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**Alleged audit and financial reporting failures: Evidence on
mandatory audit firm rotation**

Walker, Paul Lynn, Ph.D.

University of Colorado at Boulder, 1994

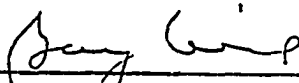
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**ALLEGED AUDIT AND FINANCIAL REPORTING FAILURES:
EVIDENCE ON MANDATORY AUDIT FIRM ROTATION**

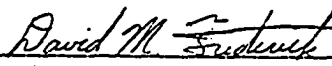
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**A dissertation submitted to the Faculty of the
Graduate School of the University of Colorado
in partial fulfillment of the requirements for the
degree of Doctor of Philosophy, College of Business
July 17, 1994**

This thesis for the Doctor of Philosophy degree by Paul Lynn Walker has been approved for the Department of Accounting, College of Business by



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7/8/94
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Alleged Audit and Financial Reporting Failures: Evidence on
Mandatory Audit Firm Rotation.

Dissertation directed by Professor Barry L. Lewis

The independence of auditors is once again being questioned. The combination of huge unexpected corporate failures and the staggering amount of lawsuits facing the accounting profession suggest that audit quality is suffering. Mandatory audit firm rotation has been suggested as one change that would help improve auditor's independence and ultimately lead to an increase in audit quality and a reduction in the number of audit failures. The mandatory rotation position rests upon the assumption that long-term relationships between a client and auditor heighten the chance of an audit failure.

The AICPA has taken a stand against mandatory rotation. Its 1991 "Statement of Position Regarding Mandatory Rotation of Audit Firms of Publicly Held Companies" argues that mandatory rotation would hurt audit quality because the likelihood of audit failure increases after an auditor change. Thus, the AICPA's position is that new client-auditor relationships are at an increased risk of failure.

This study uses three types of alleged audit and financial reporting failures in an examination of the assumptions made in the mandatory auditor rotation argument. The three types are: bankrupt companies that received an unqualified audit opinion immediately prior to bankruptcy, SEC accounting and auditing enforcement releases, and litigation against auditors.

The results indicate that long term auditor client relationships have the largest number of failures and the largest market value decrease after a failure, but have the lowest failure rate. Short term relationships reveal the highest failure rate. The overall trend of failure rates reveals a rate that increases in early periods and then declines. An additional result is that companies that change auditors have more failure characteristics than companies that don't change auditors. However, other than fraud, there are few differences noted between companies that change auditors and have a resulting audit failure versus companies that change auditors and have no related audit failure.

DEDICATION & ACKNOWLEDGMENTS

This dissertation is dedicated to my family, especially my wife, children and my parents.

I am deeply grateful to my dissertation committee chair, Barry Lewis, and to all of the committee members: Jon Davis, David Frederick, Robert McNown, and Wayne Shaw. The University of Colorado College of Business Accounting Department provided research support for which I am grateful. Furthermore, I owe a great deal of thanks to Jeff Casterella and Denton Collins.

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I. INTRODUCTION

The independence of auditors is once again being questioned. The combination of huge unexpected corporate failures and the staggering amount of lawsuits facing the accounting profession suggest that audit quality is suffering. The Public Oversight Board¹ comments (SEC Practice Section and Public Oversight Board Combined 1991 Annual Report, page 26):

"In the aftermath of the economic boom of the 1980s and the ensuing recession, and especially because of the 'S&L crisis,' allegations of audit failure naturally followed. Today, standards for performance and independence of auditors are constantly challenged and cries for change are heard in the Congress and echoed in the media."

One of the cries for change has been to mandate rotation of audit firms of publicly held companies after some set time period. Mandatory audit firm rotation has been suggested as one change that would help improve auditor's independence and ultimately lead to a reduction in the number of failures. The mandatory rotation position rests upon the assumption that long-term relationships between a client and auditor heighten the chance of a failure. This increased chance of failure is attributed to the auditor's decreased objectivity and independence that supposedly happens when auditors have been auditing the same company for several years.

¹The Public Oversight Board is an independent group that monitors and reports on the self-regulatory programs of the SEC Practice Section Division of the AICPA.

The AICPA has taken a stand against mandatory rotation. Its 1991 "Statement of Position Regarding Mandatory Rotation of Audit Firms of Publicly Held Companies" argues that mandatory rotation would hurt audit quality because the likelihood of audit failure increases after an auditor change. Thus, the AICPA's position is that new client-auditor relationships are at an increased risk of failure.

This study utilizes three types of alleged audit and financial reporting failures in an examination of the assumptions made in the mandatory auditor rotation argument. More specifically, the research issues to be addressed are as follows. First, failures are analyzed to determine if both short-term and long-term auditor-client relationships are more likely to fail than other periods. Second, companies that voluntarily change auditors are examined to determine if these companies are representative of all companies that would be rotated under a mandatory rotation policy. Third, this study examines what distinguishes companies that change auditors and then have a failure from those that change auditors and don't have a failure.

The results indicate that long term auditor client relationships have the largest number of failures and the largest market value decrease after a failure, but have the lowest failure rate. Short term relationships reveal the highest failure rate. The overall trend of failure rates reveals a rate that increases in early periods and then declines. An additional

result is that companies that change auditors have more failure characteristics than companies that don't change auditors.

However, other than fraud, there are few differences noted between companies that change auditors and have a resulting audit failure versus companies that change auditors and have no related audit failure.

The remainder of this study is organized as follows. Part II discusses the mandatory auditor rotation arguments, the prior literature, and develops the appropriate hypotheses. Part III discusses the research approach. Part IV discusses the data analysis. Finally, Part V discusses the limits of the study and draws conclusions.

II. MANDATORY ROTATION ARGUMENTS, LITERATURE REVIEW & HYPOTHESES

MANDATORY AUDIT FIRM ROTATION

There are two main arguments on mandatory auditor rotation. First, advocates argue that long term client auditor relationships impair the auditor's objectivity. Auditors who have been auditing the same company for many years supposedly get too close to these clients and lose their skepticism and independence. Thus, advocates purport that long-term relationships are a problem. To alleviate this problem, auditors should be rotated. One critic notes, "the auditing function should be defined in terms of what it can do, and the process itself ought to be changed so that the auditor is truly independent, which means that auditors ought to be assigned and rotated by the SEC²."

Second, in making a case against rotation, the AICPA argues that rotation would increase the number of failures (rather than reduce them). They note that the SEC Practice Section has analyzed 406 cases of alleged audit failures and found that "allegations of audit failure occur almost three times as often when the audit firm is performing its first or second audit of the company" (AICPA, SECPS 1992, page 2). They suggest that the auditor's lack of knowledge of the client's business leads to the increase in alleged audit failures. Auditors who have

²Robert Chatov as quoted by Leibman and Kelly (1992) regarding his testimony before Congress.

audited a client for a short time don't have this client knowledge. Thus, the AICPA purports that new relationships are more at risk and that longer term relationships are not more at risk because in long term relationships the auditor builds up knowledge of the client's business.

AUDIT FAILURE DEFINITION

The above arguments assume that there is some sort of identifiable problem that exists that can be measured and monitored to determine if indeed short or long term relationships are more at risk. This problem is an audit failure and it has been defined as the auditor's failure to detect and correct/reveal any material omissions or misstatements (Palmrose 1988). The popular press promotes a similar definition. One such article suggests an audit failure is when the auditor approves the financial statements of a company that shortly thereafter goes bankrupt or incurs serious financial difficulty (Ingersoll 1985). Note, however, that a broader definition of audit failure is used by the SECPS Peer Review Committee (Sullivan 1992). They consider audits to be substandard if 1) necessary auditing procedures were omitted, or 2) either a misleading financial statement or an inappropriate auditor's report has been issued. The two types of audit failures are derived from AICPA Professional Standards, AU Section 390 and AU Section 561, respectively

(again, see Sullivan 1992)³. Section 390 failures do not result in anyone being misled while Section 561 failures do mislead through either the financial statements themselves or the auditor's report.

Defined within this context, most empirical research has examined Section 561 audit failures since most definitions of failure imply the financial statements were misleading. Some common definitions of audit failure include bankrupt companies that had unqualified opinions immediately preceding bankruptcy (McKeown, Mutchler and Hopwood 1991), litigation (Stice 1991), and SEC actions/enforcements (Raghunathan, Lewis and Evans 1994 and Feroz, Park and Pastena 1991). The typical approach in prior literature is to take a sample of companies using one of the definitions of audit failure and compare that sample to a control sample. For example, bankrupt companies with clean opinions are compared to bankrupt companies with qualified opinions or companies that have auditor lawsuits are compared to a matching sample of companies that didn't have a suit.

Although all three definitions have been used as examples of audit failures, there are clear differences among the three. Bankrupt companies with clean opinions preceding bankruptcy capture a lot of attention in the media and are frequently noted as a problem. However, AU Section 341 (SAS No. 59) states

³AU Section 390 is "Consideration of Omitted Procedures After the Report Date" and AU Section 561 is "Subsequent Discovery of Facts Existing at the Date of the Auditor's Report."

that a company that incurs bankruptcy subsequent to receiving a clean opinion doesn't, in itself, indicate "inadequate performance." There appears to still be an expectation gap between what some expect out of auditors and what the auditors themselves expect. Litigation type failures have also received a lot of attention but for different reasons. The "litigation crisis" has prompted a Big Six official response and resulted in many tort reform requests. The SEC Accounting and Auditing Enforcement Releases (SEC AAERs) are considered financial reporting violations and imply the auditor has failed in some way to make the financial statements accurate⁴. However, when these actions are against the Big Six, they are seldom litigated and are mostly disposed of through disciplinary proceedings and civil injunctions.

