.2714)	(.2449)	(.0643)
SUB-SAMLE	NWCAC-MG	CURACR-MG	RECMAG	INV-MAG	TOTAC-MG	DAP	NDAP	TTOT-ACM[a]	TCUR-ACM[b]	TDEP-MAG[c]
D1-GC fy for BR_{SEC} firms (excluding the 10 alleged fraud years with GC opinions)	(.1223)	(.2479)	(.0959)	(.1511)	(.2716)	.7379	(.8610)	(.2716)	(.2376)	(.0626)
H-GC fy for BR_{NONSEC} firms	(.0539)	(.0605)	(.0320)	(.0573)	(.1214)	(.0784)	(.0371)	(.1312)	(.0620)	(.0595)
K1 -GC fy for SB firms (MMH firm model)	(.0372)	(.0522)	(.0299)	(.0439)	(.1142)	(.0651)	(.0392)	(.1167)	(.0440)	(.0632)
K1 -GC fy for SB firms (MMH firm model)	(.0372)	(.0522)	(.0299)	(.0439)	(.1142)	(.0651)	(.0392)	(.1167)	(.0440)	(.0632)
K2--GC fy for SB firms (Ohlson firm model)	(.0376)	(.0558)	(.0302)	(.0387)	(.1116)	(.0560)	(.0454)	(.1104)	(.0364)	(.0528)
N1--GC fy for NSB firms (MMH firm model)	(.0655)	(.0485)	(.0382)	(.0651)	(.0981)	(.0639)	(.0383)	(.1588)	(.0843)	(.0413)
N2--GC fy for NSB firms (Ohlson firm model)	(.0782)	(.1121)	(.0358)	(.0783)	(.1616)	(.1282)	(.0411)	(.1881)	(.1331)	(.0594)

GC = going-concern opinion
fy = firm-years
MMH = Mckeown, Mutchler, Hopwood, (MMH) firm model = identifying each sample firm as SB, NSB or indeterminable if two of the non-GC fy prior to bankruptcy exhibit the SB state, NSB state, or both states, respectively, based on MMH criteria
Ohlson firm model = identifying each sample firm as SB, NSB or indeterminable if two of the non-GC fy prior to bankruptcy exhibit the SB state, NSB state, or both states, respectively, based on the Ohlson model
MMH firm-year model = identifying each fy , only, as SB, NSB, or indeterminable based on the MMH criteria
Ohlson firm-year model = identifying each fy , only, as SB, NSB, or indeterminable based on the Ohlson model
NWCACMAG = Net change in working capital accruals magnitude computed: $(\Delta REC + \Delta INV - \Delta PAY - \Delta ACCEXP)/A_{t-1}$
RECMAG = receivables change magnitude (as a percentage of beginning of the year assets)
INVMAAG = in inventory change magnitude (as a percentage of beginning of the year assets)
TOTACMAG = Total accruals magnitude computed as $(\Delta CA - \Delta CL - \Delta CASH + \Delta$ current portion of long term debt) / A_{t-1}
DAP = Discretionary accruals proxy computed as (total accruals - non-discretionary accruals (NDAP- computed based on the modified Jones model
TTACMG = Total accruals magnitude based on Thomas and Zhang (1996), and defined as: TOTAL ACCRUALS = $(\Delta CA - \Delta CL - \Delta CASH -$ DEPRECIATION AND AMORTIZATION) A_{t-1}). According to Thomas and Zhang it is expected to be around -5% of beginning of the year assets on the average.
TCURACM = The current portion of total accruals based on Thomas and Zhang(1996), and defined as: TOTAL CURRENT ACCRUALS = $(\Delta CA - \Delta CL - \Delta CASH / A_{t-1}$. According to Thomas and Zhang they are expected to be around 0, on the average..
TDEPMAG = The non-current portion of the accruals based on Thomas and Zhang (1996), and defined as (-DEPRECIATION) / ASSET $_{t-1}$. According to Thomas and Zhang they are expected to be -5% of beginning of the year assets, on the average.

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TABLE 8 - PANEL 1
RESULTS OF T TEST, MEDIAN TEST, & WILCOXON TEST FOR $H1_A$
NON-GOING-CONCERN FIRM-YEARS FOR ALL BANKRUPT FIRMS (BR_{SEC} + BR_{NONSEC}) VERSUS MATCHED NSNB FIRM-YEARS

Material Earnings Manipulation Proxy	*Sign*	*N*	*Mean 1 SSA*	*N*	*Mean 2 SS P*	*T-stat.*	*P-value* [a]	*Med. 1*	*Med. 2*	*Chi-square*	*P-value* [b]	P-value[b] Wilcoxon Z-statistic
RECMAG	+	890	.0942	1368	.0420	4.03	0.0000 ***	.0104	.0158	3.27	0.0704 *#	0.1109
INVMAG	+	873	.0793	1297	.0502	3.40	0.0004 ***	.0209	.0194	0.32	0.5687	0.5221
PAYMAG	-	894	.0535	1314	.0257	3.78	0.9999 ***#	.0108	.0107	0.01	0.9309	0.4709
ACCEXPMAG	-	824	.0185	1227	.0143	.92	0.8202	.0050	.0067	3.31	0.0687 *	0.0134 **
NWCACMAG	+	883	.0986	1346	.0493	3.54	0.0002 ***	.0197	.0243	1.58	0.2091	0.0519 *
CURACMAG	+	845	.1033	1368	.0530	1.55	0.0609 *	.0168	.0292	8.87	0.0029 ***#	0.0245 **
NPPEMAG	+	652	.1095	1273	.0614	1.62	0.0526 *	.0171	.0287	13.06	0.0003 ***#	0.0001 ***
SLSPC	+	934	.8990	1417	.2125	1.67	0.0479 **	.1163	.1276	.77	0.3798	0.0607 *
GPRPC	?	929	.1186	1411	-.2067	1.80	0.0715 *	-.0167	-.0003	15.44	0.0001 ***	0.0001 ***
GPRPCAV	+	929	.4981	1411	.3031	1.09	0.1388	.0892	.0381	105.1	0.0000 ***	0.0000 ***
CFFO	-	693	6278.8	1146	49421	-8.01	0.0000 ***	611.0	10259	194.2	0.0000 ***	0.0000 ***
CASHCH	-	865	-539.36	1402	5035.5	3.03	0.0013 ***	-.5000	292.5	22.80	0.0000 ***	0.0000 ***
SGAPC	-	929	.4175	1355	.2235	4.11	1.0000 ***#	.1310	.1248	0.66	0.4183	0.6357

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians are significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
a = one tailed except where hypothesized sign is unknown (?)
b = two tailed
SSA = sub-sample A, i.e., non-going-concern firm-years for all bankrupt firms (BR_{SEC} + BR_{NONSEC})
SSP = sib-sample P, i.e., non-stressed non-bankrupt firm-years
RECMAG = receivables change magnitude: (Δ receivables / assets prior yea)
INVMAG = inventory change magnitude: (Δ inventory) / assets prior year)
PAYMAG = payables change magnitude: (Δ payables) / assets prior year)
ACCEXPMAG = accrued expenses change magnitude: (Δ accrued expenses) / assets prior year)
NWCACMAG = net working capital accruals magnitude: (Δ cash + Δ receivables - Δ payables - Δ accrued expenses) / assets prior year
CURACMAG = current accruals magnitude: (Δ current assets - Δ current liabilities - Δ change in cash + Δ short-term portion of long term debt) /assets prior year
SLSPC = percentage change in sales from last year: Δ sakes / sakes prior year
NPPEMAG = net property plant and equipment magnitude: Δ net property, plant, and equipment / assets prior year
GPRPC = percentage change in gross profit ratio from prior year: (Δ gross profit ratio/ gross profit ratio prior year)
GPRPCAV = absolute value of percentage change in gross profit ratio
CFFO = cash flow from operations for current year

CASHCH = Δ net cash
SGAPC = percentage change in selling general and administrative expenses: (Δ SGA/ assets prior year)

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TABLE 8 - PANEL 2
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR $H1_B$
ALL SEC ALLEGED FRAUD YEARS VERSUS MATCHED NSNB FIRM-YEARS

Material Earnings Manipulation Proxy	*Sign*	*N*	*Mean 1 SS F* [c]	*N*	*Mean 2 SS T*	*T-stat.*	*P-value* [a]	*Median 1*	*Median 2*	*Chi-square*	*P-value*	*P-value* [b] *Wilcoxon z-statistic*
RECMAG	+	84	.2924	73	.0289	3.91	0.0001 ***	.0758	.0106	9.39	0.0023 ***	0.0003 ***
INVMAG	+	76	.2069	66	.0520	3.95	0.0001 ***	.1185	.0177	13.70	0.0002 ***	0.0000 ***
PAYMAG	-	86	.1020	71	.0147	3.28	0.9993*** #	.0283	.0091	6.63	0.0100** #	0.0028 ***
ACCEXPMAG	-	81	.0281	68	.0170	.90	0.8140	.0171	.0066	4.61	0.0318 **#	0.0306 **
NWCACMAG	+	85	.3405	71	.0396	4.94	0.0000 ***	.1467	.0266	9.33	0.0023 ***	0.0000 ***
CURACMAG	+	85	.2074	71	.0544	1.54	0.0640 *	.1039	.0281	7.47	0.0063 ***	0.0060 ***
NPPEMAG	+	77	.3386	60	.0873	1.13	0.1301	.0492	.0375	1.47	0.2258	0.4985
SLSPC	+	88	.9274	75	.2046	2.73	0.0038 ***	.4053	.1517	18.10	0.0000 ***	0.0001 ***
GPRPC	?	84	.2742	72	.0324	1.28	0.2044	.0077	.0000	0.22	0.6416	0.3353
GPRPCAV	+	84	.5129	72	.1029	2.24	0.0136 **	.1157	.0329	20.22	0.0000 ***	0.0000 ***
CFFO	-	45	-2061.8	30	13872	-2.53	0.0072 ***	-384.0	6209.0	27.13	0.0000 ***	0.0000 ***
CASHCH	-	85	364.45	71	1863.6	1.30	0.0981 *	134.0	154.0	0.65	0.4215	0.7786
SGAPC	-	88	.7547	71	.1845	4.23	1.0000 ***#	.5167	.1123	11.28	0.008 ***#	0.0001 ***

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
a = one tailed except where hypothesized sign is unknown (?)
b = two tailed
SSF = sub-sample F, i.e., all SEC alleged fraud years
SST = sub-sample T, i.e., matched NSNB firm-years
RECMAG = receivables change magnitude: (Δ receivables / assets prior yea)
INVMAG = inventory change magnitude: (Δ inventory) / assets prior year)
PAYMAG = payables change magnitude: (Δ payables) / assets prior year)
ACCEXPMAG = accrued expenses change magnitude: (Δ accrued expenses) / assets prior year)
NWCACMAG = net working capital accruals magnitude: (Δ cash + Δ receivables - Δ payables - Δ accrued expenses) / assets prior year
CURACMAG = current accruals magnitude: (Δ current assets - Δ current liabilities - Δ change in cash + Δ short-term portion of long term debt) /assets prior year
SLSPC = percentage change in sales from last year: Δ sakes / sakes prior year
NPPEMAG = net property plant and equipment magnitude: Δ net property, plant, and equipment / assets prior year
GPRPC = percentage change in gross profit ratio from prior year: (Δ gross profit ratio/ gross profit ratio prior year)

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GPRPCAV = absolute value of percentage change in gross profit ratio
CFFO = cash flow from operations for current year
CASHCH = Δ net cash
SGAPC = percentage change in selling general and administrative expenses: (Δ SGA/ assets prior year)

TABLE 8 - PANEL 3
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR $H1_C$
NON-GOING-CONCERN NON-STRESSED BANKRUPT FIRM-YEARS OF NSB FIRMS (classified based on the MMH firm model) VERSUS MATCHED NSNB FIRM-YEARS

Material Earnings Manipulation Proxy	*Sign*	*N*	*Mean 1 SS M1*	*N*	*MEAN 2 SS P_{M1}*	*T-stat.*	*P- value* [a]	*Median 1*	*Median 2*	*Chi-square*	*P-value* [b]	*P-value* [b] *(Wilcoxon Z-statistic)*
RECMAG	+	87	.1494	134	.0441	2.53	0.0066 ***	.0155	.0172	0.02	0.8903	0.1840
INVMAG	+	99	.1071	140	.0576	1.93	0.0278 **	.0727	.0320	8.40	0.0038 ***	0.0028 ***
PAYMAG	-	96	.0511	133	.0305	1.20	0.8846	.0210	.0167	0.65	0.4194	0.6892
ACCEXPMG	-	83	.0148	130	.0162	-0.23	0.4109	.0031	.0064	2.86	0.0906 *	0.0714 *
NWCACMAG	+	90	.1799	138	.0539	2.36	0.0101 **	.0757	.0261	9.04	0.0026 ***	0.0042 ***
CURACMAG	+	86	.1804	145	.0282	2.41	0.0089 ***	.0631	.0227	4.83	0.0279 **	0.0020 ***
NPPEMAG	+	63	.1577	112	.0964	1.41	0.0808 *	.0493	.0486	0.05	0.8293	0.4039
SLSPC	+	101	.4978	150	.2488	1.58	0.0577 *	.1678	.1424	1.35	0.2460	0.1016
GPRPC	?	100	-.0054	145	-.0006	0.01	1.0000	.0001	-.0007	0.83	0.3614	0.5954
GPRPCAV	+	100	.0867	145	.0733	0.85	0.1992	.0398	.0356	0.15	0.6957	0.2123
CFFO	-	75	14439	122	34563	-2.23	0.0135 **	2962.0	10310	9.52	0.0020 ***	0.0002 ***
CASHCH	-	90	515.36	144\	7100	-1.68	0.0471 **	118.0	751.50	4.16	0.0414 **	0.1042
SGAPC	-	100	.4758	134	.1863	2.58	0.9944 ***#	.1951	.1153	5.66	0.0174** #	0.0109 **

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
a = one tailed except where hypothesized sign is unknown (?)
b = two tailed
SSM1 = sub-sample M1, i.e., non-going-concern non-stressed bankrupt firm-years of NSB firms classified using the MMH firm model
SSP = sub-sample P, i.e., matched NSNB firm-years
RECMAG = receivables change magnitude: (Δ receivables / assets prior yea)
INVMAG = inventory change magnitude: (Δ inventory) / assets prior year)
PAYMAG = payables change magnitude: (Δ payables) / assets prior year)
ACCEXPMAG = accrued expenses change magnitude: (Δ accrued expenses) / assets prior year)
NWCACMAG = net working capital accruals magnitude: (Δ cash + Δ receivables - Δ payables - Δ accrued expenses) / assets prior year
CURACMAG = current accruals magnitude: (Δ current assets - Δ current liabilities - Δ change in cash + Δ short-term portion of long term debt) /assets prior year
SLSPC = percentage change in sales from last year: Δ sakes / sakes prior year

NPPEMAG = net property plant and equipment magnitude: Δ net property, plant, and equipment / assets prior year
GPRPC = percentage change in gross profit ratio from prior year: (Δ gross profit ratio/ gross profit ratio prior year)
GPRPCAV = absolute value of percentage change in gross profit ratio
CFFO = cash flow from operations for current year
CASHCH = Δ net cash
SGAPC = percentage change in selling general and administrative expenses: (Δ SGA/ assets prior year)

TABLE 9 - PANEL 1
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR H2.1$_A$
FIRM-YEARS TWO YEARS PRIOR TO THE FRAUD YEARS FOR SEC SANCTIONED BANKRUPT FIRMS VERSUS MATCHED NSNB FIRMS

