ACADEMY OF ACCOUNTING AND FINANCIAL STUDIES JOURNAL

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THE INTERACTION OF ACCOUNTABILITY AND POST-COMPLETION AUDITS ON CAPITAL BUDGETING DECISIONS

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ABSTRACT

Capital budgeting decisions are among the most important decisions facing business entities. Current aspects of the capital budgeting process receiving increasing emphasis in the accounting literature are the relationship and impact of post completion audits (PCAs) on the capital budgeting decision process. The use of PCAs in practice is controversial since they can have both beneficial and deleterious effects on decision makers. PCAs tend to exist in two types of feedback environments, developmental and evaluative. Accountability, which is present in the work environment, may also affect capital budgeting decisions. Our research questions are how do PCAs (and the related feedback environment) and accountability, alone or interactively, affect capital budgeting decision makers and their decisions.

We hypothesize that accountability, type of post completion audit and their interactive effect influence decision makers' strength of recommendations and choices among differentially risky alternatives. We also anticipate accountability will increase decision makers' justifications of their recommendations.

We found a significant interactive effect between PCA used in an evaluative feedback environment and the presence of accountability. Subjects in this experimental condition decreased the strength of their recommendations for their chosen capital budgeting projects and became more risk averse in their capital budgeting project choices compared to other experimental conditions. There is also a significant effect for type of PCA and strength of recommendation in the accountability condition. These results are consistent with the feedback and accountability literatures, which imply an impact on behavior only when managers believe there are consequences to their decisions (evaluative environment) and they believe these consequences will have a personal impact (accountability). We found some support for the impact of accountability on justification. Accountable subjects provided more justifications than did those who were not accountable. We conclude that PCAs used in an evaluative feedback environment, with accountability, will influence managers to choose less risky and lower return projects. Managers need to be aware of these potential effects in order to improve their decision-making.

Key Words – Accountability, Capital Budgeting, Feedback Environment, Post Completion Audit
A copy of the data is available upon request

INTRODUCTION

Capital budgeting decisions are among the most important decisions facing business entities. An important aspect of the capital budgeting process is the relationship and impact of post completion audits (PCAs) on the capital budgeting decision process. Feedback environment is an inherent aspect of a PCA. Behavioral researchers have conducted no studies we are aware of on the effect of feedback environment, as incorporated in PCAs, on capital budgeting decisions. The use of PCAs in practice is controversial since they can have both beneficial and deleterious effects on decision makers (Neale, 1993). This is not surprising since the use of different feedback environments, in general, can be either beneficial or deleterious. (Kluger and DeNisi, 1996) The effect of PCAs on the decision maker could depend on the type of feedback environment that exists for the decision maker.

We can apply the concept of accountability to the capital expenditure decision process. Unlike a PCA, which is an external monitoring source, accountability is a psychological concept influencing an individual's behavior. Simonson and Nye (1992) state that if decision makers perceive they know the desired preferences of someone to whom they are accountable, they will make a decision that is consistent with their perception. Birnberg and Heiman-Hoffman (1993) suggest the need to address accountability explicitly when managers make decisions "where the ability to ascertain the outcomes is limited" (p.57). Birnberg and Heiman-Hoffman (1993, p. 51) cite Ouchi (1979) to show that accountability is a means by which other organizational members are made aware of an individual's performance, in the real world, to enforce or reinforce organizational values. Accountability research affords an opportunity to see how "various control mechanisms are currently balanced in the natural environment." (Birnberg and Heiman-Hoffman (1993), p. 59)

As Birnberg and Heiman-Hoffman (1993) recommend, this paper examines the impact of multidimensional control mechanisms on decision-maker behavior. McDaniel (1990) suggests the necessity to examine the interactive effects of control mechanisms as well. The use of PCAs is an exogenous process control mechanism to the individual proposing a capital budgeting project, and accountability is an endogenous psychological control mechanism. Therefore, both the use of PCAs and the presence of accountability can independently or interactively influence how capital budgeting decisions are made. Our research questions concern how PCAs and accountability, alone or interactively, affect capital budgeting decision makers and their decisions.

The next section of this paper contains a discussion of post-completion audits, accountability and development of our hypotheses. We present the experimental design and procedures in section three followed by the results and conclusions in section four.

THEORY AND DEVELOPMENT OF HYPOTHESES

Post-Completion Audits

The capital budgeting decision is one part of the capital budgeting process. Haka (2006) provides a comprehensive review of the capital budgeting and investment appraisal literature. Horngren, Datar, and Foster (2006) list six stages in the process. The stages are identification, search, information acquisition,

selection, financing, and implementation and control. The PCA is part of the implementation and control stage and is included to decrease the likelihood that a firm will "fund and forget." Soares, Coutinho, and Martins (2007) state that we do not know enough about the benefits of the post audit because: (1) firms protect the confidentiality of their practices and (2) the practices, where investigated, tend to be deficient. For these reasons, they see the area of post completion audits as a fruitful area for research.

We can loosely group the literature on PCAs into three categories. The first category is surveys on the extent of usage of PCAs such as Scapens and Sale (1981), Neale and Buckley (1992), and Klammer, Wilner, and Smolarski (KWS) (2002). The surveys tend to show increasing usage of PCAs over time. KWS (2002) sampled 127 firms of which 75% used some form of PCA and 25% did not use PCA's. How the 75% use PCAs differs.

The second category examines the relationship of the PCA to some measure of firm performance. The Myers, Gordon, and Hamer (1991) study is an example of this type of research. These studies find a weak relationship, at best, to performance. Our interest is in the third research category, the perceived and realized benefits of the post completion audit on the capital budgeting process, as discussed below.

Gordon and Myers (1991) say that the PCA serves four purposes: (1) financial control, (2) information for future decisions, (3) building in a "bailout factor" for unsuccessful projects, and (4) a psychological effect of the monitoring process on the decision maker who proposes a project that results in heightened awareness that the decision will not be "funded and forgotten." Knowing there will be monitoring may lead these decision makers to shy away from many projects. Neale (1993) finds deleterious effects of PCAs on executives at lower levels who are discouraged from championing projects, which they know face an audit. Interestingly, he also finds that projects put forward have a better chance of acceptance because executives at higher levels know that their subordinates believed in the project enough to overcome this deleterious effect.

Azzone and Maccarrone (2001) did a survey of Italian firms' post audit practices. They posit three main benefits: (1) Decisional support where the post audit is aimed at improving a particular investments performance, (2) Learning where the firm is able to improve its practices in evaluating all capital investments, and (3) Behavioral-related purposes aimed at aligning individual actions with organizational goals. They found learning to be the most important objective of the post audit, followed by decision support, followed by behavioral related purposes.

Implicit in the aforementioned studies is the concept of a feedback environment. The feedback environment is a textual or situational characteristic of feedback processes (Steelman, Levy, and Snell, 2004). One can incorporate two different types of feedback environment into PCAs. These two types of feedback are developmental and evaluative. Developmental is feedback that relates solely to the capital expenditure decision process. We call this the developmental feedback environment because it reflects the fact that the capital expenditure decision process is dynamic and should improve over time as organizations learn its strengths and weaknesses. The evaluative feedback environment relates to monitoring and control. This paper will investigate a scenario that does not use a PCA, a scenario using a PCA in a developmental feedback environment and finally a scenario using it in an evaluative feedback environment. [1]

The prior research implies, *ceterus paribus*, that when using PCAs in an evaluative feedback environment, there is an impact on the decision maker's behavior. This is consistent with feedback theory. (See London, Smither, and Adsit, 1997) Decision makers may become more conservative when proposing capital budgeting projects. Decision maker conservative behavior manifests itself in many ways.

In our study, we operationalize conservative behavior in two ways. First, subjects may select a less risky project. Second, subjects may explicitly show how confident they are about the success of the investment. Subjects do this by indicating how strongly they recommend the project.[2] The weaker the recommendation made, the more conservative the behavior. Two potential reactions of the decision maker related to the use of PCAs, in an evaluative feedback environment, are reducing the strength of their recommendations and increasing their risk aversion.[3]

Alternatively, when a PCA is used only in a developmental feedback environment and not for performance evaluation, the impact may be reduced or eliminated. That is, if we do not link PCAs to performance evaluation, and use them only as developmental feedback, the decision maker may continue to believe that implicit evaluation aspects still exist. However, both goal setting theory (Locke, Cartledge, and Koeppel, 1968) and control theory (Lord and Hanges, 1987) suggest the developmental feedback is not enough (by itself) to impact a decision maker's behavior. Therefore, there will be insignificant differences on behavior if there is only a developmental feedback environment or no PCA at all, instead of evaluative feedback

The above literature review leads to our first set of hypotheses. Note that we state all hypotheses in the alternative form.

> *H1A:* *Decision makers whose capital budgeting process uses a PCA in an evaluative feedback environment will make weaker recommendations for their selected alternative than decision makers will in the developmental PCA or no PCA condition.*

> *H1B:* *Decision makers whose capital budgeting process uses a PCA in an evaluative feedback environment will choose lower risk capital budgeting projects than decision makers in the developmental PCA or no PCA condition.*

Accountability

Accountability occurs when an individual believes that they will have to justify an action or decision to another person (Schlenker, 1980 and Tetlock, 1985). This definition is similar to that used in other accounting studies (e.g. Emby and Gibbins (1988), Birnberg and Heiman-Hoffman (1993), Kennedy (1993; 1995), Koonce, Anderson, and Marchant (1995), Glover (1997) and Hoffman and Patton (1997). Both the psychology and accounting literatures suggest that subjects held accountable change their decisions as well as how they justify them (Tetlock, Skitka and Boettger, 1989, and Messier and Quilliam, 1992). Holding subjects accountable creates a variety of behaviors including exhibiting the acceptability heuristic (Tetlock, 1983) and defensive bolstering (Tetlock, Skitka and Boettger, 1989).

The acceptability heuristic suggests that accountability influences people to choose alternatives that are more likely to succeed even though better alternatives may be available (Tetlock, 1985). Choosing a low-risk alternative is typically easier to explain than a high-risk alternative. It is easier to justify a decision that is likely to succeed than one that is not. Choosing low-risk alternatives is similar to acting conservatively. When individuals know they are accountable for their actions, they may choose defensible alternatives. This

leads to defensive bolstering (Tetlock, Skitka and Boettger, 1989). This causes individuals to marshal more justifications to support their recommended alternatives.

Tetlock and Lerner (1999) review twenty years of accountability research using the social contingency model (SCM) of accountability as the map to understanding a complex body of literature. The SCM's first key assumption is the "universality of accountability". People do some things alone, but it is difficult to escape the evaluative scrutiny of others in a complex, interdependent society" (Tetlock and Lerner (1999) p.573). The importance of this assumption to understanding the accountability literature, and we would argue behavioral research as well, is accountability is reflective of the "natural setting." Explicitly incorporating accountability into the experiment can increase both the internal and external validity of a study according to Birnberg and Heiman-Hoffman (1993).

The findings of Goddard (2004) reinforce our argument. Goddard found that accountability affected budgetary choices of local governmental units in the UK. Similar organizations had dissimilar budgetary practices. Goddard uses a "grounded theory" to speculate that "habitus" or disposition to act in a certain way influences individuals perceptions of accountability. "Habitus" forms by an interrelationship of attributes gleaned from an individual's experience and environmental setting. We analogize from Goddard's finding to an expectation of an interaction between the capital budgeting environment (the use of PCA in the environment) and accountability.

Birnberg and Heiman-Hoffman (1993) suggests that accountability plays a significant role in managerial accounting contexts, especially in ill-structured problem areas. They believe that accountability may make managers more cautious, exhibiting the above type behaviors. Capital budgeting is a difficult managerial accounting problem area since it requires the assessment of multiple unknown future outcomes.

The acceptability heuristic, as discussed above, suggests that accountable decision makers will feel responsible for future cash flows and hence will want to mitigate their responsibility by weakening their strength of recommendation and choosing lower risk projects. This leads to our second set of hypotheses.

> *H2A:* *Decision makers held accountable for capital budgeting decisions will make weaker recommendations for their selected alternative than decision makers not held accountable.*

> *H2B:* *Decision makers held accountable will choose lower risk (conservative) capital budgeting projects than decision makers not held accountable.*

Interactions and Justifications

We hypothesize that PCAs used in the evaluative feedback environment with accountability cause decision makers to make the weakest recommendations and choose less risky projects as compared to the other conditions (no PCA or PCA in a developmental feedback environment). The reason for this is that experiments incorporate subject confidentiality. We believe that the accountability experimental treatment would eliminate or greatly reduce the sense of anonymity that subjects have in our experiment making it more consistent with the real world environment. Individuals do not submit capital budgeting projects for consideration anonymously in business; hence, managers have some sense of accountability in all circumstances. We posit an interaction exists between accountability and type of PCA. Panel A of Figure

2 illustrates the proposed interaction. The increasing negative slope for the PCA evaluative feedback environment condition (as compared to the upper two lines in Panel A of Figure 2) demonstrates the expected primary interaction effect. This leads to the following two hypotheses.

> *H3A:* *There is an interaction between type of PCA environment and accountability on strength of recommendation.*

> *H3B:* *There is an interaction between type of PCA environment and accountability on choice of project risk.*

Finally, Hoffman and Patton (1997) found that auditors held accountable act more conservatively than when not accountable. They speculate that conservative decisions are easier to defend which is consistent with defensive bolstering behavior (e.g. *justifying your decision*) as proposed by Tetlock, Skitka and Boettger (1989). Shelton (1996) also found that accountability caused auditors to act conservatively. Birnberg and Heiman-Hoffman (1993) speculate that accountable managers in difficult or ill-structured decisions will exhibit conservative behavior. Therefore, we believe that decision makers will behave similarly to auditors. Accountable decision makers should generate more reasons to justify their decisions.

> *H4:* *Decision makers held accountable will generate more justifications for their capital budgeting decisions than decision makers not held accountable.*

EXPERIMENTAL DESIGN AND PROCEDURES

The experiment is a 2X3X2 design consisting of two between subject independent variables and one within subject independent variable. The two between subject variables are accountability and form of the post completion audit (PCA). The within subjects variable is the alternative capital budgeting projects. The dependent variables include project selection, strength of recommendation and a list of justifications for the capital budgeting project selected.

Experiment

We could not draw on an existing study to develop the experimental instrument because there was no existing publicly available experiment. We created the project descriptions for both the retool and the automate scenarios and developed the scales for our experiment. Since this is a new instrument, we conducted extensive pilot testing. We had three main goals for the pilot testing. First, we had to make sure that the instructions were clear. Second, we wanted to have a task that was tractable in a reasonable amount of time. Finally, we had to ensure that our manipulations worked. Faculty members, doctoral students, and experienced masters students participated in the pilot study. We debriefed the pilot subjects to determine the clarity of the instructions, the tractability and time required, and the efficacy of the manipulations. We made appropriate changes in the instructions and the experiment where indicated. Our first pilot test established that tractability of the task and time requirements were not an issue. We ran the pilot test iteratively, using

comments made in the debriefing sessions, until we believed the instrument and the manipulations worked. In addition to pilot testing, we ran validity checks described throughout the paper.

Independent Variables

We operationalize accountability at two levels as a between subjects variable. Either a subject is accountable or he/she is not accountable. Accountable subjects are required to record their name, address and phone number at the beginning of the instrument as well as record their name on their memo to management that justifies their choice of project. Additionally, the beginning instructions inform participants that the administrator will randomly select 25% of the respondents to have their responses reviewed by the person to whom they are accountable. Subjects who are not accountable do not record their name anywhere and are guaranteed anonymity and confidentiality.

Post-completion audits are manipulated at three levels as a between subjects variable. The levels are (1) no PCA, (2) PCA in a developmental feedback environment and (3) PCA in an evaluative feedback environment. Exhibit 1 shows how we operationalize the no PCA condition by stating explicitly that the company does not perform a post-completion audit. For the developmental feedback environment, we state the company performs the post-completion audit to look at how well the capital budgeting process is working in order to improve capital budgeting decisions in the future. Finally, in the evaluative feedback environment we emphasize that the subject is responsible for the project with the outcome used in their performance evaluation.[4]

The within subjects variable is the two alternatives of the capital budgeting decision. The differences between the two alternatives consist of the project net present value, the pattern of the cash flows, the payback and the sensitivity analysis. Both alternatives meet the minimum hurdle rate with the difference being that one alternative (automate) has a higher return, longer payback and a greater variance in the sensitivity analysis (hence implying greater risk) than the other alternative (retool).[5]

Dependent Variables

To test our hypotheses, we elicited three dependent measures from our subjects. The first dependent variable is the subjects' choice of alternative projects. Next, we measured the strength of recommendation. The subjects marked the strength of recommendation on a seven point Likert scale. Subjects indicated how strongly they recommend the alternative chosen (1= Weakly recommend, 7= Strongly recommend) and also indicated how strongly they recommended against the recommendation not chosen (1= Weakly recommend against, 7= Strongly recommend against). The final dependent variable is the number of reasons or rationales listed by the subjects to justify their selected capital budgeting project[6].

Experimental Procedures and Controls

The appendix contains one version (Accountability *and* PCA evaluative feedback environment) of our experiment. All of the experimental materials were pilot tested and modified based on feedback received from our pilot subjects. Figure one provides an overview of our experimental procedures. The researchers administered the experiment to five different groups.[7] In step 1, we randomly assigned subjects to one of the

six experimental treatment groups (See Figure 1). Subjects then read a letter thanking them for their participation and a one-page overview of procedures and instructions. The overview instructed the subjects that there were two booklets. Booklet one contained the capital budgeting case and dependent variable questions and booklet two contained demographic questions and manipulation checks. The instructions told the subjects not to open the second booklet until they turned in booklet one. Additionally, in booklet one, we initiated the accountability manipulation. Subjects in the accountable condition had to provide us with their name, address, and phone number.

Figure 1

Experimental Procedures
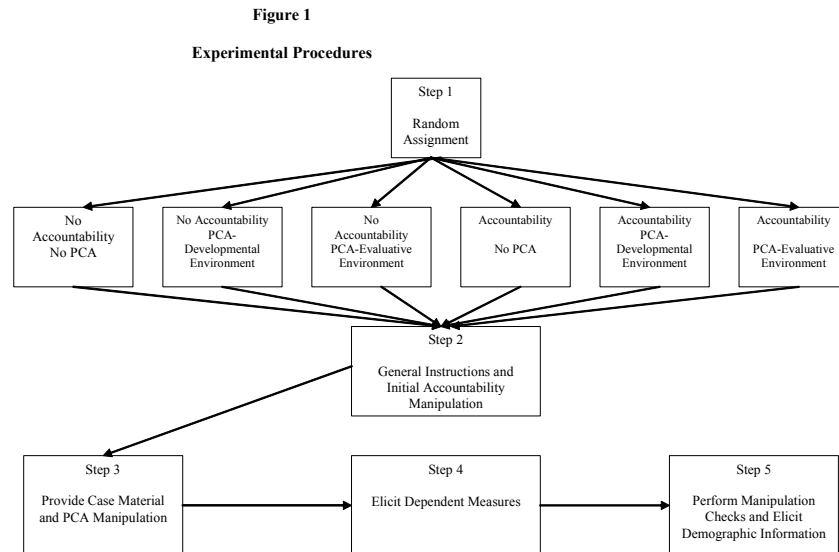
Booklet one contains a realistic capital budgeting scenario with a choice of a higher risk and lower risk action to accomplish the same objective. The case is set in a manufacturing environment with choices of retooling (lower risk) or automating (higher risk) a production line. The information in the case is constant across all accountability treatments except for the manipulation of the post-completion audit. The order of the presentation of the alternatives (retool versus automate) and related cash flow information are alternated for control purposes.[8] Following the descriptive case material were the project cash flows, statistics and sensitivity analysis for each alternative. Finally, we elicited the dependent measures as described above. We also reinforced the accountability manipulation here. Accountable subjects were required to record their name as part of the memo of reasons and rationales for their recommendation.

The subjects then proceeded to booklet two. At this point, we elicited responses about subject motivation such as interest in the study, general motivation and case realism. In addition, there are several manipulation check questions. These include questions relating to the risk of the project alternatives and the inclusion and purpose of a post-completion audit. Finally, we elicit demographic information about the subject's related experience, education and attitude toward risk.

Subjects

Table 1 reports descriptive statistics for our subjects [9]. Footnote 4 discussed the importance of the means on the risk of retooling and automating. The responses for Realism, Interest and Motivation, and Risk Tolerance were elicited on a seven-point Likert scale where 1 is Not Realistic (Interesting, Motivated, Willing to take a risk) and 7 is Very Realistic (Interesting, Motivated, Willing to take a risk). Subject responses for Realism, Interest and Motivation appear to be at a reasonable level[10]. We introduced realism, interest, motivation, and experience as potential covariates in our statistical analysis and there was no change in our results. On the other hand, risk Tolerance is a significant covariate that we discuss in the results section.

Most of the subjects are MBA students and a few are full-time managers. See Libby, Bloomfield, and Nelson (2002) for a justification of the use of students as subjects. We made appropriate modifications to the experimental package because of the use of the two subject groups. Managers in the accountability condition are accountable to a superior at their place of work whereas students are accountable to their professor. As stated above, experience levels were not significantly different and therefore we combined the two subject pools into one sample.

We provide the following checks for the Accountability manipulation. First, we only used the responses by subjects in the Accountability condition if they signed their name on the questionnaire. Second, consistent with Tetlock's ideas on cognitive effort, subjects who were accountable provided, on average, more Relevant, Relevant Non discriminating, and Total Reasons and Rationales for their recommendations and less Wrong reasons. These manipulation checks are consistent with other accountability studies in the accounting literature (Koonce, Anderson, and Marchant, 1995, Kennedy, 1995.)

Table 1: Self-Reported Descriptive Statistics for 75 Subjects	
Descriptive Statistics	Mean
Risk Retool	2.35
Risk Automate	5.32
Realism	4.97
Interest	4.57
Motivation	4.84
Experience	6.18 years*
Capital Budgeting Experience	2.23 years
Risk Tolerance	4.67
*Ten subjects self-reported having no experience	

Eighty-seven percent of our subjects correctly identified when the company used or did not use a PCA. Seventy-six percent of the subjects correctly identified the type of PCA condition they were assigned. We ran all of our tests with and without these subjects. The two different samples have identical interpretations. Therefore we report the results of the tests on the full (n=75) sample. There is credence to a conclusion that the operationalization was successful since the clear majority of subjects recognized the

condition they were assigned. Additionally, since there was random assignment of subjects across conditions, we expect any individual differences between subjects, on this condition, to be randomly distributed.