In addition to their differences, each definition suffers from some common problems. First, note that the term audit failure is incomplete, for it is not just an audit failure, but a failure of the financial reporting system that allowed the financial statements to be misreported. That is, it is a failure of not only the auditor, but also of management and the board of directors. AICPA SAS No. 58 was partly intended to highlight this point. It changed the auditor's standard report and drew clear distinctions between management's responsibilities and the auditor's responsibilities. Second, it is frequently only an "alleged" audit failure. For example, lawsuits may be settled

⁴See Feroz et al. (1991) for a thorough discussion of SEC enforcement releases.

and the real issues may never be addressed. Additionally, as noted above, many SEC AAERs are never litigated and the exact details do not surface. Third, each definition is really only an observed failure. Stice (1991) notes that a lawsuit may not be filed in some instances even where an audit failure has occurred. Furthermore, Raghunathan et al. (1994) point out that financial statement misrepresentations are not "problem audits" unless they are discovered by a third party.

Given that no one definition appears best for examining the issues of mandatory auditor rotation, all three types of alleged audit failures mentioned above are used. The use of all three definitions gives a more comprehensive perspective on the failure issues being discussed.

THE RISKINESS OF SHORT AND LONG-TERM RELATIONSHIPS

The most basic argument is that the likelihood of an audit failure is somehow related to the tenure of the auditor with the company. The AICPA argues that new relationships are more risky and critics argue that long-term relationships are more risky. Therefore, this study examines whether the length of the client-auditor relationship is significant in explaining failure rates. That is, research question one addresses whether both new and long-term relationships have an increased chance of failure compared to other periods.

Prior research has shown this variable, often referred to as "tenure," to be important. St. Pierre and Anderson (1984) examined lawsuits against auditors and found that 23% of the cases (30 out of 129) were for audit-client relationships of three years or less⁵. Furthermore, they found that these 30 cases represented 40% of the total alleged auditor errors. They concluded that there is increased legal risk when dealing with new clients.

Other studies have examined a tenure variable in predicting alleged audit failures. Stice (1991) found partial support for an increase in the likelihood of litigation early in the auditor/client relationship. Stice measured these early relationships as those for which the auditor's tenure was from one to three years. Raghunathan et al. (1994) contend that early in the relationship, the auditor is less likely to report a client misrepresentation because of the desire to keep the unknown potential future revenue. For long-term relationships, they suggest that as the auditor builds up knowledge of the company, efficiencies are gained and the auditor realizes more positive cash flows. This, in turn, influences the auditor's willingness to report client misrepresentations. Furthermore, auditors in long-term relationships may develop expectancies about problems and do minimal work. Consistent with their arguments, Raghunathan et al. (1994) found there is a greater chance of an SEC

⁵Their sample includes suits that "went to court."

enforcement action (i.e., an alleged audit failure) when the client-auditor relationship is either very short (defined as one year) or when it exists for a long period of time (defined as greater than five years).

The above studies show some evidence of increased risk among short term and long term relationships. What is needed, however, is evidence across all three failure types that documents the failure rates for each tenure period. Failure rates capture the riskiness of the tenure period. While critics of the profession complain about the number of long term failures, they have not provided evidence that such relationships are any more at risk than other periods. Similarly, the AICPA has not provided evidence on the failure rates (or riskiness) of new relationships. For example, it could be that although there are a large number of long-term failures, most companies fit into the long-term category, thus causing a low failure rate for long-term relationships. Additionally, gathering evidence on failure rates can show whether new relationships are more or less risky than long-term relationships. The preceding evidence and mandatory rotation arguments suggests the following tenure hypothesis:

Hypothesis 1: For either short or long tenure periods, there is a greater chance of a failure.

COMPANIES THAT VOLUNTARILY CHANGE AUDITORS

The debates on mandatory rotation are based on examining the current situation and making generalizations as to what might happen if rotation is mandated. This is desirable in that it offers insight into the issue without requiring full implementation. The AICPA's position is that rotating auditors will increase audit failures since it has been found that alleged audit failures occur more in new relationships. Thus, they utilize current alleged audit failures to make a point on the rotation issue. The analysis in research question one takes a similar approach. It looks at past failures to see if the failure rates differ over tenure.

The problem with both the AICPA's arguments and with research question one is that they both analyze voluntary changers. That is, the AICPA's position assumes that the sample of failures they examined is representative of all companies that would be rotated under a mandatory rotation policy. Stated differently, their argument is based on observations from a sample of companies who voluntarily changed auditors and not from a random sample of all companies that would be rotated. Therefore, their finding could be driven by the fact that companies that are more likely to have a failure are also more likely to change auditors. Additionally, this fact could be the cause of a finding in research question one that new relationships are more risky.

What is needed is evidence that shows whether new voluntary relationships are different from all other client-auditor relationships on failure characteristics. Thus, research question two compares new relationships (i.e., companies that changed auditors or "Changers") to a sample of companies that didn't change auditors (hereafter "NonChangers"). Such a comparison will identify if failure characteristics can distinguish Changers from NonChangers. If it is found that Changers are different, then it is inappropriate to look at failures among Changers to make inferences regarding mandatory rotation of all other companies. In contrast, if Changers do not differ from NonChangers then there is support for saying that failure rates among Changers could be extrapolated to all other companies. Insight into such differences can be gained by examining the reasons companies change auditors.

Companies change auditors for a variety of reasons. The February 1986 Public Accounting Report (page 1) states that "companies use service more than any other factor as a reason for firing auditors." If companies are attempting to increase their audit firm service, it is unlikely that failures would increase after the switch to a better firm. To determine when new relationships are risky, consideration must be given to other reasons companies change auditors.

Companies also change auditors for more suspect reasons. A few examples are noteworthy. McConnell (1984) found that

disagreements between the auditor and company management were reported in 14% of auditor changes. Schwartz and Menon (1985) note that the financial condition of a company can be a factor. They found that failing firms have a greater tendency to switch auditors (than do healthier firms). Changing auditors might then be considered an attempt to cover things up.

Companies could also change auditors in an attempt to shop for an accounting opinion (see Smith 1986). Finally, Williams (1988) notes that audit fees and qualified audit opinions have commonly been found in the auditor change literature to be significant variables related to auditor changes. What these examples suggest is that companies change auditors not only for service or quality reasons, but also for reasons that could lead to a potential failure. While the auditor change literature has addressed some of these characteristics, it is still incomplete on the failure issues.

CHANGER FAILURES vs. CHANGER NONFAILURES

Once failure differences between Changers and NonChangers are analyzed, the next issue is what distinguishes Changers that result in failures from Changers that don't result in failures. That is, why do some new relationships have an alleged audit failure and others do not. The AICPA's argument that all new relationships are risky implies (in its extreme form) that auditors can't do a good job on any new companies. What is more likely the case is that only certain new relationships are

at risk. This suggests that these companies had a failure not because they were "new" relationships but rather because they were already troubled companies when they made the switch to a new auditor.

Research question three addresses why some new client-auditor relationships fail. To gain insight into this issue requires comparing companies that changed auditors with no resulting failure (Changer NonFailures) to companies that changed auditors and later had a failure (Changer Failures). Note that if Changer Failures are no different than Changer NonFailures, then this lends further support to the position that all new relationships are more risky. However, finding differences between the two groups suggests that only new relationships with certain characteristics are risky. To determine these differences requires identifying the characteristics associated with failures.

The audit failure literature includes papers that have looked at characteristics associated with litigation, bankruptcy, and SEC actions. However, none of these papers has specifically examined early (or short-term) failures. As noted previously, it is argued that there are different characteristics associated with early versus late failures. Such arguments suggest an analysis of early failures. Furthermore, none of the failure studies has tried to study any failure characteristics across more than one failure definition.

The next section develops testable hypotheses related to research questions two and three. Research question two addresses what factors discriminate between Changers and NonChangers, and research question three addresses what factors discriminate between Changer Failures and Changer NonFailures. The hypotheses labeled "a" ("b") address research question two (three).

AUDITOR VARIABLES

The mandatory auditor rotation argument suggests that auditor characteristics are associated with failure. The following section suggests two variables hypothesized to be associated with failures. They are economic dependence and industry expertise.

Economic Dependence

It is argued that there is an inverse relationship between the size of the client and the CPA's independence (see DeAngelo 1981, McKeown et al. 1991, and Raghunathan et al. 1994). Thus, it is thought that auditors are less willing to report their true beliefs when the client being audited is large. Two studies have found support in favor of this argument. Both studies address the auditor's willingness to report issue by considering economic dependence. Stice (1991) argues that companies can influence (pressure) their auditors because it is costly for

auditors to switch clients. Stice attempted to capture the auditor's ability to withstand client pressure by measuring independence as 1- (client sales/total sales of all clients). In predicting litigation against auditors, this variable was found to be negatively related to the likelihood of a lawsuit against the auditor⁶. Raghunathan et al. (1994) argue that the auditor has an economic incentive to keep a client to maintain revenues and to avoid the search costs associated with obtaining new clients. There is an assumed positive relationship between the auditor's reporting the misrepresentation and the subsequent likelihood that the client fires the auditor. Therefore, auditors should be less willing to report a misrepresentation made by a large client. They estimated audit revenue as a square root function of client assets. They found that there is a greater chance of a SEC enforcement action for companies with large amounts of revenue to the auditor⁷. These studies suggest that there is an increased chance of failure when the auditor is more dependent on a client for revenue. However, what is not known is whether Changers also have this characteristic. Recall

⁶This variable was significant when Stice controlled for time period, but not when Stice controlled for both time period and industry effects.