Earnings Management Proxy	*Sign*	*N*	*Mean 1 SSE* [c]	*N*	*Mean 2 SSS*	*T-stat.*	*P-value*	*Med. 1*	*Med. 2*	*Chi-square*	*P-value*	*P-value* [b] *(Wilcoxon Z-statistic)*
ACCTGCHM	+	16	.1438	0	- —	-		.0000	—	—	—	—
EIANDDOM	+	49	-.0196	30	.0009	-.85	0.8007	.0000	.0000	1.52	0.2178	.3148
TTOTACM	+	46	-.3097	21	.1024	-1.16	0.8752	.0236	.0300	0.00	1.0000	.9946
TCURACM	+	53	-.1344	34	.1174	-0.82	0.7919	.0792	.0742	0.19	0.6591	.7908
TOTACMAG	+	46	-.2980	21	.1018	-1.14	0.8691	.0387	.0279	0.63	0.4279	.8235
DAP	+	40	-.2733	19	.0889	-.43	0.6655	.0055	.0010	.0.00	1.00	.9806

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
[a] = one tailed except where hypothesized sign is unknown (?)
[b] = two tailed
SSE = sub-sample E, i.e., two years prior to SEC fraud years
SSS = sub-sample S, i.e., matched NSNB firm-years
ACCHGM = the Compustat variable for cumulative effect of a change in accounting principle.
EIANDDOM = extraordinary items and discontinued operations (the disclosure variable which includes any effect of accounting changes as well)
TTOTACM = total accruals based on Thomas and Zhang = (Δ change in current assets - Δ current liabilities - Δ cash - depreciation and amortization) / assets prior year
TCURM = the current portion only = (Δ current assets - Δ current liabilities - Δ cash) / assets prior year
TOTACMAG = total accruals / assets prior year according to the Jones model and other literature: where (total accruals = (Δ change in current assets - Δ current liabilities - Δ cash + Δ current portion of long term debt - depreciation and amortization)
DAP = discretionary accruals proxy = total accruals - non-discretionary accruals where non-discretionary accruals is the fitted dependent variable in a regression using the modified Jones Model
c = includes only non- going concern opinion firm-years

TABLE 9 - PANEL 2
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR H2.1$_B$
ALL NON-GOING-CONCERN FIRM-YEARS -4 AND -5 PRIOR TO BANKRUPTCY FOR NON-STRESSED BANKRUPT FIRMS (NSB) USING THE MHM FIRM MODEL VERSUS MATCHED NSNB FIRMS

Earnings Management Proxy	*Sign*	*N*	*Mean 1 SS O*	*N*	*Mean 2 SSR*	*T-stat.*	*P-value*	*Median 1*	*Median 2*	*Chi-square*	*P-value*	*P-value [b] (Wilcoxon Z-statistic)*
ACCTGCHM	+	6	.0000	1	.0000	—	—	.0000	.0000	——	———	———
EIANDDOM	+	26	.0035	27	.0006	.52	.3052	.0000	.0000	1.33	.2482	.6246
TTOTACM	+	33	.1035	31	.0433	2.57	.0071 ***	.0433	.0021	3.07	.0080 ***	.0327 **
TCURACM	+	36	.1395	35	.0737	2.62	.0056 ***	.0737	.0425	2.06	.1513	.0667 *
TOTACMAG	+	33	.1048	31	.0551	2.81	.0038 ***	.0551	.0030	5.07	.0244 **	.0181 **
DAP	+	25	.0624	22	.0487	1.68	.0509 **	.0487	-.0034	4.29	.0383 **	.1274

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
[a] = one tailed except where hypothesized sign is unknown (?)
[b] = two tailed
SSO = sub-sample O, i.e., years -4 and -5 for NSB firms
SSR = sub-sample R i.e., matched NSNB firm-years
ACCHGM = the Compustat variable for cumulative effect of a change in accounting principle.
EIANDDOM = extraordinary items and discontinued operations (the disclosure variable which includes any effect of accounting changes as well)
TTOTACM = total accruals based on Thomas and Zhang = (Δ change in current assets - Δ current liabilities - Δ cash - depreciation and amortization) / assets prior year
TCURM = the current portion only = (Δ current assets - Δ current liabilities - Δ cash) / assets prior year
TOTACMAG = total accruals / assets prior year according to the Jones model and other literature: where (total accruals = (Δ change in current assets - Δ current liabilities - Δ cash + Δ current portion of long term debt - depreciation and amortization)
DAP = discretionary accruals proxy = total accruals - non-discretionary accruals where non-discretionary accruals is the fitted dependent variable in a regression using the modified Jones Model
c = includes only non- going concern opinion firm-years

TABLE 9 - PANEL 3
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR H2.2
NON-GOING-CONCERN FIRM-YEARS -3 TO -1 PRIOR TO BANKRUPTCY FOR NSB FIRMS (USING THE MHM FIRM MODEL VERSUS YEAR -4 AND -5 OF THESE FIRMS

Material Earnings Manipulation/ Management Proxy	*Sign*	*N*	*Mean 1 SSM - SSO*	*N*	*Mean 2 SSO*	*T-stat.*	*P-value.*	*Median 1*	*Median 2*	*Chi-square*	*P-value.*	*P-value b (Wilcoxon Z-statistic)*
RECMAG	+	52	.1351	35	.1706	-0.42	0.6626	.0142	.0363	0.43	0.5102	0.9379
INVMAG	+	57	.1184	42	.0919	0.60	0.2747	.0802	.0559	4.17	0.0412 **	0.3518
PAYMAG	-	55	.0373	41	.0696	-0.88	0.1916	.0132	.0229	1.06	0.3022	0.4679
ACCEXPMAG	-	51	.0111	32	.0208	-0.76	0.2261	.0021	.0039	0.47	0.4945	0.5035
NWCACMAG	+	52	.1943	38	.1602	0.36	0.3617	.0757	.0685	0.00	1.0000	0.9837
CURACMAG	+	53	.2019	36	.1408	0.59	0.2788	.0418	.0736	0.75	0.3858	0.3962
NPPEMAG	+	40	.1526	23	.1665	-0.15	0.5607	.0560	.0371	0.07	0.7926	0.9374
SLSPC	+	57	.2862	44	.7719	-1.45	0.9236 *#	.1453	.1911	1.02	0.3125	0.2657
GPRPC	?	57	-.0207	43	.0148	-1.28	0.2042	.0047	.0023	1.02	0.3125	0.2774
GPRPCAV	+	57	.0777	43	.0987	-0.97	0.8330	.0292	.0550	2.00	0.1574	0.1659
CFFO	-	48	14851	27	13707	0.578	0.5586	162.00	3583.0	0.24	0.6263	0.2398
CASHCH	-	54	555.69	36	454.86	0.02	0.5086	23.00	335.00	0.19	0.6670	0.1415
SGAPC	-	57	.3404	43	.6553	-1.27	0.1045	.1896	.2202	1.02	0.3125	0.5039
ACCTGCHM	-	18	.0010	6	———	———	———	.0000	.0000	———	———	0.5709
EIANDDOM	-	40	.0023	26	.0035	-0.20	0.5780	.0000	.0000	0.03	0.8576	0.6890
TTOTACM	+	53	.1336	33	.1035	0.29	0.3868	.0068	.0433	2.41	0.1206	0.1771
TCURACM	+	53	.1825	36	.1395	0.41	0.3413	.0475	.0737	0.93	0.3346	0.2716
TOTACMAG	+	53	.1531	33	.1048	0.47	0.3210	.0022	.0551	2.41	0.1206	0.2447
DAP	+	42	.1651	25	.0624	0.85	0.1999	.0079	.0487	3.16	0.0757 *#	0.3886

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** Sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
a = one tailed except where hypothesized sign is unknown (?)
b = two tailed
SS (M - O) = sub-sample M minus sub-sample O, i.e., all non-going concern years for NSB firms after eliminating years -u and -5., i.e. years -1, -2, and -3 remain.
SSO = sub-sample O i.e., years -4 and -5
RECMAG = receivables change magnitude: (Δ receivables / assets prior yea)
INVMAG = inventory change magnitude: (Δ inventory) / assets prior year)

PAYMAG = payables change magnitude: (Δ payables) / assets prior year)
ACCEXPMAG = accrued expenses change magnitude: (Δ accrued expenses) / assets prior year)
NWCACMAG = net working capital accruals magnitude: (Δ cash + Δ receivables - Δ payables - Δ accrued expenses) / assets prior year
CURACMAG = current accruals magnitude: (Δ current assets - Δ current liabilities - Δ change in cash + Δ short-term portion of long term debt) /assets prior year
SLSPC = percentage change in sales from last year: Δ sakes / sakes prior year
NPPEMAG = net property plant and equipment magnitude: Δ net property, plant, and equipment / assets prior year
GPRPC = percentage change in gross profit ratio from prior year: (Δ gross profit ratio/ gross profit ratio prior year)
GPRPCAV = absolute value of percentage change in gross profit ratio
CFFO = cash flow from operations for current year
CASHCH = Δ net cash
SGAPC = percentage change in selling general and administrative expenses: (Δ SGA/ assets prior year)
ACCHGM = the Compustat variable for cumulative effect of a change in accounting principle.
EIANDDOM = extraordinary items and discontinued operations (the disclosure variable which includes any effect of accounting changes as well)
TTOTACM = total accruals based on Thomas and Zhang = (Δ change in current assets - Δ current liabilities - Δ cash - depreciation and amortization) / assets prior year
TCURM = the current portion only = (Δ current assets - Δ current liabilities - Δ cash) / assets prior year
TOTACMAG = total accruals / assets prior year according to the Jones model and other literature: where (total accruals = (Δ change in current assets - Δ current liabilities - Δ cash + Δ current portion of long term debt - depreciation and amortization)
DAP = discretionary accruals proxy = total accruals - non-discretionary accruals where non-discretionary accruals is the fitted dependent variable in a regression using the modified Jones Model
c = includes only non- going concern opinion firm-years

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TABLE 10 - PANEL 1
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR $H3_A$
NON-GOING-CONCERN FIRM-YEARS FOR ALL BANKRUPT FIRMS (BR_{SEC} + BR_{NONSEC}) VERSUS GOING-CONCERN FIRM-YEARS OF THESE FIRMS

Material Earnings Manipulation /Management Proxy	*Sign*	*N*	*Mean 1 SSA*	*N*	*Mean 2 SSB*	*T-stat.*	*P-value.* [a]	*Median 1*	*Median 2*	*Chi-square*	*P-value.* [b]	*P-value* [b] *(Wilcoxon Z-statistic)*
RECMAG	+	890	.0942	356	-.0376	9.57	0.0000 ***	.0104	-.0135	21.82	0.0000***	0.0000 ***
INVMAG	+	873	.0793	342	-.0632	12.82	0.0000 ***	.0209	-.0280	179.52	0.0000 ***	0.0000 ***
PAYMAG	-	894	.0535	359	-.0334	8.67	1.0000 ***#	.0108	-.0147	76.38	0.0000 ***	0.0000 ***
ACCEXPMAG	-	824	.0185	327	-.0076	4.25	1.0000 ***#	.0050	.0000	18.05	0.0000 ***	0.0000 ***
NWCACMAG	+	883	.0986	349	-.0575	9.24	0.0000 ***	.0197	-.0399	52.08	0.0000 ***	0.0000 ***
CURACMAG	+	845	.1033	341	-.0576	2.92	0.0018 ***	.0168	-.0676	46.39	0.0000 ***	0.0000 ***
NPPEMAG	+	652	.1095	270	-.0566	5.42	0.0000 ***	.0171	-.0356	147.82	0.0000 ***	0.0000 ***
SLSPC	+	947	.8990	366	4.8753	-.80	0.7881	.1163	-.1221	15.16	0.0001 ***	0.0000 ***
GPRPC	?	929	.1186	347	-.0478	0.56	0.5739	-.0167	-.0836	27.27	0.0000 ***	0.0000 ***
GPRPCAV	?	929	.4981	347	.7782	-0.96	0.3383	.0892	.1805	32.78	0.0000 ***	0.0000 ***
CFFO	+	693	6278.8	328	5977.3	0.03	0.4866	611.0	278.00	0.76	0.3831	0.0116 ***
CASHCH	+	868	-539.36	361	2091.3	-2.11	0.9822 **#	-5000.0	-57.500	0.67	0.4144	0.8469 ***
SGAPC	-	929	.4175	358	.2115	1.37	0.9143 *#	.1310	-.0458	75.87	0.0000 #	0.0000 ***
ACCTGCHM	+	205	-.0023	99	-.0069	0.29	0.3855	.0000	.0000	0.90	0.3441	0.6349
EIANDDOM	+	661	.0162	262	.0015	0.85	0.1978	.0000	.0000	1.73	0.1881	0.2595
TTOTACM	+	793	.0322	323	-.1492	4.01	0.0000 ***	-.0384	-.1547	30.30	0.0000 ***	0.0000 ***
TCURACM	+	849	.0906	345	-.0863	4.10	0.0000 ***	.0114	-.0866	42.34	0.0000 ***	0.0000 ***
TOTACMAG	+	793	.0428	319	-.1420	4.60	0.0000 ***	-.0327	-.1172	30.30	0.0000 ***	0.0000 ***
DAP	+	654	.0537	236	.0164	0.29	0.3877	-.0153	-.0663	23.47	0.0000 ***	0.0000 ***

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
a = one tailed except where hypothesized sign is unknown (?)
b = two tailed
SSA = sub-sample A, i.e., non-going concern opinion firm-years of all bankrupt firms
SSB = sub-sample B, i.e., going concern opinion firm-years of these firms RECMAG = receivables change magnitude: (Δ receivables / assets prior yea)
INVMAG = inventory change magnitude: (Δ inventory) / assets prior year)
PAYMAG = payables change magnitude: (Δ payables) / assets prior year)
ACCEXPMAG = accrued expenses change magnitude: (Δ accrued expenses) / assets prior year)
NWCACMAG = net working capital accruals magnitude: (Δ cash + Δ receivables - Δ payables - Δ accrued expenses) / assets prior year

CURACMAG = current accruals magnitude: (Δ current assets - Δ current liabilities - Δ change in cash + Δ short-term portion of long term debt) /assets prior year
SLSPC = percentage change in sales from last year: Δ sakes / sakes prior year
NPPEMAG = net property plant and equipment magnitude: Δ net property, plant, and equipment / assets prior year
GPRPC = percentage change in gross profit ratio from prior year: (Δ gross profit ratio/ gross profit ratio prior year)
GPRPCAV = absolute value of percentage change in gross profit ratio
CFFO = cash flow from operations for current year
CASHCH = Δ net cash
SGAPC = percentage change in selling general and administrative expenses: (Δ SGA/ assets prior year)
ACCHGM = the Compustat variable for cumulative effect of a change in accounting principle.
EIANDDOM = extraordinary items and discontinued operations (the disclosure variable which includes any effect of accounting changes as well)
TTOTACM = total accruals based on Thomas and Zhang = (Δ change in current assets - Δ current liabilities - Δ cash - depreciation and amortization) / assets prior year
TCURM = the current portion only = (Δ current assets - Δ current liabilities - Δ cash) / assets prior year
TOTACMAG = total accruals / assets prior year according to the Jones model and other literature: where (total accruals = (Δ change in current assets - Δ current liabilities - Δ cash + Δ current portion of long term debt - depreciation and amortization)
DAP = discretionary accruals proxy = total accruals - non-discretionary accruals where non-discretionary accruals is the fitted dependent variable in a regression using the modified Jones Model
c = includes only non- going concern opinion firm-years

TABLE 10 - PANEL 2
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR $H3_B$
SEC SANCTIONED FIRMS ALLEGED FRAUD YEARS (EXCLUDING FRAUD FIRM YEARS THAT ARE ALSO GOING-CONCERN YEARS) VERSUS GOING CONCERN OPINION FIRM-YEARS OF THESE FIRMS