RESULTS AND DISCUSSION

Strength of Recommendation

Table 2 reports the strength of recommendation adjusted-means for each of the six treatment groups. Risk tolerance was a significant covariate and is included in all subsequent analysis of strength of recommendation. The interpretation of this covariate is the greater the tolerance for risk, the greater the strength of recommendation. Accountability and type of PCA were not significant in the ANOVA. The interaction between accountability and PCA was significant (p= .004). These results do not support H1A and H2A. We do find support for H3A. Figure 2 illustrates the expected (Panel A) and actual (Panel B) interaction. The actual interaction is different from the expected interaction.

Figure 2

Panel A

Expected and Actual Interactions

Expected

Panel B

Actual

DE = Development Feedback
EE = Evaluative Feedback

31
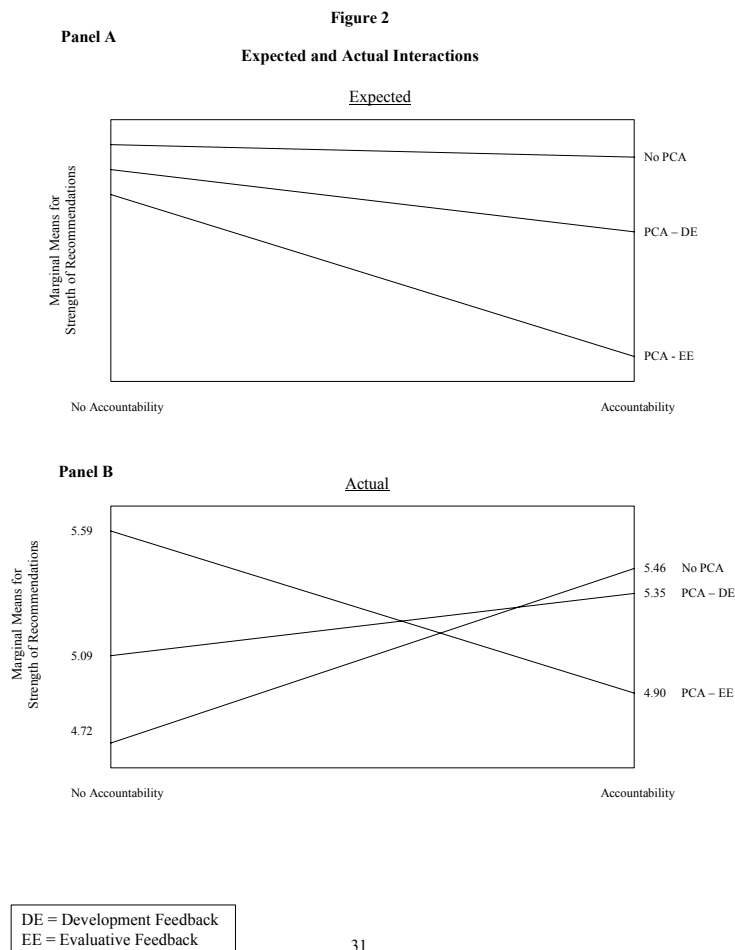
Table 2: Strength for Recommendation – Adjusted Mean Responses (All means adjusted for the risk tolerance of the individual.)		
	Accountable	Non-Accountable
No PCA	5.46	4.72
PCA- developmental environment	5.35	5.09
PCA-evaluative environment	4.90	5.59

We hypothesized the slopes of the no PCA and PCA in a developmental environment to be negative and the PCA evaluative feedback having a more negative slope than the other two conditions. Our actual results indicate that the slopes of the no PCA and the PCA developmental environment are positive. The PCA in an evaluative environment slope is highly negative as predicted. The slopes of the no PCA and the PCA in a developmental environment are in the contraindicated direction. These slopes are at least ordered correctly with the no PCA slope being less negative (more positive) than the PCA evaluative feedback environment.

In order to understand the results above, we performed regression analysis on each of the interactions individually maintaining risk tolerance as a covariate to determine their levels of significance. The PCA in a developmental environment by accountability interaction was not significant ($p= .611$) and therefore we cannot conclude that the positive slope is significantly different from zero. The No PCA by accountability interaction was marginally significant ($p= .08$) and is more difficult to explain. Perhaps our subjects did not want to appear indecisive when held accountable even without the presence of a post-completion audit. Further research could help explain this result.

The predicted interaction of PCA in an evaluative environment and accountability is highly significant ($p= .006$) in the hypothesized direction. The negative slope in Panel B of Figure 2 clearly illustrates this interaction. The strength of recommendation is highly impacted only when both PCA in an evaluative environment plus accountability are present, holding risk tolerance constant. These results are consistent with the work of Ouchi (1979), McDaniel (1990), Birnberg and Heiman-Hoffman (1993), and Tetlock and Lerner (1999). McDaniel (1990) and Birnberg and Heiman-Hoffman (1993) assert the necessity of looking for the interactive effects of control mechanisms. Ouchi (1979), Birnberg and Heiman-Hoffman (1993), and Tetlock and Lerner (1999) consider accountability as part of the natural environment for decision-making. The implication of our result is that the two control mechanisms (PCA in an evaluative environment and accountability) must be present to mirror the natural environment and to complement each other.

Further examination of the data lends support to the above conclusion. It is possible that the no accountability condition influenced subjects' seriousness in performing the task and may have lead to some unpredictable results. Therefore, we ran an ANOVA only on the subjects in the accountable condition. The cell means are presented in Panel A of Table 3.[11] The level of significance for the ANOVA is .08 suggesting that H1A is significant if we exclude non-accountable subjects.

We run pair wise comparisons of the No PCA, PCA in a developmental environment and PCA in an evaluative environment conditions to further analyze the results. Panel B of Table 3 presents the level of significance of the pair-wise comparisons. Note that the comparison of No PCA and PCA in a developmental environment is not significant. On the other hand, the comparisons of both No PCA and PCA in a

developmental environment with PCA in an evaluative environment are both significant. Consistent with H1A we can conclude that strength of recommendation is significantly weaker in the PCA in an evaluative environment condition. This conclusion is similar to the one drawn from the significant interaction discussed above. Perhaps accountability is a necessary condition and PCA in an evaluative environment is a sufficient condition to weaken strength of recommendation.

Table 3: Strength for Recommendation for Accountable Subjects – Adjusted Mean Responses (All means adjusted for the risk tolerance of the individual.)	
Panel A	
	Accountable
No PCA	5.42
PCA- developmental environment	5.40
PCA - evaluative environment	4.91
Pairwise Comparisons of Adjusted Mean Responses	
Panel B	
Comparison	Level of Significance
No PCA and PCA - developmental environment	Not Significant
No PCA and PCA evaluative environment	0.045
PCA- developmental environment and PCA evaluative environment	0.066

Choice Between Differing Risk Alternatives

Table 4 shows the percentage of subjects that chose the retool option in the capital budgeting decision. A logistic regression model and a discriminant analysis gave identical interpretations. There are no significant covariates. No significant results were found for the main effects (H1B and H2B) and an interaction was implied (H3B) but not significant. The results presented in Table 4 demonstrate the impact of the joint effect of PCA in an evaluative environment and accountability. This is evident because 62% of subjects in an evaluative environment with accountability chose the less risky project whereas only 27% and 36% of the other two accountable groups chose the less risky project. Therefore, we conducted further analysis by partitioning the data into separate accountable and non-accountable groups. A significant difference was found when subjects were accountable and PCA was used in an evaluative environment compared to when PCA was used in a developmental environment or when there was no PCA (Chi-square $= 2.95$, $p = .043$). Accountability was the controlling influence here when we performed Chi-square tests as part of the additional analysis. We found similar results on the subjects' choices to the strength of recommendation results reported in the previous section. Accountability is necessary for an effect and it must be interactive with PCA in an evaluative environment to be significant.

Table 4: Percentage of Subjects Choosing to Retool		
	Accountable	**Non-Accountable**
No PCA	**36%**	**56%**
PCA developmental environment	**27%**	**54%**
PCA evaluative environment	**62%**	**61%**

Justification for Alternative Choice

Table 5 reports the results for H4 on accountability and number of justifications. We see from Table 5 that the average number of relevant justifications for the accountable group is 3.11, which is greater than the 2.68 for the non-accountable group.[12] We observed a p-value of .097 in a one-tailed t-test. This marginal significance is due to the no PCA group. Perhaps some form of PCA needs to be in place with accountability to impact justification behavior which is consistent with our prior reported results. The no PCA group had a minimal difference across the accountability condition (3.09 vs. 3.11). Therefore, we repeated the one-tailed t-test with two levels of PCA: PCA in a development environment and PCA in an evaluative environment. Accountability for this analysis is significant ($p = .07$). These tests reveal some support for defensive bolstering behavior proposed by Tetlock, Skitka and Boettger (1989).

Table 5: Mean Number of Justifications			
	Accountable	Non-Accountable	Group Means
No – PCA	3.09	3.11	3.10
PCA developmental environment	3.09	2.38	2.71
PCA evaluative environment	3.15	2.67	2.87
Group Means	3.11	2.68	

CONCLUSIONS

In this study, we attempt to understand the impact of different types of post completion audit environment, accountability and their interactive effect in a capital budgeting decision context. We hypothesized that accountability, type of post completion audit, and their interactive effect influence the decision makers' strength of recommendation and choice among differentially risky alternatives. We also anticipated accountability would increase decision makers' justifications of their recommendations. We found a significant interactive effect for both strength of recommendation and decision choice. There is some support for the impact of accountability on justification. Accountable subjects provided more justifications than did those who were not accountable.

The results of our study are consistent with the previously cited work of Ouichi (1979), Birnberg and Heiman-Hoffman (1993), and Tetlock and Lerner (1999) who assert that accountability needs to be viewed as part of the manager's natural environment. We believe organizations hold most managers accountable in

their general work environment. When they use post-completion audits in an evaluative environment and managers are accountable, they will be more risk averse in their capital budgeting decisions. This risk aversion may often be suboptimal if lower return less risky projects are proposed even if a more risky higher return project is better for the manager's company. When there is no PCA or the PCA is used in a developmental environment, with accountability, the increase in risk aversion is not manifested. This result is consistent with the predictions of both goal setting theory (Locke, Cartledge, and Koeppel, 1968) and control theory (Lord and Hanges, 1987), which suggest that a developmental feedback environment is insufficient to impact managers' behavior. Since PCAs have many benefits, they can still be performed without biasing capital budgeting decisions toward risk adverse projects. Our study implies this since it appears that accountability is a necessary condition and PCA in an evaluative environment is a sufficient condition to induce weaker recommendations and risk adverse decisions. Companies need to be mindful of these potential effects when adopting the use of PCAs as a performance evaluation tool.

Finally, our results also lead us to speculate about the importance of explicitly operationalizing accountability in an experiment. If we had not included accountability in our experiment, we would have arrived at the conclusion that PCAs of any type have no impact on capital budgeting decisions. Only when accountability is explicitly included do we find that type of PCA does make a difference in decision-making. We urge behavioral researchers to incorporate accountability in their experiments if they think it exists in the natural environment for a particular task.

ENDNOTES

[1]   The purpose of our experiment is to examine the impact of these situations on a decision maker's judgment and actions. This study does not attempt to justify nor explain the rationale for the use of PCAs. We take the various uses of PCAs as a given. Additionally, it is not our intent to test how different forms of feedback influence individuals. Instead, we examine the existence of an a priori feedback environment on behavior. We cite feedback theory to develop our hypotheses on how individuals react to different PCA situations.

[2]   See the section describing dependent variables to see how we operationalized this in the experiment.

[3]   This risk aversion will be manifest by choosing lower risk (conservative) projects. We measured the risk tolerance of the subjects in our experiment and used it as a covariate where appropriate.

[4]   Note that this manipulation is not the same thing as accountability as discussed in the introduction. You may or may not have accountability even if you do not perform a post-completion audit. The post-completion audit when used as part of the performance evaluation system adds an explicit external mechanism beyond the normal evaluation process when post-completion audits are not used. We manipulate accountability independent of post-completion audit in the experiment.

[5]   Note in Table 1 that, on a seven point Likert scale, the subjects perceived the automate alternative to be more than twice as risky as the retool alternative. This is important since the automate alternative was designed to be the high-risk project. If subjects viewed the automate alternative as the lower risk then the risk manipulation was unsuccessful. The risk manipulation was unsuccessful for eighteen subjects and we eliminated them from our analysis.

[6]   The three researchers did the coding of reasons or rationales in the following manner. Two of the researchers independently classified the written responses. The classifications were relevant discriminating (RD), relevant non-discriminating (RND), and wrong (W). If the two researchers agreed on the number of RD's, RND's and W's for a subject then that was the coding used in the study. For those subjects where the first two researchers did not agree, the third researcher independently coded. If the third coding agreed with either of the first two, then that was the coding used in the study. If the third coding disagreed with both of the first two then the three researchers discussed that coding and either reconciled their differences or took the coding most biased against our hypothesis. Nine papers coded had to be reconciled. We tested H4 using both RD and a summary of reasons called TOT (= RD+ RND+ W) as the dependent variable. There were no differences and the results reported later use only RD as the dependent variable.

[7]   One of the principle researchers was present at every administration except one. The presenter at the fifth administration was that class's professor who the researchers thoroughly briefed on how to administer the instrument.

[8]   In our ANOVA, we tested for and did not find an order of presentation effect.

[9]   Eighty-two subjects were initially included in the analysis. We dropped seven subjects in the accountability condition because they failed to provide their names, phone numbers and addresses. This left us with 75 usable responses.

[10]   The mean of the responses are all above the neutral point of 4.0 with the distribution clearly skewed above the 4.0 level.

[11]   Note that the means are different from Table 2 because the effect of the covariate (risk tolerance) is different in this single variable model. The risk tolerance covariate is significant at the .14 level in this model whereas the significance of the covariate of the full model is at the .02 level.

[12]   As stated in footnote 4 we tested H4 using both relevant justifications and total justifications. There is no difference in interpretation of results and we only report the relevant justification means.

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Exhibit 1
Operationalization of the PCA Condition

No PCA:

> Even though Kayben uses a formalized capital budgeting process, **they do <u>NOT</u> perform a post completion audit.**

PCA used in a developmental environment:

> Once a project is implemented, Kayben performs a post-completion audit. **The post-completion audit is only performed to look at how well the capital budgeting process is working in order to improve capital budgeting decisions in the future.**

PCA used in an evaluative environment:

> Once a project is implemented, Kayben performs a post-completion audit for two purposes. The post-completion audit is performed to look at how well the capital budgeting process is working in order to improve capital budgeting decisions in the future. **In addition, the post-completion audit is used as part of the performance evaluation of managers responsible for the project.** Managers have been promoted for successful projects while other managers have been denied promotion and raises for unsuccessful projects**. Since you are responsible for implementing this project, top management wants you to make a final recommendation.** This project is considered to be extremely important to Kayben.

APPENDIX
Procedures and Instructions

The materials consist of the following:

BOOKLET ONE

This booklet contains a capital budgeting case and questions related to the case. Please read the case carefully and answer all the questions asked. In answering the questions you may refer back to the case at any time. The case has no right or wrong answers.

BOOKLET TWO

This booklet contains a set of demographic questions and general questions about your perceptions of booklet 1. **PLEASE DO NOT LOOK AT THIS BOOKLET UNTIL YOU ARE COMPLETELY FINISHED WITH BOOKLET 1 AND HAVE PLACED BOOKLET 1 IN THE ENVELOPE PROVIDED.**

As part of this study your professor is interested in how well students **perform** this task. Consequently, after you have completed the case, your responses may be randomly selected for review. Twenty-five percent of the respondents will be selected. Please place your name, address, and phone number in the blanks provided below. If your responses are reviewed, they will be returned to you with the reviewer comments. Otherwise you will receive a note that your responses were not randomly selected.

Name:

Phone:

Address:

Email address:

After reading the description above and asking the administrator any questions you may have, please turn to the next page that is the beginning of Booklet One.

This instrument was approved by the University Institutional Review Board

BOOKLET ONE

Kayben Filters Company

Kayben Filters Company designs and manufactures high quality air and water filters. They sell filters under their own name as well as manufacture custom filters for other companies to use in their products. Kayben has been in business for 30 years and is a non-diversified business. The company has been profitable although profits have been declining in the past few years.

During mid-2002, Kayben's top management determined that declining profitability was due to production inefficiencies. They believe that profitability may be improved by upgrading or replacing a part of their existing manufacturing process. Two alternatives have been proposed: (1) retool the existing equipment or (2) purchase and install an automated robotic production line. Top management stated that one of these alternatives must be chosen in order to remain competitive. Both of these alternatives will improve quality and increase efficiency. Implementing one of these alternatives is crucial since competitors have introduced higher quality filters at a lower price. It is your responsibility to recommend one of these alternatives to top management. You will also be in charge of implementing the alternative you recommend.

The retool alternative may be less disruptive to normal operations than automating but it requires more personnel. The capital costs associated with this option are $1,200,000. Because of the special nature of the required tooling, the retooling will not be fully implemented until January, 2004. The retooled machines have an expected economic life of 10 years. The retooled machines will require 17 operators and two maintenance personnel, all on a full-time basis. It is projected that the retooled machines will have a negligible scrap value at the end of ten years.

Purchase and installation of a fully automated robotic assembly requires less personnel than retooling but may be more disruptive to normal operations when first implemented. The cost of implementing this alternative is $2,500,000. To cover all shifts the automated line is projected to require only four operators and four maintenance personnel. Because the robotic technology is new, it is estimated that the robotic assembly line will be implemented in January, 2004 which is the same time as the retooling alternative. The robotic assembly process will eventually free up 3,000 square feet of manufacturing space that can be used

for other purposes. It is projected that the robotic assembly line will have a 10-year life with negligible scrap value.

Kayben uses a formalized capital budgeting process. All projects over $100,000 must be submitted to the capital appropriations committee. This committee can approve projects up to a $500,000 investment limit. Any investment over $500,000 must be approved by Kayben's Board of Directors. Once a project is implemented, Kayben performs a post-completion audit for two purposes. The post-completion audit is performed to look at how well the capital budgeting process is working in order to improve capital budgeting decisions in the future. **In addition, the post-completion audit is used as part of the performance evaluation of managers responsible for the project.** Managers have been promoted for successful projects while other managers have been denied promotion and raises for unsuccessful projects. **Since you are responsible for implementing this project, top management wants you to make a final recommendation.** This project is considered to be extremely important to Kayben.

The weighted average cost of capital for Kayben is 11% and the hurdle rate (minimum required rate of return) used to analyze these projects is 12%. The average tax rate for Kayben is 30%. All cash flows are adjusted for inflation assuming a 2.5% inflation rate. The inflation rate is appropriately reflected in the hurdle rate. The complete analysis of cash flows for each project, reflecting all of the above information, is given on the next two pages. Appropriate adjustments for taxes and inflation have been made.

The Retool Alternative

Cash Flows	
The cash investment is $ 1,200,000 on 1/1/04.	
The net operating cash flows for each year are given below:	
Year	Cash Flow
2004	$ 330,000
2005	370,000
2006	390,000
2007	410,000
2008	370,000
2009	360,000
2010	330,000
2011	300,000
2012	270,000
2013	220,000

There is no estimated residual value at the end of the project life.

Project Statistics

Project statistics for retool are given below:

Net Present Value	$ 171,100
Internal Rate of Return	15.6% (exceeds 12% hurdle rate)
Payback	4.58 years

Sensitivity Analysis

Sensitivity analysis was run assuming an optimistic and pessimistic assessment of cash flows. Under the optimistic scenario, the net present value is $ 211,400, the internal rate of return is 17.4% and the payback is 4.1 years. Under the pessimistic scenario, the net present value is $144,800, the internal rate of return is 13.8% and the payback is 4.9 years.

The Automated Robot Alternative

Cash Flows

The cash investment is $ 2,500,000 on 1/1/04.
The net operating cash flows for each year are given below:

Year	Cash Flow
2004	$ 20,000
2005	390,000
2006	625,000
2007	850,000
2008	1,200,000
2009	1,600,000
2010	1,650,000
2011	925,000
2012	600,000
2013	350,000

There is no estimated residual value at the end of the project life.

Project Statistics

Project statistics for retool are given below:

Net Present Value	$ 478,050
Internal Rate of Return	15.6% (exceeds 12% hurdle rate)
Payback	5.3 years

Sensitivity Analysis

Sensitivity analysis was run assuming an optimistic and pessimistic assessment of cash flows. Under the optimistic scenario, the net present value is $ 863,200, the internal rate of return is 22.6% and the payback is 3.8 years. Under the pessimistic scenario, the net present value is a negative $ 27,300, the internal rate of return is 11.8% and the payback is 9.1 years.

The following questions relate to your recommendations regarding the two alternatives.

1.   Place an **X** in the blank space next to the project you recommend.

_____ Retool   _____ Automate

2.   Indicate on the scale below how strongly you would **recommend** the alternative you **selected** above. Place a circle around the number that best depicts your strength of recommendation.

Weakly recommend   Strongly recommend
implementation   implementation

            1   2   3   4   5   6   7
            I   I   I   I   I   I   I

3.   Indicate on the scale below how strongly you would **recommend against** the alternative you **did NOT select** above. Place a circle around the number that best depicts your strength of rejection.

Weakly recommend   Strongly recommend
against   **against**
implementation   implementation

            1   2   3   4   5   6   7
            I   I   I   I   I   I   I

4.   On the next page you are to justify your recommendation to the Board of Directors. This should be done by listing your reasons (or rationales) for your recommendation.

Internal Memo
Kayben Corporation

To: Members of the Board of Directors

From: (Please Print Your Name)

Re: List of Reasons and Rationales for My Recommendation

_____

_____

_____

_____

_____

_____

Write on the back of this page if you need more space

You now have completed Booklet 1. Please place the booklet in the envelope provided and go to Booklet 2.

BOOKLET TWO

1.   Place a circle around the number that best indicates your judgement about the level of risk of the **retool** alternative.

Very low risk   Very high risk

            1   2   3   4   5   6   7

            I   I   I   I   I   I   I

2. Place a circle around the number that best indicates your judgement about the level of risk of the **automate** alternative.