⁷Approaching independence by examining revenues has its problems. Such an approach is similar to examining the auditor's independence in appearance. It appears that auditors may be more influenced by larger clients. Independence in appearance is really just the avoidance of conflict of interest situations. It does not necessarily mean that auditors are not independent. Auditors can appear to not be independent but still exercise independence in fact. Bartlett (1991, page 46) notes that "... independence 'in fact' may be possessed by auditors in any situation, regardless of the relationships which they might have with audit clients..." Such independence should be tested on the individual auditor. Empirically, this is impossible to do.

that research question two addresses the similarity between voluntary changers and all other companies. Thus, it asks whether Changers already had failure characteristics that may have caused the AICPA to observe the high number of failures in new relationships. This leads to the following hypothesis:

Hypothesis 2a: Changers, when compared to NonChangers, are more likely to have auditors economically dependent on them as clients.

Recall that research question three addresses why some new relationships result in a failure. While advocates of mandatory audit rotation suggest that independence is a problem in longer relationships, it is not clear whether it is also a problem in new relationships. However, Raghunathan et al. (1994) argue that auditors have an economic incentive to not disrupt an early relationship because it could jeopardize the stable and positive cash flows that will follow after the start-up costs have been incurred. Therefore, to learn whether this is a problem in Changer Failures requires the following hypothesis:

Hypothesis 2b: Changer Failures are more likely than Changer NonFailures to have auditors who are economically dependent on them.

Auditor Ability/Industry Expertise

Some have suggested that the complexity of the audit is related to failures. For example, St. Pierre and Anderson's (1984) review of litigation cases reveals that 72% of audit

litigation cases alleged a problem with the auditor's interpretation of GAAP and/or GAAS while only 28% addressed procedural errors. Interpretation errors included complex accounting issues, uncertainty, and judgments that later proved incorrect. They suggest that complexity of the engagement may result in some industries being more susceptible to litigation⁸. A mitigating factor, however, is the auditor's expertise with respect to a client's industry. Auditors who are considered experts in an industry should have fewer failures than others operating in the same area⁹. If Changers have auditors with less expertise after they have switched auditors, then they may have a greater chance of a failure.

Williams (1988) studied companies who voluntarily changed auditors and found that companies switch to auditors with more market share. However, even after the change, they are still with auditors who have less industry expertise (when compared to companies who didn't change their auditors). A partial replication of this finding is necessary for three reasons. First, the Williams study covered only NYSE and AMEX companies switching among Big Eight firms from 1977 to 1982. Thus, the result has not been tested on a broader sample of

⁸Their findings indicate that certain industries do show up more frequently than expected. However, they note that this is not evidence that some industries are more complex – it could instead be that certain industries have more exposure due to size, etc. See Part III for a discussion of industry effects and see Hypothesis 8 for a discussion of the impact of account complexity.

⁹DeFond (1992) suggests that auditors who are industry experts provide greater assurances against financial statement breaches because they have a disproportionate amount of reputation at stake.

Changers. Second, Williams estimated expertise for only one year (1980) in the total time period. Finally, examining Changers over the decade of the 1980s is consistent with the failure sample measured in research question one (see Section III for a full discussion of the research approach). This leads to the following hypothesis:

Hypothesis 3a: Auditor industry expertise is likely to be lower for Changers than for NonChangers.

Before comparing the expected differences between Changer Failures and Changer NonFailures on this variable, it is important to consider the perceptions of audit quality from those in the field. Carcello, Hermanson and McGrath (1992) examine the perceptions of auditors, preparers, and financial statement users. They find that the two most important factors in audit quality are 1) audit team and firm experience with the client, and 2) industry expertise. Thus, knowledge of the client and industry are considered the key ingredients to audit quality. Early in the client-audit relationship it is expected that extensive client knowledge is not possible. Recall that this is one of the reasons for arguing against mandatory auditor rotation. The argument is that since client expertise is not possible early, then mandating auditor rotation will increase the likelihood of failure. Therefore, it appears that industry knowledge will be very important in new relationships due to the lack of client knowledge. Furthermore, those without

industry knowledge will be more likely to fail. This leads to the following failure related hypothesis:

Hypothesis 3b: Industry expertise is likely to be less for Changer Failures than for Changer NonFailures.

MANAGEMENT VARIABLES

Management characteristics must also be examined in failures. Feroz et al. (1991) document management's role. They report that 72% of the SEC's accounting enforcements result in either the firing or forced resignation of top management. Additionally, of the 188 actions taken against management, 83 (or 44%) are civil actions for fraud, 22 (or 12%) are for negligence or recklessness by management, and 70 (or 37%) are classified as administrative proceedings¹⁰.

In consideration of management's role, this section suggests that the following company/management attributes are associated with Changers: fraud, financial condition, management ownership, audit committee and the complexity of the accounts being audited.

Management Fraud

It is well documented that fraud is related to failures. For example, the SECPS and POB Combined 1991 Annual Report (page 27) notes that "33% of the cases allege failure by the

¹⁰Proceedings relate to when the SEC found disclosure violations but did not find any intent to defraud or any recklessness.

auditor to detect the consequences of management fraud." Additionally, McKeown et al. (1991) show that the average incidence of fraud reported after the audit report date is 47% for bankrupt companies who received a clean opinion and have signs of financial stress. Palmrose (1987) shows that 44% of litigation cases involve management fraud¹¹. Fraud is not only a problem in audit failures but has also been found in new auditor-client relationships.

In new relationships, it is considered easier for the company to deceive the auditor since the auditor lacks the knowledge to counteract the client's deceptions. The National Commission on Fraudulent Financial Reporting provides some further insight. They found that a significant number of fraud cases involved companies with recent auditor changes. Note once again though, that this riskiness of new relationships could be because companies with fraud are more likely to change auditors. For example, Williams (1988) provides partial evidence that fraud is related to auditor changes. He measured a negative publicity variable as any company that was reported in the Wall Street Journal Index as having accusations related to fraud, errors, foreign bribes, and misleading financial information. He found that companies who receive this negative publicity are more likely to change auditors. This leads to the following hypothesis:

¹¹Palmrose also classified 48% of litigation cases as "errors" as opposed to management fraud type cases. The primary difference is the intent to misrepresent by management.

Hypothesis 4a: Changers are more likely than NonChangers to have fraud.

Financial Condition

The financial condition of a company can be a factor in both auditor changes and failures. For example, consider the AICPA's comment that allegations of audit failure are more likely in new relationships. Next, consider Stice's (1991) results that allegations of audit failure (i.e., litigation) are related to more highly distressed companies. Taken together, these suggest that financial distress is more common in new relationships. This assertion is partially supported by Schwartz and Menon (1985) who find that firms in bankruptcy switch auditors more than healthier firms. This leads to the following:

Hypothesis 5a: Changers are more likely to be companies in poor financial condition when compared to NonChangers.

Financial distress in a company can also affect management's veracity or their willingness to properly reflect the events of the company. For example, Kinney and McDaniel (1989) studied firms who corrected previously reported quarterly earnings. They found that when these firms were compared to their industry, they were smaller, less profitable, had higher debt and had slower growth. Additionally, DeFond and Jiambalvo (1991) examined accounting errors noted in

prior period adjustments. They showed that firms that overstate earnings are more likely to have lower growth in earnings and have fewer income-increasing GAAP alternatives available. Both studies suggest that managers are responding to economic incentives to enhance earnings.

In addition to the influence on management's behavior, distressed companies can also be strong candidates for litigation¹². St. Pierre and Anderson (1984) showed that 63 out of 129 auditor litigation cases were companies who were either in bankruptcy or had incurred significant losses. Palmrose (1987) found that 50% of litigation cases involved companies with either bankruptcy or severe financial distress. Finally, Stice (1991) found an increased likelihood of audit litigation if the company was in poor financial condition.

The studies cited above suggest that poor financial performance may be related not only to management's behavior with respect to proper reporting, but also to the incidence of auditor litigation. Consider, however, how the auditor might be influenced by a company's financial performance. Raghunathan et al. (1994) argue that auditors recognize the greater risk of litigation on distressed companies. This, in turn, leads the auditors to work harder and report more honestly on distressed companies, resulting in fewer actual failures. Consistent with their hypothesis, they found

¹²Note, however, that financial distress in a company does not necessarily lead to auditor litigation. Palmrose (1987) found that 80% of bankrupt companies have no auditor litigation.

that companies with low financial distress have a higher likelihood of failure. Similar results were found by McKeown et al. (1991). In predicting why bankrupt companies did not have qualified opinions (i.e., alleged failures), they found that companies with low financial distress scores had a higher likelihood of failure. In summary, although highly distressed companies are more likely to be involved in litigation, low distressed companies are more likely to be involved in other failures. The implication is that auditors seem to be involved in more failures when the signs of financial difficulty are ambiguous. These results lead to the following hypothesis:

Hypothesis 5b: Changer Failures are more likely to be financially healthy companies compared to Changer NonFailures.

Ownership Control & Objectivity

Williamson (1964) argued that managers of companies with widely separated ownership have more discretion in managing the company. If this is true, then it follows that managers of such companies have more influence over the financial statements. The issue that arises for this study is whether managers who are more in control of a company can affect the likelihood of a failure.

Research to date has shown some differences between management-controlled firms and owner-controlled firms. For example, Dhaliwal, Salamon, and Smith (1982) found significant

differences between the depreciation methods adopted by management-controlled firms (i.e., firms with diffuse ownership) and owner-controlled firms. Additionally, DeFond and Jiambalvo (1991) found that firms with diffuse ownership have a greater chance of having an income increasing accounting error.

In the context of failures, Raghunathan et al. (1994) argue that management-controlled companies are less constrained by their internal control systems and can make it more difficult for auditors to detect errors. They also argue that management-controlled firms have more power in hiring and firing their auditors with the suggestion that auditors are then less willing to report a misrepresentation by management-controlled firms¹³. Thus, the prior literature shows some ownership differences and suggests an association of this variable with failures. What has not been tested is whether Changers are more likely to have this characteristic. These arguments lead to the following hypothesis:

Hypothesis 6a: Changers are more likely than NonChangers to be companies that are management controlled.