Material Earnings Manipulation/ Management Proxy [e]	*Sign*	*N*	*MEAN 1 SS F*	*N*	*Mean 2 SS D*	*T- stat.*	*P-value* [a]	*Med. 1*	*Med. 2*	*Chi-Square*	*P-value* [b]	*P-value* [b] *(Wilcoxon Z-statistic)*
RECMAG	+	78	.3110	39	-.0959	5.14	0.0000 ***	.0803	-.0464	40.08	0.0000 ***	0.0000 ***
INVMAG	+	68	.2180	36	-.1511	5.97	0.0000 ***	.1185	-.1092	38.24	0.0000 ***	0.0000 ***
ACCEXPMAG	-	73	.0280	38	-.0067	2.08	0.9801 **#	.0154	-.0041	10.29	0.0013 #	0.0004 ***
NWCACMAG	+	77	.3629	39	-.1223	5.91	0.0000 ***	.1622	-.0972	26.68	0.0000 ***	0.0000 ***
CURACMAG	+	77	.2549	38	-.2479	3.87	0.0001 ***	.1378	-.0999	19.11	0.0000 ***	0.0000 ***
NPPEMAG	+	69	.3770	35	-.1126	1.98	0.0257 **	.0541	-.0783	22.78	0.0000 ***	0.0000 ***
SLSPC	+	79	.9886	38	-.2121	4.10	0.0000 ***	.4615	-.1807	33.38	0.0000 ***	0.0000 ***
GPRPC	?	79	.2946	35	-.3516	2.33	0.0219 **	.0106	-.2930	11.92	0.0006 ***	0.0003 ***
GPRPCAV	+	79	.5423	35	.8110	1.11	0.0865 *	.1205	.4227	21.81	0.0000 #	0.0001 ***
CFFO	+	39	-1814.3	23	-7801.7	.93	0.1788	384.00	-1421.0	.62	0.4303	0.7596
CASHCH	+	77	558.74	39	2373.9	-.68	0.7490	272.00	-35.000	3.13	0.0769 *	0.4033
SGAPC	-	79	.7510	36	.1620	3.07	0.9985 ***#	.5439	-.0505	16.24	0.0001 #	0.0000 ***
ACCTGCH	+	27	-.0262	5	.0000	——	——	.0000	.0000	——	——	0.9793
EIANDDO	+	73	.0086	36	.0010	1.24	0.1087	.0000	.0000	.12	0.7321	0.4568
TTOTACM	+	69	.1445	33	-.2520	2.52	0.0066 ***	.0370	-.1385	10.08	0.0015 ***	0.0001 ***
TCURACM	+	77	.2263	38	-.2376	3.32	0.0006 ***	.1243	-.1009	14.45	0.0001 ***	0.0000 ***
TOTACMAG	+	69	.1789	33	-.2716	3.08	0.0013 ***	.0880	-.1555	19.75	0.0001 ***	0.0000 ***
DAP	**+**	**58**	**.2285**	**29**	**.7379**	**.53**	**0.7997**	**.0523**	**-.1059**	**1038**	**0.0013 *** **	**0.0009 *** **

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
a = one tailed except where hypothesized sign is unknown (?)
b = two tailed
SSF = sub-sample F, i.e., SEC fraud years
SSD = sub-sample D, i.e., going concern opinion firm-years of SEC sanctioned firms
RECMAG = receivables change magnitude: (Δ receivables / assets prior yea)
INVMAG = inventory change magnitude: (Δ inventory) / assets prior year)
PAYMAG = payables change magnitude: (Δ payables) / assets prior year)
ACCEXPMAG = accrued expenses change magnitude: (Δ accrued expenses) / assets prior year)
NWCACMAG = net working capital accruals magnitude: (Δ cash + Δ receivables - Δ payables - Δ accrued expenses) / assets prior year

CURACMAG = current accruals magnitude: (Δ current assets - Δ current liabilities - Δ change in cash + Δ short-term portion of long term debt) /assets prior year
SLSPC = percentage change in sales from last year: Δ sakes / sakes prior year
NPPEMAG = net property plant and equipment magnitude: Δ net property, plant, and equipment / assets prior year
GPRPC = percentage change in gross profit ratio from prior year: (Δ gross profit ratio/ gross profit ratio prior year)
GPRPCAV = absolute value of percentage change in gross profit ratio
CFFO = cash flow from operations for current year
CASHCH = Δ net cash
SGAPC = percentage change in selling general and administrative expenses: (Δ SGA/ assets prior year)
ACCHGM = the Compustat variable for cumulative effect of a change in accounting principle.
EIANDDOM = extraordinary items and discontinued operations (the disclosure variable which includes any effect of accounting changes as well)
TTOTACM = total accruals based on Thomas and Zhang = (Δ change in current assets - Δ current liabilities - Δ cash - depreciation and amortization) / assets prior year
TCURM = the current portion only = (Δ current assets - Δ current liabilities - Δ cash) / assets prior year
TOTACMAG = total accruals / assets prior year according to the Jones model and other literature: where (total accruals = (Δ change in current assets - Δ current liabilities - Δ cash + Δ current portion of long term debt - depreciation and amortization)
DAP = discretionary accruals proxy = total accruals - non-discretionary accruals where non-discretionary accruals is the fitted dependent variable in a regression using the modified Jones Model
c = includes only non- going concern opinion firm-years

TABLE 10 - PANEL 3
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR $H3_C$
NON-GOING-CONCERN FIRM-YEARS FOR NON-STRESSED BANKRUPT (NSB) FIRMS BASED ON THE MMH FIRM MODEL VERSUS GOING-CONCERN FIRM-YEARS OF NSB FIRMS

Material Earnings Manipulation/Management	*Sign*	*N*	*Mean 1 SSM1*	*N*	*Mean 2 SSN1*	*T-stat.*	*P-value* [a]	*Med. 1*	*Med. 2*	*Chi-square*	*P-value* [b]	*P-value* [b] *(Wilcoxon Z-statistic)*
RECMAG	+	87	.1494	40	-- .0382	21.40	0.0000 ***	.0155	-.0218	14.65	0.0000 ***	0.0000 ***
INVMAG	+	99	.1071	40	-.0651	5.49	0.0000 ***	.0727	-.0257	40.70	0.0000 ***	0.0000 ***
PAYMAG	-	96	.0511	38	-.0390	4.32	1.0000 ***#	.0210	-.0119	9.40	0.0022 #	0.0000 ***
ACCEXPMAG	-	83	.0148	31	.0019	1.86	0.9670 **#	.0031	.0000	2.17	0.1406	0.1832
NWCACMAG	+	90	.1799	37	-.0655	4.12	0.0000 ***	.0757	-.0268	18.82	0.0000 ***	0.0000 ***
CURACMAG	+	89	.1772	36	-.0485	3.13	0.0011 ***	.0596	-.0527	5.44	0.0000 ***	0.0000 ***
NPPEMAG	-	63	.1577	26	-.0815	5.34	0.0000 ***	.0493	-.0425	5.34	0.0000 ***	0.0000 ***
SLSPC	+	101	.4978	41	-.0831	3.77	0.0001 ***	.1678	-.0577	32.95	0.0000 ***	0.0000 ***
GPRPC	?	100	-.0054	41	1.3992	-0.77	0.4480	.0001	-.1517	12.45	0.0004 ***	0.0000 ***
GPRPCAV	+	100	.0867	41	2.2657	-1.20	0.8820	.0398	.1525	23.66	0.0000 #	0.0000 ***
CFFO	+	75	14439	34	9025.3	0.74	0.7701	2962.0	2230.0	0.39	0.5309	0.5322
CASHCH	+	87	515.36	41	8673.4	-1.67	0.9498	118.0	-62.0	0.33	0.5632	0.6785
SGAPC	-	100	.4758	41	.0914	3.13	1.0000 ***#	.1951	.0912	12.45	0.0004 #	0.0003 ***
ACCTGCHM	+	24	.0008	12	.0094	-.96	0.8221	.0000	.0000	183.46	0.0000 ***	0.8273
EIANDDOM	+	66	.0028	25	-.0188	1.61	0.0601 *	.0000	.0000	1.61	0.0601 ***	0.1838
TTOTACM	+	86	.1220	33	-.1588	3.25	0.0008 ***	.0219	-.0930	3.25	0.0008 ***	0.0001 ***
TCURACM	+	89	.1651	36	-.0843	2.83	0.0029 ***	.0583	-.0594	2.15	0.0063 ***	0.0002 ***
TOTACM	+	86	.1345	33	-.0981	5.65	0.0000 ***	.0288	-.0928	3.16	0.0010 ***	0.0000 ***

***sub-sample means /medians significantly different from each other at .10 level**
**** Sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
a = one tailed except where hypothesized sign is unknown (?)
b = two tailed
SSM1 = sub-sample M1, i.e., non-going concern firm-years for non-stressed bankrupt (NSB) firms based on the MMH firm model
SSN1 = sub-sample N1 going-concern firm-years of NSB firms based on the MMH firm model
RECMAG = receivables change magnitude: (Δ receivables / assets prior yea)
INVMAG = inventory change magnitude: (Δ inventory) / assets prior year)
PAYMAG = payables change magnitude: (Δ payables) / assets prior year)
ACCEXPMAG = accrued expenses change magnitude: (Δ accrued expenses) / assets prior year)
NWCACMAG = net working capital accruals magnitude: (Δ cash + Δ receivables - Δ payables - Δ accrued expenses) / assets prior year

CURACMAG = current accruals magnitude: (Δ current assets - Δ current liabilities - Δ change in cash + Δ short-term portion of long term debt) /assets prior year
SLSPC = percentage change in sales from last year: Δ sakes / sakes prior year
NPPEMAG = net property plant and equipment magnitude: Δ net property, plant, and equipment / assets prior year
GPRPC = percentage change in gross profit ratio from prior year: (Δ gross profit ratio/ gross profit ratio prior year)
GPRPCAV = absolute value of percentage change in gross profit ratio
CFFO = cash flow from operations for current year
CASHCH = Δ net cash
SGAPC = percentage change in selling general and administrative expenses: (Δ SGA/ assets prior year)
ACCHGM = the Compustat variable for cumulative effect of a change in accounting principle.
EIANDDOM = extraordinary items and discontinued operations (the disclosure variable which includes any effect of accounting changes as well)
TTOTACM = total accruals based on Thomas and Zhang = (Δ change in current assets - Δ current liabilities - Δ cash - depreciation and amortization) / assets prior year
TCURM = the current portion only = (Δ current assets - Δ current liabilities - Δ cash) / assets prior year
TOTACMAG = total accruals / assets prior year according to the Jones model and other literature: where (total accruals = (Δ change in current assets - Δ current liabilities - Δ cash + Δ current portion of long term debt - depreciation and amortization)
DAP = discretionary accruals proxy = total accruals - non-discretionary accruals where non-discretionary accruals is the fitted dependent variable in a regression using the modified Jones Model
c = includes only non- going concern opinion firm-years

TABLE 11 (ALTERNATIVE TO TABLE 8 - PANEL 1)
RESULTS OF T TEST, MEDIAN TEST, & WILCOXON TEST FOR $H1_A$
NON-GOING-CONCERN FIRM-YEARS FOR ALL BANKRUPT FIRMS (BR_{SEC} + BR_{NONSEC}) VERSUS MATCHED NSNB FIRMS

Material Earnings Manipulation Proxy	*Sign*	*N*	*Mean 1 SSA*	*N*	*Mean 2 SSP*	*T-stat.*	*P-value* [a]	*Med. 1*	*Med. 2*	*Chi-Square*	*P-value* [b]	p-value[b] (Wilcoxon Z statistic)
RECPC	+	876	.9002	1351	.2789	2.33	0.0100 **	.1442	.1301	0.61	0.4348	0.8387
RECSLSPC	+	870	.4613	1341	.0794	1.42	0.0775 *	.0226	-.0041	2.68	0.1015	0.0763 *
INVPC	+	859	.5307	1285	.2012	3.48	0.0003 ***	.1266	.1141	1.21	0.2705	0.6926
INVSLSPC	+	854	.1492	1278	.0156	1.39	0.0829 *	.0221	-.0025	3.13	0.0771 *	0.0805 *
PAYPC	-	862	.6013	1312	.3279	2.35	0.9906 ***#	.1263	.1352	0.12	0.7258	0.8632
ACCEXPPC	-	769	.7957	1180	.2718	2.02	0.9781 **#	.1292	.1402	0.55	0.4582	0.1670
NPPEPC	+	652	.7186	1273	.2877	3.53	0.0002 ***	.0824	.1150	5.80	0.0160 **#	0.0215 **

*** sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
[a] one tailed except where hypothesized sign is unknown (?)
[b] two tailed
SSA = sub-sample A, i.e. non-going-concern firm-years for all bankrupt firms (BR_{SEC} + BR_{NONSEC})
SSP = sib-sample P, i.e., non-stressed non-bankrupt firm-years
RECPC = receivables percentage change: (Δ receivables/ receivables prior year)
RECSLSPC = percentage change in receivables - percentage change in sales
INVPC = inventory percentage change: (Δ inventory / inventory prior year)
INVSLSPC = percentage change in inventory - percentage change in sales
PAYPC = payables percentage change: (Δ payables / payables prior year)
ACCEXPPC = accrued expenses percentage change: (Δ accrued expenses / accrued expenses prior year)
NPPEPC = net property plant and equipment percentage change: (Δ net PPE/ net PPE prior year)

TABLE 12 (ALTERNATIVE TO TABLE 8 - PANEL 2)
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR $H1_B$
ALL SEC ALLEGED FRAUD YEARS VERSUS MATCHED NSNB FIRM-YEARS

Earnings Manipulation Proxy	*Sign*	*N*	*Mean 1* [c] *SSF*	*N*	*Mean 2 SST*	*T-stat.*	*P-value*	*Med. 1*	*Med. 2*	*Chi-square*	*P-value* [b]	*P-value* [b] *(Wilcoxon Z-statistic)*
RECPC	+	81	1.7679	73	.1644	81.7	0.0002 ***	.4450	.0804	5.86	0.0155 **	0.0005 ***
RECSLSPC	+	80	.8220	73	-.0416	2.07	0.0209 **	.0129	-.0121	0.42	0.5158	0.2273
INVPC	+	74	1.9172	66	.1772	2.00	0.0245 **	.5096	.1201	11.47	0.0007 ***	0.0000 ***
INVSLSPC	+	73	1.0426	66	-.0181	1.13	0.1304	.2110	.0039	9.41	0.0022 ***	0.0007 ***
PAYPC	-	86	1.5443	71	.4487	1.17	0.8785	.3093	.1352	4.37	0.0366 **#	0.0319 **
ACCEXPPC	-	77	1.6125	64	.2834	1.99	0.9750 **#	.4194	.1806	4.14	0.0418 **#	0.0066 ***
NPPEPC	+	77	2.3446	60	.4241	2.13	0.0183 **	.3011	.1400	3.62	0.0570 *	0.0522 *

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
[a] one tailed except where hypothesized sign is unknown (?)
[b] two tailed
SSF = sub-sample F, i.e., all SEC alleged fraud years
SST = sub-sample T, i.e., matched NSNB firm-years
RECPC = receivables percentage change: (Δ receivables/ receivables prior year)
RECSLSPC = percentage change in receivables - percentage change in sales
INVPC = Inventory percentage change: (Δ inventory / inventory prior year)
INVSLSPC = percentage change in inventory - percentage change in sales
PAYPC = payables percentage change: (Δ payables / payables prior year)
ACCEXPPC = accrued expenses percentage change: (Δ accrued expenses / accrued expenses prior year)
NPPEPC = net property plant and equipment percentage change: (Δ net PPE/ net PPE prior year)