    Very low risk   Very high risk

    1   2   3   4   5   6   7
    I   I   I   I   I   I   I

3. Place a circle around the number that best indicates your belief about how realistic this capital budgeting case was:

    Not realistic   Very realistic

    1   2   3   4   5   6   7
    I   I   I   I   I   I   I

4. Place a circle around the number that best indicates your level of interest in participating in this study.

    Not interested   Very interested

    1   2   3   4   5   6   7
    I   I   I   I   I   I   I

5. Place a circle around the number that best indicates how motivated you were to give good reasons to justify the recommendation you made in Booklet One.

    Not motivated   Very motivated

    1   2   3   4   5   6   7
    I   I   I   I   I   I   I

6. Did the case you completed in Booklet One state that Kayben will perform post completion audits for their capital budgeting decisions?

    _____ Yes   _____ No (Go to question 8)

7. If the answer to question 6 is **yes**, what was Kayben's stated purpose(s) for using the post completion audit? (Check one)

    _____ To look at how well the capital budgeting process is working in order to improve capital budgeting decisions in the future.

    _____ To evaluate the performance of the manager responsible for the project and to look at how well the capital budgeting process is working in order to improve capital budgeting decisions in the future.

8. Please indicate below the number of years of professional business work experience you have. (Place a zero in the blank if you have no professional business work experience.)

    _____ years

9. Place a circle around the number that best indicates your actual experience with making capital budgeting decisions.

    No experience   Very experienced

    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
    | I | I | I | I | I | I | I |

10. Place a circle around the number that best indicates your familiarity with the use of post completion audits.

    Unfamiliar   Very familiar

    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
    | I | I | I | I | I | I | I |

11. Place a circle around the number that best indicates how often you make capital budgeting recommendations at work.

    Never   Very frequently

    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
    | I | I | I | I | I | I | I |

12. Have you ever worked for a company that performs post-completion audits as part of the capital budgeting process?

    _____ Yes   _____ No   _____ Don't know

13. If the answer to question 12 is yes, describe how post-completion audits were used. (Check all applicable answers.)

    _____ a.   As a feedback mechanism to improve the capital budgeting process

    _____ b.   As part of the performance evaluation process

    _____ c.   Other (please describe)

14. Indicate below your highest level of education.

    _____ high school   _____ some college   _____ bachelors   _____ graduate
         degree   degree   degree

15   Place a circle around the number that best indicates how you would describe your willingness to take risks for the type of decision you made for Kayben.

I am not willing   I am very willing
to take a risk   to take a risk

          1   2   3   4   5   6   7
          I   I   I   I   I   I   I

16.   If you have any comments, make them below.

THE UNDERREPRESENTATION OF WOMEN IN ACCOUNTING ACADEMIA

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ABSTRACT

Female faculty members in the hard sciences perceive women graduate students as less committed to their work than their male counterparts. This study replicates the science studies in doctoral accounting programs to determine the potential impact of this perception on the current shortage of accounting faculty. Female faculty members are found to rate female accounting doctoral students significantly lower than male students on several measures of commitment. These negative perceptions may lead to a relative lack of support and encouragement that gives women doctoral students a greater incentive to pursue other opportunities compared to male doctoral students.

INTRODUCTION: SHORTAGE OF ACCOUNTING FACULTY

The shortage of accounting faculty has been well documented (e.g. Fogarty and Markarian 2007; Plumlee et al. 2006; Marshall et al. 2006). The Association to Advance Collegiate Schools of Business (AACSB) predicted in 2003 a shortage of 1,100 professors by 2007 that will more than double to a shortage of over 2,400 professors by 2012. Similarly, a report from the American Accounting Association (AAA) and the Accounting Programs Leadership Group (AAPLG) indicates that for the academic years 2005 through 2008, the overall supply of new accounting Ph.D. graduates is only 49.9 percent of those demanded (AAA/AAPLG Ad Hoc Committee 2005). Compounding the problem, over half of accounting academics are 55 or older (Hasselback 2006). The shortage of accounting faculty not only presents a professor shortage problem in the classroom, but also "a real threat to the very core of collegiate business schools and institutions of higher education scholarship" (AACSB 2003).

WOMEN IN INDUSTRY AND ACADEME

Concerns about the small proportion of women in academic careers have been raised over the last 40 years. Women are now 45 percent of the undergraduate students in business (AACSB 2008). Since 1986, women have been the majority of accounting graduates and new hires in public accounting (AICPA 2004). Similarly, female accounting Ph.D. students represented over 39 percent of the respondents of the survey done by the AAA/AAPLG Ad Hoc Committee (2005). However, evidence shows a low proportion of women accounting faculty members were hired at doctoral institutions in the past (Collins et al. 1998). Likewise, there is an underrepresentation of women in business academia, especially at the higher ranks. According to AACSB, in the 2007-2008 academic year the proportion of female faculty was 28 percent overall, and only

15 percent of full professors in business schools were women. Females apparently are not progressing in rank as quickly as their male colleagues. There also appears to be a lack of a critical mass of female accounting academics at individual universities (Almer and Single 2007).

Prior research identifies many potential causes of the shortages of accounting faculty, including the following reasons: relatively high entry-level salaries in CPA firms, low doctoral student stipends, weak math preparation of accounting students at the undergraduate level, a lack of positive cash inflows from Ph.D. programs to the institution, and other factors (Fogarty and Markarian 2007; Plumlee et al. 2006). The potential self-selection of accounting faculty members based on perceived academic environments, including diversity issues, is discussed in the recent Weisenfeld and Robinson-Backmon (2007) study as being of greater concern given the shortage of accounting professors. In light of the shortage of accounting faculty and the perception in other fields of women as being less committed than men, this study attempts to address whether the societal bias against females is so innate that even female accounting faculty members perceive female students to be less committed than male students.

THE BIAS OF WOMEN AGAINST WOMEN

In the 1970s, psychology researchers established that some women who succeeded individually in male-majority environments were likely to oppose the movement for women's rights (Staines, Tavris, and Jayartne 1974). Several studies found that women in majority-male work environments perceived themselves as being different from women in general and as pursuing individual goals rather than goals that impacted a group (Tajfel and Turner 1979; Branscombe and Ellemers 1998). Therefore, there are circumstances in which females are more likely to view other women in gender-stereotypical roles (Lyness 2006; Catalyst 2007). They may also simply not want to jeopardize the system in which they are successful. Conversely, women who were frustrated in their attempts to move ahead in male-dominated workplaces were more likely to endorse women's rights and affirmative action (Tougas et al. 1999).

This study explores the following two possible contributors to the underrepresentation of women in accounting academia: (1) differing levels of work commitment of male and female Ph.D. students on average; and (2) faculty perceptions of student levels of work commitment that differ by student gender that result in a lower level of support and encouragement for female students. In other words, the paper investigates whether doctoral students show differing levels of motivation by gender, and assesses if their faculty advisers, on average, hold stereotypical gender expectations of doctoral student work commitment. Comparing self-reports of future faculty at the beginning of their research careers and the perception of their motivation by more senior faculty members permits both actual and perceived motivation differences to be examined as potential explanations for the gender differential by academic rank.

DIFFERENTIAL WORK COMMITMENT

Differences between the career paths of men and women could be caused by motivational differences between the sexes. Women, including sole external earners, still perform most of the childcare and household chores, despite whether they perceive their households as traditional or egalitarian (U.S. Department of Labor 2006). At the surface level, there appears to be more of a trade-off between the dual responsibilities at home and at work for women and for men. However, it is more difficult for women than men to signal the total

availability that is often interpreted as commitment in the workplace (Levin and Stephan 1998). Perceptual differences between men and women about the problem-solving abilities of the sexes may also contribute to the appearance of differential commitment, given the preponderance of men in executive-level business roles (Catalyst 2005). Generally, studies have found that women managers are judged more negatively when compared to equally skilled men in male-dominated fields (Schneider 2005). On the other hand, no consistent relation between gender and the degree of commitment has been found in past studies (e.g. Mathieu and Zajac 1990). Similarly, the management skills of men and women have been found to be comparable (Perrault and Irwin 1996; Catalyst 2005; Banker et al. 2008). In addition, in a study of more than 900 senior-level women and men from Fortune 1000 companies, women and men are found to have equal interest in having the CEO job (Catalyst 2004).

DIFFERENTIAL FORMS OF COMMITMENT

The nature of commitment may differ between men and women. Ellemers et al. (1998) identify a career-oriented commitment focusing on individual achievement, versus a team-oriented commitment focusing on collaboration with co-workers. Men are expected to be more individualistic, task-oriented, and competitive, which would correspond to the career-oriented commitment. There is evidence that men emphasize their own work over meeting team goals (Barash 2006). If women are relatively more team-oriented, and therefore relatively less focused on their own achievement, it could explain the lack of advancement of individual females (Ellemers et al. 2004).

GENDER STEREOTYPES

Although equal employment opportunity laws have eliminated blatant discrimination based on gender stereotypes, more subtle forms of discrimination, including failures to help (Gaertner and Dodidio 1977) and indifferent nonverbal signals (Schneider 2005), may continue. Underrepresented groups may self-select out of environments that are not perceived as welcoming to them (Schneider 2005). In the 2005 Catalyst study, both women and men leaders perceived men as excelling in masculine leadership traits including delegating and influencing upward behaviors, while both women and men leaders perceived women as excelling in feminine leadership traits including supporting and rewarding behaviors. These perceptions appear to be consistent with gender stereotypes.

METHODOLOGY

Evidence shows that women are still underrepresented among university faculty. The perceived motivational differences between men and women and gender stereotypes have been shown to contribute to the phenomenon. This study will explore whether male and female accounting Ph.D. students differ in their levels of work commitment, and whether they are perceived to be differentially committed, or both.

Since the gender ratio appears to shift after graduate school, this study focuses on male and female doctoral accounting students at the beginning of their academic careers. It is difficult to assess whether the gender shift occurs because women are truly less motivated than men in pursuing an academic career, or because women are perceived this way by others, thus leading to less encouragement and support. The

self-reported commitment of male and female Ph.D. students in accounting is compared to the way they are perceived by accounting faculty in doctoral programs. Other related variables, including work satisfaction and self-reported work behavior, may also provide evidence of differential commitment.

DESIGN

The questionnaires and cover letters are replicated in Appendix A. The doctoral student questionnaire is designed to assess doctoral accounting students' self-reported levels of commitment to the doctoral program and their own careers. Inquiries were also made regarding their general work attitudes and the time invested in various activities. The faculty questionnaire male/female versions were randomly assigned. The perceived commitment of male/female doctoral accounting students was the focus of the faculty questionnaire.

COMMITMENT

Six statements were presented to doctoral student participants to indicate the extent to which they agreed with each statement on a scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The commitment statements were designed to measure three forms of commitment: affective program commitment (Meyer and Allen 1991; Meyer, Allen, and Smith 1993), career-oriented commitment, and team-oriented commitment. Affective program commitment involves emotional reactions to the accounting doctoral program: " I like being a doctoral student in accounting." Achievement is the focus of career-oriented commitment: "I want to move ahead in my career." Finally, team-oriented commitment emphasizes relationships with other doctoral students: "I feel at home with my fellow students in the doctoral accounting program." Similarly, in the faculty version, faculty members were asked to assess the average perceived commitment of either male or female doctoral students as a group along the same three dimensions.

TIME EXPENDITURE

Doctoral students were asked to indicate how they spent their time in an average week. They specified the percentage of time they spent each week on (1) work, (2) chores, (3) personal care (meals, dressing, etc.), (4) sleeping, and (5) free time activities.

DEMOGRAPHIC VARIABLES

The final part of the questionnaire focused on doctoral students' demographic data concerning their gender, age group, marital status, parental status, and progress in the doctoral accounting program. The age groups were intended to roughly represent four commonly delineated generations: the Silent Generation (1925-1944), the Baby Boomers (1945-1964), Generation X (1965-1984), and Generation Y (1985-2004). In addition, the faculty members were asked to share their gender and academic rank.

IMPLEMENTATION

Questionnaires (Appendix A) were sent to 558 accounting doctoral students and 1,193 accounting faculty members of doctoral accounting programs in the United States. Each individual email included a link to the third-party survey host website.

DOCTORAL STUDENT DEMOGRAPHICS

Student email addresses were collected from department websites and university directories. Of all the surveys sent, 56 were undeliverable and 2 were unusable blank responses. This process resulted in 236 useable surveys, a 47% response rate. Of the usable responses, 150 (64%) and 86 (36%) were from male and female students respectively. Ninety percent of the student respondents were between 23 and 42 years of age, falling into Generation X. Twenty-two respondents (9%) indicated they were between 43 and 62 years old, part of the Baby Boom Generation. The remaining 1% did not indicate their age. Most respondents (69%) were either married or in a committed relationship, while 31% were single or divorced. While most respondents did not have children living at home (57%), a significant number (43%) did have one or more children under 18. Dissertation stage students accounted for 43% of the respondents, 21% of students had completed their comprehensive exams, and 36% of students were in the coursework phase of the program.

FACULTY MEMBER DEMOGRAPHICS

The email addresses of faculty member were collected from the Accounting Faculty Directory 2006-2007 (Hasselback 2006) and department websites. Each faculty member completed one of two versions of the questionnaire depending on the experimental condition they were randomly assigned to: one version focused on the opinions about male doctoral students, the other on female doctoral students. The email explained that the researchers were interested in the views of faculty members about the work commitment of (male or female) doctoral students. A total of 118 surveys were undeliverable. Useful responses were received from 195 faculty members, a response rate of 18% of the total 1,075 surveys delivered. Responses were received from 133 men (68%) and 62 women (32%). Of these participants, 59 were Assistant Professors (25 women, 42%), 68 were Associate Professors (29 women, 43%), and 67 were Full Professors (7 women, 10%). One professor did not provide his/her rank.

Table 1: Doctoral Student Commitment Response Means by Gender			
Statement	Gender	N	Mean
I like being a doctoral student.	Male	150	4.08
I like being a doctoral student.	Female	86	3.99
I am enthusiastic about the program.	Male	150	4.02
I am enthusiastic about the program.	Female	86	3.79
I am fully immersed in my work.	Male	148	4.16

Table 1: Doctoral Student Commitment Response Means by Gender			
Statement	Gender	N	Mean
I am fully immersed in my work.	Female	86	3.91
I am devoted to my work.	Male	150	3.45
I am devoted to my work.	Female	86	3.36
I want to move ahead in my career.	Male	150	4.61*
I want to move ahead in my career.	Female	86	4.34*
I feel at home with my fellow students.	Male	150	3.91
I feel at home with my fellow students.	Female	86	3.90
*Significantly different means at the 1% level.			

DOCTORAL STUDENT COMMITMENT RESULTS

Mean responses to the commitment statements are reported in Table 1. For affective program commitment and team-oriented commitment, there were no significant differences between male and female doctoral student responses. However, there was a significant difference between men and women regarding career-oriented commitment responses. The mean response for women (4.34) was significantly lower than the mean response for men (4.61) at the 1% level. Nonetheless, on average both men and women agree that they want to move ahead in their careers.

Table 2: Doctoral Student Time Expenditure Means by Gender			
Proportion of Time Spent on	Gender	N	Mean
Working	Male	147	42.67%
Working	Female	83	44.07%
Completing Household Tasks	Male	147	10.09%
Completing Household Tasks	Female	83	10.32%
Personal Care	Male	147	10.30%
Personal Care	Female	83	9.13%
Sleeping	Male	147	27.49%
Sleeping	Female	83	28.31%
Spare Time	Male	147	9.48%
Spare Time	Female	83	8.23%
No means were significantly different at the 1% level.			

DOCTORAL STUDENT TIME EXPENDITURE RESULTS

The proportion of time doctoral students spent on various activities is reported in Table 2. No significant differences in time usage were found between male and female doctoral students. Both men and women spent slightly over 40% of their time per week working on average. Household tasks took up about 10% of the students' week, and a similar proportion of time was spent on personal care. Students on average slept a little less than seven hours per night. As might be expected, students reported relatively little spare time.

FACULTY PERCEIVED COMMITMENT OF DOCTORAL STUDENTS

We conducted 2 (faculty gender) x 2 (doctoral student gender) ANOVAs to examine any gender differences in the perceived commitment of male and female doctoral students. These tests revealed a main effect of faculty gender on affective program commitment ($p<.05$) and team-oriented commitment ($p<.10$). The interaction of faculty gender and doctoral student gender was also borderline significant in these cases ($p<.11$). These results indicate that there is a reliable difference between the perceptions of male and female professors with regard to these aspects of the commitment of male and female doctoral students. Profile plots are presented in Figures 1 and 2. In these cases, both male and female faculty members perceived male doctoral student commitment similarly. However, male professors consistently gave female doctoral students higher commitment ratings than male doctoral students, while female professors consistently rated female doctoral students as being less committed than male doctoral students. The career-oriented commitment perceptions did not reveal a significant gender difference.

DISCUSSION

One objective of this study was to determine if motivation differed by gender. The results show that male and female doctoral students had similar levels of affective program commitment and team-oriented commitment. Although the average responses to career-oriented commitments differed significantly, both male and female average responses indicated strong levels of commitment. There is also no gender difference in the ways that students spend their time.

As shown in Figures 1 and 2, the differences in female and male faculty member perceptions of doctoral student commitment are apparent. Male faculty members rate female doctoral student commitment more highly than male doctoral student commitment. Men have been found to be more sensitive to perceived gender bias in traditionally male occupations than in other settings, possibly because they are familiar with allegations of bias (Maeder et al. 2007). As a result of this sensitivity, male faculty members may consciously overcompensate for the perceived bias when rating female doctoral students.

Figure 1

**Estimated Marginal Means of
Faculty Perceptions of Doctoral Student Affective Program Commitment**
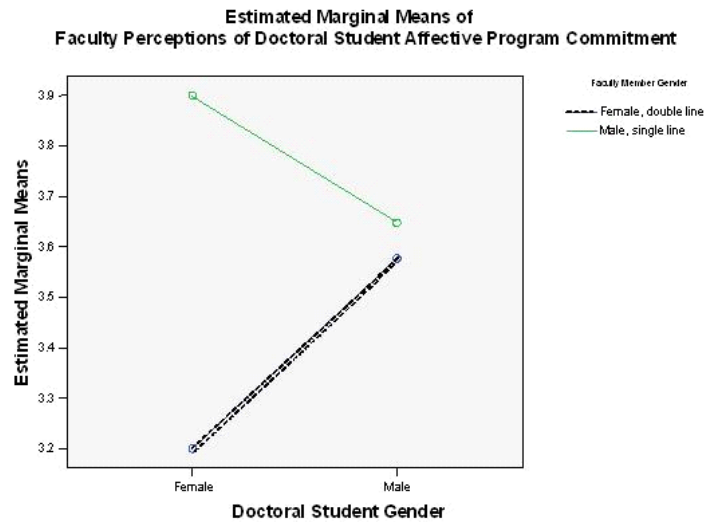
Faculty member perceptions are significantly different by gender at the 5% significance level (n=195).

Figure 2

**Estimated Marginal Means of
Faculty Perceptions of Doctoral Student Team-Oriented Commitment**
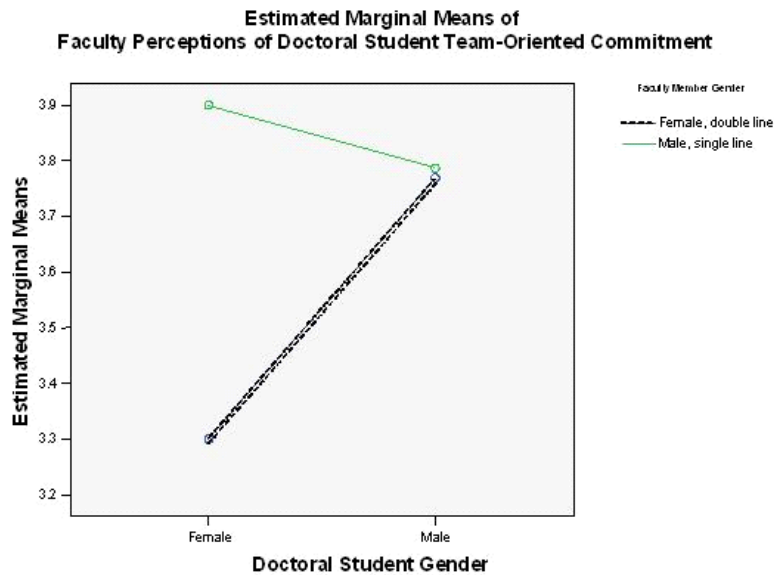
Faculty member perceptions are significantly different by gender at the 10% significance level (n=195).

Female faculty members' ratings of student commitment are lower overall than those of their male colleagues, and the effect is most apparent when female faculty members evaluate the commitment of female doctoral students. The queen bee hypothesis is therefore supported in this setting. This gender difference in evaluation results has also been observed in other studies (Cole et al. 2004), and women in men's traditional occupations perceive lower occurrence rates of bias than women in other occupations (Maeder et al 2007). The biased way women evaluate other women is generally not viewed as gender discrimination, and it is especially difficult to detect group-based prejudice when merit is being assessed at the individual level (Schmitt et al. 2003). In addition, women have difficulty responding to gender discrimination by other women because they have difficulty recognizing the source of the issue (Barreto and Ellemers 2005). As a result, women may leave academe as a result of encountering an inexplicable lack of support and encouragement. Both female and male academics may need to more consciously examine their evaluations of female doctoral students.

LIMITATIONS

Eliciting truthful responses is always an issue when conducting research based on questionnaires. Respondents were assured of their anonymity, but they may have still provided responses that they perceived as desired by societal pressures. In addition, the results may not be reliable because different individuals filled out the male/female versions of the survey. However, the separate responses were chosen due the potential for anchoring in a combined response design. Finally, it was not possible to analyze generational differences among faculty members because the age of faculty member question was inadvertently omitted from the survey.

CONCLUSION

Previous studies have shown that faculty members in the sciences have perceived women graduate students as less committed to their work than their male counterparts. Women faculty and administrators were more likely to exhibit these perceptions than their male colleagues. This paper replicates these studies in the context of doctoral accounting programs to determine the potential impact on the current shortage of accounting faculty. Female faculty members in accounting doctoral programs are found to rate female accounting doctoral students significantly lower than male students on several aspects of commitment. These negative perceptions may lead to a relative lack of support and encouragement that gives women doctoral students a greater incentive to pursue other opportunities compared to male doctoral students.