Consider the argument above that management-controlled firms have more power to hire and fire their auditors. If a management-controlled firm wanted to hide something from

¹³Although not statistically significant, they found that a management-control variable was positively related to the likelihood of failure.

the auditor, it could attempt to do so. Further consider, however, what would happen at the first hint that the auditor may be on to management's hidden plans. The result would be the firing of an auditor and the subsequent hiring of another auditor (with the hope that the new auditor would ignore or miss the issue). This is exactly what was alleged in the case of the Silverado Savings & Loan failure. The regulators investigating the case allege that Silverado fired the "tough auditors" who were cracking down on bad loans. Management then hired new auditors in an attempt to both hide the thrifts' poor financial condition and to pay large executive bonuses (see Wilmsen 1990). The pattern that results in such scenarios is that new relationships are more likely to fail. However, the association (as discussed here) with the failure would be due to management changing auditors in an attempt to hide something¹⁴. This leads to the following hypothesis:

Hypothesis 6b: Changer Failures are more likely than Changer NonFailures to be management-controlled companies.

Audit Committee

Commenting on audit committees, the Report of the National Commission on Fraudulent Financial Reporting (NCFRR 1987, page 12) notes that "the audit committee of the board of

¹⁴"Opinion shopping" by management would look the same. Note, however, that Smith (1986) found only 5 out of 139 cases of auditor changes that revealed the possibility of opinion shopping.

directors plays a role critical to the integrity of the company's financial reporting." The commission then recommends that all public companies should have audit committees with independent directors. Thus, audit committees are expected to make a difference in whether fraudulent financial reporting occurs or not. In the context of the present framework, audit committees add a level of objectivity to the financial reporting process.

Seabright, Levinthal & Fichman (1992) studied individual attachments in an auditor change context. They did not find an association between the presence of an audit committee and companies that change auditors. This study replicates their test and then extends it by testing not only audit committees but also independence of audit committees. This leads to the following hypothesis:

Hypothesis 7a: Changers are less likely than NonChangers to have either an audit committee or an independent audit committee.

Another empirical study addressing audit committees is DeFond and Jiambalvo (1991). They argue that companies with audit committees have a decreased chance of earnings overstatement because the audit committee is part of a control environment that increases the chance that errors will be detected. They found that earnings overstatements are less likely for companies with audit committees. However, what

has not been tested is whether audit committees are helpful in reducing early failures (as implied by the NCFER). This leads to the following hypothesis:

Hypothesis 7b: Changer Failures are less likely than Changer NonFailures to have either an audit committee or an independent audit committee.

Management Ability & Account Riskiness

Not all failures are intentional. Management's ability to correctly report an issue can be a cause for failures. One study supporting such an argument is DeFond & Jiambalvo (1991). They note that four of their forty-one firms with earnings overstatements were not "deliberate attempts" to increase earnings. In contrast, these appeared to be complex issues that were not initially interpreted correctly by management or the auditors. Additionally, Kreutzfeldt and Wallace (1986) analyzed errors detected by auditors and found that half of the errors are classified as judgment errors or incorrect application of GAAP. Furthermore, they found that companies with personnel problems had more errors. These studies suggest that management's ability can be an important issue. The following studies discuss when ability is likely to be a problem.

Stice (1991) suggests that certain financial statement accounts have greater risk due to their size and their subjectivity. Stice found that accounts receivable and inventory, as a percent of total assets, are positively associated

with lawsuits against auditors¹⁵. Additionally, Feroz et al. (1991) report on SEC enforcements and note that 70% of the enforcements relate to overstatements of accounts receivable and inventories. Such overstatements were caused by premature revenue recognition and delayed write-off. These articles document the significance and riskiness of receivables and inventories in both litigation and SEC actions. Additionally, Seabright et al. (1992) showed that receivables as a per cent of total assets was positively related to auditor changes. This study will again hypothesize that relationship but does so on a sample period consistent with the failures being examined. This leads to the following hypotheses:

Hypothesis 8a-i: Changers are more likely than NonChangers to have a large receivable balance relative to total assets.

Hypothesis 8a-ii: Changers are more likely than NonChangers to have a large inventory balance relative to total assets.

Although Stice (1991) provided some support for the association of account risk or complexity and litigation type failures, additional evidence is needed to determine if early failures are more likely to have this characteristic. The failure differences are hypothesized as follows:

¹⁵Note that these variables were only significant in predicting litigation against auditors when the tests controlled for time period and industry.

Hypothesis 8b-i: Changer Failures are more likely than Changer NonFailures to have a large receivable balance relative to total assets.

Hypothesis 8b-ii: Changer Failures are more likely than Changer NonFailures to have a large inventory balance relative to total assets.

The variables and their predicted signs are summarized in Table 1. The table provides a glance at the differences that are expected 1) between Changers and NonChangers, and 2) between Changer Failures and Changer NonFailures. Section V provides a discussion of these differences.

Table 1
Predictor Variables for Research Questions 2 and 3

Variable	Predicted Sign when Changers are compared to NonChangers ^a :	Predicted Sign when Changer Failures are compared to Changer NonFailures ^b :
Economic Dependence	Positive	Positive
Industry Expertise	Negative	Negative
Fraud	Positive	not applicable
Financial Condition ^c	Positive	Negative
Management Control	Positive	Positive
Audit Committee	Negative	Negative
Receivables as a percent of Total Assets	Positive	Positive
Inventory as a percent of Total Assets	Positive	Positive

^a Changers are coded as one and NonChangers are coded as zero.

^b Changer Failures are coded as one and Changer NonFailures are coded as zero.

^c Higher scores on this variable indicate more financial distress. Thus, financially healthy companies should have low scores and financially sick companies should have high scores. Changers are hypothesized to have a higher score than NonChangers meaning that Changers will be more financially distressed. Changer Failures are hypothesized to have a lower score than Changer NonFailures meaning that they are less financially stressed. As previously noted, auditors work harder on companies with clear signs of financial distress resulting in less audit failures.

III. RESEARCH APPROACH

MODELS

Research question one is designed to test whether short term and long term failures have a higher failure rate than other periods. The approach taken in research question one was first to identify the audit failures for each definition of audit failure. Once identified, the ability of tenure to predict failure rate is examined with a logistic regression model that classifies all companies during the time frame as either a failure or a nonfailure.

Research question two hypothesizes differences between companies that change auditors and companies that don't change auditors. This question is approached by using a logistic regression model. The model uses a dichotomous dependent variable coded as one if a company changed their auditor and zero if they did not. The independent variables are used to differentiate between the two samples.

Research question three addresses differences between companies that changed their auditors and had an audit failure and companies who changed auditors but had no audit failure. Failure, in this sample, includes all of the three failure definitions included in research question one. This question is also addressed with a logistic regression model. The model has a dichotomous dependent variable and codes Changer Failures as a one and Changer NonFailures as a zero. Essentially, the

same independent variables used in research question two are used to discriminate between Changer Failures and Changer NonFailures.

SAMPLES

Numerous samples were collected for the three research questions. All of the samples were gathered over the time period 1980-1991 and included only companies meeting the following criteria: largest 15 CPA firms, SIC codes less than 6000, and no IPOs in the failure year. Choosing the largest CPA firms covers most publicly traded companies that had a related audit failure. The SIC criteria helps to avoid the noncomparability of financial statements between industrials and banks, real estate and insurance companies. Additionally, excluding the banks and savings and loan institutions prevents the sample from being biased due to the so called "S&L crisis" which occurred in the time frame.

Research Question One - Failure Samples

In addressing whether the tenure of the client-auditor relationship is important, three failure samples were collected. The first failure sample, the litigation sample, was obtained by reviewing Lexis/Nexis, the Wall Street Journal Index and other miscellaneous sources. The adoption of litigation as a definition of failure is not however without problems. The most obvious problem is that litigation only represents "allegations" of audit

failure and not actual audit failure itself. In an attempt to alleviate this concern, two steps are taken. First, litigation cases were used only if the auditor's opinion was unqualified. This approach ensures a better fit with the Section 561 audit failure definition¹⁶. Second, litigation cases were thrown out to the extent that they appear to represent "frivolous cases."¹⁷ This step is necessary because frivolous litigation plagues court dockets (see Klausner 1986 and Katz 1990)¹⁸. Frivolous suits will be measured as any suits that have been dismissed by the courts. Palmrose (1991) documents that twelve percent of auditor cases are dismissed by the courts. Leaving in all suits that are not dismissed assumes that the remaining suits have some merit. Note that the remaining litigation sample includes only suits that are open or settled/decided against the auditor. This approach resulted in twenty-six litigation type audit failures.

The second failure sample is bankrupt companies whose last audit opinion before bankruptcy was unqualified. Companies

¹⁶Sullivan (1992) provides some evidence on this issue. He sampled 90 litigation cases filed with the Quality Control Inquiry Committee and found that 72 percent (or 36 out of 50 non-financial institution cases) of the litigation cases were for companies whose financial statements had received an unqualified opinion.

¹⁷Frivolous suits are considered suits that have such a low chance of prevailing that they would not be filed but for the prospect of settlement (Katz 1990).

¹⁸The problem of frivolous suits is echoed by Jerry Sullivan, executive director of the Public Oversight Board. Sullivan (1992, page 11) notes that when the Quality Control Inquiry Committee investigates audit litigation cases they occasionally suspect a busted audit but adds "far more often the investigations lead us to the conclusion that the litigation is frivolous."

were used only if the last opinion issued was within approximately two years of the bankruptcy filing. This sample was identified from the Wall Street Journal Index and resulted in forty-seven bankrupt type failures. The third failure sample is SEC accounting and auditing enforcement releases. These cases were obtained from the NAARS database. Thirty-seven companies were in this category.