TABLE 13 (ALTERNATIVE TO TABLE 8 - PANEL 3)
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR $H1_c$
NON-GOING-CONCERN NON-STRESSED BANKRUPT FIRM-YEARS OF NSB FIRMS CLASSIFIED USING THE MMH FIRM MODELVERSUS MATCHED NSNB FIRMS-YEARS

Material Earnings Manipulation Proxy	*Sign*	*N*	*Mean 1 SSM1*	*N*	*Mean 2 SS P*	*T-stat.*	*P-value* [a]	*Median 1*	*Median 2*	*Chi-Square*	*P-value* [b]	*P-value* [b] *(Wilcoxon Z-statistic)*
RECPC	+	87	3.1169	128	.2728	1.11	0.1358	.3025	.1439	2.34	0.1258	0.0194 **
RECSLSPC	+	86	2.5865	126	.0097	0.99	0.1626	.0603	-.0164	0.70	0.4013	0.1545
INVPC	+	97	.6753	138	.2053	1.60	0.0566 *	.2200	.1136	10.17	0.0014 ***	0.0028 ***
INVSLSPC	+	96	.1787	136	-.0209	1.00	0.1586	.0494	-.0011	1.78	0.1825	0.1355
PAYPC	-	88	.5952	130	.2983	1.30	0.9017 *#	.15944	.1475	0.02	0.8903	0.8923
ACCEXPPC	-	72	.3018	132	.2743	0.25	0.5970	.1246	.1337	0.00	1.0000	0.3453
NPPEPC	+	63	.6937	112	.3644	1.50	0.0683 *	.2196	.2005	0.02	0.8747	0.6399

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
[a] one tailed except where hypothesized sign is unknown (?)
[b] two tailed
SSM1 = sub-sample M1, i.e., non-going-concern non-stressed bankrupt firm-years of NSB firms classified using the MMH firm model
SSP = sub-sample P, i.e., matched NSNB firm-years
RECPC = receivables percentage change: (Δ receivables/ receivables prior year)
RECSLSPC = percentage change in receivables - percentage change in sales
INVPC = inventory percentage change: (Δ inventory / inventory prior year)
INVSLSPC = percentage change in inventory - percentage change in sales
PAYPC = payables percentage change: (Δ payables / payables prior year)
ACCEXPPC = accrued expenses percentage change: (Δ accrued expenses / accrued expenses prior year)
NPPEPC = net property plant and equipment percentage change: (Δ net PPE/ net PPE prior year)

TABLE 14 (ALTERNATIVE TO TABLE 9 - PANEL 3)
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR H2.2
NON-GOING-CONCERN FIRM-YEARS -3 TO -1 PRIOR TO BANKRUPTCY FOR NSB FIRMS (USING THE MMH FIRM MODEL VERSUS YEAR -4 AND -5 OF THESE FIRMS

Earnings Management./ Manipulation Proxy	*Sign*	*N*	*Mean 1 SS(M-O)*	*N*	*Mean 2 SSO*	*T-stat.*	*P-value.*	*Median 1*	*Median 2*	*Chi-square*	*P-value.*	*P-value [b] (Wilcoxon Z-statistic)*
RECPC	+	52	4.8243	35	.5803	0.99	0.1642	.3177	.3025	0.00	1.0000	0.6309
RECSLSPC	+	52	4.5047	34	-.3471	1.13	0.1326	.0860	-.0193	0.78	0.3777	0.2527
INVPC	+	56	.4004	41	1.0508	-0.95	0.8272	.2330	.2131	0.04	0.8365	0.8868
INVSLSPC	+	56	.1158	40	.2667	-0.34	0.6336	.0543	.0379	0.00	1.0000	0.6530
PAYPC	-	51	.5213	37	.6970	-0.39	0.3493	.1222	.2079	1.17	0.2803	0.5043
ACCEXPPC	-	45	.2370	27	.4098	-0.73	0.2362	.0957	.1337	0.06	0.8077	0.5886
NPPEPC	+	50	.5981	23	.8599	-0.51	0.6934	.2279	.1497	0.07	0.7926	0.8696

***sub-sample means /medians significantly different from each other at .10 level**
****sub-sample means/medians re significantly different from each other at .05 level**
*****sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
[a] one tailed except where hypothesized sign is unknown (?)
[b] two tailed
RECPC = receivables percentage change: (Δ receivables/ receivables prior year)
RECSLSPC = percentage change in receivables - percentage change in sales
INVPC = inventory percentage change: (Δ inventory / inventory prior year)
INVSLSPC = percentage change in inventory - percentage change in sales
PAYPC = payables percentage change: (Δ payables / payables prior year)
ACCEXPPC = accrued expenses percentage change: (Δ accrued expenses / accrued expenses prior year)
NPPEPC = net property plant and equipment percentage change: (Δ net PPE/ net PPE prior year)

TABLE 15 (ALTERNATIVE TO TABLE 10 - PANEL 1)
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR $H3_A$
NON-GOING CONCERN OPINION FIRM-YEARS OF ALL BANKRUPT FIRMS) VERSUS THE GOING-CONCERN FIRM-YEARS OF THESE FIRMS

Earnings Management/ Manipulation Proxy	*Sign*	*N*	*Mean 1 SSA*	*N*	*Mean 2 SSB*	*T-stat.*	*P-value* [a]	*Median 1*	*Median 2*	*Chi-square.*	*P-value* [b]	*P-value* [b] *(Wilcoxon Z-statistic)*
RECPC	+	876	.9002	355	-.0658	3.57	0.0002 **	.1442	-.2123	109.71	0.0000 ***	0.0000 ***
RECSLSPC	+	870	.4613	351	-5.1561	1.09	0.1389	.0226	-.0924	21.31	0.0000 ***	0.0000 ***
INVPC	+	859	.5307	336	-.1503	6.81	0.0000 ***	.1266	-.2161	172.36	0.0000 ***	0.0000 ***
INVSLSPC	+	854	.1492	333	-.0590	2.06	0.0197 **	.0221	-.0774	19.88	0.0000 ***	0.0000 ***
PAYPC	-	862	.6013	354	-.0235	5.11	1.0000 ***#	.1263	-.1484	80.35	0.0000 ***	0.0000 ***
ACCEXPPC	-	769	.7957	310	.3791	1.33	0.9088 ***#	.1292	-.0134	21.60	0.0000 ***	0.0000 ***
NPPEPC	+	652	.7186	269	.0187	3.55	0.0002 ***	.0824	-.1522	143.03	0.0000 ***	0.0000 ***

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
[a] one tailed except where hypothesized sign is unknown (?)
[b] two tailed
SSA = sub-sample A, i.e., non-going concern opinion firm-years of all bankrupt firms
SSB = sub-sample B, i.e., going concern opinion firm-years of these firms
RECPC = receivables percentage change: (Δ receivables/ receivables prior year)
RECSLSPC = percentage change in receivables - percentage change in sales
INVPC = inventory percentage change: (Δ inventory / inventory prior year)
INVSLSPC = percentage change in inventory - percentage change in sales
PAYPC = payables percentage change: (Δ payables / payables prior year)
ACCEXPPC = accrued expenses percentage change: (Δ accrued expenses / accrued expenses prior year
NPPEPC = net property plant and equipment percentage change: (Δ net PPE/ net PPE prior year)

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TABLE 16 (ALTERNATIVE TO TABLE 10 - PANEL 2)
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR $H3_B$
SEC SANCTIONED FIRMS ALLEGED FRAUD YEARS (EXCLUDING FRAUD FIRM YEARS THAT ARE ALSO GOING-CONCERN YEARS) VERSUS GOING CONCERN OPINION FIRM-YEARS OF THESE FIRMS

Earnings Management./ Manipulation Proxy	*Sign*	*N*	*Mean 1 SSF*	*N*	*Mean 2 SSD*	*T-stat.*	*P-value* [a]	*Med. 1*	*Med. 2*	*Chi-square.*	*P-value* [b]	*P-value* [b] *(Wilcoxon Z-statistic)*
RECPC	+	75	1.8165	39	-.1974	4.02	0.0001 ***	.4450	-.4254	32.78	0.0000 ***	0.0000 ***
RECSLSPC	+	74	.8475	38	.0121	1.75	0.0420 **	.0343	-.1835	7.81	0.0052 ***	0.0280 **
INVPC	+	67	2.0735	36	-.2099	2.35	0.0108 **	.4892	-.4200	33.66	0.0000 ***	0.0000 ***
INVSLSPC	+	66	1.1611	35	.0352	1.08	0.1422	.2070	-.1118	6.42	0.0113 **	0.0071 ***
PAYPC	-	78	1.6709	39	-.0190	1.67	0.9502 **#	.3461	-.1826	13.94	0.0002 #	0.0000 ***
ACCEXPPC	-	69	1.0021	38	.2923	2.33	0.9891 **#	.4194	-.0974	8.04	0.0046 #	0.0004 ***
NPPEPC	+	69	2.0446	35	-.2335	2.76	0.0037 ***	.3106	-.2662	22.78	0.0000 ***	0.0000 ***

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
[a] one tailed except where hypothesized sign is unknown (?)
[b] two tailed
SSF = sub-sample F, i.e., SEC fraud years
SSD = sub-sample D, i.e., going concern opinion firm-years of SEC sanctioned firms
RECPC = receivables percentage change: (Δ receivables/ receivables prior year)
RECSLSPC = percentage change in receivables - percentage change in sales
INVPC = inventory percentage change: (Δ inventory / inventory prior year)
INVSLSPC = percentage change in inventory - percentage change in sales
PAYPC = payables percentage change: (Δ payables / payables prior year)
ACCEXPPC = accrued expenses percentage change: (Δ accrued expenses / accrued expenses prior year)
NPPEPC = net property plant and equipment percentage change: (Δ net PPE/ net PPE prior year)

TABLE 17 (ALTERNATIVE TO TABLE 10 - PANEL 3)
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR $H3_c$
NON-GOING-CONCERN FIRM-YEARS FOR NON-STRESSED BANKRUPT (NSB) FIRMS BASED ON THE MMH FIRM MODELVERSUS GOING-CONCERN FIRM-YEARS OF NSB FIRMS

Earnings Management./ Manipulation Proxy	*Sign*	*N*	*Mean 1 SSM1*	*N*	*Mean 2 SSN1*	*T-stat.*	*P-value* [a]	*Med. 1*	*Med. 2*	*Chi-Square*	*P-value* [b]	*P- value* [b] *(Wilcoxon Z-statistic)*
RECPC	+	87	3.1169	40	-.0848	1.25	0.1082	.3025	-.2121	17.73	0.0000 ***	0.0000 ***
RECSLSPC	+	86	2.5865	40	-.0011	0.99	0.1616	.0603	-.0627	3.66	0.0556 *	0.0726 *
INVPC	+	97	.6753	40	-.2099	3.01	0.0017 ***	.2200	-.1849	27.77	0.0000 ***	0.0000 ***
INVSLSPC	+	96	.1787	40	-.1343	1.62	0.0542 *	.0494	-.0951	3.66	0.0556 *	0.0104 ***
PAYPC	-	88	.5952	36	-.1769	3.25	0.9992 ***#	.1594	-.1773	15.66	0.0001 #	0.0000 ***
ACCEXPPC	-	72	.3018	25	.1149	1.19	0.8808	.1246	-.0400	2.65	0.1035	0.1260
NPPEPC	+	63	.6937	26	-.2054	4.21	0.0000 ***	.2196	-.1504	4.21	0.0000 ***	0.0000 ***

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
[a] one tailed except where hypothesized sign is unknown (?)
[b] two tailed
SSM1 = sub-sample M1, i.e., non-going concern firm-years for non-stressed bankrupt (NSB) firms based on the MMH firm model
SSN1 = sub-sample N1 going-concern firm-years of NSB firms based on the MMH firm model
RECPC = receivables percentage change: (Δ receivables/ receivables prior year)
RECSLSPC = percentage change in receivables - percentage change in sales
INVPC = Inventory percentage change: (Δ inventory / inventory prior year)
INVSLSPC = percentage change in inventory - percentage change in sales
PAYPC = payables percentage change: (Δ payables / payables prior year)
ACCEXPPC = accrued expenses percentage change: (Δ accrued expenses / accrued expenses prior year)
NPPEPC = net property plant and equipment percentage change: (Δ net PPE/ net PPE prior year)

TABLE 18
RELATIONSHIP OF ALTERNATE DISTRESS INDICATORS WITH THE FOUR ALTERNATIVE DISTRESS MODELS USING UNIVARIATE LOGISTIC REGRESSION FOR ALL BR_{NONSEC} NON-GOING CONCERN FIRM-YEARS

	INDEPENDENT VARIABLE IN UNIVARIATE LOGISTIC REGRESSION									
DISTRESS Variable $	*DDE (+) a*		*NICHANGE (-)*		*SPRICEPC (-)*		*ZALTLMV (-)*		*P (+)*	
	Coefficient (% of 0s correctly classified)	P-value (% of 1s correctly classified)	Coefficient (% of 0s correctly classified)	P-value (% of 1s correctly classified)	Coefficient (% of 0s correctly classified)	P-value (% of 1s correctly classified)	Coefficient (% of 0s correctly classified)	P-value (% of 1s correctly classified)	Coefficient (% of 0s correctly classified)	P-value (% of 1s correctly classified)
MMH FIRM	.11	.9146	-.37	.7145	.29 x	.7696	-3.14	.0017***	3.10	.0019***
	(0%)	(100%)	(0%)	(100%)	(0%)	(100%)	(53%)	(45%)	(1%)	(99%)
OHLSON FIRM	9.17	.0000***	-.03	.9774	.56 x	.5724	-2.64	.0083***	9.39	.0000***
	(44%)	(92%)	(0%)	(100%)	(0%)	(100%)	(78%) #	(60%) #	(53%)	(94%)
MMH F-Y	3.12	.0018***	-1.07	.2856	.47 x	.6358	-3.37	.0008***	8.26	.0000***
	(1%)	(97%)	(0%)	(99.8%)	(0%)	(100%)	(78%) #	(75%) #	(35%)	(91%)
OHLSON F-Y	11.16	.0000***	-1.32	.1873	-1.26	.2075	-.44	.6620	13.92	.0000***
	(77%) #	(72%) #	(99%) $	(8%)	(96%) $	(13%)	(100%) $	(0%)	(100%) #	(100%) #

$ = The distress variable used in a univariate logistic regression for each of the four alternative distress models

a = predicted sign

DISTRESS = a dichotomous variable used as the dependent variable where distress = 1 if firm considered distressed (SB) and 0 if firm not considered distressed (NSB)

F-Y = firm-year

MHM FIRM MODEL = identifying each firm as SB or NSB if two of the non-GC fy prior to bankruptcy exhibit the SB state or NSB state respectively, based on MHM criteria.