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APPENDIX A
DOCTORAL STUDENT QUESTIONNAIRE

COMMITMENT STATEMENTS

I like being a doctoral student in accounting.
Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

I am enthusiastic about the doctoral accounting program.
Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

I am fully immersed in my academic work.
Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

I am devoted to my academic work without distractions from outside employment and other responsibilities.
Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

I want to move ahead in my career.
Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

I feel at home with my fellow students in the doctoral accounting program.
Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

TIME EXPENDITURE

Please indicate how you spend your time in one average week:
Proportion of Time Working   __
Proportion of Time on Household Tasks and Chores   __
Proportion of Time on Personal Care*   __
Proportion of Time Sleeping   __
Proportion of Spare Time   __
Proportions must total   100%
*Personal care includes time spent eating, getting dressed, etc.

DEMOGRAPHIC INFORMATION

In each category, please indicate the group that best describes you:

Gender: Male   Female   Age: Under 23   23-42   43-62   Over 62

Marital Status: Single   Married/Domestic Partnership/Living Together Divorced

Parental Status: No children   One or more children under 18   All children over 18

Program Status:
        Coursework Phase
        All But Dissertation Phase (completion of comprehensive exam)
        Dissertation Phase

DOCTORAL STUDENT COVER LETTER

Dear (name):

We are studying accounting doctoral students in an attempt to understand some possible reasons for the shortage of accounting faculty. We would appreciate your help in completing this short survey. Pre-testing of the questionnaire indicated it should take no more than a few minutes. Anonymity of responses is assured as all data will be collected by the third-party survey website and the reported data will be analyzed and presented in aggregate form only.

Please click on the following link to participate in a short 12 question survey on program commitment and time management:
http://www.zoomerang.com/survey.zgi?p=WEB226UHD5349J

Thank you,

Author Names
Associate Professors of Accounting

FACULTY MEMBER QUESTIONNAIRE (MALE VERSION) (FEMALE VERSION REPLACES 'MALE' WITH 'FEMALE'.)

COMMITMENT STATEMENTS

On average, male students like the doctoral accounting program.
Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

On average, male students are enthusiastic about the doctoral accounting program.
Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

On average, male students are fully immersed in their academic work.
Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

On average, male students are devoted to their academic work without distractions from outside employment and other responsibilities.
Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

On average, male students want to move ahead in their careers.
Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

On average, male students feel at home with their fellow students in the doctoral accounting program.
Strongly Disagree   Disagree   Neither Agree Nor Disagree   Agree   Strongly Agree

DEMOGRAPHIC INFORMATION

In each category, please indicate the group that best describes you:

Gender: Male   Female

Academic Rank: Assistant Professor   Associate Professor   Full Professor

FACULTY MEMBER COVER LETTER

Dear (name):

We are studying accounting doctoral students in an attempt to understand some possible reasons for the shortage of accounting faculty. We would appreciate your help in completing this short survey. Pre-testing of the questionnaire indicated it should take no more than a minute. Anonymity of responses is assured as all data will be collected by the third-party survey website and the reported data will be analyzed and presented in aggregate form only.

Please click on the following link to participate in a short eight question survey on doctoral student commitment:
http://www.zoomerang.com/survey.zgi?p=WEB226UHH336NG

(Female version:
http://www.zoomerang.com/survey.zgi?p=WEB226UHJA37EA)

Thank you,

Author Names
Associate Professors of Accounting

DOES THE ADOPTION OF INTERNATIONAL FINANCIAL REPORTING STANDARDS RESTRAIN EARNINGS MANAGEMENT? EVIDENCE FROM AN EMERGING MARKET

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ABSTRACT

We investigate whether firms adopting international financial reporting standards (IFRS, formerly known as IAS) have higher earnings quality in an emerging market (China). The literature proposes that, compared to non-adopting firms, firms adopting IFRS are less likely to smooth earnings, less likely to engage in earnings management as a means to avoid reporting losses, and more likely to recognize losses in a timely manner. However, critics also argue that IFRS provides more opportunities for managers to use accruals to manipulate earnings in China, where a rule-based accounting system had been used before the introduction of accounting standards. We compare the characteristics of accounting data for firms adopting IFRS with those from non-adopting firms. We find that adopting firms are less likely to smooth earnings in the post-adoption period. We, however, did not find that adopting firms have any lower tolerance for reporting losses or engage in more timely loss recognition. Overall, our results suggest some improvement in the quality of accounting information associated with the adoption of IFRS. Our results also suggest that providing managers more opportunities for earnings manipulation under IFRS may neutralize its otherwise positive effect on earnings quality. Because of the relatively newer regulatory environment in China, our findings may point to the need for a stricter enforcement mechanism of accounting standards in emerging markets.

INTRODUCTION

The issue of earnings management has always been a concern for the integrity of published accounting reports. Evidence from the academic literature has shown that the practice of earnings management is extensively practiced by publicly listed firms (Barth et al., 2005; Burgstahler and Dichev, 1997). In recent years, primarily due to revelations of corporate scandals resulting from fraudulent financial reporting, both the popular press and accounting regulatory agencies have been focusing on earnings management, which may be regularly engaged in by public firms. In emerging markets, earnings management is more universally practiced because of relatively weak legal enforcement capabilities (e.g., Jian and Wong, 2004).

Not surprisingly, earnings management has recently been an extensively researched topic in the emerging market literature. Prior studies examine accounting accruals (Aharony et al., 2000), non-operating

earnings (Chen and Yuan, 2004), and related party transactions (Jian and Wang, 2004) to detect earnings manipulations by public companies in emerging markets. However, there is relatively little empirical evidence on whether the adoption of international financial reporting standards (*IFRS, formerly known as IAS*) has been instrumental in the improvement of the quality of accounting information, including any reduction in the level of earnings management.

In this study, we investigate whether adopting IFRS is associated with less earnings management and more timely loss recognition. We use a pooled time-series cross-sectional sample to examine whether firms adopting IFRS are less likely to smooth earnings, less likely to manage earnings upwards to avoid reporting losses, and more likely to recognize losses in a timely fashion, compared with non-adopting firms. Our results indicate that adopting firms are less likely to smooth earnings to achieve earnings management than their non-adopting counterparts. However, we did not find that adopting firms evidence lower tolerance of losses or more timely loss recognition than non-adopting firms.

Our study contributes to the literature in several ways. First, the empirical evidence provided in this paper suggesting that the adoption of accounting standards appears to improve financial reporting could prompt regulators to push for such adoption by public firms in emerging markets. This conclusion is especially relevant now that Chinese accounting standards are undergoing substantial changes. Second, the findings of this paper would help investors understand earnings management issues in China. Finally, the findings also suggest that the influence of IFRS on the quality of reported accounting information may be limited if it provides more accounting choices to managers without a concurrent stricter enforcement mechanism.

The remainder of our paper is organized as follows. We present a summary of the evolution of accounting standards in China and develop our testable hypotheses regarding the impact of IFRS on earnings management in background and hypotheses development sections. This is followed by the presentation of our research design and sample selection in research methods and sample selection sections. We report our results in results section and the conclusions and limitations of our study in conclusion and limitation section.

BACKGROUND-EVOLUTION OF CHINESE ACCOUNTING STANDARDS

In the process of transforming itself from a centrally planned economy to a market oriented economy, China realized early the importance of a sound financial infrastructure. The earlier accounting standards and regulations were to provide information to various levels of government for planning and control purposes (Rask et al., 1998; Xiang, 1998). Accordingly, the financial performance measurements reported were not suitable for the financial reporting objectives in a market oriented economy.

During China's progress toward a market oriented economy, it has experienced rapid growth of its economy, international trade and securities markets, which, in turn, demanded new objectives for financial reporting. Even in state-owned enterprises now functioning like profit-oriented businesses, managers, as well as other users, need reliable and relevant financial information to make decisions to ensure the efficient allocation of capital. At the same time, China has reached out to the international community to form joint ventures and gain greater access to the latest technologies and the world's captial markets at large. These changed circumstances have increasingly demanded a framework of accounting standards to meet the needs of investors and creditors as well as management and the government, thus necessitating signficant accounting reforms undertaken during the past two decades.

The Ministry of Finance (MOF) of China promulgated the *Accounting Standards for Enterprises No. 1--Basic Standards* (ASFE) in 1992, initiating the most important reform in setting accounting standards. This ASFE represents the first step to bring Chinese accounting system in line with international practice (Xiang, 1998; Sami and Zhou, 2004), as the ASFE is modeled after western accounting standards and thus is familiar to outside investors. However, it is also recognized that there are certain variations from western standards. For example, ASFE is less detailed and complex than western standards in that it left out complex liability issues (Winkle et al., 1994). Following the ASFE, a series of specific accounting standards were issued. From May 1997 to December 2001, there were sixteen specific standards promulgated . These standards claimed to improve corporate accounting disclosure in both quality and quantity.

In China, public companies issue two kinds of shares – A-shares to domestic investors and B-shares to foreign investors. A-shares are denominated in RMB and issued only to Chinese citizens, while B-shares are denominated in U.S. dollars on the Shanghai Stock Exchange or in Hong Kong dollars on the Shenzhen Stock Exchange and issued only to foreign residents before Year 2001 (Sami and Zhou, 2004). Both A-shares and B-shares convey equal rights though they are different in terms of ownership. However, A-share investors receive accounting information prepared under the Chinese GAAP and audited by local CPA firms, while B-share investors receive accounting information prepared under the IFRS and audited primarily by international accounting firms. Therefore, the Chinese emerging market provides a unique environment in which one can examine whether accounting information prepared under the IFRS has higher earnings quality than that prepared under local GAAP. While A-share data represent the information prepared by the non-adopters of IFRS and B-share data represent the information prepared by the adopters, comparing A-share and B-share financial data would help us identify the difference in the earnings quality due to the difference between IFRS and local GAAP.

HYPOTHESES DEVELOPMENT

Previous studies have shown that accounting standards add value to accounting information in developed economies (Hung and Subramanyam, 2004; Bartov et al., 2004). However, it is unclear whether such benefits also apply to developing or transitional economies. Despite the increasing importance of the earnings management problem in emerging markets, there is relatively little empirical evidence to show whether local accounting standards improve the quality of accounting information provided by firms that have adopted them and whether such adoption reduces the level of earnings management.

Recent evidence suggests that accounting information is less useful in emerging markets. For example, Ball et al. (2000) find that there is low transparency of earnings in Hong Kong, Malaysia, Singapore and Thailand. They argue that such low transparency is attributable to weak enforcement of accounting standards in these countries. As this study shows, given the weak legal system and the lack of accounting and capital market infrastructure in transitional economies, emerging economies are particularly likely to face severe problems in monitoring managers' accounting decisions.

The introduction of international accounting principles and practices in emerging markets has been shown to increase market liquidity, reduce transaction cost, and improve pricing efficiency (Feldman and Kumar, 1995). It is still an open question as to whether the adoption of IFRS improves the quality of

accounting information, thereby reducing the level of earnings management. The emerging market in China provides a unique opportunity to examine these questions.

Eccher and Healy (2003) compare the value relevance of accounting information prepared under the IFRS to those under Chinese accounting standards. This study finds that accounting information prepared under the IFRS is not more value relevant than that prepared under the Chinese accounting standards for B-share firms - firms that can be owned by foreign investors. The authors posit that one reason for the modest performance of the IFRS may be the lack of effective controls and infrastructure to monitor reporting under the IFRS, a conclusion similar to that of Ball et al. (2000).

An investigation of the changes in the value relevance of earnings between different market segments, following the implementation of new national accounting standards in China, shows that implementation of specific national standards has a positive effective on the perceived value of the accounting information (Zhou et al., 2007).

None of these studies, however, examined whether IFRS or local GAAP proves to be more effective in deterring earnings management by managers in public companies. A study by Barth et al. (2005) demonstrates that firms adopting IFRS are less likely to smooth earnings, less likely to manage earnings upwards to avoid reporting losses, and more likely to recognize losses timely than non-adopting firms. Other studies, on the other hand, indicate that the rule-based Chinese accounting system, even before the adoption of any formal standard, provided little opportunities for managers to manipulate earnings through accruals, implying that the effect of implementing IFRS on earnings management, via accounting accruals, could be negative (Chen and Yuan, 2004; Jian and Wong, 2003). In other words, new accounting standards and IFRS could leave the door open for managers to manipulate earnings via accounting accruals. Such contradicting arguments provide a strong basis to empirically examine the impact of new accounting standards on the earnings mangement behavior of firms. Therefore, it is hypothesized (in alternative form) that

> *Hypothesis 1:* *Firms that adopt IFRS are less likely to smooth earnings than firms that adopt local GAAP.*

> *Hypothesis 2:* *Firms that adopt IFRS are less likely to manage earnings upwards to avoid reporting losses than firms that adopt local GAAP.*

> *Hypothesis 3:* *Firms that adopt IFRS are more likely to recognize losses in a timely manner than firms that adopt local GAAP.*

Our study differs from prior research on the impact of accounting standards on earnings management in at least two ways. First, our study encompasses a sample of firms focused on the emerging market in China. As mentioned by Barth et al. (2005), studies focusing on a single country benefit from having research designs that control for other country-specific factors, although it is difficult to extrapolate inferences relating to their findings to other countries.

Second, we directly focus on the characteristics of accounting information under IFRS and Chinese GAAP. Whereas studies of analyst earnings forecast errors and studies of value relevance provide indirect evidence of the quality of accounting information (e.g., Sami and Zhou, 2004; Bartov et al., 2004; Sankaraguruswamy and Sweeney, 2005), results are generally mixed, and other confounding aspects of markets

and firms' information environments make it more difficult to attribute the results directly to the effect of accounting standards. We follow Barth et al. (2005) and Leuz et al. (2003) in focusing more directly on the characteristics of accounting data to provide direct evidence on earnings management, particularly earnings smoothing, and timely loss recognition. We focus on earnings management metrics because a common concern with applying GAAP is that the inherent flexibility under GAAP affords firms the opportunity to manage earnings, which, in turn, has long been a concern of securities markets regulators (e.g., Breeden, 1994). Our metrics of earnings management are the variance of the change in net income, the frequency of small positive net income, and the frequency of large negative net income (Lang et al., 2003; 2005). Following these studies, we interpret a higher variance of the change in net income, a lower frequency of small positive net income, and a higher frequency of large negative net income as evidence of less earnings management and higher earnings quality.

RESEARCH METHODS

As already stated, we use three measures of earnings management: variance of the change in net income (VARNI), frequency of small positive net income (SPOS), and frequency of large negative net income (LNEG). Our selection of these variables closely follows the work of Barth et al. (2005). We share the argument of these authors that less earnings management results in higher quality of earnings. We further argue that higher valuation of the change in net income (VARNI), a lower frequency of small positive net income (SPOS), and a higher frequency of large negative net income (LNEG) provide evidence of less earnings management, and hence, of higher quality of earnings. We first compare firms adopting standards (ADOPT) with non-adopting firms (NADOPT) to see if accounting amounts determined using IFRS evidence higher quality. To the extent that results are consistent across the measures, there is greater assurance that such consistent findings can be attributed to earnings management rather than other factors. Our measures are designed to detect earnings smoothing and earnings management toward a target of positive earnings.

For Hypothesis 1, the measure for earnings smoothing is variability of earnings (Leuz et al., 2003; Lang et al., 2003; 2005). Earnings that are smoothed should be less variable than those that are not. We predict that ADOPT firms have less smooth earnings than NADOPT firms. Following Leuz et al. (2003), we use earnings smoothing measure as the variability of the change in net income scaled by total assets. A smaller variance is evidence consistent with earnings smoothing.

$$ADOPT\,(1,0) = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 GROWTH_{it} + \alpha_3 EISSUE_{it} + \alpha_4 LEV_{it} + \alpha_5 DISSUE_{it} + \alpha_6 VARNI + \epsilon_{it} \qquad (1)$$

Where

ADOPT(1,0)	= an indicator variable set to one for ADOPT firms and zero for NADOPT firms;
SIZE	= the natural log of end of year market value of equity;
LEV	= end of year total liabilities divided by end of year total equity;
GROWTH	= percentage change in sales;
EISSUE	= percentage change in common stock;
DISSUE	= percentage change in total liabilities;
VARNI	= variability of the change in net income scaled by total assets.

A negative coefficient on VARNI suggests that ADOPT firms of new accounting standards are less likely to smooth earnings that NADOPT firms, while a positive coefficient on VARNI suggests that ADOPT firms are more likely to smooth earnings. We also include independent variables, other than VARNI, to control for differences in economic factors associated with firms adopting IFRS that might not be captured by the matched sample design. The control variables used in this study are those suggested by prior research to control for size, different ratios among total liabilities, book value, market value, and growth, including the natural log of end of year market value of equity (SIZE), end of year total liabilities divided by end of year total equity book value (LEV), percentage change in common stock (EISSUE), percentage change in total liabilities (DISSUE), and percentage change in sales (GROWTH) (Pagano et al., 2002; Lang et al.,2003; and Lang et al., 2005).

In Hypothesis 2, our approach to examining earnings management is to focus on targets toward which firms might manage earnings. A common target is to report small positive earnings (Burgstahler and Dichev, 1997 and Leuz et al., 2003). The notion underlying this measure is that management prefers to report small positive earnings rather than negative earnings. Our measure is the coefficient on small positive net income, *SPOS*, in the following regression:

$$ADOPT\,(1,0){=}\alpha_0{+}\alpha_1 SIZE_{it}{+}\alpha_2 GROWTH_{it}{+}\alpha_3 EISSUEit{+}\alpha_4 LEV_{it}{+}\alpha_5 DISSUE_{it}{+}\ \alpha_6 SPOS{+}\epsilon_{it} \qquad (2)$$

Where

ADOPT(1,0)	= an indicator variable set to one for ADOPT firms and zero for NADOPT firms;
SIZE	= the natural log of end of year market value of equity;
LEV	= end of year total liabilities divided by end of year total equity;
GROWTH	= percentage change in sales;
EISSUE	= percentage change in common stock;
DISSUE	= percentage change in total liabilities;
SPOS	= a dummy variable that equals one if net income scaled by total assets is between 0 and 0.01, and zero otherwise.

A negative coefficient on *SPOS* would suggest that NADOPT firms manage earnings toward small positive amounts more frequently than do ADOPT firms.

In Hypothesis 3, we consider timely loss recognition as one of the dimensions of earnings management. Ball et al. (2000) and Lang et al. (2003; 2005) suggest that one characteristic of higher quality earnings is that large losses are recognized as they occur rather than being deferred to future periods. This characteristic is closely related to earnings smoothing in that if earnings are smoothed, large losses should be relatively rare. Following these studies, we measure timely loss recognition as the coefficient on the percentage of large negative net income, *LNEG*, in the following regression:

$$ADOPT\,(1,0){=}\alpha_0\ {+}\alpha_1 SIZE_{it}{+}\alpha_2 GROWTH_{it}{+}\alpha_3 EISSUE_{it}{+}\alpha_4 LEV_{it}{+}\alpha_5 DISSUE_{it}{+}\alpha_6 LNEG{+}\epsilon_{it} \qquad (3)$$

Where

ADOPT(1,0)	= an indicator variable set to one for ADOPT firms and zero for NADOPT firms;
SIZE	= the natural log of end of year market value of equity;

LEV   = end of year total liabilities divided by end of year total equity book value;
GROWTH   = percentage change in sales;
EISSUE   = percentage change in common stock;
DISSUE   = percentage change in total liabilities;
LNEG   = a dummy variable set to one for observations for which annual net income scaled by total assets is less than − 0.20, and zero otherwise.

A positive coefficient on *LNEG* suggests that ADOPT firms recognize large losses more readily than NADOPT firms.

SAMPLE SELECTION

Our sample starts with all firms that have shares listed on the Shanghai Stock Exchange and the Shenzhen Stock Exchange for the period from 1994 to 2000, including 4252 observations from 913 firms in the Taiwan Economic Journal (TEJ) database. Excluding observations with missing data on firm's equity, sales, common stock shares, total liabilities, total assets and/or net income, our sample for the test of small positive net income and lagged negative earnings includes 3,298 firm-year observations, including 2809 observations from NADOPT firms and 489 observations from ADOPT firms. Since we further require that firms should have at least 3 year net income data to calculate earnings volatility, our sample for the test of earnings smoothing comprises 2,286 firm-year observations, including 1926 observations from NADOPT firms and 360 observations from ADOPT firms. Table 1 reports the sample selections schedule, including information on the numbers of observations for ADOPT and NADOPT firms.

Table 1.Descriptive Information on Sample Selection		
Sample Selection Procedure	Number of Firms	Number of Observations
Firm's financial information for the period of 1994 – 2000 is available from the TEJ database	913	4252
Less: Firm's equity, sales, common stock shares, total liabilities, total assets and/or net income is missing		954
Final sample size for analysis of small positive net income and lagged negative earnings		3298
Include: ADOPT firms		489
NADOPT firms		2809
Less: Firm has less than 3 year net income data to calculate earnings volatility		1012
Final sample size for analysis of earnings smoothing		2286
Include: ADOPT firms		360
NADOPT firms		1936

Table 2 reports descriptive statistics for the ADOPT and NADOPT firms. In terms of the variables of interest, the ADOPT firms have significantly higher incidents of small positive earnings. Although these results do not control for other factors, they suggest that IFRS may provide more accounting choices and hence more earnings management opportunities through accounting accruals. As a result, ADOPT firms are more likely to manage earnings toward a target than NADOPT firms. In terms of control variables, the ADOPT firms are more mature, or have lower growth than the NADOPT firms (median 1.247 vs.1.919) and are somewhat larger than the NADOPT firms. Further, there is some evidence that the ADOPT firms are less likely to issue debt and equity, and more highly leveraged than NADOPT firms (although mean or median difference is insignificant).