Research Question Two - Changers and NonChangers

Research question two considers whether Changers are representative of NonChangers and requires two samples. The Changer sample is a random sample of fifty companies that voluntarily changed auditors in the time period 1980-1991. This excludes companies that changed auditors due to mergers, rotation policy, etc. Companies that changed auditors were determined from Who Audits America. These Changers were matched with a NonChanger company on year and industry¹⁹. Matching was successful in that most Changers were matched on the four digit SIC code. To ensure these NonChangers didn't change auditors, the auditor's name was checked both five years before and five years after the year of matching.

¹⁹Controlling for industry helps control for industries that may switch auditors more frequently (Schwartz and Menon 1985).

Research Question Three - Changer Failures and NonFailures

Research question three addresses why some new relationships result in a failure. This question requires a Changer Failure sample and a Changer NonFailure sample. Changer Failure is defined as any company that changed auditors and had a failure by the auditor's second year with the company. This definition captures one and two-year tenure periods.

The Changer Failure sample is composed of the three failure types and includes litigation cases, SEC enforcement cases, and bankrupt type cases. Fifteen companies were in the Changer Failure sample. The Changer NonFailures are the fifty Changer companies from research question two. None of these fifty companies experienced any of the failures mentioned.

VARIABLES

Failure Rates

The failure rate is defined as the number of failures for a certain tenure period divided by the total number of companies with the same tenure period. There are four steps taken to calculate the failure rate. First, all failures are classified based on the auditor tenure as of the year the failure occurred. That is, if the auditor had audited the company for two years when the failure occurred, this is classified as a two-year failure. Second, all failures for each tenure period are summed and put in the numerator. Thus, if there are twenty

two-year failures over the sample period then the numerator is twenty. Third, all companies are identified for each tenure period. This number is the denominator. Finally, the failure rate is then calculated for each tenure period.

The tenure of each failure (the numerator) was identified by examining Compustat, Moodys, Q-Data and Who Audits America. To calculate the number of companies in each tenure period required an estimate of total companies per year and of total companies that changed auditors over the sample period. Compustat was used to obtain both of these items.

For each year in the sample period 1980-1991, Compustat was used to determine the number of companies with both an SIC code of less than 6000 and a value in the total asset field for the respective year. This approach yielded the number of companies per year. The number of Changers was determined by examining all companies that had a change in their auditor code on Compustat. Only companies with SIC codes less than 6000 were counted as Changers. One problem in using Compustat, is that up until 1988, Compustat only listed the top eight CPA firms and labeled all other CPAs as "other." Thus, data collection on Changers before 1988 doesn't capture companies that changed from one non-Big Eight firm to another non-Big Eight. The percent of companies changing from "other" to "other" was estimated in two ways. First, Johnson & Lys (1990) noted that 8 percent of companies fall into this category for the time period 1973-1982. Second, the 1988 and later

results from Compustat indicate that an average of 10.4 percent of companies fall into this category. Thus, an adjustment was made to all Changers before 1988 by taking the number of Changers and adjusting upward by 9.2 percent (or the average percent between the two time periods).

Once these data were obtained, the total number of companies in each tenure period was estimated by examining the number of changers per year. For example, the total number of one year tenure period companies is the total number of companies that changed auditors during the time frame. As another example, examining the number of companies that switched auditors in 1987 reveals how many companies will be in two year relationships in 1989. This procedure is repeated for each tenure period to estimate the total companies in that tenure period.

Economic Dependence

This variable is measured as client sales divided by the total sales of all clients. Client sales were determined from Compustat and total sales of all audit clients were determined from Who Audits America. This measure captures the independence (or rather dependence) in appearance issue. Very large numbers in this variable indicate that the client contributes a very large percentage of the total revenue of the auditor. Thus, as this variable gets larger, the auditor is considered more dependent on the client for revenue.

Auditor Ability and Industry Expertise

Industry expertise is measured as an auditor's market share of an industry. The approach used is based on Williams (1988). For each company, he listed their SIC code, auditor and sales. This data is obtained for each year from the Compustat files. Market share is computed for each year based on an auditor's percentage of total sales in a particular industry for that year. Industries are grouped by two digit SIC codes. This variable attempts to capture the auditor's ability to deal with the issues presented by a client. Higher scores on this variable proxy for a greater amount of industry knowledge on the part of the auditor.

Fraud

The fraud variable is binary with a value of 1 for a reported incidence of fraud and a value of zero for no reported fraud. The Wall Street Journal Index was searched for instances of fraud for a three year window. The search was for one year on both sides of the year of an auditor change. Examples of items classified as fraud included overcharging customers with padded invoices, rigging bids on government contracts, officer theft of company funds and allegations of misleading or false financial statements.

Financial Condition

The financial condition variable is measured using Dietrich and Kaplan's (1982) model of loan classification. The model provides a measure of loan risk (or financial distress) using three variables. The three variables are a debt-equity ratio, a funds flow ratio, and a sales trend variable. Since the concept to be captured is distress and not necessarily bankruptcy, this model appears more appropriate than bankruptcy prediction models²⁰. This variable is measured in the first year the company is with the new auditor.

Management Control

This variable is measured as the percentage of stock owned by directors and managers. This data was found in a company's proxy statement and in the 10-K.

Audit Committee

Two separate measures are tested for this variable. The first measure is a dummy variable coded as 1 if an audit committee is present and 0 otherwise. This measure is consistent with the work of DeFond and Jiambalvo (1991). The second measure is the number of nonmanagement (i.e., independent) audit committee members divided by the total

²⁰Additionally, note that two separate measures of distress have been used and found to converge to the same result. McKeown et al. (1991) used a probability of bankruptcy and Raghunathan et al. (1992) used the loan risk model. Both studies found that failure was more likely to occur in companies with less distress.

number of audit committee members. This measure captures the concern expressed over the independence of audit committee members. Audit committee information was obtained from proxies and 10-Ks.

Management Ability and Account Riskiness/Complexity

This variable has two measures. The first is accounts receivable as a percent of total assets. The second is inventory as a percent of total assets. These variables were measured in the year of the auditor change.

IV. DATA ANALYSIS

RESEARCH QUESTION ONE

Number Of Failures

Table 2 shows the number of failures per tenure period for the three failure types and for failures in aggregate while Figures 1 and 2 plot the number of failures over tenure²¹. The figures reveal that there are larger numbers of failures when the tenure period is short (approximately 1 - 3 years) and when the tenure period is at least equal to 7 years.

Examination of the figures suggests that tenure is an important issue in explaining failures. This finding is consistent with prior research and with the previously stated arguments that both short-term and long-term relationships seem to be at risk. However, the result is misleading because it does not consider the failure rates. That is, it fails to consider the number of companies in each tenure period over the sample time frame.

Note that Table 2 is not consistent with the AICPA's assertion that alleged audit failures (i.e., litigation) occur "almost three times as often when the audit firm is performing its first or second audit of the company." The differences are most likely due to the data selection criteria. For example, the

²¹Table 2 does not include companies for which tenure information could not be found or for which the tenure information available was for less than 7 years.

Table 2
Number of Failures

	Aggregate Failures	Litigation Failures	SEC/AAER Failures	Bankrupt Failures
Tenure:				
1	5	1	1	4
2	10	4	5	5
3	12	2	4	6
4	7	2	1	4
5	6	3	3	2
6	8	3	3	2
7 or longer	50	11	20	24
Total	98	26	37	47

Note: The aggregate number of failures is less than the sum of the individual failure definitions due to duplicates among the different definitions of failure.

Figure 1
Number of Failures per Tenure Period

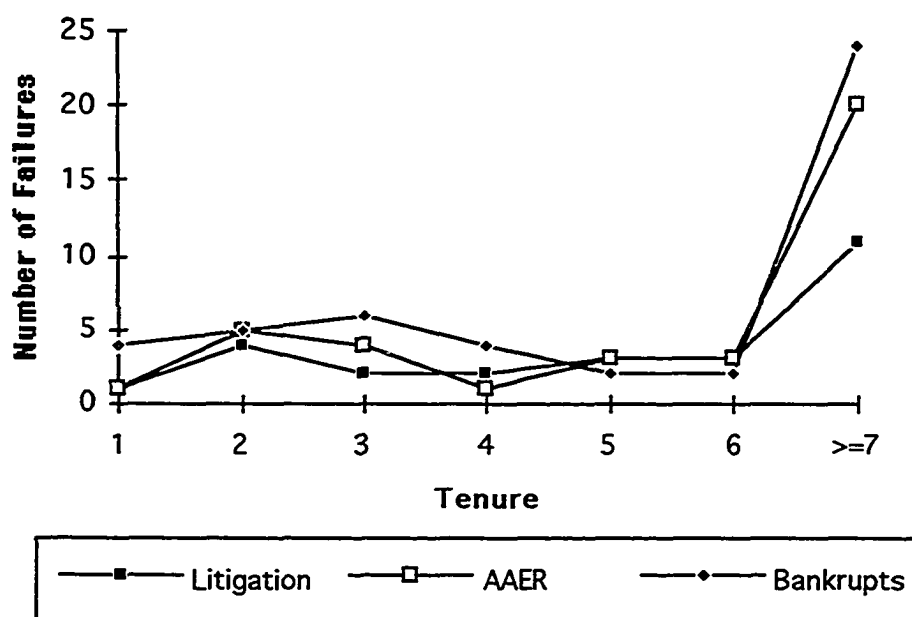
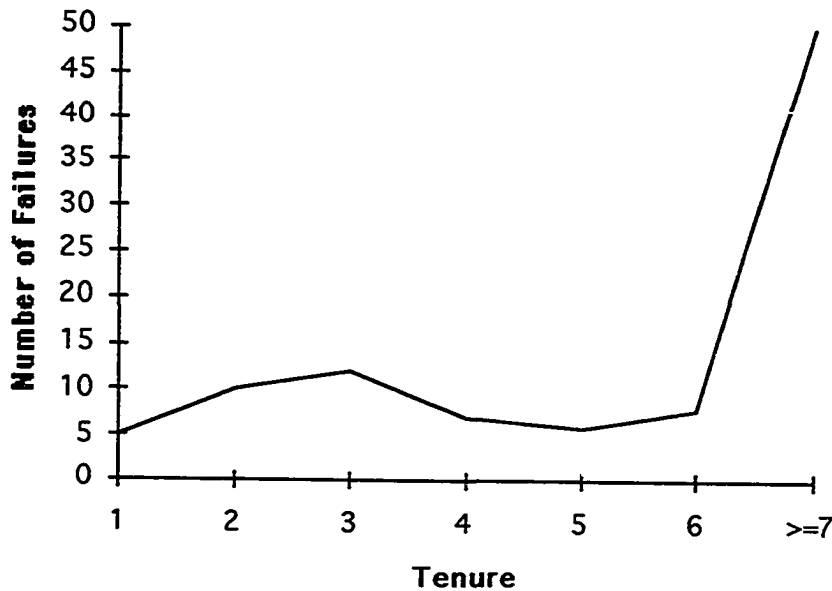