OHLSON FIRM MODEL = identifying each firm as SB or NSB if two of the non-GC fy prior to bankruptcy exhibit the SB state or NSB state respectively, based on the Ohlson model

MHM F-Y MODEL = identifying each fy, as SB, NSB, or indeterminable based on the MHM criteria

OHLSON F-Y MODEL = identifying each fy, as SB, NSB, or indeterminable based on the Ohlson model

DDE = debt equity ratio = debt equity ratio (total liabilities / liabilities + stockholders equity)

NICHANGE = change in net income

SPRICEPC = percentage change in stock price at current year end

ZALTMV = Altman z-score (predicts bankruptcy if z lower than 2.675)

P = Ohlson p score (predicts bankruptcy if p higher than .038)
***** = significance at better than the .01 level**
x = sign in wrong direction,
 # = using alternate distress indicator would result in similar classification of both non-distressed and distressed years
$ = using alternate distress indicators would result in similar classification of non-stressed firms only

TABLE 19 (ALTERNATIVE TO TABLE 8, PANEL 3)
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR H1
NON-GOING-CONCERN NON-STRESSED BANKRUPT (NSB) FIRM-YEARS CLASSIFIED PER THE MMH FIRM-YEAR MODEL VERSUS MATCHED NSNB FIRM-YEARS

Earnings Manipulation Proxy	*Sign*	*N*	*Mean 1 SSM3*	*N*	*Mean 2 SS P*	*T-stat.*	*P-value* [a]	*Med. 1*	*Med. 2*	*Chi-square.*	*P -value* [b]	*P -value* [b] *(Wilcoxon Z-statistic)*
RECMAG	+	266	.0941	998	.0413	3.26	0.0006 ***	.0221	.0170	1.90	0.1676	0.0416 **
RECPC	+	265	1.3769	981	.2821	1.29	0.0987 *	.2249	.1241	8.86	0.0029 ***	0.0010 ***
RECSLSPC	+	262	.9649	974	.1042	1.01	0.1578	.0169	-.0045	1.24	0.2655	0.2971
INVMAG	+	281	.1002	940	.0515	4.03	0.0000 ***	.0553	.0219	28.86	0.0000 ***	0.0000 ***
INVPC	+	276	.4760	940	.2048	2.52	0.0061 ***	.2016	.1173	16.87	0.0000 ***	0.0000 ***
INVSLSPC	+	273	.1165	936	.0389	1.10	0.1371	.0353	.0006	6.48	0.0109 **	0.0377 **
PAYMAG	-	276	.0501	947	.0263	2.73	0.9967 ***#	.0168	.0109	1.69	0.1931	0.0669 *
PAYPC	-	257	.5508	946	.2994	2.25	0.9874 **#	.1990	.1402	1.79	0.1813	0.1112
ACCEXPMAG	-	247	.0148	890	.0132	0.52	0.6967	.0054	.0066	0.63	0.4288	0.1966
ACCEXPPC	-	219	.3472	850	.2758	1.13	0.8704	.1603	.1370	1.29	0.2556	0.8822
NWCACMAG	+	264	.1271	974	.0517	3.53	0.0002 ***	.0544	.0261	18.51	0.0000 ***	0.0000 ***
CURACMAG	+	245	.1296	996	.0578	2.83	0.0025 ***	.0486	.0331	5.26	0.0218 **	0.0022 ***
NPPEMAG	+	186	.0968	927	.0593	1.42	0.0791 *	.0277	.0295	0.23	0.6297	0.8060
NPPEPC	+	186	.5442	927	.2911	1.83	0.0346 *	.1216	.1157	0.10	0.7479	0.4115
SLSPC	+	288	.4071	1049	.1967	3.02	0.0014 ***	.1657	.1265	9.80	0.0017 ***	0.0000 ***
GPRPC	?	281	-.0679	1020	-.2630	1.46	0.1436	.0020	-.0015	0.46	0.4999	0.1119
GPRPCAV	+	281	.1827	1020	.3613	-1.35	0.9106 *#	.0477	.0390	1.68	0.1953	0.0767 *
CFFO	-	252	12567	883	41973	-6.08	0.0000 ***	2582.0	9526.0	23.49	0.0000 ***	0.0000 ***
CASHCH	-	285	1040.6	1021	5814.4	-1.91	0.0281 **	44.0	300.00	3.35	0.0674 *	0.1893
SGAPC	-	281	.3844	974	.2142	2.78	0.9971 ***#	.1823	.1203	10.13	0.0015 ***#	0.0012 ***

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
[a] one tailed except where hypothesized sign is unknown (?)
[b] two tailed
SSM3 = sub-sample M3, i.e., non-going-concern non-stressed bankrupt (NSB) firm-years classified based on the MMH firm-year model
SSP = sub-sample P, i.e., matched NSNB firm-years
RECMAG = receivables change magnitude (Δreceivables / assets prior year)
RECPC = receivables percentage change: (Δ receivables / receivables prior year)
RECSLSPC = percentage change in receivables - percentage change in sales
INVMAG = inventory change magnitude; (Δ inventory/asset s prior year)
INVPC = inventory percentage change: (Δ inventory/inventory prior year)
INVSLSPC = percentage change in inventory - percentage change in sales

PAYMAG = payables change magnitude: (Δ payables / assets prior year)
PAYPC = payables percentage change: (Δ payables/assets prior year)
ACCEXPMAG = accrued expenses change magnitude: (Δ accrued expenses/ assets prior year)
ACCEXPPC = accrued expenses percentage change: (Δ accrued expenses/ accrued expenses priory year)
NWCACMAG = net working capital accruals magnitude = (Δ cash + Δ receivables -Δ payables - Δ accrued expenses) / assets prior year
CURACMAG = current accruals magnitude = (Δ current assets - Δ current liabilities - Δ cash) + Δ current portion of long term debt /assets prior year
NPPEMAG = net property plant and equipment change magnitude: (Δ net PPE / asset prior year)
NPPEPC = net property plant and equipment percentage change: (Δ net PPE/ net PPE prior year)
GPRPC = percentage change in gross profit ratio from prior year: (Δ gross profit ratio / ratio prior year)
GPRPCAV = absolute value of percentage change in gross profit ratio
CFFO = cash flow from operations for current year
CASHCH = Δ net cash
SGAPC = selling general and administrative expenses percentage change: (Δ SGA expenses / SGA prior year)

TABLE 20 - (ALTERNATIVE TO TABLE 8, PANEL 3)
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR H1
NON-GOING-CONCERN NON-STRESSED BANKRUPT (NSB) FIRM-YEARS CLASSIFIED PER THE OHLSON FIRM MODEL VERSUS MATCHED NSNB FIRM-YEARS

Material Earnings Manipulation Proxy	*Sign*	*N*	*Mean 1 SSM2*	*N*	*MEAN 2 SSP*	*T-stat.*	*P-value* [a]	*Med. 1*	*Med. 2*	*Chi-square*	*P-value* [b]	*P-value* [b] *Wilcoxon Z-statistic*
RECMAG	+	118	.0713	159	.0246	1.22	0.1129	.0055	.0071	0.53	0.4654.	0.1572
RECPC	+	117	2.3929	147	.2186	1.13	0.1296	.1141	.1201	0.02	0.9014	0.7382
RECSLSPC	+	117	2.1470	147	.0730	1.08	0.1404	.0173	.0087	0.14	0.7101	0.5767
INVMAG	+	127	.0917	147	.0685	0.71	0.2387	.0132	.0258	1.13	0.2868	0.1225
INVPC	+	125	.3913	164	.1770	1.68	0.0481**	.1133	.1278	0.35	0.5522	0.5175
INVSLSPC	+	125	.1546	164	.0259	1.75	0.0410**	.0294	.0168	1.14	0.2846	0.4519
PAYMAG	-	118	.0459	164	.0295	0.75	0.7724	.0028	.0101	2.09	0.1485	0.1380
PAYPC	-	110	.4574	167	.2894	0.97	0.8341	.0669	.1399	1.83	0.1756	0.1971
ACCEXPMAG	-	110	.0154	167	.0148	0.10	0.5407	.0037	.0088	6.79	0.0092***	0.0093 ***
ACCEXPPC	-	98	.2271	161	.2735	-0.57	0.2858	.0895	.1607	2.37	0.1237	0.0337 *
NWCACMAG	+	124	.0986	161	.0441	1.12	0.1334	.0179	.0232	0.68	0.4101	0.1411
CURACMAG	+	123	.1296	175	.0492	1.34	0.0917*	.0079	.0228	0.89	0.3460	0.1862
NPPEMAG	+	109	.0428	173	.0580	-0.62	0.7327	.0163	.0353	4.32	0.0375 **#	0.0232 **
NPPEPC	+	109	.2533	173	.1747	0.96	0.1700	.0456	.0989	5.40	0.0202 **#	0.0364 **
SLSPC	+	128	.2416	183	.1651	1.09	0.1397	.0796	.1231	1.92	0.1663	0.0570 *
GPRPC	?	127	-.0114	176	.0338	-0.99	0.3232	-.0166	.0010	1.36	0.2432	0.1278
GPRPCAV	+	127	.1516	177	.1066	1.07	0.1434	.0550	.0356	3.04	0.0811*	0.0149 **
CFFO	-	109	17721.0	159	42725.0	-3.18	0.0008***	4320.0	12263.0	10.85	0.0010***	0.0000 ***
CASHCH	-	124	-901.82	176	12136.0	-1.57	0.0585*	-136.50	599.0	5.47	0.0193**	0.0163 **
SGAPC	-	125	.1903	183	.1735	0.39	0.6508	.0639	.1129	3.03	0.0818*	0.0697 *

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
[a] one tailed except where hypothesized sign is unknown (?)
[b] two tailed
SSM2= sub-sample M2, i.e., non-going-concern non-stressed bankrupt (NSB) firm-years classified using the Ohlson firm model
SSP = sub-sample P, i.e., matched NSNB firm-years
RECMAG = receivables change magnitude (Δreceivables / assets prior year)
RECPC = receivables percentage change: (Δ receivables / receivables prior year)
RECSLSPC = percentage change in receivables - percentage change in sales
INVMAG = inventory change magnitude; (Δ inventory/asset s prior year)

INVPC = inventory percentage change: (Δ inventory/inventory prior year)
INVSLSPC = percentage change in inventory - percentage change in sales
PAYMAG = payables change magnitude: (Δ payables / assets prior year)
PAYPC = payables percentage change: (Δ payables/assets prior year)
ACCEXPMAG = accrued expenses change magnitude: (Δ accrued expenses/ assets prior year)
ACCEXPPC = accrued expenses percentage change: (Δ accrued expenses/ accrued expenses priory year)
NWCACMAG = net working capital accruals magnitude = (Δ cash + Δ receivables -Δ payables - Δ accrued expenses) / assets prior year
CURACMAG = current accruals magnitude = (Δ current assets - Δ current liabilities - Δ cash) + Δ current portion of long term debt /assets prior year
NPPEMAG = net property plant and equipment change magnitude: (Δ net PPE / asset prior year)
NPPEPC = net property plant and equipment percentage change: (Δ net PPE/ net PPE prior year)
GPRPC = percentage change in gross profit ratio from prior year: (Δ gross profit ratio / ratio prior year)
GPRPCAV = absolute value of percentage change in gross profit ratio
CFFO = cash flow from operations for current year
CASHCH = Δ net cash
SGAPC = selling general and administrative expenses percentage change: (Δ SGA expenses / SGA prior year)

TABLE 21 (ALTERNATIVE TO TABLE 8, PANEL 3)
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR H1
NON-GOING-CONCERN NON-STRESSED BANKRUPT (NSB) FIRM-YEARS CLASSIFIED PER THE OHLSON FIRM-YEAR MODEL VERSUS MATCHED NSNB FIRM-YEARS

Material Earnings Manipulation Proxy	*Sign*	*N*	*Mean 1 SS M4*	*N*	*Mean 2 SS P*	*T-stat.*	*P-value* [a]	*Med. 1*	*Med. 2*	*Chi-square.*	*P-value* [b]	*P-value* [b] *(Wilcoxon Z-statistic)*
RECMAG	+	344	.0817	940	.0429	1.99	0.0239**	.0118	.0162	2.69	0.1012.	0.2596
RECPC	+	342	1.2163	920	.2623	1.45	0.0745*	.1556	.1335	1.60	0.2053	0.4955
RECSLSPC	+	342	.9023	917	.0720	1.26	0.1039	.0395	.0015	4.64	0.0312**	0.0581 *
INVMAG	+	355	.0810	883	.0497	2.39	0.0087***	.0250	.0195	1.43	0.2325	0.7044
INVPC	+	351	.3590	879	.1862	2.68	0.0039***	.1266	.1116	1.44	0.2303	0.6272
INVSLSPC	+	351	.0934	877	.0127	1.44	0.0758*	.0259	.0027	4.89	0.0271**	0.0779 *
PAYMAG	-	351	.0438	918	.0251	1.93	0.9727**#	.0078	.0097	.0312	0.3791	0.5978
PAYPC	-	335	.4519	914	.2883	1.80	0.9637**#	.0876	.1326	2.76	0.0964*	0.3046
ACCEXPMAG	-	334	0101	8/41	.0132	-0.45	0.3278	.0032	.0065	7.19	0.0073***	0.0019 ***
ACCEXPPC	-	307	.3471	814	.2689	1.05	0.8517	.0724	.1384	3.77	0.0521*	0.0054 ***
NWCACMAG	+	356	.1046	956	.0516	2.41	0.0082***	.0258	.0246	0.02	0.9012	0.9635
CURACMAG	+	333	.1564	946	.0494	2.33	0.0103**	.0220	.0279	1.47	0.2260	0.7989
NPPEMAG	+	257	.0748	906	.0593	0.80	0.2129	.0205	.0297	4.33	0.0374** #	0.0188 **
NPPEPC	+	257	.5393	906	.2927	1.52	0.0644 *	.0856	.1154	10.79	0.0772 *#	0.0263 **
SLSPC	+	362	.4084	968	.1877	2.36	0.0095***	.1003	.1226	2.19	0.1393	0.0434 **
GPRPC	?	362	-.0554	953	-.2338	1.57	0.1164	-.0004	.0000	0.72	0.3967	0.5783
GPRPCAV	+	362	.2211	953	.3334	-1.00	0.8402	.0551	.0356	14.21	0.0002***	0.0000 ***
CFFO	-	287	12999.0	875	55269.0	-6.12	0.0000***	2831.0	11288.0	40.02	0.0000***	0.0000 ***
CASHCH	-	334	-457.11	961	6354.4	-2.71	0.0034***	7.0000	451.0	12.66	0.0004***	0.0021 ***
SGAPC	-	357	.2736	928	.2262	0.96	0.8323	.0934	.1155	2.05	0.1520	0.0453 **

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
[a] one tailed except where hypothesized sign is unknown (?)
[b] two tailed
SSM4 = sub-sample M4, i.e., NSB firms classified based on the Ohlson firm model
SSP = sub-sample P, matched NSNB firm-years
RECMAG = receivables change magnitude (Δreceivables / assets prior year)
RECPC = receivables percentage change: (Δ receivables / receivables prior year)
RECSLSPC = percentage change in receivables - percentage change in sales
INVMAG = inventory change magnitude; (Δ inventory/asset s prior year)
INVPC = inventory percentage change: (Δ inventory/inventory prior year)

INVSLSPC = percentage change in inventory - percentage change in sales
PAYMAG = payables change magnitude: (Δ payables / assets prior year)
PAYPC = payables percentage change: (Δ payables/assets prior year)
ACCEXPMAG = accrued expenses change magnitude: (Δ accrued expenses/ assets prior year)
ACCEXPPC = accrued expenses percentage change: (Δ accrued expenses/ accrued expenses priory year)
NWCACMAG = net working capital accruals magnitude = (Δ cash + Δ receivables -Δ payables - Δ accrued expenses) / assets prior year
CURACMAG = current accruals magnitude = (Δ current assets - Δ current liabilities - Δ cash) + Δ current portion of long term debt /assets prior year
NPPEMAG = net property plant and equipment change magnitude: (Δ net PPE / asset prior year)
NPPEPC = net property plant and equipment percentage change: (Δ net PPE/ net PPE prior year)
GPRPC = percentage change in gross profit ratio from prior year: (Δ gross profit ratio / ratio prior year)
GPRPCAV = absolute value of percentage change in gross profit ratio
CFFO = cash flow from operations for current year
CASHCH = Δ net cash
SGAPC = selling general and administrative expenses percentage change: (Δ SGA expenses / SGA prior year)