Table 2. Descriptive Statistics of Independent Variables						
Variables	Sample	Number	Mean		Median	Std. Dev.
SIZE	Adopt = 0	2809	6.9237		6.8653	0.8734
	Adopt = 1	489	7.3716	***	7.3944	0.8320
GROWTH	Adopt = 0	2809	2.3403		1.9189	1.6330
	Adopt = 1	489	1.5383	***	1.2471	1.3581
EISSUE	Adopt = 0	2809	0.1377		0.0737	0.7047
	Adopt = 1	489	-0.4673	***	0.0400	11.9671
DISSUE	Adopt = 0	2809	0.3322		0.1502	0.8826
	Adopt = 1	489	0.1742	***	0.0896	0.3971
LEV	Adopt = 0	2809	2.2256		0.9444	33.4670
	Adopt = 1	489	3.3702		1.0720	34.0039
VARNI	Adopt = 0	1926	0.0474		0.0243	0.0686
	Adopt = 1	360	0.0478		0.0246	0.0658
SPOS	Adopt = 0	2809	0.0968		0	0.2958
	Adopt = 1	489	0.1329	**	0	0.3398
LNEG	Adopt = 0	2809	0.0231		0	0.1504
	Adopt = 1	489	0.0245		0	0.1549
Definition of variables: *ADOPT*(1,0) is an indicator variable set to one for ADOPT firms and zero for NADOPT firms, *SIZE* is the natural log of end of year market value of equity, *LEV* is end of year total liabilities divided by end of year total equity book value, *GROWTH* is percentage change in sales, *EISSUE* is percentage change in common stock, *DISSUE* is percentage change in total liabilities, *VARNI* is variability (standard deviation) of the change in net income scaled by total assets, *LNEG* is an indicator variable set to one for observations for which annual net income scaled by total assets is less than −0.20, and zero otherwise, and *SPOS is* an indicator variable that equals one if net income scaled by total assets is between 0 and 0.01.						
*, **, *** Statistically significant at 0.10, 0.05, and 0.01, respectively.						

RESULTS

Table 3 presents the Pearson correlation coefficient matrix. As predicted, ADOPT is significantly and positively related with SPOS (r = 0.0424 and p = 0.0150) and SIZE (r = 0.1803 and p < 0.0001), while significantly and negatively correlated with GROWTH (r = -0.1756 and p < 0.0001), EISSUE (r = - 0.0462 and p = 0.008), and DISSUE (r=-0.0672 and p < 0.0001). The correlation between ADOPT and LNEG is positive but insignificant (r = 0.0033 and p = 0.8500) and the same is the one between ADOPT and VARNI (r = 0.0023 and p = 0.9128). None of the correlation among control variables are higher than 0.3, except that between SIZE and GROWTH (r = -0.3839 and p < 0.0001). The highest variance inflation factor (VIF) is less than 10 for each model, indicating that multicollinearity does not appear to be a problem.

Table 3. Pearson Correlation Coefficient Matrix for Independent and Control Variables									
	ADOPT	SIZE	GROWTH	EISSUE	DISSUE	LEV	SPOS	LNEG	VARNI
ADOPT	1.0000								
	0.0000								
SIZE	0.1803	1.0000							
	0.0001	0.0000							
GROWTH	-0.1756	-0.3839	1.0000						
	0.0001	0.0001	0.0000						
EISSUE	-0.0462	0.0079	0.0092	1.0000					
	0.0080	0.6518	0.5961	0.0000					
DISSUE	-0.0673	-0.0074	0.0349	0.0272	1.0000				
	0.0001	0.6713	0.0455	0.1186	0.0000				
LEV	0.0121	-0.0106	0.0071	-0.0058	-0.0124	1.0000			
	0.4870	0.5442	0.6819	0.7378	0.4754	0.0000			
SPOS	0.0424	0.0287	-0.0855	-0.0029	-0.0863	-0.0106	1.0000		
	0.0150	0.0997	0.0001	0.8671	0.0001	0.5427	0.0000		
LNEG	0.0033	-0.0981	0.0461	-0.1329	-0.0407	0.0332	-0.0522	1.0000	
	0.8500	0.0001	0.0081	0.0001	0.0197	0.0566	0.0027	0.0000	
VARNI	0.0023	-0.2258	0.2309	-0.1082	-0.0256	0.0589	-0.0120	0.3784	1.0000
	0.9128	0.0001	0.0001	0.0001	0.2213	0.0049	0.5673	0.0001	0.0000

Table 4 presents the logit regression results on the relationship between the adoption of IFRS and earnings smoothing. When factors like SIZE, GROWTH, DISSUE are controlled for, the coefficient on VARNI is positive and significant (Wald Chi-squares = 4.5400), the expected outcome from Hypothesis 1. Thus firms

adopting IFRS appear to be more likely to smooth earnings compared with firms that do not. In addition, the findings of a positive coefficient for SIZE and negative coefficients for GROWTH and DISSUE are consistent with Barth et al. (2005), who report that firms adopting IFRS tend to have larger size, lower growth rate, and lower demand for capital. However, no significant results are found for other variables.

Table 4. Logit Analysis of IFRS Adoption and Earnings Smoothing		
Variables	Coefficient	Wald x^2
INTERCPT	-3.3712***	32.0556
SIZE	0.3438***	22.0188
GROWTH	-0.3909***	39.4570
EISSUE	-0.0274	0.2568
DISSUE	-0.5692***	13.7164
LEV	0.0008	0.4131
VARNI	1.9144***	4.5400
Likelihood Ratio Chi-Square	144.197***	
Pseudo R-square	7.24	
N	2296	

Table 5 reports the primary results on the relationship between the adoption of IFRS and the likelihood of reporting small positive earnings. The coefficient on SPOS is positive but insignificant (Wald Chi-squares = 0.2060), which is quite different from the positive correlation between ADOPT and SPOS in Tables 1 and 2. This divergence may indicate that the higher percentage of firms in ADOPT group reporting small positive earnings in the univariate test (Table 2) could be caused by the better financial status of these firms including larger size, more mature status (lower growth rate), and lower demand for capital compared to NADOPT firms, rather than by the adoption of IFRS, as suggested by the significant correlation between SPOS and these financial variables (see Table 3). The results on the control variables are consistent with those from the univariate tests: the coefficient for SIZE is significant and positive, while the coefficients of GROWTH and DISSUE are significant and negative. Our results are consistent with the findings of Barth et al. (2005), who report that firms adopting IFRS tend to have larger size, lower growth rate, and lower demand for capital. However, no significant results are found for other variables.

Table 6 presents the primary results on the relationship between the adoption of IFRS and timely recognition of negative earnings. The coefficient on LNEG is positive but insignificant (Wald Chi-squares = 0.4197). Given the correlation matrix of Table 3, it is possible that firms with smaller size, higher growth rate and more demand for capital tend to delay their annual reports if they have net losses. Surprisingly, there is no evidence indicating that firms adopting IFRS are less likely to delay negative earnings. Again, the results on the control variables are consistent with those from the univariate tests: the coefficient for SIZE is significant and

positive, while the coefficients of GROWTH and DISSUE are significant and negative. No significant results are found for other variables.

Table 5. Logit Analysis of IFRS Adoption and Recognition of Small Positive Earnings		
Variables	Coefficients	Waldχ^2
INTERCPT	-3.5511***	54.4907
SIZE	0.3709***	37.7110
GROWTH	-0.4008***	54.9103
EISSUE	-0.0732	0.8277
DISSUE	-0.4874***	15.4599
LEV	0.0010	0.6430
SPOS	0.0705	0.2060
Likelihood Ratio Chi-Square	207.361	
Pseudo R-square	7.55	
N	3298	

Table 6. Logit Analysis of IFRS Adoption and Timely Recognition of negative Earnings		
Variables	Coefficeint	Wald x^2
INTERCPT	-3.5491***	54.1922
SIZE	0.3721***	37.7125
GROWTH	-0.4035***	56.1697
EISSUE	-0.0687	0.7258
DISSUE	-0.4913***	15.8086
LEV	0.0010	0.6310
LNEG	0.1062	0.0902
Likelihood Ratio Chi-Square	207.246	
Pseudo R-square	7.53	
N	3298	
*, **, *** Statistically significant at 0.10, 0.05, and 0.01, respectively.		

The Likelihood Ratio Chi-squares for all models are significant. Pseudo R-squares are 7.24%, 7.55% and 7.53% for equations (1), (2) and (3) repsectively, which is compatible with what is reported by Barth et al. (2005).

Overall,we find that firms are less likely to smooth earnings in the post-adoption period. However, we did not find that firms evidence any lower tolerance of losses or more timely loss recognition when adopting IFRS. Thus, our results suggest only marginal improvement in accounting quality associated with the adoption of IFRS. Our results also suggest that strong enforcement mechanisms of IFRS be implemented to ensure its positive role in improving the quality of accounting information overall.

CONCLUSIONS AND LIMITATIONS

We investigated the impact of the adoption of international accounting standards (IFRS) by firms in the emerging market of China in their practice of earnings management. Based on our review of the existing literature on the subject, we developed three hypotheses as likely outcomes of the adoption of IFRS. As expected in the first hypothesis, the results of our study indicate that firms adopting IFRS are less likely to smooth earnings compared to non-adopting firms.

The second hypothesis expected that adopting firms would be less likely to manage earnings upwards to avoid reporting losses compared to firms reporting under local GAAP. Our findings did not find any evidence for such an improvement in practice. This observation may suggest that non-adopting firms could manipulate earnings up through vehicles other than accounting accruals. For instance, earnings could be managed up through non-core operating earnings or related third party transactions (Chen and Yuan, 2004). This observation, therefore, might imply a need for a stricter enforcement of IFRS.

The third hypothesis expected the adopting firms to be more likely to recognize losses in a timely manner. Our observation from the study did not find any difference in the way adopting and non-adopting firms delay their reports. While the difference in the timeliness of accounting disclosure between adopting and non-adopting firms may be obscured by the dual accounting information systems used by firms issuing both domestic shares and foreign shares, it is also possible that adopting IFRS may not be a determinant of timeliness in reporting accounting information of Chinese firms.

Overall our investigation suggests some improvements in the quality of accounting information associated with the adoption of IFRS. Because of the relatively newer environment of the introduction of IFRS in China, our findings may also imply that a stronger enforcement mechanism for the implementation of IFRS be instituted to ensure its positive impact on the quality of accounting information. These conclusions are in agreement with Eccher and Healy (2003), who also posit a modest performance from the adoption of IFRS and the lack of effective controls and infrastructure to monitor reporting under IFRS.

While our study encompasses an empirical investigation of any association between adoption of IFRS and earnings management, it is undertaken in the context of the emerging market of China. As a country-specific study, as pointed out by Barth et al. (2005), the conclusions from our study are probably difficult to extrapolate to other countries exhibiting different socio-economic and socio-political characteristics. This constitues a limitation of our study.

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PRESSURES FOR THE CREATION OF A MORE INDEPENDENT BOARD OF DIRECTORS IN THE POST-RESTRUCTURING PERIOD

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ABSTRACT

This paper examines the relationship between board of director independence and restructuring. Although poor performance driven by inadequate governance is a widely investigated antecedent of portfolio restructuring, it is also widely contested since governance structures of restructuring firms are automatically labeled as weak. Research has not proven that governance is weak in the pre-restructuring period, yet this philosophy has become institutionalized. This paper incorporates institutional arguments by suggesting that firms will adjust governance structures to reflect socially valid indicators of governance – greater board independence. Results revealed that firms do modify board independence in the post-restructuring period.

INTRODUCTION

Corporate restructuring has been a significant area of interest in helping to understand the limits of firm growth, the implications of changes in the firm's business portfolio, as well as the effectiveness of changes in organizational and capital structures (Bergh, 2001; Bowman & Singh, 1993; Johnson, 1996). Portfolio restructuring involves the process of divesting and acquiring businesses that entails a refocusing on the organization's core business(es), resulting in a change of the diversity of a firm's portfolio of businesses (Bowman, & Singh, 1993; Bowman, Singh, Useem & Bhadury, 1999).

A multitude of empirical and theoretical investigations into the antecedents of restructuring revealed that the premier explanation of asset restructuring is the agency explanation, which suggests that firms engage in restructuring as a direct response to less-than-desirable performance (Hoskisson & Hitt, 1994; Hoskisson, Johnson & Moesel, 1994; Johnson, 1996; Johnson, Hoskisson & Hitt, 1993). Additionally, it is posited that the suboptimal performance is driven by managerial inefficiencies arising from weak governance mechanisms. Due to its overwhelming acceptance by researchers, the agency explanation has made portfolio restructuring synonymous with weak or poor governance (Bethel & Liebeskind, 1993; Chatterjee, Harrison & Bergh, 2003; Markides & Singh, 1997). Research has not proven that governance is weak in the pre-restructuring period, yet this school of thought has become ingrained in the literature.

One area that has received little attention is post-restructuring governance. In calls for future portfolio restructuring research, Johnson (1996) asked if governance is truly weak or a complete failure in the pre-restructuring period, then what changes does a firm make in the post-restructuring period? The basic implications of this question is that if firms do not correct such inefficiencies or shortcomings, then the process of portfolio restructuring may be followed by renewed expansion or continued inefficiencies in various governance mechanisms.

This paper argues that firms suffering from poor performance in the pre-restructuring period will initiate governance changes in the post-restructuring period. The belief is that it is common for these firms to have their governance structures labeled as weak or inadequate. As such, boards of directors and the CEO are pressured to not only address the performance issues but also address the governance issues that are frequently linked with poor performance.

To date, there has been no empirical examination that specifically addresses governance as an outcome of the restructuring process. Governance is the most discussed antecedent of portfolio restructuring, yet it is completely ignored in the post-restructuring period. Due to its overwhelming popularity, the agency explanation of restructuring suggests that firms suffering from poor performance in the pre-restructuring period will be saddled with the same weak governance structures they possessed in the pre-restructuring period if corrective actions are not taken. As such, the idea of governance reforms in the post-restructuring period has merit, but is yet to be addressed in the restructuring literature.

By drawing on the basic tenets of institutional theory (DiMaggio & Powell, 1983; Meyer & Rowan, 1977), this paper suggests that firms redesign their governance structures in post-restructuring periods to enhance, or even maintain, organizational legitimacy (Oliver, 1991). By changing governance structures that adhere to the prescriptions of rationalizing myths in the institutional environment, an organization may demonstrate that it is behaving on collectively valued purposes in a proper and adequate manner (Meyer & Rowan, 1977). Thus, by not making changes in post-restructuring governance structures, the firm becomes more vulnerable to claims that they are negligent or irrational. Additionally, conformity of organizations to normative pressures increases the flow of societal resources and enhances the chances of survival (Meyer & Rowan, 1977; Tolbert & Zucker, 1996).

LITERATURE REVIEW

The Institutionalization of the Agency Explanation of Restructuring

The premier explanation as to why organizations engage in portfolio restructuring is in response to substandard organizational performance, which is driven by managerial inefficiencies that, in turn, resulted from weak governance. An organization divests assets with the intent of improving performance, whether it is their performance in relation to competitors, the overall industry, or a predetermined aspiration level. In fact, research has demonstrated that firms engaged in restructuring often are performing poorly prior to the initiation of restructuring activities (Bergh, 2001; Bowman et al., 1999; Hoskisson & Hitt, 1994; Hoskisson et al., 1994; Johnson, 1996; Markides & Singh, 1997; Smart & Hitt, 1994). For example, Jain (1985) found that performance began to suffer approximately a year prior to divestiture and resulted in negative excess stock return of 10.8% within the one year prior to the restructuring event.

More commonly known as the agency explanation of portfolio restructuring (Filatotchev, Buck & Zhukov, 2000; Hoskisson & Hitt, 1994; Markides & Singh, 1997), poor performance as an antecedent of portfolio restructuring has become the leading explanation in the literature to account for restructurings since the 1980s. This explanation suggests that performance needs to be improved as a result of past managerial inefficiencies, which arise as a result of agency costs. Arguments are made that the board of directors, ownership concentration, and managerial incentives were ineffective and resulted in the failure of internal governance systems (Bethel & Liebeskind, 1993; Chatterjee & Harrison, 2001; Hoskisson et al., 1994; Jensen, 1993; Johnson, 1996).

Although never truly defined in the literature, weak governance is believed to be characterized by diffusion of shareholdings among outside owners, board passivity, and certain characteristics of managers and boards, such as minimal equity ownership by top managers and board members or an insufficient amount of outsiders sitting on the board (Bethel & Liebeskind, 1993; Dalton, Daily, Certo & Roengpitya, 2003; Johnson et al., 1993; Johnson, 1996; Westphal & Fredrickson, 2001).

Due to its overwhelming acceptance by restructuring researchers and its simplistic and intuitive appeal, the agency explanation has made portfolio restructuring synonymous with weak governance (Bethel & Liebeskind, 1993; Markides & Singh, 1997). Smart and Hitt echoed this sentiment by suggesting that "many of the arguments and concepts embedded in the agency literature seem so compelling that agency and governance related arguments have become a virtual de facto explanation for many types of corporate restructuring" (1996: 1). As a result, the academic and practitioner literatures on portfolio restructuring have devoted much effort to pointing out such alleged governance failures and highlighting ways of improving the corporate governance system of the modern corporation (Jensen, 1993).

Agency arguments have become ingrained in governance research that other paradigms are often ignored. Daily et al. referred to this barrier as empirical dogmatism, which they argued has negatively impacted researchers' willingness to "embrace research that contradicts dominant governance models and theories (e.g., a preference for independent governance structures) or research that is critical of past research methodologies or findings" (2003: 379). In essence, agency arguments have become the norm for viewing governance, and, as such, impact the organization of firms (e.g., the structure of the board). The agency arguments are embedded in how practitioners, institutional investors, and for the most part, academicians define what is good or sound corporate governance. In other words, there is remarkable consensus as to the best practices that need to reside in all firms if they are to maximize performance. Support for this idea was offered by Westphal and Zajac (1998) and Zajac and Westphal, who noted that "large investors appear to have co-opted normative agency theory to help legitimate their political agenda, thus contributing to and benefiting from the growth of agency theory as a dominant perspective on corporate control" (1995: 287-288).

Governance, Governance Reform, and Firm Performance

The literature suggests that large firms are under considerable pressure from concentrated ownership, such as institutional investors, to improve performance (Ryan & Schneider, 2002; Westphal & Zajac, 1997; Westphal & Fredrickson, 2001). These financial improvements include both corporate financial measures, such as operating and net income, and return on assets, as well as by stock valuation, which is a measure of the market's perception of firm value (Prevost & Rao, 2000; Ryan & Schneider, 2002). Additionally, these activist investors may extend their desired performance improvements to non-financial indicators of performance, such as enhancements in the composition of the board of directors and changes in the level and composition of executive pay (David, Kochhar & Levitas, 1998; Ryan & Schneider, 2002).

Institutional fund managers have been particularly effective in achieving governance changes in the firms they target (Dalton et al., 2003; Ryan & Schneider, 2002). In fact, there is evidence that pension funds have pressed organizations to initiate board changes in response to poor organizational performance (Daily & Dalton; 1995; Davis & Thompson, 1994). Among more commonly sought actions are increasing the proportion of outside directors and separating the positions of CEO and board chairperson. Thus, it is evident that ownership concentration can and does impact governance changes within firms suffering from sub-optimal performance.

The reforms sought by these constituencies are quite uniform in nature. They seek the implementation of good/sound governance structures – those structures which supposedly minimizes agency costs (Brown, 2003; Byrne, 2000; Langley, 2003). It is important to note that such pressures to reform the governance structure of the firm may not be driven by solid evidence that the governance structure was actually inappropriate, since precise causes of poor performance are often difficult to identify (Cyert & March, 1963). However, it is widely suggested that poor performance does stimulate such changes within organizations (Davis, Diekmann & Tinsley, 1994) even when performance deficits cannot be attributed unambiguously to efficiency problems that the proposed changes seek to rectify.

A synthesis of the governance-performance relationship was investigated via a meta-analysis by Dalton, Daily, Ellstrand and Johnson (1998), who focused on the impact of board composition (inside versus outside directors) and board leadership structure (CEO duality) on firm performance. The authors identified 54 and 31 studies (from 1972-1996) that investigated the board composition-performance relationship and board leadership-performance relationship, respectively. Dalton et al. (1998) concluded that there is no relationship between either of the two governance structures and firm performance. Additionally, the authors investigated the type of performance measure (i.e., accounting-based versus market-based) and found no evidence of a moderating effect between these two governance characteristics and performance based on the nature of the performance indicator.

Another meta-analysis by Dalton et al. (2003) investigated the impact of equity holdings by various groups (i.e., CEO, top managers, and directors) on financial performance (i.e., Tobin's Q, ROA, ROE, ROI, EPS, shareholder returns, Jensen's Alpha, and P/E ratio). The authors identified 229 empirical studies (1968-2001) that investigated the equity-performance relationship. The results revealed that, with the exception of officer and director equity and EPS, none of the correlations between measures of insider equity and performance exceed .02.

The meta-analyses above reveal that the linkages between governance and firm performance are *non-existent despite the fact that shareholder activists firmly believe that the aforementioned governance structures have a clear and consistent impact on performance.*

THEORY AND HYPOTHESES

Pressures for Change

Institutional theory suggests that organizational legitimacy is paramount for firm performance and survival (Certo, 2003; DiMaggio & Powell, 1983). To gain legitimacy, organizations respond to institutional pressures stemming from such sources as suppliers of capital, consumers, owners, boards of directors, and regulatory agencies by adopting similar organizational forms (DiMaggio & Powell, 1983; Luoma & Goodstein, 1999). Better known as isomorphism (DiMaggio & Powell, 1983; Meyer & Rowan, 1977), this process forces an organization to resemble other organizations that are confronted with the same set of environmental issues (DiMaggio & Powell, 1983).

Additionally, the literature suggests that isomorphism does impact organizational structures and practices (Meyer & Rowan, 1977; Tolbert & Zucker, 1996). The adoption of these prevailing practices and procedures results in increases in organizational legitimacy, which helps organizations acquire more resources and lessen the probability of failure (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Oliver, 1991; Pfeffer & Salancik, 1978).

It is suggested that governance structures face these same pressures from their external environment. The pressures are greatest when performance is sub-optimal since the literature claims that sub-optimal governance is linked with deteriorations in firm performance. As such, firms suffering from poor performance will not only face these pressures, but will have to make changes to their governance structures in order to conform to these pressures. Given the need to positively influence these sources of power, firms may adopt organizational structures to signal legitimacy, because "organizations that incorporate socially legitimated rationalized elements in their formal structures maximize their legitimacy and increase their resources and survival capabilities" (Meyer & Rowan, 1977: 352). The desired result is an improved perception of the firm's image and renewed confidence in the organization's future (Daily & Dalton, 1995). Research indicates that such organizational structures include characteristics of boards of directors and top managers (Certo, 2003; Mizruchi, 1996; Pfeffer & Salancik, 1978; Westphal & Zajac, 1994; 1998). It is important for top managers and boards to manage these multiple contingencies in order to preserve their positions.