Figure 2
Aggregate Number of Failures



AICPA has all lawsuits filed against all auditors whereas this study has only suits against public companies that could be identified in the previously noted sources for the largest 15 CPA firms. Additionally, this study excluded suits involving an IPO year, all SIC codes of 6000 or higher, companies for which data could not be found, and companies for which the suit has been dismissed or settled in favor of the auditor. Given the AICPA's comment, these selection criteria may have biased the litigation results. However, to the extent that the selection

criteria capture the mandatory rotation issues, the litigation results are not biased.

Failure Rates

Calculation of the number of companies in each tenure period requires an estimate of total companies and of total companies that changed auditors. This was done using the approach described in section III. Table 3 reflects the final estimated number of Changers and the total estimated number of companies per year. The number of companies estimated to be in each tenure period are disclosed in Table 4.

Figures 3 and 4 provide evidence on failure rates as a function of tenure. The rates are based on the number of failures divided by the total number of companies in that tenure period. Figure 3 shows the failure rates by failure definition and Figure 4 shows aggregate failure rates. Both figures reveal that failure rates climb initially and then retreat somewhat to a lower level with the highest failure rates occurring in tenure periods two and three. Figure 3 reveals fairly similar patterns in the failure rates among the three failure definitions. One exception, however, is a noted increase in failure rates for litigation and SEC/AAER type failures occurring in years 5 and 6 but not occurring for bankrupt type failures. In summary, the plots indicate partial support for the AICPA's argument that new relationships are more risky.

Table 3

Total Number of Companies and Changers Per Year

Year	Total Companies on Compustat with SIC < 6000.	Changers - Number of Companies That Changed Auditors & Had SIC < 6000.
1975	Not estimated	165
1976	Not estimated	146
1977	Not estimated	207
1978	Not estimated	234
1979	Not estimated	153
1980	4650	146
1981	4691	183
1982	4879	194
1983	5027	164
1984	5022	203
1985	5277	234
1986	5481	284
1987	5491	274
1988	5342	237
1989	5227	286
1990	5201	357
1991	5208	294

Table 4

Total Number of Companies per Tenure Period

Tenure	Number of Companies Estimated to be in Respective Tenure Period
1	2,856
2	2,715
3	2,592
4	2,513
5	2,422
6	2,313
7 or longer	46,085

Figure 3
Failure Rates by Type

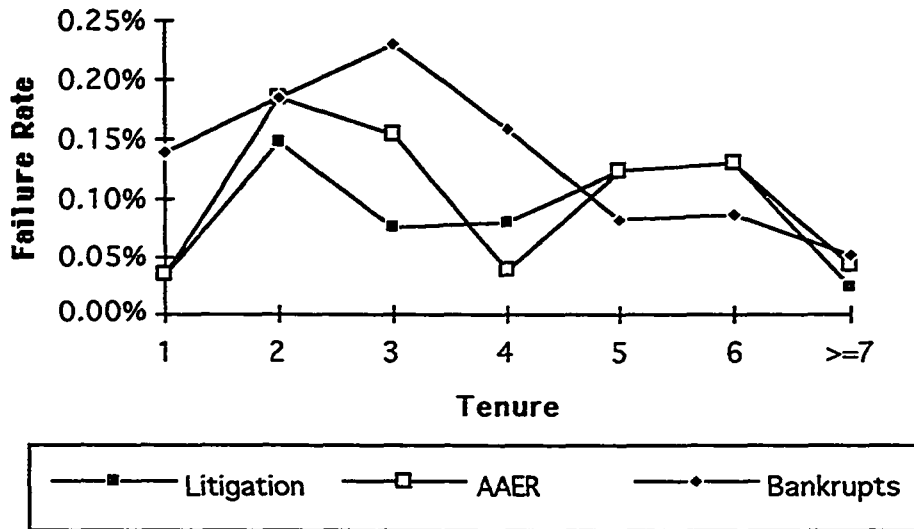
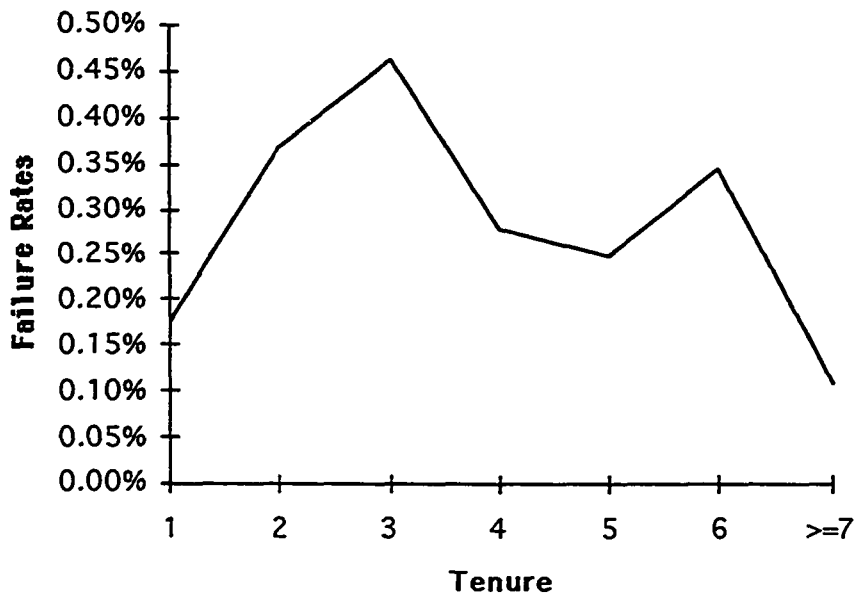


Figure 4
Aggregate Failure Rates



To provide further support, a logistic regression model was used to determine if there is the predicted curvilinear relationship. The logit model classifies each company (for each tenure period) as either a failure or nonfailure and then utilizes tenure and a squared term for tenure to predict failure. That is, the model tests for a quadratic trend. The model was run on aggregate failure rates and on each individual failure type. The results, which are weighted by the total number of companies, are reported in Table 5.

Table 5

Logit Results for Predicting Failures
(Model Contains both the Tenure & Tenure Squared Variables)

Variable:	Logit Coefficient (p value)			
	Aggregate Failures Model	Litigation Failures Model	SEC/AAER Failures Model	Bankrupt Failures Model
Tenure	.7259 (.0166)	1.0457 (.0731)	.6985 (.1699)	.3605 (.3768)
Tenure squared	-.1041 (.0017)	-.1435 (.0232)	-.0977 (.0781)	-.0682 (.1365)
Model Chi-Square	26.635 (.0000)	11.448 (.0033)	7.692 (.0214)	14.43 (.0007)

Table 5 results indicate a significant quadratic relationship for aggregate failures ($p=.0017$) and for the litigation failures ($p=.0232$). However, instead of the expected u-shape in failure rates (hypothesis one), the logit results indicate an inverted u-shape with lower rates on the tails. Consistent with this, Figure 4 shows that for low tenure periods there is an increasing failure rate and for higher tenure periods the rate tends to decline. These results reflect the overall trend of the failure rates. It should be noted that Figure 3 reveals that Litigation and SEC/AAER type failures do have a slight increase in failure rates in tenure periods 5 and 6.

Given the number and trend of failure rates, it is of further interest to examine the market value impact over tenure. Data was collected on closing stock prices and common shares outstanding as of the failure year and for the following year. The average annual decrease in stock price from the failure year to the following year was forty-three percent. Market value (defined as the number of common shares outstanding multiplied by the closing price) was plotted over tenure to determine the dollar value impact of the failures. Market value data was available for only 65 of the alleged audit failures. That is, some of the companies had no market price or shares outstanding listed on Compustat for the following year. The results are shown for the total market value change as a function of tenure (Figure 5) and for the average market value change as a function of tenure (Figure 6).