TABLE 22 (ALTERNATIVE TO TABLE 9 - PANEL 2)
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR H2.1
ALL NON-GOING-CONCERN FIRM-YEARS -4 AND -5 PRIOR TO BANKRUPTCY FOR NON-STRESSED BANKRUPT FIRMS (NSB) USING THE MMH FIRM-YEAR MODEL VERSUS MATCHED NSNB FIRMS

Earnings Management Proxy	*Sign*	*N*	*Mean 1 SSM1*	*N*	*Mean 2 SS P*	*T-stat.*	*P-value*	*Median 1*	*Median 2*	*Chi-square*	*P-value*	*P-value [b] (Wilcoxon Z-statistic)*
ACCTGCHM	+	19	.0000	9	.0000	—	—	.0000	.0000	—	—	—
EIANDDOM	+	100	.0044	252	-.0005	1.97	0.0253**	.0000	.0000	0.83	.3623	.3498
TTOTACM	+	117	.0516	224	.0042	2.50	0.0065***	.0060	-.0080	2.44	.1179	.0420 **
TCURACM	+	132	.0913	269	.0558	2.12	0.0177**	.0427	.0426	0.02	.8874	.3172
TOTACM	+	117	.0511	224	.0054	2.46	0.0073***	.0060	-.0073	2.20	.1378	.0282 **
DAP	+	94	.0370	199	.0197	1.09	0.1380	.0264	.0054	1.57	.2104	.2006

*sub-sample means /medians significantly different from each other at .10 level
** sub-sample means/medians re significantly different from each other at .05 level
*** sub-sample means/medians are significantly different from each other at .01 level
# sign in opposite of hypothesized direction.
[a] one tailed except where hypothesized sign is unknown (?)
[b] two tailed
SSM1 = sub-sample M1, i.e., Non-going-concern Non-Stressed Bankrupt (NSB) Firm-years classified based on the MMH Firm-year Model
SSP = matched NSNB Firms
ACCHGM = the Compustat variable for cumulative effect of a change in accounting principle.
EIANDDOM = extraordinary items and discontinued operations (the disclosure variable which includes any effect of accounting changes as well)
TTOTACM = total accruals based on Thomas and Zhang = (Δ change in current assets - Δ current liabilities - Δ cash - depreciation and amortization) / assets prior year
TCURM = the current portion only = (Δ current assets - Δ current liabilities - Δ cash) / assets prior year
TOTACMAG = total accruals / assets prior year according to the Jones model and other literature: where (total accruals = (Δ change in current assets - Δ current liabilities - Δ cash + Δ current portion of long term debt - depreciation and amortization)
DAP = discretionary accruals proxy = total accruals - non-discretionary accruals where non-discretionary accruals is the fitted dependent variable in a regression using the modified Jones Model
c = includes only non- going concern opinion firm-years

TABLE 23 (ALTERNATIVE TO TABLE 9, PANEL 3)
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR H2.2
NON-GOING-CONCERN FIRM-YEARS -3 TO -1 PRIOR TO BANKRUPTCY FOR NON-DISTRESSED BANKRUPT FIRMS (NSB) (USING THE MMH FIRM-YEAR MODELVERSUS YEAR -4 AND -5 OF THESE FIRMS

Earnings Management/ Manipulation Proxy	*Sign*	*N*	*Mean SS(M-O)*	*N*	*Mean 2 SSO*	*T-stat.*	*P- value*	*Median 1*	*Median 2*	*Chi-Square*	*P-value*	*P-value [b] (Wilcoxon Z-statistic)*
RECMAG	+	122	.1081	144	.0822	0.81	0.2101	.0257	.0202	0.24	0.6226	0.4796
RECPC	+	122	2.4750	143	.4401	1.11	0.1351	.2618	.1748	1.85	0.1742	0.2668
RECSLSPC	+	122	2.0410	140	.0273	1.10	0.1374	.0529	-.0019	2.21	0.1372	0.4531
INVMAG	+	128	.1198	153	.0838	1.50	0.0678 *	.0717	.0439	3.24	0.0718*	0.0299 **
INVPC	+	125	.5026	151	.4539	0.25	0.4031	.2757	.1639	7.74	0.0054***	0.0019 ***
INVSLSPC	+	125	.1694	148	.0718	0.75	0.2284	.0805	.0235	1.79	0.1808	0.0300 **
PAYMAG	-	126	.0581	150	.0433	0.87	0.8082	.0189	.0142	0.94	0.3322	0.2807
PAYPC	-	122	.6260	135	.4829	0.66	0.7442	.2001	.1873	0.02	0.9004	0.5983
ACCEXPMAG	-	116	.0137	131	.0158	-0.39	0.3475	.0078	.0073	0.15	0.7015	0.1814
ACCEXPPC	-	102	.2412	117	.4397	-1.74	0.0419 **	.1461	.1730	0.66	0.4154	0.1496
NWCACMAG	+	123	.1508	141	.1065	1.01	0.1568	.0657	.0440	2.57	0.1087	0.1978
CURACMAG	+	113	.1744	131	.0906	1.59	0.0577 *	.0623	.0435	1.34	0.2462	0.3137
NPPEMAG	+	91	.1376	95	.0576	1.55	0.0616 *	.0324	.0251	1.05	0.3045	0.3213
NPPEPC	+	91	.7388	95	.3577	1.39	0.0836 *	.1752	.1118	1.74	0.1868	0.1748
SLSPC	+	130	.4086	168	.4060	.02	0.4923	.1587	.1689	3.24	0.0718*#	0.0299 **
GPRPC	?	129	.0185	152	-.1413	1.02	0.3095	-.0029	.0048	0.70	0.4013	0.4901
GPRPCAV	?	129	.1069	152	.2471	-0.90	0.3692	.0429	.0518	0.23	0.6313	0.5686
CFFO	-	113	11748	97	13521	-0.28	0.3901	485.00	3611.0	2.79	0.0951*	0.0307 **
CASHCH	-	119	978.45	136	1094.9	-0.07	0.4711	.0000	163.01	1.59	0.2068	0.3333
SGAPC	-	130	.4512	151	.3270	1.05	0.8515	.1951	.1621	1.74	0.1872	0.0972 *
ACCTGCHM	-	30	.0010	19	.0000	——	——	.0000	.0000	1.16	0.2817	0.4416
EIANDDOM	-	90	.0040	100	.0040	-0.16	0.4385	.0000	.0000	——	——	0.5954
TTOTACM	+	108	.1242	117	.0516	1.33	0.0924 *	.0144	.0060	0.44	0.5057	0.4355
TCURACM	+	114	.1648	132	.0913	1.41	0.0802 *	.0524	.0427	1.63	0.2010	0.5135
TOTACM	+	108	.1325	117	.0511	1.51	0.0672 *	.0219	.0069	0.44	0.5057	0.4355
DAP	+	91	.1259	94	.0370	1.52	0.0658 *	.0170	.0264	0.09	0.7705	0.9508

***sub-sample means /medians significantly different from each other at .10 level**
****sub-sample means/medians re significantly different from each other at .05 level**
*****sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.

[a] one tailed except where hypothesized sign is unknown (?)
[b] two tailed
RECMAG = receivables change magnitude (Δreceivables / assets prior year)
RECPC = receivables percentage change: (Δ receivables / receivables prior year)
RECSLSPC = percentage change in receivables - percentage change in sales
INVMAG = inventory change magnitude; (Δ inventory/asset s prior year)
INVPC = inventory percentage change: (Δ inventory/inventory prior year)
INVSLSPC = percentage change in inventory - percentage change in sales
PAYMAG = payables change magnitude: (Δ payables / assets prior year)
PAYPC = payables percentage change: (Δ payables/assets prior year)
ACCEXPMAG = accrued expenses change magnitude: (Δ accrued expenses/ assets prior year)
ACCEXPPC = accrued expenses percentage change: (Δ accrued expenses/ accrued expenses priory year)
NWCACMAG = net working capital accruals magnitude = (Δ cash + Δ receivables -Δ payables - Δ accrued expenses) / assets prior year
CURACMAG = current accruals magnitude = (Δ current assets - Δ current liabilities - Δ cash) + Δ current portion of long term debt /assets prior year
NPPEMAG = net property plant and equipment change magnitude: (Δ net PPE / asset prior year)
NPPEPC = net property plant and equipment percentage change: (Δ net PPE/ net PPE prior year)
GPRPC = percentage change in gross profit ratio from prior year: (Δ gross profit ratio / ratio prior year)
GPRPCAV = absolute value of percentage change in gross profit ratio
CFFO = cash flow from operations for current year
CASHCH = Δ net cash
SGAPC = selling general and administrative expenses percentage change: (Δ SGA expenses / SGA prior year)
ACCHGM = the Compustat variable for cumulative effect of a change in accounting principle.
EIANDDOM = extraordinary items and discontinued operations (the disclosure variable which includes any effect of accounting changes as well)
TTOTACM = total accruals based on Thomas and Zhang = (Δ change in current assets - Δ current liabilities - Δ cash - depreciation and amortization) / assets prior year
TCURM = the current portion only = (Δ current assets - Δ current liabilities - Δ cash) / assets prior year
TOTACMAG = total accruals / assets prior year according to the Jones model and other literature: where (total accruals = (Δ change in current assets - Δ current liabilities - Δ cash + Δ current portion of long term debt - depreciation and amortization)
DAP = discretionary accruals proxy = total accruals - non-discretionary accruals where non-discretionary accruals is the fitted dependent variable in a regression using the modified Jones Model
c = includes only non- going concern opinion firm-years

TABLE 24 (ADDITIONAL TABLE)
RESULTS OF T- TEST, MEDIAN TEST, & WILCOXON TEST FOR H1
NON-GOING-CONCERN -OPINION FIRM-YEARS FOR ALL BANKRUPT NON-SEC FIRMS (BR_{SNONEC}) VERSUS MATCHED NSNB FIRMS

Earnings Manipulation Proxy	*Sign*	*N*	*Mean 1 SSG*	*N*	*Mean 2 SS P*	*T-stat.*	*P Value.* [a]	*Med. 1*	*Med. 2*	*Chi-square.*	*P-value.* [b]	*P -value* [b] *(Wilcoxon z-statistic)*
RECMAG	+	740	.0555	1167	.0402	1.44	0.0751 *	.0007	.0155	12.76	0.0004 #	0.0001 ***
RECPC	+	731	.7864	1150	.2780	1.62	0.0530 *	.1150	.1291	0.50	0.4779	0.0704 *
RECSLSPC	+	726	.4498	1140	.0844	1.15	0.1253	.0221	.0012	2.31	0.1287	0.2044
INVMAG	+	737	.0576	1104	.0484	1.14	0.1282	.0139	.0194	2.12	0.1454	0.0127 **
INVPC	+	723	.3597	1102	.1977	2.61	0.0046 ***	.0856	.1116	1.48	0.2240	0.0142 **
INVSLSPC	+	719	.0806	1095	.0153	1.22	0.1109	.0115	-.0026	0.67	0.4145	0.4459
PAYMAG	-	744	.0391	1110	.0264	2.12	0.9827 **#	.0077	.0106	2.30	0.1295	0.1397
PAYPC	-	712	.4755	1108	.2914	2.49	0.9936 ***#	.0941	.1364	3.69	0.0547 *	0.1165
ACCEXPMAG	-	678	.0136	1047	.0137	-0.03	0.5000	.0037	.0057	8.18	0.0042 ***	0.0001 ***
ACCEXPPC	-	627	.7748	1006	.2661	1.61	0.9456 **#	.1009	.1364	2.82	0.0931 *	0.0044 ***
NWCACMAG	+	734	.0585	1144	.0472	0.90	0.1846	.0073	.0237	10.34	0.0013 ***#	0.0000 ***
CURACMAG	+	694	.1035	1165	.0464	1.92	0.0277 **	.0071	.0264	13.67	0.0002 ***#	0.0002 ***
NPPEMAG	+	520	.0729	1095	.0583	.88	0.1896	.0146	.0287	20.98	0.0000 ***#	0.0000 ***
NPPEPC	+	520	.5072	1095	.2770	7.73	0.0000 ***	.0561	.1136	12.75	0.0004 ***#	0.0000 ***
SLSPC	+	786	.8890	1230	.2094	1.37	0.0849 *	.0784	.1251	13.70	0.0002 ***#	0.0000 ***
GPRPC	?	770	.1247	1201	-.2457	1.72	0.9572	-.0178	-.0008	15.04	0.0001***	0.0001 ***
GPRPCAV	+	770	.4975	1201	.3419	0.73	0.2341	.0826	.0385	65.32	0.0000 ***	0.0000 ***
CFFO	-	611	7232.6	1040	52658	-7.67	0.0000 ***	751.0	10571	156.01	0.0000 ***	0.0000 ***
CASHCH	-	717	-771.53	1199	5457.3	-2.88	0.0020 ***	-30.0	336.0	25.12	0.0000 ***	0.0000 ***
SGAPC	-	770	.3531	1146	.2249	2.52	0.9940 ***#	.1067	.1181	1.25	0.2634	0.0309 **

***sub-sample means /medians significantly different from each other at .10 level**
**** sub-sample means/medians re significantly different from each other at .05 level**
***** sub-sample means/medians are significantly different from each other at .01 level**
 # sign in opposite of hypothesized direction.
a = one tailed except where hypothesized sign is unknown (?)
b = two tailed
SSG = sub-sample G, i.e., non-going-concern opinion firm-years for all bankrupt Non-SEC firms (BR_{SNONEC})
SSP = sub-sample P, i.e., matched NSNB firm-years
RECMAG = receivables change magnitude (Δreceivables / assets prior year)
RECPC = receivables percentage change: (Δ receivables / receivables prior year)
RECSLSPC = percentage change in receivables - percentage change in sales
INVMAG = inventory change magnitude; (Δ inventory/asset s prior year)
INVPC = inventory percentage change: (Δ inventory/inventory prior year)
INVSLSPC = percentage change in inventory - percentage change in sales
PAYMAG = payables change magnitude: (Δ payables / assets prior year)

PAYPC = payables percentage change: (Δ payables/assets prior year)
ACCEXPMAG = accrued expenses change magnitude: (Δ accrued expenses/ assets prior year)
ACCEXPPC = accrued expenses percentage change: (Δ accrued expenses/ accrued expenses priory year)
NWCACMAG = net working capital accruals magnitude = (Δ cash + Δ receivables -Δ payables - Δ accrued expenses) / assets prior year
CURACMAG = current accruals magnitude = (Δ current assets - Δ current liabilities - Δ cash) + Δ current portion of long term debt /assets prior year
NPPEMAG = net property plant and equipment change magnitude: (Δ net PPE / asset prior year)
NPPEPC = net property plant and equipment percentage change: (Δ net PPE/ net PPE prior year)
GPRPC = percentage change in gross profit ratio from prior year: (Δ gross profit ratio / ratio prior year)
GPRPCAV = absolute value of percentage change in gross profit ratio
CFFO = cash flow from operations for current year
CASHCH = Δ net cash
SGAPC = selling general and administrative expenses percentage change: (Δ SGA expenses / SGA prior year)

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APPENDIX A

A. Literature Review

There are several literature streams that are relevant to this study and often overlap. They include studies relating to earnings management (within-GAAP earnings manipulation), fraudulent financial reporting (non-GAAP material earnings manipulation), financial distress, bankruptcy prediction, going concern opinions and audit qualifications, financial statement errors, litigation against auditors, and SEC Accounting and Auditing Enforcement Releases (AAERs). Some of these studies are described throughout the paper, as applicable. Others are detailed below.