The literature on institutional theory would suggest that firms would incorporate or institute governance changes that reflect the myths of their institutional environments. These changes will become part of the organization's rationalized formal structure (e.g., board of director and top management team), whose elements reflect rules that are socially constructed, deeply ingrained, taken for granted, may be supported by public opinion, and/or enforced by the views of important constituents (Berger & Luckmann, 1976; Meyer & Rowan, 1977). In other words, rather than incorporate elements in terms of efficient coordination and control of productive activities, firms incorporate elements that are legitimated externally. Thus, making alterations to one's governance structures by adhering to the prescriptions of myths in the institutional environment (i.e., effective and high performing firms are those with sound governance structures), an organization demonstrates that it is acting on collectively valued purposes in a proper and adequate manner (Meyer & Rowan, 1977; Tolbert & Zucker, 1996).

Governance in the Post-Restructuring Period

Based on the fact that a common research proxy for a board's governing effectiveness is firm financial performance (Chatterjee & Harrison, 2001), and revolutionary, yet not universally accepted, statements in the portfolio restructuring literature such as "If perfect governance is achieved, no performance problems should exist" (Johnson et al., 1993: 34), pressures for, and adoptions of, governance reforms should be greatest when shareholders' interests are viewed as having been neglected (Westphal & Zajac, 1994). As such, it is believed that this has direct implications for firms engaged in portfolio restructuring, specifically those organizations that are experiencing substandard performance because poor performance threatens the credibility of board members as guardians of shareholder interests (Fama & Jensen, 1983). In order to alleviate this negative attribution, boards must at least "give the appearance of efficacy" (Salancik & Meindl, 1984: 238) by symbolically affirming and tightening their control over management (Pfeffer, 1981; Westphal & Zajac, 1994).

One of the most widely studied governance structure is the composition of the board since many believe that its composition is a critical determinant of the board's ability to effectively carry out its governance responsibilities (Dalton et al., 1998; Finkelstein & Hambrick, 1996). There is a commonly held belief in the academic literature (e.g., Daily et al., 2003; Hoskisson et al., 1994) and the popular press (Brown, 2003; Langley, 2003) that the interests of shareholders are better protected when there is greater board independence (i.e., a higher proportion of independent directors sitting on the board).

Dalton et al. noted the prevalence of this belief by stating, "There is near consensus in the conceptual literature that effective boards will be comprised of greater proportions of outside directors. The corporate community is even more outspoken on this issue. Among practitioners, especially institutional investors and shareholder activists, it is not unusual to find advocates for boards which are comprised exclusively of outside directors" (1998: 270). These arguments echoed prior arguments by Hoskisson et al., who stated that "outside directors have often been viewed in the governance literature as having few costs in terms of strategic formulation and unbound benefits for governance and monitoring" (1994: 1237). Lastly, Baysinger and Butler argued that "proposals for corporate board reform devote special attention to the issues of board composition and director independence. According to many reformers, the boards of all major U.S. corporations should have at least a majority of outside directors. Moreover, the ideal board would have no director, except for the chief executive officer, who is also an employee of the firm, past or present" (1985: 102). Based on this evidence, there is a taken for granted notion that boards with a predominance of outsiders are ones that lead to the greatest reduction of uncertainty about managerial motives.

There is evidence in the popular press that firms respond to increases in pressures from ownership groups or social expectations by replacing insiders with outsiders with the intent of achieving greater, or even maintaining, legitimacy and social acceptability. For instance, Tenet Healthcare Corporation recently announced that their CEO and three directors would step down from the board and replaced by four individuals not working for the organization (Rundle, 2003). The move was part of a broad plan by the organization to quell shareholder discontent about its governance practices. When asked about the change, the CEO, Jeffrey Barbekow, mentioned, "It is an indication of the level of seriousness we have about this…when we talk about independence, we really mean it" (2003: A8).

Signaling theory suggests that a board composed predominantly of outside directors may signal that effective controls are in place (Certo, Daily & Dalton, 2001). As such, board independence may provide investors greater confidence in the firm's potential. Evidence of this belief was offered by Seward and Walsh (1996), who hypothesized and found evidence of their assertion that spun-off firms would create outsider-dominated boards as a means of communicating that management wanted to "do right" by shareholders and have effective monitoring in place. Here, again, there is an assumption that effective monitoring and proper governance manifests itself in the form of a majority of outsiders on the board of directors. Westphal and Zajac (1994) suggested that such changes in board composition, although substantive in appearance, might be largely symbolic since the CEO may have the opportunity to recruit sympathetic outsiders to the board. While such changes may enhance the formal structural bases of board power, they may nevertheless decrease the board's informal power over management if CEOs effectively control the selection process. As such, changes in the formal structure of the board are highly visible to stakeholders, yet the inability of stakeholders to discern what outcomes they are obtaining or the value of such outcomes makes it easier for boards to take such symbolic action (Pfeffer, 1981; Westphal & Zajac, 1994).

Based on the above arguments, two main hypotheses are offered below. The first hypothesis posits that portfolio restructuring by itself, irrespective of performance in the pre-restructuring period, is sufficient enough to force greater board independence. Despite having no impact on performance, socially legitimated governance structures will be adopted in the post-restructuring period. The second main hypothesis is more restrictive by suggesting that the adoption of socially legitimated governance structures is more salient for those firms with performance deficiencies in the pre-restructuring period. Based on the above arguments, the following hypotheses are offered.

Hypothesis 1: Portfolio restructuring firms will adopt socially legitimated, non-performance enhancing, governance structures in the post-restructuring period. As such, portfolio restructuring firms will exhibit an increase in the proportion of outsiders on the board in the post-restructuring period.

Hypothesis 2: Greater declines in performance for a portfolio restructuring firm in the pre-restructuring period will result in greater adoption of socially legitimated, non-performance enhancing governance structures in the post-restructuring period. As such, greater declines in performance for a portfolio restructuring firm in the pre-restructuring period will result in increased proportion of outsiders on the board in the post-restructuring period

METHODS

Sample

This paper argues that governance changes are most prevalent in restructuring firms and experienced sub-optimal performance in the pre-restructuring period – an interaction effect between restructuring and performance. In other words, low performance that leads to changes in governance, and the magnitude or probability of these changes is amplified for those firms that have restructured their portfolio of assets. As such, it is important to sample two types of firms – ones that did and ones that did not engage in asset restructuring.

The sample of restructuring firms was collected from the *SDC Platinum Database* published by *Thomson Financial*. The data contained in this database is drawn from SEC filings. The search was limited to U.S. firms that had $1 billion or more in annual revenues. Data was accessed from 1986 through 2000. Incorporating firms that have and have not restructured their portfolio of assets and sampling across 15 years allows for greater confidence in any causal relationships since it increases the external validity of my conclusions and inferences. External validity is also enhanced since the sample of firms is a cross-industry sample.

In order to qualify as having restructured, a firm must have divested at least 10% of its assets, which represents significant strategic change by an organization. This criterion has been used in previous restructuring research (e.g., Hoskisson & Johnson, 1992; Johnson et al., 1993; Markides, 1992; Simmonds, 1990) and is accepted as a construct valid indicator of restructuring activity.

A total of 100 randomly sampled restructuring firms were included. Each restructuring event in the database was compared against the actual SEC filings for each firm for that particular year in order to confirm the 10% rule. Specifically, the asset data was located in the firm's 'notes to the consolidated financial statements' contained within the annual report to shareholders. The average firm in my sample of restructuring firms divested 19.84% of its assets for an average dollar value of $1.63 billion. The minimum and maximum divested percentages for my sample were 10% and 46.7%, respectively. The minimum and maximum divested dollar amounts were $508 million and $4.57 billion, respectively.

The restructuring sample needed to be matched with a non-restructuring firm sample. From the same database, a randomly selected a sample of non-restructuring firms and matched them up with randomly selected years within the same time frame as the restructuring firms. A firm qualified as a non-restructuring firm if it had not engaged in any restructuring activity within a six-year period (i.e., three years before and three years after). A total of 110 non-restructuring firms were selected, however one firm was acquired in the following year, thus reducing the non-restructuring sample to 109 firms. The non-restructuring sample was statistically not different

from the restructuring sample based on assets, revenues, and capital structures. The total sample size was 209 firms (100 restructurers and 109 non-restructurers).

Variables

Dependent variable. The dependent variable for Hypothesis 1 was the proportion of outsiders on the board. An outside board member was anyone who was not currently or formally employed by the organization or related to any of the organization's executives. The proportion of outsiders on the board was calculated as the number of outside board members divided by the total number of board members. Data sources for these governance characteristics were drawn from SEC filings (annual reports and proxy statements). Data for all other variables in this paper were drawn from *CompuStat*, *Moody's Manuals*, and SEC filings.

Independent and moderating variables. The hypotheses suggest that low performance leads to changes in governance. Additionally, the magnitude or amount of changes in governance structures should be greater for those firms that have restructured their portfolio of assets. This implies that there is an interaction effect between these two variables.

Organizational performance was measured as a change in return on assets (ROA). This measure is appropriate for this study identifies restructuring firms as those who alter their assets, and increases and decreases in this measure is indicative of the quality of investment decisions. ROA is considered a fairly robust measure of performance, as compared to return on equity, because ROA is a measure of return on total (debt and equity) investment. Specifically, this paper incorporated a change score for ROA.

It is important to discuss the issue of time (i.e., the temporal dimension) in the measurement of each of the variables. The performance variable (i.e., ROA) will be measured on a one-year time lag. In other words, if restructuring is in year t, the change in ROA will be measured from year t-2 to year t-1. I am using a one year time lag since research has clearly demonstrated that firms engaged in restructuring often are performing poorly just prior to the initiation of restructuring activities (Bergh, 2001; Bowman et al., 1999; Hoskisson & Hitt, 1994; Hoskisson et al., 1994; Johnson, 1996; Markides & Singh, 1997; Smart & Hitt, 1994).

Restructuring was operationalized using a dichotomous variable. This was done because the object of the paper was to assess if differences exist between restructuring and non-restructuring firms in the post-restructuring period. This is the first study that addresses this issue, thus a more broad-based approach is warranted. As such, restructuring firms were coded as 1, and non-restructuring firms were coded as 0.

To come closer to inferring causality, the dependent variable (i.e., the proportion of outsiders on the board) was measured one year (t1) and two years (t2) following a restructuring. It is not appropriate to measure governance and restructuring cross-sectionally for two reasons. First, this paper is predicting that portfolio restructuring will lead to subsequent changes in governance. Second, the nature of governance mechanisms, (e.g., 3 year director assignments) limits the ability of the firm to immediately institute governance changes (Westphal & Zajac, 1998). Thus, if a restructuring took place in 1992, the dependent variable was measured in 1993 and 1994. It is important to note that a longitudinal study is crucial in order to ascertain the direction of causality and, thus, increase internal validity.

Control variables. To account for third-variable alternative interpretations of the relationships between the independent and dependent variables, the following control variables were employed. One must control for the other governance variables to counter any substitution effects that take place between governance mechanisms. For example, governance reform activists believe that a higher level of monitoring by the board (i.e., greater

outsider representation) would be required when a CEO does not accept any compensation risk tied to firm performance versus when a CEO's incentives are tied to the performance of the firm (e.g., Fama & Jensen, 1983). In essence, the substitution effect of governance states that the desired level of one governance mechanism is to be contingent on the magnitude of other governance mechanisms. As such, when testing the proportion of outsiders on the board, this study controlled for CEO duality. Other governance characteristics frequently discussed when it comes to substitution effects of governance, and thus used as control variables were: *CEO and board equity ownership* (in number of shares) and the *number of board interlocks*.

Controlling for *CEO tenure* is imperative since a number of studies have hypothesized a link between tenure and CEO influence over the board (Finkelstein & Hambrick, 1996). It is typically argued that as tenure increases, CEOs acquire personal power by populating boards with supporters (Finkelstein & Hambrick, 1996) while gaining expert power through an increased familiarity with the firm's resources (Young, Stedham & Beekun, 2000; Zald, 1969).

Ownership concentration was included as a control variable because concentrated ownership increases the ability and incentive to monitor investments and their subsequent ability to institute changes in the organization (Bethel & Liebeskind, 1993; Ryan & Schneider, 2002). Ownership concentration was operationalized as the number of common shares outstanding divided by the total number of shareholders.

Pressures for greater accountability in governance have not been uniform throughout time. As such, dummy variables to control for *period effects* were incorporated into the analyses. Since the data for this study starts at 1986 and continues through 2000, the 1986-1992 period was coded as 1 to account for the stricter regulations placed upon shareholders by the SEC in regards to communications between large shareholders, as well as more insider-trading rules. The 1993-2000 period was coded as 0 to account for the less strict regulations and increased activism by shareholders as a result of fewer legal rules governing large shareholders.

Testing the Hypotheses

This paper suggests that the restructuring event itself leads to changes in board independence. Additionally, such changes are magnified when performance decreases are noted in the pre-restructuring period. This basically implies that there is an interaction effect. OLS regression was used to test Hypothesis 1 and moderated multiple regression was used to test Hypothesis 2.

RESULTS

Table 1 presents the means, standard deviations, and correlations. The findings in the table reveal that restructuring activity is positively correlated with the proportion of outsiders on the board of directors in one year and two years following a restructuring ($r = .24$, $p < .05$ and $r = .27$, $p < .05$, respectively). It is important to note that the means reported in Table 1 are for the combined sample of restructuring and non-restructuring firms. As such, it is difficult to draw conclusions based on the combined sample, thus t-tests were conducted to investigate the differences in means of the two samples.

Table 1: Means, Standard Deviations, and Correlations of Variables																					
Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. CEO equity t_1	1.95	5.8	-																		
2. CEO equity t_2	1.67	4.26	.88**	-																	
3. TMT equity t_1	2.62	4.98	.87**	.78**	-																
4. TMT equity t_2	2.96	5.88	.86**	.82**	.96**	-															
5. BOD equity t_1	6.82	38.9	.10	.07	.12	.15*	-														
6. BOD equity t_2	5.26	24.28	.36**	.33**	.44**	.40**	.41**	-													
7. CEO duality t_1	0.88	0.33	-.26**	-.08	-.22**	-.21**	.02	.02	-												
8. CEO duality t_2	0.87	0.34	-.26**	-.11	-.24**	-.21**	.03	.03	.75**	-											
9. Outside prop. t_1	0.76	0.12	-.11	-.07	-.25**	-.23**	-.02	-.12	.27**	.21**	-										
10. Outside prop. t_2	0.77	0.12	-.07	-.09	-.20**	-.20**	.04	-.13	.26**	.23**	.84**	-									
11. Board ties t_1	41.24	24.83	-.01	.04	-.08	-.05	.06	.00	.19**	.16*	.24**	.21**	-								
12. Board ties t_2	41.62	24.77	-.02	.05	-.06	-.03	.10	.08	.17*	.12	.23**	.20**	.96**	-							
13. CEO tenure t_1	84.91	81.07	-.03	.02	.02	.01	.01	.09	.21**	.17*	-.16*	-.24**	-.16*	-.18**	-						
14. CEO tenure t_2	97.12	163.37	-.02	.01	.02	.01	.01	.05	.11	.13	-.21**	-.25**	-.14*	-.14*	.56**	-					
15. Restructuring	0.48	0.50	.20**	.18*	.22**	.22**	.13	.01	-.10	-.05	.24**	.27**	.09	.07	-.26**	-.16*	-				
16. Period effect	0.41	0.49	-.13	-.11	-.15*	-.15*	.01	-.05	-.01	.04	-.23**	-.28**	-.01	-.02	.13	.02	-.26**	-			
17. ROA change	-0.22	7.68	-.01	.12	.14	.17*	-.01	.01	-.12	-.06	-.15*	-.22**	.02	.01	.01	.05	-.05	-.08	-		
18. Owner conc. t_1	12.72	24.68	.33**	.21**	.34**	.33**	.07	.06	-.09	-.06	-.24**	-.13	-.17*	-.14*	.06	.03	-.03	-.21**	-.03	-	
19. Owner conc. t_2	13.26	25.73	.32**	.22**	.33**	.35**	.07	.07	-.10	-.07	-.23**	-.12	-.16	-.14*	.06	.02	-.03	-.21**	-.04	1.00**	-
N = 209 for V7 - V17. N = 205 for V18 and V19. N = 198 for V1 and V5. N = 196 for V2 and V6. N = 187 for V3. N = 185 for V4.																						
** p < .01; * p < .05. Means and standard deviations for V1 - V6 are in millions.																						

It was not surprising to find that the two groups differed significantly. With regard to performance, restructuring firms had an average ROA in the year preceding a restructuring that was 53% less than non-restructuring firms in the same period. However, ROA for restructuring firms greatly improved -- approximately 273% -- in the year following a restructuring, yet ROA for the non-restructuring sample improved by a little more than 3%. Additionally, restructuring firms have greater proportions of outsiders on their boards (around .78 - .80) in the year of restructuring, as well as the one and two years after, versus the non-restructuring group (around .735 - .745). These were statistically significant differences (p < .05).

Tables 2 and 3 show the results of the regression analyses that assessed the proportion of outsiders on the board of directors in the post-restructuring period. Specifically, Table 2 assesses the proportion of outsiders in the year following restructuring (i.e., t1) and Table 3 assesses the proportion of outsiders in the second year following a restructuring (i.e., t2). Both Models 1 in Tables 2 and 3 reveal that the period effect variable and CEO tenure are negatively related to the proportion of outsiders on the board for t_1 and t_2. This first finding suggests that organizations studied in years marked by greater shareholder activism (i.e., after 1993) were likely to have greater proportions of outsiders on the board. This second finding suggests that as CEO tenure increases proportion of outsiders on the board decreases. This finding might be attributable to increased tenure leading to increased CEO power and control, which allows CEOs to have boards more beholden to them (Finkelstein & Hambrick, 1996). Additionally, the results suggest that CEO duality and the number of board ties are positively related to the proportion of outsiders at year t_1 and t_2. Lastly, ownership concentration was negatively related to the proportion of outsiders on the board only for t_1.

Models 2 in Tables 2 and 3 clearly demonstrate that performance and restructuring are predictors of the proportion of outsiders on the board in the first (R^2 = .283, p = .005) and second year (R^2 = .346, p = .000) after a restructuring. More specifically, the change in ROA is negatively related to the proportion of outsiders at t_1 (p < .05) and t_2 (p < .01). Thus, firms experiencing poor performance adopt (either voluntarily or involuntarily) greater proportions of outsiders on their boards. Such a move might be viewed as an attempt to institute socially legitimated characteristics of better or good governance since poor or inadequate governance is often times believed to be the driver of organizational performance. In addition to the significance of the performance change, restructuring proved to be significant and positive predictor of the proportion of outsiders on the board in years t_1 and t_2 (p < .05 for both).

Overall, the findings that relate to the proportion of outsiders in the post-restructuring period allow for full support of Hypothesis 1. Although the hypothesis predicted that restructuring firms with low ROA in the pre-restructuring period would have greater proportions of outsiders on their boards in post-restructuring periods, support was found for the direct effects of performance and restructuring. Restructuring firms had greater proportions of outsiders on their boards in post-restructuring years (t_1 and t_2) and firms experiencing low performance had greater proportions of outsiders on their boards in years t_1 and t_2, but an interaction effect did not exist (p = .348 for year t_1 and p = .843 for year t_2). The models were not-significant, thus support for Hypothesis 2 could not be found.

Table 2: Results of Regression Analysis Predicting the Proportion of Outsiders on the Board of Directors in Year t1					
	Model 1			Model 2	
	ß	t		ß	t
Period Effect	-0.259	-3.874**		-0.235	-3.475**
Owner Concentration t1	-0.242	-3.427**		-0.227	-3.254**
CEO Equity t1	-0.001	-0.02		-0.037	-0.519
BOD Equity t1	-0.108	-1.499		-0.094	-1.327
CEO Duality t1	0.254	3.608**		0.237	3.412**
CEO Tenure t1	-0.152	-2.229*		-0.109	-1.611
Board Ties t1	0.121	1.786†		0.124	1.859†
Performance				-0.139	-2.179*
Restructuring				0.161	2.322*
R^2		0.239			0.283
Adjusted R^2		0.211			0.248
Change in R^2					0.044
Significance of R2 Change					0.005
N = 192. † p < .10, * p < .05, and ** p < .01					

Table 3: Results of Regression Analysis Predicting the Proportion of Outsiders on the Board of Directors in Year t2					
	Model 1			Model 2	
	ß	t		ß	t
Period Effect	-0.331	-4.946**		-0.302	-4.538**
Owner Concentration t2	-0.115	-1.621		-0.109	-1.57
CEO Equity t2	-0.111	-1.439		-0.121	-1.543
BOD Equity t2	-0.094	-1.309		-0.088	-1.267
CEO Duality t2	0.229	3.361**		0.217	3.325**
CEO Tenure t2	-0.249	-3.746**		-0.211	-3.265**
Board Ties t2	0.114	1.694†		0.111	1.723†
Performance				-0.192	-2.979**
Restructuring				0.173	2.524
R^2		0.278			0.346
Adjusted R^2		0.248			0.311
Change in R^2					0.068
Significance of R2 Change					0
N = 194. † $p < .10$, * $p < .05$, and ** $p < .01$					

DISCUSSION AND CONCLUSION

Overall, the results generally support the notion that restructuring firms do institute governance changes in the post-restructuring period. This overarching finding leads one to believe that there is a general consensus in corporate America that governance modifications, along with the restructuring itself, are necessary in order to improve organizational performance. Why would powerful owners or institutional investors push for modifications to governance structures and/or firms volunteer to institute governance changes if there were not socially constructed beliefs that governance truly does matter and that these particular changes are means of improving organizational performance?

The results revealed that the restructuring event itself, irrespective of performance in the pre-restructuring period, is causally related to changes in the proportion of outsiders in the first and second years following a restructuring. These positive relationships reflect a push towards governance structures that are believed to be for the betterment of the organization and its functioning.

Even though these modifications to governance structures are instituted, what remains uncertain relates to how these changes came about. In other words, do organizations make changes as a result of powerful actors forcing these changes upon them, or are these changes instituted as a proactive measure in order to appease powerful actors in the external environment (Oliver, 1991)? In fact, these changes might constitute a compromise between the organization and multiple constituent demands (Oliver, 1991), since powerful actors might have the

different agendas (Hoskisson et al., 2002). Although beyond the scope of this paper, these issues are important to address in order to attain a greater understanding of governance in the post-restructuring period.