Figure 5
Change in Market Value as a function of Tenure

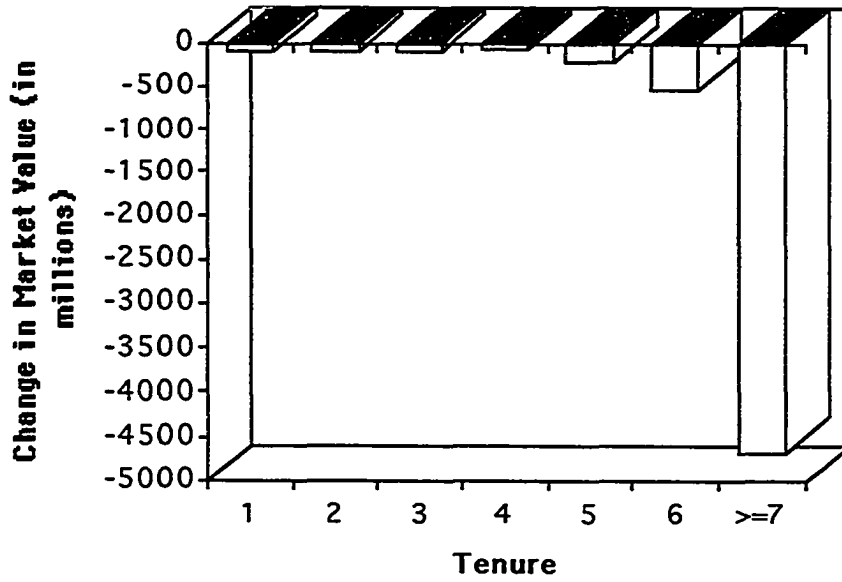


Figure 6
Average Change in MV as a function of Tenure

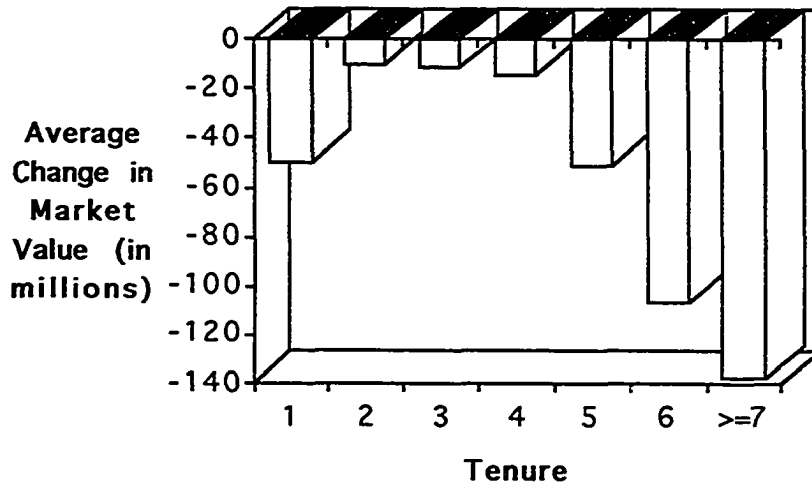


Figure 5 shows that the dollar change in market value is negative²². Total market value losses for tenure periods of 7 years or longer total \$4.7 billion while earlier periods have much smaller losses in market value. For example, periods one and two have only \$181 million in total combined losses. It is perhaps these losses in long term relationships that prompt the call by some for changes in the profession.

Figure 6 examines the average change in market value. Note that, in spite of the fact that the failure rate is lower among long term relationships (Figures 3 and 4), Figure 6 reveals that the average market value loss in long term relationships is \$138 million. This amount is almost three times larger than the average loss in tenure period one and almost fourteen times larger than tenure period two. The overall average change in market value per company is a loss of \$88 million.

Overall, the results suggest that while longer tenure periods have the highest number of failures, they appear to have a lower failure rate due to the larger number of companies in these relationships. However, the position that long-term relationships are more at risk is partially supported by the increase in aggregate failure rates in year 6. Even more support for the problem with long term relationships is noted

²²Admittedly, this measure is noisy as it only looks forward one year. Some alleged audit failures aren't discovered until a year later and thus the price and value could decline even more.

by the average losses in these tenure periods which dwarf the losses of the shorter tenure periods.

New relationships exhibit a low number of failures, but have the highest failure rates with that rate increasing early and then declining. Additionally, the average market value loss in one year tenure periods is \$50 million and is much higher than tenure periods two through four with an average loss of about \$12 million. This finding is consistent with the AICPA's position that new relationships are at an increased risk. While the increased failure rate in early tenure periods is suggestive of increased risk, it ignores the fact that these types of Changers are voluntary Changers and may not be representative of all companies that would be rotated under a mandatory rotation policy. Furthermore, it suggests a need to understand why new relationships fail.

RESEARCH QUESTION TWO

Descriptive Data

Table 6 provides descriptive data on the independent variables. The means and standard deviations are provided for both Changers and NonChangers. Overall, the two samples look fairly similar. However, univariate statistics reveal some differences. First, Changers have auditors with significantly less industry expertise than do NonChangers (one-tail $p = .01$). Second, Changers have a much higher occurrence rate of fraud

Table 6
Descriptive Data (Changers and NonChangers)

Variable		Changers (n=50)	NonChangers (n=50)
Economic Dependence	Mean	.0365	.0361
	Std. Dev.	.174	.174
Industry Expertise	Mean	.0934	.1462*
	Std. Dev.	.083	.139
Fraud	Mean	.1000	.0200**
	Std. Dev.	.303	.141
Financial Condition	Mean	-.9422	-2.5529***
	Std. Dev.	3.877	4.824
Management Control	Mean	.2922	.2624
	Std. Dev.	.187	.225
Presence of Audit Committee	Mean	.8600	.8400
	Std. Dev.	.351	.370
Independence of Audit Committee	Mean	.8013	.7811
	Std. Dev.	.361	.377
Receivables as a percent of Total Assets	Mean	.2172	.2256
	Std. Dev.	.137	.128
Inventory as a percent of Total Assets	Mean	.2335	.2327
	Std. Dev.	.168	.143

* - Significant for one-tailed test at $p = .012$.

** - Marginally significant for Fisher's exact one-tail test at $p = .1022$.

*** - One-tailed significance is $p = .0345$.

than NonChangers (one-tail $p = .10$). Finally, Changers are in worse financial condition than NonChangers (one-tail $p = .03$). Thus, the univariate statistics indicate that Changers have more failure type characteristics than do NonChangers.

Logit Analysis

A logistic regression is used to determine whether Changers are different from NonChangers on failure characteristics²³. The dependent variable receives a value of one if the company is a Changer, and a value of zero otherwise (for NonChangers). The results of the logistic regression are reported in Table 7²⁴. Overall, the model is fairly weak (model chi-square = 11.09) and does not distinguish well between Changers and NonChangers. Although the fraud and financial condition results are marginally significant ($p < .11$), they are consistent with the univariate results and provide some support for Hypotheses 4a and 5a. These results indicate that there is a

²³Maddala (1991) notes that sampling rare events results in unequal sampling rates. He adds that the logit model bypasses the need for a weighting procedure that would otherwise be necessary for the inequality in sampling rates. That is, the coefficients of the independent variables and their standard errors are not affected by the inequality in sampling rates.

²⁴The reported results are based on transforming the funds flow variable into a linear form. This variable is an input variable to the financial condition score. Six fund values in each sample were from between 2 and an infinite number of standard deviations away from the remaining sample. These outliers were scaled back to the next value of the funds flow variable. If the outliers are left in the model and if the outliers that have a value of infinity are reset to an average of the next four values, then the one-tail significance of expertise and fraud are $p < .05$ and $p < .10$. Thus, these two variables are mostly unaffected by the transformation. However, financial condition loses its significance.

Table 7
Logit Results comparing Changers (n=50)
to NonChangers (n=50)

Variable:	Predicted Sign	Coefficient	Wald (Chi-Square)
Economic Dependence	Positive	-.1316	.0111
Industry Expertise	Negative	-3.9804	3.4882*
Fraud	Positive	1.4571	1.5574**
Financial Condition	Positive	.0721	1.5717***
Management Control	Positive	.6692	.3714
Presence of Audit Committee	Negative	-1.0749	.4592
Independence of Audit Committee	Negative	1.3198	.7729
Receivables as a percent of Total Assets	Positive	-1.4519	.7300
Inventory as a percent of Total Assets	Positive	-.6265	.1628
Constant		.6791	.5238
* - Significant for one-tail hypothesis with $p < .05$.			
** - Marginal significance for one-tail hypothesis with $p = .106$.			
*** - Marginal significance for one-tail hypothesis with $p = .105$.			
Model Chi-Square	11.091		
model significance	(.2695)		

greater chance that a company will change auditors if the company is involved in fraud or if the company is in poorer financial condition. Furthermore, in support of Hypothesis 3a, companies that change auditors still have auditors with less industry expertise than do companies that don't change auditors. In summary, there is partial support for the assertion that Changers have more failure characteristics.

RESEARCH QUESTION THREE

Descriptive Data

Table 8 provides descriptive data on Changer Failures and Changer NonFailures. As noted previously, none of these Changers had a related audit failure. Additionally, for comparison purposes, descriptive data on NonChangers is provided. T-tests were done by comparing Changer Failures to Changers and Changer Failures to NonChangers. As expected Changer Failures involve significantly ($p < .001$) more fraud type cases than do other Changers. Furthermore, the rate of fraud increases from NonChangers to Changers to Changer Failures. One other variable, the presence of an audit committee, shows marginal significance ($p = .098$). This indicates that Changers are less likely to have an audit committee. The comparison of Changer Failures to NonChangers reveals that Changer Failures 1) have auditors

Table 8
Descriptive Data (Changer Failures, Changers and NonChangers)

Variable		Changer -Failures (n=15)	Changers (n=50)	Non- Changers (n=50)
Economic Dependence	Mean	.0657	.0365	.0361
	Std. Dev.	.253	.174	.174
Industry Expertise	Mean	.1003	.0934	.1462 ^c
	Std. Dev.	.086	.083	.139
Fraud	Mean	.5333	.1000 ^a	.0200 ^d
	Std. Dev.	.516	.303	.141
Financial Condition	Mean	-.1206	-.9422	-2.5529 ^e
	Std. Dev.	2.512	3.877	4.824
Management Control	Mean	.3252	.2922	.2624
	Std. Dev.	.224	.187	.225
Presence of Audit Committee	Mean	.6667	.8600 ^b	.8400
	Std. Dev.	.488	.351	.370
Independence of Audit Committee	Mean	.65	.8013	.7811
	Std. Dev.	.48	.361	.377
Receivables as a % of Total Assets	Mean	.2393	.2172	.2256
	Std. Dev.	.141	.137	.128
Inventory as a % of Total Assets	Mean	.2776	.2335	.2327
	Std. Dev.	.215	.168	.143

a - One-tail significance is $p < .001$ (comparing Changer Failures to Changers).

b - Fischer's exact test one tail significance at $p = .098$ (comparing Changer Failures to Changers).

c - One-tail significance is $p = .065$ (comparing Changer Failures to NonChangers).

d - One-tail significance is $p < .001$ (comparing Changer Failures to NonChangers).

e - One-tail significance at $p < .01$ (comparing Changer Failures to NonChangers).

with less expertise (one-tail $p = .06$), 2) have more fraud (one-tail $p < .001$), and 3) are in worse financial condition (one-tail $p < .01$).