A–1 Within-GAAP Versus Non-GAAP Earnings Manipulation

The distinction between non-GAAP and within-GAAP earnings manipulation has not been completely addressed in the earnings manipulation literature. Within-GAAP manipulation, i.e., earnings management seems to imply that although managers have followed the letter of the law where GAAP allows a range of options, their actions are not necessarily motivated by the best interests of financial statement users such as investors and creditors. Non-GAAP manipulation, i.e., fraud also involves actions, taken by managers, which are not in the best interests of users such as investors and creditors. However, within-GAAP and non-GAAP earnings manipulation differ in that if the actions taken to achieve these motives result in **material** misstatement of the financial statements, this is clearly out of the range of acceptable actions within GAA.P. If management deliberately intended to mislead financial statement users, this

constitutes fraud. SAS 82 points out that it is often difficult to determine intent: "particularly in matters involving accounting estimates and the application of accounting principles. For example unreasonable accounting estimates may be unintentional or may be the result of an intentional attempt to misstate the financial statements."

Although earnings management may be considered unethical (Bernstein 1967; Briloff 1972,1976,1979), financial statement users such as auditors, investors, creditors, regulators, and financial analysts are more concerned with non-GAAP earnings manipulation that results in materially misstated financial statements.[1] Auditors are affected by the threat of sanction and loss of reputation if they render an unqualified opinion on materially misstated financial statements (Kellogg 1984; St. Pierre and Anderson 1984; Palmrose 1987; Stice 1991; Carcello and Palmrose 1994). Investors' and creditors' concerns are primarily about the potential financial loss that can ensue if they carry out transactions based on materially misstated financial statements.

Materially misstated financial statements can result from either errors or irregularities. While errors are defined as "unintentional misstatements" (Statement on Auditing Standards (SAS) 53,1988, SAS 82, 1997), irregularities are defined as "intentional misstatements", i.e. distortions including misrepresentations by management and fraud. This study focuses on

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1 FASB Statement of Accounting Concepts No. 2 defines materiality as "the magnitude of an omission or misstatement of accounting information that in the light of surrounding circumstances makes it probable that the judgement of a reasonable person relying on the information would have changed or been influenced by the omission or misstatement."

irregularities rather than errors.

Jiambalvo (1996), in his discussion of the Dechow, Sloan, and Sweeney (1995) paper, points out that prior research has mostly studied within GAAP earnings manipulation and he knows of only three non-GAAP studies. He refers to Dechow, Sloan, and Sweeney (1996) which studies SEC sanctioned companies, DeFond and Jiambalvo (1991) which studies accounting errors, and DeFond & Jiambalvo (1993) which studies auditor-client disagreements over income increasing accounting methods. They find that disagreement firms are more likely to have violated debt covenants, have higher leverage and experience a decline in earnings.

Dechow, Sloan, and Sweeney (1995, 1996) examine, as one of several samples, the Accounting and Auditing Enforcement Releases (AAERs) issued by the Securities and Exchange Commission (SEC) as a result of findings of materially misstated or misleading financial statements. In their 1995 study, they do not distinguish between GAAP and non-GAAP earnings manipulation. However, the sample companies are all SEC sanctioned firms. In their 1996 study, they further analyze the sample of firms investigated by the SEC for GAAP violations, specifically related to the overstatement of earnings. The motivation for this kind of manipulation is hypothesized to be the desire to attract external financing at low cost. They also find that non-GAAP earnings manipulators are less likely to have an audit committee and more likely to have a Chief Executive Officer who is also chairman of the board.

Beneish (1995), also examines the SEC sanctioned companies and labels them as "GAAP violators" that have been detected, and contrasts them with undetected earnings managers which are described as firms with either large positive discretionary accruals ("aggressive accruers") or firms with income enhancing accounting changes ("aggressive accountants").

A-2 Financially Distressed Firms

There are various definitions of troubled firms used within the earnings management context (fraud is not addressed in these studies). The results on whether earnings management takes place in troubled firms are mixed. Elliot and Shaw (1988) hypothesize that managers of firms with declining earnings, defined as firms which substantially under-perform their industry, tend to take large write-offs for the purpose of cleansing their financial statements. This motivation is consistent with the "Big Bath Theory" (Bernstein 1967; Lilien; Mellman and Pastena 1988; Copeland and Moore 1972) study accounting changes for successful versus unsuccessful firms. They define successful firms based on their total market returns to investors over a ten-year period (1974 - 1983). They find that unsuccessful firms are more likely to make income increasing accounting changes. Healy and Palepu (1990) study firms' responses to an increase in the tightness of dividend constraints, and conclude that firms cut dividends, but do not make accounting changes to circumvent the dividend restrictions. DeFond and Jiambalvo (1994) find that firms that reported debt covenant violations in annual reports display significantly positive total and

positive abnormal working capital accruals in the year prior to violation and in the year of violation after controlling for management changes and going concern qualifications.

DeAngelo, DeAngelo, and Skinner (1994) define troubled firms as those that reported at least three annual losses in a given six-year period and also reduced cash dividends. They hypothesize that managers of these firms as well as those close to debt covenant violations have incentives to increase reported earnings so as to keep their jobs and reduce Board of Directors' and regulators' interventions. However, they found no evidence of income increasing accruals, and conclude that managers wish to credibly signal that they recognize and intend to deal with their financial problems. They also point out that because lower accruals map on to low earnings, the sample may include firms with low accruals. Hence there is a possible self-selection bias.[2]

In an unrelated footnote, they mention that only three companies in their sample eventually declared bankruptcy. Therefore, their results cannot be applied to my sample of companies that eventually all declared bankruptcy.

Sweeney (1994) examines firms approaching default of their debt covenants. She calls these firms financially distressed firms and finds that they have a greater number of income-increasing accounting changes in years surrounding technical default than control firms. However, cross-sectional analysis of the

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2 This may be true for firms that have low earnings because those are the ones less likely to have managed earnings. Ultimately bankrupt firms that engage in fraud may not appear troubled and so would not be in the DeAngelo, DeAngelo, and Skinner (1994) sample. See footnote 10 in section 3.2 for more details regarding this selection bias.

individual accounting changes does not provide conclusive evidence that this is done to offset the tightening debt constraints.

Dechow, Sloan, and Sweeney (1995) examine, among other samples, a sample of firms with extreme financial performance which is defined as extreme earnings performance or extreme cash flows from operations performance (i.e. the firms in the lowest and highest deciles of performance). They find that, for such firms, the discretionary accruals earnings management model may not be accurate.

Kerstein, Lee, Lilien, and Ghicas (1996) examine a sample of firms whose bond rating was downgraded because of declining earnings prospects. They find no evidence of income increasing accruals or accounting changes, but rather that firms respond to the downgrade by managing their working capital more efficiently.

Given the mixed results displayed in the literature regarding the presence of earnings management in troubled firms, there appears to be room for further clarification. In this study, I use failing firms, i.e., firms that ultimately declared bankruptcy as an ex-post measure of distress. It captures firms which do not appear troubled at all because they have successfully managed earnings, as well as those firms which may have temporarily avoided debt covenant violations, but ultimately are forced to declare bankruptcy. Beneish and Press (1995) study the interrelation among events of default, specifically technical default (i.e. the violation of accounting based constraints in debt covenants), debt service default and bankruptcy. While they find that these events are interrelated and range in

severity from mildest to most serious, they point out that debt service default and bankruptcy may occur without firms first reporting technical default. They also conclude that covenants do not always provide warning of future difficulties. As part of a sample of 159 default incidents, they examined thirty chapter 11 firms. They found that 21 (70%) had no prior default announcement, 4 (13%) were preceded by technical default, and 5 (17%) were preceded by debt service default. This conclusion suggests that it is useful to examine a sample of bankrupt companies, since it will include different firms than those in the debt covenant violations samples found in the literature. DeFond and Jiambalvo (1994) and Sweeney (1994) point out that their sample has a selection bias, i.e., their sample only contains firms which were not successful in avoiding debt covenant violations. However, although it may be possible to avoid covenant violations through earnings management, it is less likely that a firm can avoid bankruptcy via earnings management. Therefore a sample of bankrupt firms should contain firms that managed earnings or engaged in fraud successfully for a while but ultimately went bankrupt.

Furthermore, in order for fraud to exist and be detectable, three criteria must be met. (1) Management has to have a motive for engaging in fraud (2) Management has to have the ability to carry out the fraud without immediate detection by outside parties (SAS 82). (3) "Red flags" have to be present in the financial statements in order to detect fraud from publicly available information.

A–3 Motivations for Earnings Management

The past earnings management literature offers various motivations for earnings management. Although these were hypothesized relative to within-GAAP earnings manipulators, it might be useful to examine them as potential motives for non-GAAP earnings manipulators. Motivations include: the management opportunism hypothesis (Healy 1985; Dechow and Sloan 1991; Pourciau 1993; Gaver, Gaver, and Austin 1995), the income smoothing hypothesis (Gordon 1964; Bernstein 1967, p.47; Ronen and Sadan 1980; Lambert 1984; Dye 1988; Trueman and Titman 1988), the debt covenant hypothesis (Press and Weintrop 1990; DeFond and Jiambalvo 1994; Sweeney 1994); the political cost/size hypothesis (Zmijewski and Hagerman 1981; Wong 1988; Cahan 1992), other special reasons such as union negotiations (Liberty and Zimmerman 1985), proxy contests (DeAngelo 1988); trade import protection (Jones 1988), takeover targets (Christie and Zimmerman 1994), management buyouts (Perry and Williams 1994), anticipation of the issuance of common shares (Shivakumar 1996), and troubled firms (Argenti 1976; SAS 53,1988; SAS 82, 1997).

A–4 Management's Ability to Carry Out Earnings Management

In order for management to be able to carry out earnings management without immediate detection, some of the following characteristics may need to exist. A poor system of internal control increases audit risk and thus makes it

difficult for an auditor to find the misstatement during the audit (Stice 1991).[3] Also, the lack of external monitoring gives management a freer hand in managing earnings. Dechow, Sloan, and Sweeney (1996) find that companies without an audit committee and with a Chief Executive Officer who was also Chairman of the Board are more likely to engage in non-GAAP earnings management. This implies that less independent external monitoring facilitates earnings management. Also Kerstein, Lee, Lilien, and Ghicas (1996) show that companies that have had their bond rating downgraded do not manage earnings upward. Creditors also provide monitoring. Auditor quality can also be considered part of the external monitoring environment, i.e., if the company has lower quality auditors they may be more likely to issue materially misstated financial statements (Simunic and Stein 1987; Stice 1991, etc.)

A–5 Methods of Implementing Earnings Management

There are several methods of implementing earnings management that are examined in the literature. These include accounting method choice which is fairly transparent since changes in accounting method are disclosed in the financial statements, accelerated adoption of mandated new pronouncements (e.g. Balsam, Haw, and Lilien 1995), and operating, investing, and financing decisions. The latter require carrying out actual transactions for the purpose of managing earnings (Elliott and Shaw 1988; Bartov 1993). This may be more difficult to detect, since the transactions which were motivated by earnings

3 This is known as control risk which increases audit risk. Audit risk is composed of inherent

management, for example the sales of assets, do not look different from transactions motivated by other factors. Finally increasing or decreasing (discretionary) accruals (Healy 1985; Jones 1991; Dechow et al. 1995, etc.) have been frequently addressed in the literature. SAS 82 mentions methods of carrying out fraud, i.e., manipulation, falsification, or alteration of accounting records or supporting documentation, misrepresenting in or intentional omission from the financial statements of events, transactions, or other significant information, intentional misapplication of accounting principles relating to amounts, classification, manner of presentation, or disclosure.

A–6 Methods of Detecting Earnings Management

In order for earnings management to be detectable from publicly available information, there have to be some "red flags" present in the financial statements. Methods for detecting earnings management used in the literature include examining disclosures relating to changes in accounting principles, examining the accelerated adoption of new pronouncements, examining extraordinary gains and losses on the income statement, examining proxies for (discretionary) accruals in a sample hypothesized to manage earnings. Although a company may engage in a combination of all three types of earnings management, only the earnings management techniques involving the use of actual operating, investing, or financing decisions, and/or discretionary accruals can involve non-GAAP transactions. The change in accounting principle, which

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risk x control risk x detection risk (Bailey 1997).

is obvious to auditors and other financial statement users since it is disclosed on the financial statements, is presumably within GAAP. It would seem that it should be easier to detect non-GAAP earnings management that materially misstates financial statements than within-GAAP earnings management that does not. For example, the magnitude of total or discretionary accruals (i.e. as a percentage of beginning of the year assets) should be substantially higher for non-GAAP earnings managers than for within-GAAP earnings managers.

A–7 Time Series of Earnings Management Prior to Other Events

In addressing these research questions, this study examines the time-series of within-GAAP earnings management and fraud occurring prior to bankruptcy. Several studies have examined the time series of earnings management prior to other events. Dechow, Sloan, and Sweeney (1996) depict graphically the proportion of firms using income-increasing accounting procedures such as combined choice of FIFO, straight line depreciation, and flow through methods for investment tax credit. They also show median total accruals for SEC sanctioned firms versus matched control sample firms for three years prior to and after the first year of SEC sanction. Dechow, Sloan, Sweeney (1995) depict graphically the median annual total accruals, median cash flows from operations, median earnings for SEC sanctioned firms identified by the SEC for overstating earnings versus a random sample for five years prior to and subsequent to the year the SEC alleged overstatements. DeAngelo, DeAngelo, and Skinner (1994) examine accruals levels, and changes for binding debt

covenant firms that reduced dividends and reported multiple losses during 1980 - 1985. They examine 10 years prior to and three years subsequent to the event that is the year of the firms initial dividend reduction. DeFond and Jiambalvo (1992) examine the time series of total accrual changes, earnings changes, cash flow changes, and revenue changes, (all scaled by $assets_{t-1}$) for the five years prior to and one year following the event which is violation of debt covenant. Sweeney (1994) examines the time-series of discretionary income increasing accounting changes from five years prior to until two years after the event, which is the year of reporting a debt covenant violation. Lilien, Mellman, and Pastena (1988) examine the time series of accounting changes for successful and unsuccessful firms (success is defined based on total market return to the investor over a ten-year period). They report all accounting changes for both groups of firms during the ten-year period, the net change for a firm in each year, and the total effect of all changes for each firm.

A–8. Financial Statement Errors and Fraud

Researchers find that the balance sheet accounts: receivables, inventory, payables, and accrued expenses; and the income statement accounts: cost of goods sold, general and administrative expenses and other expenses and revenues are commonly subject to error/manipulation (Kreutzfeldt and Wallace 1986; DeFond and Jiambalvo 1991; Feroz, Park, and Pastena 1991; Houghton and Fogarty 1991; Stice 1991; Entwistle and Lindsay 1994; Asare and Davidson 1995, Groveman 1995; Dechow, Sloan, and Sweeney 1996; Fanning and

Cogger 1997; Beasley, Carcello, and Palmrose 1999). Houghton and Fogarty (1991) found that accounts most affected by errors were inventories of manufacturing firms, receivables of credit granting institutions, liability reserves of insurance companies, and that overstatements of net income (which were more frequent than understatements) accounted for approximately two thirds of the weighted errors detected. Feroz, Park, and Pastena (1991) who examined 214 SEC AAERs issued from 1982 to 1989 found that the SEC most often pursued overstatements of receivables and inventories. These two accounts represented 70% of the investigations and the overstatements usually resulted from premature revenue recognition and delayed write-offs. Fanning and Cogger (1997), using artificial intelligence neural networks to detect management fraud, find that a large increase in receivables, gross margin ratio, the ratios of property plant and equipment to total assets and sales to total assets are related to the presence of fraud in an SEC sanctioned sample. The results of these studies were used to determine the fraud proxies used in testing of the hypotheses.