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SHARE PERFORMANCE FOLLOWING SEVERE DECREASES IN ANALYST COVERAGE

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ABSTRACT

This study examines the relationship between analyst coverage intensity and security valuation by documenting share performance following severe decreases in analyst coverage. Using a sample period from 1988-2002, we find that short-term share performance is strongly, abnormally positive for firms that lose more than 50% of their analyst coverage in the previous year. More specifically, we find an abnormal return of 11.6%, calculated over the first 60 trading days of the year following coverage loss. These results are obtained after controlling for risk, firm size, price-book, and momentum effects. Further evidence suggests that greater coverage losses in a particular year are followed by higher abnormal returns in the following year. These findings support the view that shareholders initially overreact to extreme losses in analyst coverage, driving stock prices to below their fundamental values. As this temporary mispricing is corrected in the market, shares of coverage losing firms experience positive abnormal returns.

INTRODUCTION

Earlier researchers, such as Chang, Dasgupta, and Hilary (2006), argue that security analysts likely help to mitigate information asymmetry between managers and outside investors by: (a) synthesizing complex information for less sophisticated investors; and (b) making private information available to the public. (Examples of private information include that gained from firm visits and, prior to enactment of Regulation Fair Disclosure, discussions with top managers.) Chang, et al., and several other studies provide evidence that analyst coverage is negatively associated with information asymmetry (Hong, Lim, and Stein, 2000; Gleason and Lee, 2003).

Other researchers provide evidence that, especially when confronted with complex information, analysts make important recommendation and forecasting errors that do not reduce information asymmetry (Gilson, 2000; Louis, 2004; Feng, 2005; and Shane and Stock, 2006). Even worse, analysts have come under heavy criticism in recent years for allegedly issuing intentionally biased recommendations or biased earnings forecasts in order to gain lucrative brokerage or underwriting fees for their firms. Evidence to support the claim that conflicts of interest lead analysts to intentionally biased recommendations or forecasts is provided by Lin and McNichols (1998), Michaely and Womack (1999), and others. Also, evidence that analysts tend to disproportionately cover firms that they view favorably is provided by McNichols and O'Brien (1997), Rajan and Servaes (1997), Bradley, Jordan, and Ritter (2003), and Cliff and Denis (2004). Building on studies that highlight analysts' economic incentives for providing firm coverage, Doukas, Kim, and Pantzalis (2005) state that analysts increase coverage for certain firms in anticipation of greater underwriting and brokerage business. In turn, firms receiving high analyst coverage experience high investor demand for their stocks, resulting in overvaluation. Doukas, et al., find that firms receiving high analyst coverage have overvalued stocks that subsequently experience low future returns.

They also find that firms receiving weak analyst coverage have undervalued stocks that subsequently experience high future returns.

We add to the literature on analyst behavior and security prices by examining shareholder reactions to severe losses in analyst coverage. There are two main reasons for analysts to drop existing coverage of a firm. First, analysts may conclude that the firm is no longer a good prospect for generating future income (through brokerage and underwriting fees) for the analyst's firm. Second, analysts may become pessimistic about the firm's future share performance and would rather drop coverage than issue a sell recommendation. These motivations are not mutually exclusive and brokerage firms rarely give public explanations for dropping coverage of a firm's stock. Therefore, shareholders are left alone to infer the information content of dropped analyst coverage. If shareholders believe that analysts generally drop coverage because they have private, negative information that they choose not to reveal through a sell recommendation, then shareholders would interpret dropped coverage as "bad news." This bad news would likely motivate many shareholders to sell their shares in the firm. A severe decrease in analyst coverage of a firm might lead to shareholder overreaction and security undervaluation because shareholders fear that analysts have chosen to drop coverage rather than to issue sell recommendations. If shareholders initially overestimate the role of private, negative information in analysts' decisions to drop coverage, then an initial mispricing caused by shareholders' overreaction to dropped coverage would only be corrected over time as the feared bad news fails to materialize. Under this scenario, positive abnormal returns would be earned in a period following dropped analyst coverage.

Our primary research question is whether firms suffering severe losses in analyst coverage subsequently earn abnormal returns consistent with investor overreaction and security mispricing. We gather a sample of firms from the period 1988-2002 that experienced more than a 50% loss in analyst coverage during a single calendar year. We then calculate abnormal returns for the first 60 trading days in the year following coverage loss. Abnormal returns are calculated using the Fama-French (1993) three factor model, plus an adjustment for momentum. On average, firms suffering severe losses in coverage during the prior calendar year earn positive abnormal returns of 11.6% during the first 60 trading days of the current calendar year. This evidence of abnormal performance supports the view that shareholders initially mispriced stocks in reaction to analysts' decision to drop coverage. After controlling for prior share performance, price-to-book, market capitalization, risk, and trading volume, further evidence suggests that the initial mispricing is more extreme for firms suffering a greater percentage loss in analyst coverage. Abnormal returns in the first 60 trading days of the current year are negatively related to the percentage of coverage loss in the prior year. We conclude that shareholders initially overreact to coverage loss and their overreaction is greater when the coverage loss is greater.

RELATED LITERATURE

Jensen and Meckling (1976) argued that security analysts provide a valuable function by monitoring managers and thereby decreasing the costs of agency conflict between shareholders and managers. Jensen and Meckling (1976) also suggest that analysts cause security prices to trade closer to fundamental values, by reducing information asymmetries between shareholders and managers. Some more recent researchers, such as Chang, Dasgupta, and Hilary (2006), assume that firms followed by more analysts have a lower level of information asymmetry, although Chag, et al., acknowledge that analysts may simply be attracted to more transparent firms.

Beginning at least with Bhushan (1989), researchers began examining the economic incentives for analysts to cover firms. Given that brokerage firm resources are limited, and not all firms can be covered, analysts

must decide which firms to cover. Over time researchers became more focused on analysts' incentives to provide coverage, and perhaps optimistically biased coverage, for those firms more likely to generate investment banking fees and trading fees. For example, Cheng, Liu, and Qian (2006) discuss the incentives that (sell-side) analysts have to issue overly optimistic research, because this serves the interests of their firms' underwriting and trading business. Chung and Cho (2005) find that analysts are more likely to provide coverage for firms that are handled by their affiliated market makers. Cliff and Denis (2004) find that firms conducting IPOs compensate their lead underwriting firms for providing analyst coverage by underpricing their IPOs. Hong and Kubik (2003) find evidence that brokerage firms reward overly optimistic analysts who endorse stocks. Bradley, Jordan and Ritter (2003) find that analysts initiate coverage for about three fourths of IPOs at the expiration of the quiet period and that the initial ratings are almost always favorable. Barth, Kasznik, and McNichols (2001) find that analyst coverage is significantly greater for firms with higher trading volume and equity issuance, i.e., sources of income for brokers and underwriters. Barth, et al., conclude that analysts weigh the private benefits and the private costs to their own firms when deciding which stocks to cover.

Other researchers have emphasized analysts' incentives to selectively cover firms that they view favorably and to drop coverage of firms that they view unfavorably. McNichols and O'Brien (1997) find evidence that analysts are more likely to drop coverage of a firm when they have private, negative information about the firm. Specifically, they find that analysts' ratings changes are mostly unfavorable immediately prior to dropping coverage. McNichols and O'Brien also provide evidence that analysts' earnings forecast errors are more negative for stocks that they recently dropped than for those firms that analysts continue to cover. This finding suggests that analysts often prefer to discontinue coverage, rather than revise their earnings forecasts downward or issue sell recommendations. Das, Guo, and Zhang (2006) also support the idea that analysts provide coverage for firms that they view favorably.

Another strand of the analyst literature focuses on the effect analyst coverage has on stock values and some researchers even challenge the notion that greater analyst coverage forces security prices towards their fundamental values. Merton (1987) shows that firm value is a positive function of investors' awareness of the firm. To the extent that analysts increase awareness of a firm by providing coverage, analyst coverage can increase share values. After controlling for various factors, Chung and Jo (1996) find that Tobin's q is positively related to the number of analysts covering the firm. Of course, an increase in share value driven by analyst coverage does not necessarily mean that analyst coverage moves share prices closer to their fundamental values. Jegadeesh, Kim, Krische, and Lee (2004) find that sell-side analysts disproportionately recommend expensive stocks. They report that, among stocks with unfavorable characteristics (regarding momentum, growth, volume, and valuation), stocks recommended by analysts experience *lower* subsequent returns. Jensen (2004) suggests that excessive analyst coverage can cause stock prices to trade above fundamental values and that this leads to agency costs of overvalued stock. Finally, Doukas, Kim, and Pantzalis (2005) argue that excessively high analyst coverage (caused by investment banking and brokerage trading interests) drives stock prices above fundamental values, because analysts cause investors to be overly optimistic about such firms. Doukas, et al., find that stocks with weak analyst coverage trade below their fundamentally values.

DATA AND METHODOLOGY

Our primary research objective is to test the hypothesis that a severe loss of analyst coverage will cause a firm's stock to trade below its fundamental value. Analysts may drop coverage of a firm because the firm is no

longer a good prospect for generating future investment banking or brokerage income. Alternatively, analysts may drop coverage because they become pessimistic about the firm's future share performance. Investors generally must infer the reason for dropped coverage. If investors typically emphasize the latter explanation when they initially interpret the coverage drop decision, they may overreact by selling shares and driving stock prices to below fundamental values. We test this hypothesis by examining abnormal share returns in the first 60 trading days of the calendar year following the year of dropped coverage. We would interpret positive abnormal share performance following the year of lost coverage as evidence that dropped coverage is associated with undervaluation.

Using I/B/E/S data covering the years 1988-2002, we gather a sample of firms experiencing greater than a 50% decrease in analyst coverage during a single calendar year. Analyst coverage is defined as the number of analysts providing at least one annual earnings forecast for the firm during the year. We require that a firm be included in the I/B/E/S database both in the year of lost coverage and in the prior year. That is, we do not assume that a firm has lost 100% of its coverage if it appears in the database one year and fails to appear in the database the next year. This ensures that I/B/E/S is reporting each sample firm's data for both years, but it also effectively excludes firms that lose all analyst coverage. So that abnormal share returns can be calculated, firms included in the final sample must be included in the Center for Research in Security Prices (CRSP) database. Our final sample includes 1249 firm years for which we have sufficient data to calculate abnormal returns. For additional tests, including regressions of abnormal returns on firm-specific variables, we require that firms are included in the Compustat database. Thus, the sample size varies and is reduced in some tests because of Compustat data limitations. In summary, all data concerning analyst coverage are drawn from I/B/E/S, all data used to calculate abnormal returns are drawn from CRSP, and all other firm-specific data are drawn from Compustat.

We calculate abnormal share performance over a 60 trading day period using the Fama-French (1993) three-factor model with the momentum factor adjustment recommended by Carhart (1997). The estimation period is the 255 trading days ending 46 trading days before the first trading day of the year immediately following the year of severe change in analyst coverage. Daily abnormal returns are cumulated over the first 60 trading days in the year following the change in coverage year.

RESULTS

Descriptive statistics and share returns for the sample of coverage losing firms appear in Table 1. Because we draw a sample of firms that experience an extreme (greater than 50%) loss in analyst coverage, this selection requirement results in a sample of mostly small cap firms with relatively modest initial analyst coverage. The mean (median) market value of equity for sampled firms at the end of the year of lost coverage is $1.4 billion ($92 million). The mean (median) number of analysts covering sampled firms in the year prior to coverage loss is six (five). The mean and median percentage decrease in analyst coverage is about 67%.

To gain some perspective on the overall share performance of firms suffering extreme coverage losses we report in Table 1 the raw returns and the market-adjusted returns calculated the year before, the year of, and the year following coverage losses. The market-adjusted return for an individual firm is calculated as the sample firm's total annual return minus the total return on a small stock index for the same year. Annual returns for the small stock index are obtained from Kenneth French's web site at Dartmouth University. In particular, we use the returns on the smallest quintile of U.S. firms. The mean raw return in the year before coverage loss is -12.88%. The mean market-adjusted return in the year before coverage loss is -27.34%. Both of these returns are

significant at the 0.01 level and they suggest that analysts often drop firms that have performed poorly in the prior year. The results concerning annual returns in the year of coverage loss are less conclusive. The mean raw return in the year of coverage loss is 9.16% (p = 0.054), however the mean market-adjusted return in the year of coverage loss is -4.08% (p = 0.386). Finally, the mean returns for the year following coverage loss are strongly positive. The raw return in the year following coverage loss is 33.57% and the market-adjusted return in the year following coverage loss is 14.59%. Both of these results are significant at the 0.01 level.

Table 1: Descriptive Statistics and Share Returns For Firms Suffering Severe Losses in Analyst Coverage						
Variable	N	Mean	Median	Standard Deviation	Min	Max
Market cap (in $millions)	1249	1401.2	92.13	7548.68	1.32	155440.1
Analyst Coverage$_{t-1}$	1249	6.02	5	4.05	3	41
Analyst Coverage$_t$	1249	2.03	1	1.73	1	16
Coverage loss	1249	-0.671	-0.667	0.079	-0.938	-0.524
Annual Return$_{t-1}$	1126	-0.129	-0.177	0.561	-0.991	4.941
Annual Return$_t$	1206	0.092*	-0.06	1.647	-0.992	47.932
Annual Return$_{t+1}$	1124	0.336***	-0.07	1.35	-0.998	23.929
Market-Adjusted Annual Return$_{t-1}$	1127	-0.273	-0.311	0.55	-1.456	4.54
Market-Adjusted Annual Return$_t$	1206	-0.041	-0.175	1.634	-1.366	47.841
Market-Adjusted Annual Return$_{t+1}$	1124	0.146***	-0.078	1.287	-1.741	23.183
Abnormal Return	1249	0.116***	0.038	0.423	-1.736	3.597

Shown are descriptive statistics for firms suffering severe losses in security analyst coverage.
Each firm was selected from the I/B/E/S database and experienced greater than a 50% loss in analyst coverage during a single calendar year.
The sample period includes analyst coverage losses from 1988-2002. Market cap is the total market value of firm equity at the end of the year of severe coverage loss.
 Analyst Coverage$_{t-1}$ is the number of analysts covering the firm before the year of coverage loss. Analyst Coverage$_t$ is the number of analysts covering the firm at the end of the coverage loss year.
Coverage loss is the percentage change in the number of analysts covering the firm's stock during the year of coverage loss.
Annual Return$_{t-1}$, Annual Return$_t$, and Annual Return$_{t+1}$, refer to the raw share returns in the calendar year before, during, and after the coverage loss, respectively.
Market-Adjusted Annual Return$_{t-1}$, Market-Adjusted Annual Return$_t$, and Market-Adjusted Annual Return$_{t+1}$, refer to the market-adjusted share returns in the calendar year before, during, and after the coverage loss, respectively.
Abnormal Return is the cumulative mean abnormal return calculated for the first 60 trading days following the year of coverage loss.
For the various mean return measures, ***, **, and *, indicates statistical significance at the 1%, 5%, and 10% level, respectively.

Although the positive mean annual returns following the year of coverage loss could suggest that firms suffering coverage losses were oversold and undervalued at the end of the lost coverage year, these calculations do not well control for the effects of firm size, risk, price-book, or momentum. To directly test whether abnormal

share returns are positive in the year following extreme coverage loss, we use the Fama-French (1993) three-factor model with the momentum adjustment mentioned earlier. Using this model with the sample of 1249 extreme decreases in analyst coverage, we find a mean cumulative abnormal return of 11.64% (significant at the 0.01 level) calculated over the first 60 trading days following the year of coverage loss. The most likely explanation for this positive abnormal return is that, during a year in which firms suffer a severe loss in analyst coverage, their stocks are heavily sold and become undervalued. If investors initially fear that analysts drop coverage because of private, negative information relating to the firm's future share performance, then investors would rationally choose to sell their shares before the "bad news" becomes publicly revealed. As the feared bad news often fails to materialize over time, because many analysts drop coverage for other reasons, share prices should return to their fundamental values, thus producing positive abnormal returns, on average.

To further investigate the influence of dropped analyst coverage on share prices and future returns, we estimate several models by regressing the 60-day abnormal returns on the degree of coverage loss. A finding that abnormal returns are greater following more severe coverage losses would support the hypothesis that dropped analyst coverage causes investors to sell shares until stock prices fall below fundamental values. In these regressions we include several control variables so that we can isolate the effects of the lost coverage. Specifically, we regress abnormal returns on the following explanatory variables: *Coverage loss*; *Market-adjusted return*; *Volatility*; *Market cap*; *Price-book*; and *Volume*. *Coverage loss* is the percentage change in analyst coverage. *Market-adjusted return* is the firm's total annual stock return minus the return on a small stock index. *Volatility* is the standard deviation of the monthly stock returns. *Market cap* is the total market value of equity. *Price-book* is the firm's stock price divided by the book value of equity per share. *Volume* is the number of shares of the firm's stock traded. *Coverage loss*, *Market-adjusted return*, *Volatility*, and *Volume* are calculated for the coverage loss year. *Market cap* and *Price-book* are calculated at the end of the coverage loss year.

A negative relation between *Coverage loss* and abnormal returns would indicate that abnormal returns are higher when the prior year's coverage losses are more severe. Therefore, a negative sign on *Coverage loss* suggests a positive relationship between dropped coverage and undervaluation in the coverage loss year. We include *Market-adjusted return* as a control variable, because stocks performing poorly in the prior calendar year may experience a turnaround earlier in the current calendar year for several reasons suggested in the literature, such as tax-loss selling effects. Of course it is also true that, if investors overreact more severely to coverage losses, returns in the coverage loss year will be lower and subsequent price recover may be greater. We include *Volatility* as a control variable for several reasons including: (a) riskier stocks are likely to produce higher returns; (b) evidence suggests that analysts prefer to cover riskier stocks; and (c) investors may value analyst coverage more for volatile stocks and thus react more severely to a loss in coverage for these firms. Bhushan (1989) argues that investor demand for analyst coverage will be greater for more volatile stocks, because the potential gains and losses from firm-specific information is greater for these stocks. We include *Market cap* as a control variable because small firms: (a) typically produce greater returns; (b) may be more susceptible to calendar year effects; and (c) may be subject to greater information asymmetries so that investors react more severely to losses in analyst coverage for these firms. Investors may value analyst coverage more highly for high *Price-book* firms because these firms generally have greater growth opportunities that are more difficult to value absent analyst coverage. We include *Price-book* as a control variable for this reason and also because prior evidence suggests analysts are more likely to cover high *Price-book* firms (see, for example, Jegadeesh, et al., 2004). Finally, we include *Volume* as a control variable because prior evidence suggests analysts prefer to cover high volume stocks (see, for

example, Barth, et al., 2001, and Jegadeesh, et al., 2004) and because price reactions to coverage losses may be greater for more thinly traded stocks.

The regression results appear in Table 2. Using simple ordinary least squares regression, multiple tests of the null hypothesis of homoskedasticity are rejected at the 0.001 level. Although our results are extremely similar using simple OLS, and none of our major conclusions change depending on the method used, for brevity we only report regression results using White's (1980) heteroskedasticiy-consistent standard errors.

Model 1 of Table 2 shows that when *Coverage loss* is the only explanatory variable considered, it is negatively related to abnormal returns (p = 0.004). Models 2 through 5 show that, as the control variables are introduced to the specifications, *Coverage loss* is consistently, negatively related to abnormal returns at a significance level of 0.025 or better. Thus, after controlling for the effects of prior stock performance, stock return volatility, firm size, price-book ratio, and trading volume, the more severe the loss in analyst coverage during a particular year, the greater are the abnormal returns in the early months of the following year. The most plausible interpretation of this finding is that shareholders overreact to news of lost analyst coverage and they drive stock prices to below their fundamental values. Additional evidence suggests that *Market cap* and *Market-adjusted return* are negatively related to abnormal returns, whereas *Price-book* is positively related to abnormal returns. These findings indicate that smaller firms, firms that suffered the worst relative performance in the prior year, and firms with higher price-book ratios tend to perform better in the early months following the coverage loss year. We conduct a number of tests (not shown) to check on the robustness of our regression results concerning *Coverage loss*. Using the specification shown as Model 5 in Table 2 as a base model, we tried several alternatives to the firm performance variable *Market-adjusted return*. Specifically, we substituted, one variable at a time: (a) the raw stock return from the coverage loss year; (b) the market-adjusted return calculated for the coverage loss year using returns on the Wilshire 5000 index as the benchmark index; and (3) the accounting return on assets calculated for the coverage loss year. Results using these alternative firm performance measures in the coverage loss year are very similar. In each case the performance variable is significantly, negatively related to abnormal returns. More importantly, in each case *Coverage loss* is significantly, negatively related to abnormal returns at the p = 0.019 level or better. As an additional robustness check, we altered the Model 5 specification so that the dependent variable is the market-adjusted annual return for the year following the coverage loss. When an annual return is substituted for a 60-day return, obviously many events unrelated to analyst coverage loss intercede to affect the dependent variable. As expected, the model's R-squared and the significance levels of explanatory variables deteriorate dramatically. Nevertheless, the coefficient on *Coverage loss* remains negative and is significant at the p = 0.069 level.

Table 2: Regressions of Abnormal Returns Following Severe Losses in Analyst Coverage					
	(1)	(2)	(3)	(4)	(5)
Intercept	-0.172	-0.156	-0.138	-0.134	-0.134
	(0.072)	(0.091)	(0.137)	(0.143)	(0.152)
Coverage loss	-0.428	-0.358	-0.339	-0.317	-0.316
	(0.004)	(0.011)	(0.016)	(0.022)	(0.025)
Market-adjusted return		-0.001	-0.001	-0.002	-0.002
		(0.000)	(0.000)	(0.000)	(0.000)

Table 2: Regressions of Abnormal Returns Following Severe Losses in Analyst Coverage					
Volatility		0.001	0.001	0.000	0.000
		(0.201)	(0.230)	(0.866)	(0.865)
Market cap			-2.8e-06	-3.4e-06	-3.4e-06
			(0.000)	(0.000)	(0.000)
Price-book				0.008	0.008
				(0.000)	(0.000)
Volume					-5.4e-06
					(0.969)
R^2	0.007	0.075	0.078	0.115	0.115
N	1249	1097	1097	1023	1023

Shown are the results of regressing abnormal returns on several variables.