Logit Analysis

The dependent variable in the logit analysis coded Changer Failures as a one and Changers as a zero. The model thus attempts to distinguish between Changer Failures and Changers that don't have a failure. The logit analysis is run without the fraud variable because this variable, for the most part, distinguishes the two groups. For example, companies with SEC/AAER type failures by definition involve misstated financial statements (a type of fraudulent activity). The logit results are reported in Table 9. Overall, the model is weak (model chi-square of 5.845) and does not discriminate between the two samples. Only the presence of an audit committee variable reveals any significance and it is marginal ($p = .105$).

The combined results reveal that Changer Failures are very similar to Changers that have no related failure. That is, there are few differences between the two groups. However, the major distinguishing factor is fraudulent activity - either lawsuits or the SEC alleging some sort of company wrongdoing. Furthermore, the presence of an audit committee appears to make a difference, with Changer Failures being less likely to have an audit committee.

Table 9

Logit Results comparing Changer Failures (n=15)
to Changer NonFailures (n=50)

Variable:	Predicted Sign	Coefficient	Wald (Chi-Square)
Economic Dependence	Positive	1.7508	1.2158
Industry Expertise	Negative	3.2008	.6294
Financial Condition	Negative	.1030	1.1336
Management Control	Positive	.2224	.0161
Presence of Audit Committee	Negative	-4.8750	1.5712*
Independence of Audit Committee	Negative	3.9065	1.0192
Receivables as a percent of Total Assets	Positive	.8818	.1458
Inventory as a percent of Total Assets	Positive	.1004	.0025
Constant		-.9619	.6062
* - Marginal one-tail significance at p = .105.			
Model Chi-Square	5.845		
model significance	(.6646)		

V. DISCUSSION AND CONCLUSION

Limitations

There are several limitations in this study. In testing the failure rates, only observed audit failures were used and only observed failures for which the tenure variable could be determined. If unobserved failures or companies without full tenure data differ from the companies used in this sample, then the results are partly misleading. Furthermore, in identifying the failure samples, any bias by the reporting sources (i.e., by Lexis/Nexis, the SEC or the WSJ Index) against certain companies could distort the results. One further limitation was that the identification of Changers and a matching sample of NonChangers required proxy and financial statement availability. Finally, the analysis in research question three was limited because of the small sample size of Changer Failures. Despite these limitations, the following conclusions are made.

Discussion and Conclusions

The first research question addressed whether both short-term and long-term relationships are more likely to fail than other periods. It was found that short-term relationships do exhibit an increased rate of failure relative to other periods. Furthermore, it was found that the rate of failure increases over the first three years of the auditor-client tenure and then

tends to decline. Litigation and SEC AAER type failures also exhibited an increase in failure rates around tenure periods four and five and then a decrease consistent with the bankrupt type failures in later periods. Overall, there appears to be an association between tenure period and failure rate.

The claim that long-term relationships are a problem is partially supported. The results indicated that almost half of all failures are for tenure periods of at least seven years. Additionally, the average market value loss in this tenure period is quite large at \$138 million. The large impact of these losses could be due to bigger companies being more likely to stay with their auditor over long periods. Another factor could be that since the auditors aren't rotated, the errors are inadvertently allowed to continue over multiple periods with the cumulative effect being a major problem by the time it is discovered. In the context of mandatory audit firm rotation, it has been argued that the auditor's independence and objectivity is being diminished in these longer tenure periods and that this is causing the problems. It remains an untested assertion that auditors have less independence and objectivity in long term relationships and that rotation will help eliminate or reduce this problem.

The failure rates provide further insights. Due to the large number of companies which are in these longer tenure periods, it appears that the risk of failure is quite low. This evidence suggests that long term relationships are less likely to fail than

other relationships. However, the riskiness of long term relationships appears less risky because it is compared to the riskiness of short term relationships. To the extent that the failure rate of short term relationships is overstated, this conclusion is invalid.

Despite their low failure rate, it is hard to ignore the large dollar losses in these long term tenure periods. The AICPA has argued that another major problem with mandatory audit firm rotation is the increase in overall audit costs. The AICPA notes that rotation raises costs to the firms, their clients and to the public. For audit firm costs, this is true only to the extent to which auditors can pass along these costs to their clients. However, there should be a cost-benefit analysis that weighs these increased costs to the auditors and to the companies, against the \$4.7 billion (and this number is understated due to data limitations) in market value losses that resulted in long term tenure periods.

The mandatory rotation position of the AICPA argues that new relationships are more risky and therefore, any rotation would exacerbate the problem of alleged audit failures. This claim that new relationships are more risky is supported based on Figures 3 and 4. Even though the number of early alleged audit failures isn't large, neither is the number of new auditor client relationships. This results in a high failure rate for these tenure periods. The market value analysis provided further insights. One year tenure periods have an average market

value loss of \$50 million and this loss is much higher than tenure periods two through four. By themselves, these results indicate that rotation should not be considered.

Using Figures 3 and 4 alone, the conclusion is that rotation would increase the number of failures because there is a higher rate of failures in these tenure periods. Recall, that the AICPA's argument in this area is that the increase in short term failures is due to the new auditor lacking knowledge of the client's operations and business. This appears to be the primary issue - whether these early failures are due to the new auditor's lack of knowledge or whether they are caused by some other reason. This study notes that to test that assertion, it must first be determined whether this sample is representative of other companies that would be rotated under a mandatory audit firm rotation policy. That is, these figures and the results from them use voluntary changers and any generalizations to the population of companies who during the time period did not change their auditor is premature. Thus, the additional analysis provided by research questions two and three are necessary in addressing this issue.

The results from research question two indicate that Changers do have more failure characteristics than do NonChangers. Although the results are weak, there is support to suggest that Changers exhibit worse financial condition, have a much higher rate of fraud, and have auditors with less expertise. The expertise results are especially interesting

because the knowledge argument is made by the AICPA as a factor in reducing failures. The fact that Changers are, on average, not switching to auditors with industry expertise may indicate that companies with worse financial condition either don't want an industry expert or can't afford one (assuming industry experts can charge higher fees).

Furthermore, research question three results indicate that Changer Failures are also less likely to have an audit committee. The AICPA notes in their position on mandatory rotation that audit committees are in the best position to know when to change auditors. However, if audit committees are less likely to be present, then this is not possible.

Fraud was, of course, a major issue in Changers and Changer Failures. The fact that fraudulent activity existed may have biased the results in that the financial statements were most likely incorrect and any use of such statements in the hypotheses were probably affected. Furthermore, the fact that the model can't distinguish between Changer Failures and Changer NonFailures could mean that the fraud was so pervasive that not even a good model nor good auditors (although they are auditors with less industry knowledge) could detect any differences. Additionally, it could be that the model is misspecified.

The combined results indicate that although new relationships indicate a higher degree of risk, this may be due to the fact that these companies (who voluntary changed

auditors) are more likely to fail. Therefore, based on the results in this study, noting the riskiness of new relationships as a reason to not rotate audit firms does not appear to be a valid argument considering the characteristics which these companies display.

Future Research

Future work on the mandatory rotation issue should address the issue of the representativeness of voluntary changers to other companies. If it is confirmed that voluntary changers are companies that are more likely to fail, then this argument against mandatory rotation should be abandoned. That is, failure rates observed in voluntary changers should not be generalized to the sample of all companies that would be rotated under a mandatory rotation policy. It should be noted that, given that the AICPA Quality Control Inquiry Committee is the only one to have the full sample of litigation type failures, that this issue may not be fully addressed until that sample has been tested. Furthermore, the higher failure rate noted in short term tenure periods suggests that audit procedures need to be strengthened when a company is new to the auditor.

Focusing next on long term failures, the issue is still open as to whether the auditor's independence and objectivity are a factor in any of the definitions of long term failures. Even if it is found to be a factor, the next issue is whether rotating is the solution. Given the size of the dollar losses in long term

failures, this area is potentially the one that could have the largest impact if solutions are found.

It should be added that there is currently a middle ground. If it is accepted that long term relationships are more at risk due to a decrease in the auditor's independence and objectivity, and it is accepted that new relationships are more at risk due to the auditor's lack of client knowledge, then the potential solution is one that already exists. That is, rotate the engagement partner on the job. The SEC Practice Session (a division of the AICPA) currently requires all member CPA firms to rotate the engagement partner on public companies after seven years. This is designed to maintain knowledge of the client but to bring in a fresh perspective. However, the previously noted large market losses in long term relationships suggest this may not be working.

In addition to the insights provided on the mandatory audit firm rotation arguments, this study contributes to the literature in several ways. First, it offers an extensive examination of failure rates utilizing all tenure periods and multiple failure definitions. Second, it provides a more recent and comprehensive analysis of how companies who change auditors are related to failures. Third, it extends the failure literature because although previous work has utilized a tenure variable, no studies have specifically examined early failures.

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