APPENDIX B

B. Case Studies

In the initial stages of this research, I examined four SEC sanctioned firms that also filed for bankruptcy protection (Circle Express, Inc., Coated Sales, Inc., Crazy Eddie, Inc., and Sahlen and Associates, Inc.). I chose companies that filed for bankruptcy protection since I am hypothesizing that such firms are likely to engage in earnings manipulation or fraud. The fact that the SEC sanctioned them verifies that they were doing so. As a measure of comparison I also examined two apparently healthy companies, Johnson and Johnson, Inc. and Campbell Soup, Inc. All the bankrupt, SEC sanctioned companies have several characteristics in common. In the four to five years prior to bankruptcy, these companies display a pattern of progressively increasing, positive (i.e. income increasing) total accruals.[4] The year or two prior to actual bankruptcy sometimes contains a reversal of the previously inflated accruals. In contrast, this pattern does not exist in the two control companies, i.e. Johnson and Johnson, Inc. and Campbell Soup, Inc. Their total accruals are negative for all the years shown, and they fluctuate up and down from year to year with no apparent pattern. The earnings management literature uses discretionary accruals (i.e. unexpected accruals), a component of total accruals to measure

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4 The definition of total accruals comes from the earnings management literature (Healy 1985; Jones 1991).

TOTAL ACCRUALS = [CHANGE IN CURRENT ASSETS - CHANGE IN CASH] - CHANGE IN CURRENT LIABILITIES - DEPRECIATION AND AMORTIZATION

earnings management. However, the literature is mixed on how reliable this measure is. Thomas and Zhang (1996) investigate the accuracy of five different accrual prediction models. They find that assuming total accruals equals –5 % of total assets for all firm years outperforms all the models they tested. The relevance of this information here is to note that total accruals are generally expected to be negative and specifically about –5 % of total assets). This is the case, for Johnson and Johnson and Campbell Soup (Tables B-1 and B-2).

Looking at total accruals, however, may be misleading because the depreciation accrual which is included here in total accruals, consistent with the Healy (1985) and Jones (1991) definition of total accruals, is always negative and thus income decreasing. Therefore it may mask the magnitude of the operating accruals other than depreciation. Kerstein, Lee, Lilien, and Ghicas (1996), in studying bond rating downgrades in the context of earnings management, disaggregate total accruals into its components. Accruals were similarly disaggregated, in this study for the six firms analyzed in the case study (Appendix B). Results showed that for three out of four of the sample firms, the change in receivables or the change in inventories or both, increased consistently (in non-going concern opinion years) from period -5 prior to bankruptcy to period -1 prior to bankruptcy. A reversal of this trend was evident in the case of Circle Express, Inc. and Crazy Eddie, Inc. in the year prior to bankruptcy. This is consistent with the literature that shows that accounts receivable and inventory are the most likely candidates for manipulation

(Kreutzfeldt and Wallace 1986, Feroz, Park, and Pastena 1991, Houghton and Fogarty 1991, Stice 1991, Asare and Davidson 1995 etc.). It also suggests that the auditors prompted the reversal of the fraud in the going concern years. Also the magnitude of total accruals deflated by total assets at the beginning of the period in the years is positive or income increasing in almost all the years and ranges from approximately 11% of, to over five times, beginning of the year assets, in the year of the misstatements. This is in sharp contrast to the two healthy firm where total accruals are always income decreasing.

The magnitude of change in receivables that are income increasing in most years ranges from less than -.02 to 1.62 times beginning of the year assets. The magnitude of the change in inventories which is only relevant for two of the sample companies, since the other two are service companies, is income increasing in most years and ranges from .09 to 1.10 times beginning of the year assets in the SEC alleged fraud years. This is in contrast to the magnitudes of changes in receivables and inventory for the healthy firms, who do not exhibit any particular pattern of inventory or receivable accruals. Out of the ten periods shown for the control firms, Johnson and Johnson, Inc., and Campbell Soup, Inc., changes in receivables and inventory are almost always positive. However, the magnitude for income increasing (positive) receivable accruals ranges from .009 to .03 of beginning of the year assets. The magnitude of income increasing inventory accruals ranges from .001 to .04 of beginning of the year assets.

For Crazy Eddie, Inc. (sample case 3), the AAER notes that the company

overstated its 1985,1986, and 1987 pre-tax income. By looking at the increasing pattern of the inventory accrual in these years in conjunction with the high magnitude of the inventory accrual, as a percentage of beginning of the year assets (.09, .51, .39, respectively) one can hypothesize that the company overstated its inventory in those periods. In this case, the SEC has verified this in its AAERs. Therefore, the two interesting factors to be gained from analysis of these companies are the pattern of income increasing total, inventory, and receivables accruals, prior to bankruptcy, as well as their material magnitude, measured as the percentage of accruals to beginning of the year assets being substantially greater than 5%. The rationale for this pattern of increasing total accruals is intuitive. Given the hypothesis that distressed firms are likely to window dress their financial statements to portray a healthier picture, the implication is that as the company approaches bankruptcy, it has constantly declining earnings. Therefore in order to hide this downward trend, it must compensate with an ever-increasing amount of overstatement. This overstatement manifests itself in the changes in the working capital variables, i.e. the accruals.

It is also interesting to note that the companies do not display signs of distress in the SEC alleged fraud years. Coated Sales and Crazy Eddie reported positive net income, retained earnings, income from operations, and cash flow from operations in SEC alleged fraud years. Circle Express has only a small loss in operating income in the last fraud year. All other indicators are positive. Sahlen has a net loss, retained earnings deficit, and negative cash flow from

operations in the first two, SEC alleged, fraud years, but this improves over the next two SEC alleged fraud years. It appears that these companies were for the most part successful in concealing their deteriorating financial condition. In fact, in these cases, the picture seems to be getting progressively healthier. The observations acquired from analysis of these four cases were used in hypothesis development.

TABLE B1
JOHNSON & JOHNSON, INC.
SCHEDULE OF TOTAL ACCRUALS IN THOUSANDS

YEAR	1993	1992	1991	1990	1989
+CA	-206000	490000	269000	888000	273000
-CL	215000	-738000	- 66000	-696000	- 59000
-CASH	373000	-156000	237000	-374000	77000
+STD	-117000	353000	-197000	306000	48000
-DEP	-617000	-560000	-493000	-474000	-414000
Total Accruals	-352000	-611000	-250000	-350000	- 75000
+STI	- 29000	-70000	98000	- 26000	-
+REC	252000	92000	244000	199000	185000
+INV	- 25000	40000	159000	190000	80000
+OCA	- 31000	272000	5000	151000	85000
-PAY	9000	24000	-105000	-207000	29000
-ACC	19000	-384000	- 67000	-227000	- 9000
-IT	70000	- 25000	- 91000	44000	- 31000
-DEP	-617000	-560000	-493000	-474000	-414000
Total Accruals	-352000	-611000	-250000	-350000	- 75000
TA/A_{t-1}	- .03	-.06	- .03	- .04	- .01
REC/A_{t-1}	.02	.009	.03	.03	.03
INV/A_{t-1}	-.002	.004	.02	.02	.01

CA = change in current assets
CASH = change in cash
DEP = annual depreciation expense
REC = change in receivables
OCA = change in other current assets
ACC = change in accrued expenses
TA = total accruals
CL = change in current liabilities
STD = change in current portion of long term debt
STI = change in short term investments
INV = change in inventory
PAY = change in payables
IT = change in income taxes payable
A_{t-1} = total assets at beginning of the year

TABLE B2
CAMPBELL SOUP COMPANY, INC.
SCHEDULE OF TOTAL ACCRUALS IN THOUSANDS

YEAR	1993	1992	1991	1990	1989
+CA	184000	-17000	-147000	64000	238000
-CL	-551000	- 22000	20000	- 66000	-369000
-CASH	49000	67000	- 98000	40000	- 35000
+STD	376000	12000	80000	- 69000	134000
-DEP	-242000	-216000	-209000	-201000	-192000
Total Accruals	-184000	-176000	-354000	-232000	-224000
-STI	1000	- 7000	- 10000	- 4000	- 9000
-REC	69000	50000	- 97000	87000	51000
-INV	86000	11000	-113000	4000	151000
+OCA	77000	- 4000	- 25000	17000	10000
-PAY	- 12000	- 16000	43000	- 17000	- 62000
-ACC	-149000	33000	78000	-102000	-185000
-IT	- 14000	- 27000	- 21000	- 16000	12000
-DEP	-242000	-216000	-209000	-201000	-192000
Total Accruals	-184000	-176000	-354000	-232000	-224000
TA/A_{t-1}	-.04	-.04	-.09	-.06	-.06
REC/A_{t-1}	.02	.01	-.02	.02	.01
INV/A_{t-1}	.02	.003	-.03	.001	.04

CA = change in current assets
CASH = change in cash
DEP = annual depreciation expense
REC = change in receivables
OCA = change in other current assets
ACC = change in accrued expenses
TA = total accruals
CL = change in current liabilities
STD = change in short term debt
STI = change in short term investments
INV = change in inventory
PAY = change in payables
IT = change in income taxes payable
A_{t-1} = total assets at beginning of the year

TABLE B3

SAMPLE COMPANY # 1 - CIRCLE EXPRESS, INC.

Trucking Company - AAERs Dated - 1991

The company **misstated Financial Statements for 1985,1986,1987** by preparing fictitious documents to mislead the auditors. They **overstated assets and income** and **understated liabilities and expenses** - Filed For Bankruptcy - **9/11/90**

BREAKDOWN OF TOTAL ACCRUALS IN THOUSANDS

YEAR	-1	-2	-3	-4	-5
YEAR-END	12-31-89 G	12-31-88 G	12-31-87*	12-31-86*	9-30-85 *
+STI	0	-24083	24083	0	0
+REC	- 3966	1405	4443	4321	10781
+OCA	2226	1235	1474	2418	1920
-PAY	- 132	- 3222	1573	258	- 4324
-ACCR	- 1427	- 7382	- 1478	- 1572	- 3527
-DEP	- 7132	- 8441	- 2848	- 1604	- 1281
TOTAL ACCRUALS	-10431	-40488	27247	3821	3569
TA/At-1	-.09	-.47	.53	.11	.48
REC/At-1	-.04	.02	.09	.13	1.44
Net Income	-39560	-21557	1545	3259	1300
Retained Earnings	-56408	-16847	6650	5105	1946
Operating Income	-4418	-2723	-384	5243	2874
Operating Cash Flow	53693	56476	6130	4434	3182

* = year of misstated financial statements according to the SEC
G = received going concern opinion
STI = change in short term investments
REC = change in receivables
OCA = change in other current assets
ACC = change in accrued expenses
PAY = change in payables
DEP = annual depreciation expense
TA = total accruals
A_{t-1} = total assets at beginning of the year

TABLE B4

SAMPLE COMPANY #2 - COATED SALES, INC.

Manufacturer of coated fabrics for industrial textile use. AAERs dated 1991, 1992
The company **Misstated financial statements for 1986, 1987, 1988.** They **inflated earnings** and recorded **fictitious accounts receivable and inventory.**
Filed for bankruptcy protection **6/17/88**

BREAKDOWN OF TOTAL ACCRUALS IN THOUSANDS

YEAR	-1	-2	-3	-4	-5
YEAR-``END	2-28-87 *	2-28-86 *	2-28-85	2-28-84	2-28-83
+STI	113	1642	0	0	0
+REC	2892	9260	1307	353	- 72
+INV	4761	2900	4878	1323	258
+OCA	17964	3736	379	109	- 68
-(PAY+ACC)	- 7549	- 2862	- 2506	- 698	524
-IT	2233	- 2661	- 291	- 26	- 63
-DEP	?	- 145	- 33	- 8	- 11
TOTAL ACCRUALS	20414	11870	3734	1053	568
TA/At-1	.59	1.05	.84	.39	.22
REC/At-1	.08	.82	.29	.13	-.02
INV/At-1	.14	.26	1.10	.49	.10
Net Income	7204	3510	678	456	
Retained Earnings	12263	5059	1549	872	
Operating Income	15846	9083	2896	1859	
Operating Cash Flow	7731	3655	711	464	

*= year of misstated financial statements according to the SEC
G = received going concern opinion
STI = change in short term investments
REC = change in receivables
OCA = change in other current assets
ACC = change in accrued expenses
A_{t-1} = total assets at beginning of the year
INV = change in inventory
PAY = change in payables
IT = change in income taxes payable
TA = total accruals
DEP = depreciation expens

TABLE B5

SAMPLE COMPANY #3 - CRAZY EDDIE, INC.

Radio & television & household appliance stores - AAERs dated 10/91

The company **overstated its 1985, 1986, 1987 pre-tax income** by **overstating inventory** (it overstated 1985 pre-tax income by 19% and 1986 pre-tax income overstated by 34%) – filed for bankruptcy protection **5/89**

BREAKDOWN OF TOTAL ACCRUALS IN THOUSANDS

YEAR	-1	-2	-3	-4	-5
YEAR-END	2-26-89 G	2-28-88G	3-1-87 *	3-2-86 *	3-3-85 *
+STI	- 1909	-112111	95117	26840	15058
+REC	- 1629	59	1224	2246	136
+INV	- 20954	- 49628	49208	33321	3200
+OCA	- 23561	16908	15652	- 1022	131
-PAY	18043	7270	1701	- 28646	- 2972
-ACC	- 6292	- 3739	462	- 3343	- 2655
-IT	0	0	11071	- 5051	0
-OCL	1239	- 220	55	- 2523	- 409
-DEP	- 4143	- 4305	- 2330	- 1044	- 417
TOTAL ACCRUALS	- 39206	-145766	172160	20778	12072
TA/At-1	- .26	- .49	1.36	.32	.33
REC/A_{t-1}	- .01	.0002	.01	.03	.004
INV/A_{t-1}	- .14	- .17	.39	.51	.09
Net Income	64582	-109098	10596	13244	5829
Retained Earnings	-74784	-73828	35269	24673	11429
Operating Income	-41969	-127447	18927	24922	12390
Operating Cash Flow	?	?	15540	14794	?

* = year of SEC AAER G = received going concern opinion

STI = change in short term investments REC = change in receivables INV = change in inventory

OCA = change in other current assets PAY = change in payables OCL = change in other curr. liabilities
ACC = change in accrued expenses IT = change in income taxes pay DEP = depreciation expense
TA = total accruals A_{t-1} = total assets at beginning year

TABLE B6

COMPANY # 4 - SAHLEN & ASSOCIATES, INC.

Provides detective and protective services

AAERs dated 1994

SEC targeted **1984-1989**, but especially during 1987,1988,1989 the company **improperly recognized revenue** and recorded **over 45 million of fictitious revenues**
Filed for bankruptcy **5/89**

BREAKDOWN OF TOTAL ACCRUALS IN THOUSANDS

YEAR	-1	-2	-3	-4
YEAR-END	6-30-88 *	6-30-87 *	6-30-86 *	6-30-85 *
+STI	- 1300	1582	101	1684
+REC	31973	11793	4420	1161
+INV	1337	NA	NA	NA
+OCA	4704	- 216	153	546
-PAY	- 2068	- 246	- 346	65
-ACC	- 7007	- 1452	- 416	136
-IT	- 1205	- 657	0	0
-DEP	- 2586	- 175	- 92	- 48
TOTAL ACCRUALS	23848	10629	3820	3544
TA/A_{t-1}	.83	1.13	.88	4.96
REC/A_{t-1}	1.11	1.26	1.02	1.62
Net Income	1934	1259	651	-776
Retained Earnings	1908	274	-885	-1537
Operating Income	6834	3148	1017	686
Operating Cash Flow	5517	1604	515	-713

* = year of misstated financial statements according to the SEC
G = received a going concern opinion
STI = change short term investments REC = change in receivables INV = change in inventory

OCA = change in other current assets
ACC = change in accrued expenses
DEP = annual depreciation expense
A_{t-1} = total assets at beginning of the year
PAY = change in payables
IT = change in income taxes payable
TA = total accruals

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