The dependent variable is the cumulative abnormal return calculated for the first 60 trading days following the calendar year in which the sample firm lost more than 50% of its security analyst coverage.

The sample period includes analyst coverage losses from 1988 to 2002. Coverage loss is the percentage change in analyst coverage.

Market-adjusted return is the firm's total annual stock return minus the return on a small stock index. Volatility is the standard deviation of the monthly stock returns.

Market cap is the total market value of equity. Price-book is the firm's stock price divided by the book value of equity per share. Volume is the number of shares of the firm's stock traded.

Coverage loss, Market-adjusted return, Volatility, and Volume are calculated for the calendar year in which the coverage loss occurred.

Market cap and Price-book are calculated at the end of the coverage loss year. Coefficient estimates are shown on the top row for each variable.

P-values are shown in parentheses and are calculated using White's (1980) corrected standard errors.

SUMMARY AND CONCLUSIONS

This study investigates the share price effects of extreme losses in security analyst coverage. Using a sample of firms that lose more than 50% of their analyst coverage in a single calendar year, we find that abnormal returns in the early months of the subsequent year are strongly positive. The mean abnormal return calculated over the first 60 trading days following the year of coverage loss is 11.6%. Furthermore, the returns in the year following coverage loss are negatively related to the percentage change in analyst coverage during the year of coverage loss. These results are obtained after controlling for the effects of firm size, price-book, prior share performance, risk, and trading volume.

The most plausible interpretation of this evidence is that investors respond to extreme losses in analyst coverage by selling shares in the coverage loss year and driving stock prices to below their fundamental values. As stock prices recover and move closer to their fundamental values, shares of coverage losing firms experience positive abnormal returns. Analysts' bias in favor of covering stocks that they can recommend is well-documented in the finance literature and has been widely reported in the financial press. Therefore, investors are likely to view dropped coverage as an indication that analysts have private, negative information regarding the

firm's future prospects. Under this scenario, investors would rationally choose to sell their shares at the time of dropped coverage, before the feared "bad news" becomes publicly revealed. However, analysts have other incentives to add or drop coverage of firms, which also have been documented in the literature. These incentives relate to analysts' desire to generate brokerage and investment banking fees for their own firms. If analysts drop coverage of firms because of brokerage and investment banking concerns, rather than because of private information about the firm's prospects, then investors would overreact by selling their shares during periods of severe coverage loss.

Although we conclude that investor overreaction to extreme losses in analyst coverage is the best explanation for our findings, we cannot completely rule out an alternative interpretation. After firms suffer a loss in analyst coverage, the problems of information asymmetry between managers and investors are likely to become more severe. Therefore, it is possible that the relationship we observe between coverage loss and abnormal returns shortly following coverage loss is evidence of a permanent asymmetric information risk premium. We note this alternative explanation for completeness, but we surmise that the magnitude of the abnormal returns is better explained by an initial shareholder overreaction to coverage loss resulting in temporary mispricing.

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EARLY EVIDENCE OF THE VOLATILITY OF COMPREHENSIVE INCOME AND ITS COMPONENTS

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ABSTRACT

The Financial Accounting Standards Board issued Statement of Financial Accounting Standard (SFAS) No. 130 Reporting Comprehensive Income, in June 1997, effective for fiscal periods beginning after December 15, 1997. Early trends in reporting comprehensive income and its components for the Fortune 500 reveal an overwhelming preference for disclosure in the statement of changes in stockholders' equity, despite the FASB's recommendation of utilizing a combined statement of income/comprehensive income or a separate statement of comprehensive income. This disclosure tends to downplay the importance of other comprehensive income items and focus readers' attention on the traditional net income figure rather than comprehensive income. Data from the Fortune 500 show that OCI items can indeed be volatile and significant, increasing in impact from a -1.9% of net income in 1999 to -30.9% of net income in 2001. The most significant component of OCI was the foreign currency translation adjustment, which was negative in each year examined. Perhaps it is time for the FASB to reconsider the reporting flexibility afforded companies under SFAS No. 130. Requiring the OCI items to be disclosed in a combined statement of income and comprehensive income or in a separate statement of comprehensive income would allow these volatile and potentially significant items to be evaluated more directly by users of the financial statements.

INTRODUCTION

The Financial Accounting Standards Board issued Statement of Financial Accounting Standard (SFAS) No. 130 *Reporting Comprehensive Income*, in June 1997, effective for fiscal periods beginning after December 15, 1997. Comprehensive Income is defined by FASB in SFAC No. 6 as the change in a firm's net assets (assets minus liabilities) from non-owner sources. Thus SFAS No. 130 is consistent with the Asset-Liability approach to income measurement whereby an increase in the value of net assets creates income, with comprehensive income capturing the overall increase or decrease in net assets for the period. Comprehensive income (CI) is comprised of net income and other comprehensive income (OCI). Other comprehensive income items consist primarily of gains and losses which by-pass the income statement under current GAAP and are carried straight to the owner's equity section of the balance sheet.

The major objective of SFAS No. 130 was to display Other Comprehensive Income items in a financial statement having equal prominence with other financial statements. While SFAS No. 130 requires that comprehensive income and its components be disclosed, it does not prescribe the specific method of disclosure.

It does however suggest three alternatives: 1) a combined statement of net income and comprehensive income 2) a separate statement of comprehensive income and 3) within a statement of changes in equity. FASB encouraged the use of one of the first two methods.

BACKGROUND FOR ISSUANCE OF SFAS NO. 130

Historically, income presentation issues were primarily characterized in terms of a contrast between the current operating performance (dirty surplus) and the all-inclusive (clean surplus) approaches. Under the current operating performance concept of income, only ordinary and recurring revenues, expenses, gains, and losses are recognized as income while extraordinary and non-recurring gains and losses are excluded from income. Under the all-inclusive concept of income, however, all revenues, expenses, gains, and losses recognized during the period are included in income, regardless of whether they are considered to be results of normal, recurring operations of the period. The Accounting Principles Board largely adopted the all-inclusive income concept when it issued APB Opinion No. 9, *Reporting the Results of Operations,* and later reaffirmed the concept when it issued APB Opinion No. 20 and APB Opinion No. 30. Application of these pronouncements results in the presentation of discontinued operations, extraordinary items, and the cumulative effect of a change in accounting principle on the face of income statement (net of their related tax effects) immediately below income from continuing operations on the face of the income statement.

Although the FASB generally follows the all-inclusive concept of income adopted by the APB, it has occasionally made specific exceptions by requiring that certain changes in assets and liabilities bypass the income statement in the period they are recognized. Instead of being reported in income, these unrealized items are to be reported as elements of stockholder's equity on the balance sheet. Statements that contain these exceptions include SFAS No. 52 *Foreign Currency Translation,* SFAS No. 87 *Employers' Accounting for Pensions*, and SFAS No. 115 *Accounting for Certain Investments in Debt and Equity Securities.*

FASB issued SFAS No. 130 in response to users' concern over these items bypassing the income statement and appearing only in the statement of changes in stockholders' equity. The information provided by comprehensive income was expected to assist investors, creditors and other financial statement users in evaluating an enterprise's economic activities, and its timing and magnitude of future cash flows. However, the disclosure of comprehensive income created an additional performance measure that many feared would confuse readers and would prove more volatile than net income (Hirst, 2006). Another major criticism of SFAS No. 130 is that the resulting comprehensive income figure is incomplete. Given the FASB's partial approach to fair value accounting, these OCI items capture some fair value changes for assets but disregard liability fair value changes (Hirst, 2006). While SFAS No. 130 mandates the reporting of these OCI items, it does not unify the presentation of them due to the allowance of three reporting alternatives.

REPORTING ALTERNATIVES

The first alternative uses a combined statement of net income and comprehensive income. Companies that elect to use this method report comprehensive income items at the bottom of the traditional income statement after net income. The advantage of this approach is that both measures of the entity's performance, net income and comprehensive income are disclosed in a single statement. Thus, users of the financial statement are less likely to miss OCI items in their decision making process. The primary disadvantage is that net income can be

looked at as a subtotal in the income statement and comprehensive income can be thought of as the new bottom line. This will reduce the prominence of net income as the principle measure of a company's performance and may cause confusion among some financial statement users about true earnings (Campbell et al., 1999). However, the confusion should occur for a short period of time during the implementation of the standard for unsophisticated users because if the FASB chooses to enforce this format, even unsophisticated users will grow accustomed to the format.

The second method for reporting comprehensive income uses a separate financial statement. The statement begins with net income and concludes with comprehensive income. One advantage of this approach is that the income statement is kept free of potentially distracting disclosures about comprehensive income. Companies that view net income as the more meaningful performance may elect this approach because it does not change the income statement. Also the separate comprehensive income statement that is reported helps sophisticated professional investors who can utilize the additional information. The primary disadvantage of this approach is that it creates another statement, adding to the four traditional financial statements (Campbell et al., 1999). However, if companies must report OCI items in a certain format to comply with FASB's pronouncement, the cost of issuing one more financial statement will be minimal and users will be accustomed to the financial statement after some period of time.

The third approach reports comprehensive income in the statement of stockholders' equity. For most companies, this approach will be the closest to prior practice. The statement of stockholders' equity is the place where all of the components of comprehensive income have been previously shown. To comply with SFAS No. 130 using the third approach, companies only need to show how these components are added together to produce comprehensive income and add disclosures about tax effects. The primary advantage of using this approach is that companies can soften the appearance of comprehensive income as a performance measure. A potential disadvantage exists for companies that have previously relegated the statement of stockholders' equity to the footnotes. Because the FASB requires that the statement disclosing comprehensive income be given the same prominence as other financial statements, companies that choose to disclose comprehensive income in the statement of changes in stockholder's equity will no longer be able to put the statement in the footnotes (Campbell et al., 1999).

FASB does not mandate any one of the three possible financial statement formats for reporting comprehensive income. However, the Board encourages reporting entities to show the components of OCI and total CI in either a combined statement of net income and comprehensive income or in a separate statement. Regardless of the format used, comprehensive income per share is not shown and earnings per share will continue to be based on net income. Cumulative total OCI for the period should be presented on the balance sheet as a component of stockholders' equity, separate from additional paid in capital and retained earnings.

PRIOR RESEARCH

Several empirical and survey-based articles have examined the importance of comprehensive income and the preference of reporting. King et al. (1999) surveyed chief financial officers (CFOs) of publicly traded companies prior to the effective date of SFAS No. 130 to determine which of the three reporting formats the CFOs intended to use and whether the CFOs considered reporting comprehensive income useful to financial statement users. Approximately 67% of the surveyed CFOs stated that they preferred the option of reporting comprehensive income in a statement of changes in stockholders' equity while 33% preferred one of the two performance-based

financial statement formats. In addition, a majority of the CFOs indicated that reporting comprehensive income was either not useful (35.9%) or actually misleading (38.5%) to users. They found a strong correlation between the respondents questioning the usefulness of reporting comprehensive income and the preference for reporting OCI items in a statement of changes in stockholders' equity. In addition to examining CFOs beliefs and intentions they also surveyed the professional users of the financial statements to determine their preferences in reporting format. Contrary to CFOs, 82% of the users preferred that comprehensive income be reported in one of the two performance-based financial statements. Only 18% preferred reporting in a statement of changes in stockholders' equity. Also, the format of reporting comprehensive income appeared to have an impact on whether these analysts would use comprehensive income in computing traditional performance measures such as return on equity. Reporting comprehensive income in a statement of changes in stockholders' equity lessened the likelihood that it would be used in computing performance ratios.

Hirst and Hopkins (1998) reached a similar conclusion in an experiment conducted with professional security analysts and portfolio managers. They examined one component of OCI, unrealized gains and losses on available for sale securities, and found that displaying this information in one of the two performance-based financial statements (as originally proposed in the Board's exposure draft) was effective in revealing to the professional investors a company's active earnings management through its marketable securities portfolio. Displaying the information in a statement of changes in stockholders' equity (as finally allowed in SFAS No. 130) was not effective in revealing this type of active earnings management to the users. Maines and McDaniel (2000) investigated the issue from the standpoint of non-professional investors. They conducted an experiment with individual investors, and their results showed that non-professional investors would use comprehensive income information in evaluating management performance only if it is presented in a separate statement of comprehensive income.

More recently, Hunton et al. (2006) conducted an experiment using financial executives and chief executive officers and found that subjects tended to buy or sell securities to manage earnings to achieve earnings forecasts. The use of a more transparent format (separate statement) for reporting comprehensive income significantly reduced this behavior. Subjects in the less transparent format (stockholders' equity statement disclosure) indicated these earnings management attempts would not be easily detectible by readers. Subjects in the more transparent format indicated these attempts at earnings management would be easily detectible by readers. Lee et al. (2006) sampled firms in the property-liability insurance industry and found that insurers with a tendency to manage earnings through security sales and insurers with reputations for poor disclosure quality are more likely to report comprehensive income in the statement of stockholders' equity.

Thus, all these studies examining the usefulness of comprehensive income in relation to its reporting format reached similar conclusions; placement of comprehensive income in a performance-based versus nonperformance-based financial statement signals the importance of comprehensive income information to users and impacts their use of this information. Reporting comprehensive income in a statement of changes in stockholders' equity conveys to users that this information is unrelated to corporate performance and therefore, is used little by investors. Moreover, disclosure in the statement of stockholders' equity can be an aid to firms who wish to manage earnings without detection.

SIGNIFICANCE OF OCI ITEMS

Campbell et al. (1999) examined the 1997 financial statements of 73 companies that adopted SFAS No. 130 early. They found that the average impact of OCI relative to net income was material and positive for those companies that chose the formats of the combined statement of net income and comprehensive income or the separate statement of comprehensive income as FASB recommended. Companies that chose the combined statement format had OCI that was, on average 57% of net income. Those that chose the separate statement format had average OCI that was 81% of net income. As a result, comprehensive income was substantially higher than net income in both of these groups. In contrast, the firms that chose the statement of stockholders' equity format had a material negative amount of OCI, averaging 17% of net income.

Jordan et al. (2002) studied a sample of 100 randomly selected financial services firms for 1998. The study also revealed the significant effects of OCI items compared to net income. Using a materiality threshold of 10%, 54 firms reported a material amount of OCI. Among them 11 firms reported OCI that was more than 100% (either positive or negative) of the net income. Even though the study was limited in scope due to the same type of firms being studied for a single year, it demonstrated that the significance of OCI in evaluating companies' operating performance potentially should not be ignored. If OCI are significant and different placement of reporting OCI items affects visibility and usefulness to financial statement users, FASB should consider eliminating the option of reporting OCI in the statement of changes in stockholders' equity.

SAMPLE FIRMS AND DATA COLLECTION

The Fortune 500 companies were chosen for analysis in the current study. These large firms are likely to have the type of transactions that would be captured in other comprehensive income (OCI) and not net income. In addition the Fortune 500 firms consist of companies in a wide range of industry classifications. Previous studies have been limited in the number of firms or the type of firms analyzed. Using the Fortune 500 as a sample overcomes these limitations of previous studies.

The Fortune 500 list has chronicled big business in the United States since it was first compiled in 1954 (Clifford, 2001). Revenue has remained Fortune's constant criterion for ranking the largest companies. The 2000 list was the initial year included in this study and was based on operating results for 1999. As the first Fortune 500 of the 21st century, the 2000 list included such notable firsts as: the first pure internet company to make the list—AOL; first woman CEO to make the list—Carly Florina of Hewlett-Packard; and first biotech company to make the list—Amgen (Watson et al., 2000).

The 2001 list saw Exxon Mobil overtake General Motors as the largest U.S. company for the first time since 1984. Higher oil prices helped energy giants Duke Energy and Reliant Energy nearly double their revenues, and paved the way for the rise of diversified energy companies like Enron and Dynegy (Clifford, 2001). Of the 59 new arrivals on the 2001 list, twelve were from the energy industry classification. Other industries with significant increases included hotels and casinos (ten), pipelines (nine), and rubber and plastics (eight). Industry classifications with significant decreases included specialty retailers (ten), food (ten), motor vehicles (nine).

The 2002 list included 44 new firms. However, unlike the 2001 list, the industry classification totals remained stable with no industry gaining or losing more than three companies. The turnover of 59 companies (11.8%) in 2001 and 44 companies (8.8%) in 2002 approximate the 10% to 20% annual rate predicted by Fortune when the list was introduced (McLean, 2000). We found no evidence that inclusion in the Fortune 500 list

affected valuation of the firms. However, Fortune unveiled two new stock indexes during the time period of this study (McLean, 2000). The first is based on the Fortune 500 list and the second, Fortune e-50, is based on Fortune's list of the 50 companies that best reflect the internet revolution. The Fortune 500 Index is designed to measure the stock performance of the largest U.S. businesses. Much of the stability of the Fortune 500 list itself comes from the fact that companies are ranked by revenue and not by more volatile factors like market value or earnings (McLean, 2000).

For each year from 1999-2001 financial statements were reviewed from SEC filings and/or company websites. These years build upon studies conducted on early adopters in 1997 and studies conducted on initial reporting of comprehensive income in 1998. Data was collected on the industry classification, method utilized to report comprehensive income, net income, components of OCI, and comprehensive income for each firm.

REPORTING METHOD UTILIZED

Results in Table 1 show that disclosure in the statement of stockholders' equity is the clearly favored choice of reporting method by the Fortune 500. The data for the three years 1999 to 2001 reveal that 69%, 68.4% and 74.2%, respectively, chose this method. These figures are slightly higher than those reported in earlier studies and indicate a small increase over the three years. The next most popular method is the separate statement of comprehensive income. The data show that 14.6%, 12.4%, and 16% of the Fortune 500 used the separate statement in 1999, 2000 and 2001. This shows a fairly steady number of firms choosing this method. The combined statement was chosen the least often as the reporting method each and the number of firms using this method declined steadily over this time period. Perhaps the most interesting finding was the surprising number of firms that did not report comprehensive income. The firms not reporting comprehensive income jumped from 13% in 1999 to 17% in 2000, and dropped dramatically to 7.8% cent in 2001. The dramatic drop in 2001 may be partially attributed to the 44 firms that failed to make the list again and the 44 new firms added. Fifteen of the 44 dropping off the list did not report comprehensive income information for 2000 while only three of the 44 new firms did not report comprehensive income information for 2001 operating results. A possible explanation for the remaining difference is materiality. OCI as a percentage of net income was greater than a positive or negative 3% for 352 firms in 2001 and for only 291 firms in 2000 (see Table 3). More firms may have chosen not to report detailed comprehensive income information in 2000 because OCI items did not materially affect their financial statements.

Table 1: Method Used to Report Comprehensive Income and Its Components						
	1999		2000		2001	
Reporting Method	Number	Percent	Number	Percent	Number	Percent
Not reported	65	*13%*	85	*17%*	39	*7.8%*
Combined Statement of Net Income & Comprehensive Income	17	*3.4%*	11	*2.2%*	10	*2%*
Separate Statement of Comprehensive Income	73	*14.6%*	62	*12.4%*	80	*16%*
Included in Statement of Stockholder's Equity	345	*69%*	342	*68.4%*	371	*74.2%*
Total	500	*100%*	500	*100%*	500	*100%*

IMPACT OF OCI ITEMS

The most dramatic impact of OCI items for a company occurs when the two performance measures (net income and comprehensive income) have different signs. Table 2 shows the number of instances where this occurred each year. OCI turned a net loss into positive comprehensive income for no firms in 1999, 4 firms in 2000, and 2 firms in 2001. OCI turned a net income into a comprehensive loss for 19 firms in both 1999 and 2000, and 24 firms in 2001. This indicates that other comprehensive income is more likely to negatively affect performance than to enhance it.

Table 2: Cases of Other Comprehensive Income Causing the Sign of Net Income And Comprehensive Income to be Different			
	1999	2000	2001
Firms with negative Net Income and positive CI	0	4	2
Firms with positive Net Income and negative CI	19	19	24

Tables 3 and 4 also bear out this conclusion. Table 3 examines the relationship between OCI and net income. The total OCI for each firm was divided by the absolute value of the net income to determine the direction and percentage impact of OCI on net income. The table is arranged in gradients of materiality (positive and negative 2%, 3%, 5%, 10%, and 100%) with zero or not reported as the anchor. Note that the number of firms with zero comprehensive income or not reported in Table 3 is greater than the numbers for "not reported" in Table 1 because some firms reported zero comprehensive income while others did not disclose any comprehensive income information. The number of firms in the negative gradient of materiality in Table 3 is greater than the number of firms in the corresponding positive gradient of materiality in all cases for each of the three years except one. That case is occurs in 1999 (up to 1.9%—52 firms, compared to up to –1.9%—47 firms). In each year, the total number of firms negatively impacted by OCI is greater than the number of firms positively affected.

Table 3: Relationship of Other Comprehensive Income to Net Income						
	1999		2000		2001	
OCI as % of NI	Number	Percent	Number	Percent	Number	Percent
> 100%	9	*1.8%*	10	*2%*	7	*1.4%*
10% to 99.9%	47	*9.4%*	37	*7.4%*	43	*8.6%*
5% to 9.9%	16	*3.2%*	19	*3.8%*	12	*2.4%*
3% to 4.9%	15	*3%*	13	*2.6%*	8	*1.6%*
2% to 2.9%	14	*2.8%*	7	*1.4%*	4	*.8%*
Up to 1.9%	52	*10.4%*	25	*5%*	26	*5.2%*
0 or Not Reported	70	*14%*	100	*20%*	49	*9.8%*

Table 3: Relationship of Other Comprehensive Income to Net Income						
	1999		2000		2001	
OCI as % of NI	Number	Percent	Number	Percent	Number	Percent
Up to –1.9%	47	*9.4%*	59	*11.8%*	54	*10.8%*
-2% to -2.9%	18	*3.6%*	18	*3.6%*	15	*3%*
-3% to -4.9%	25	*5%*	20	*4%*	37	*7.4%*
-5% to -9.9%	45	*9%*	36	*7.2%*	43	*8.6%*
-10% to -99.9%	120	*24%*	132	*26.4%*	157	*31.4%*
>-100%	22	*4.4%*	24	*4.8%*	45	*9%*
Total	500	*100%*	500	*100%*	500	*100%*

Table 4 tracks net income, other comprehensive income, and comprehensive income for each of the three years examined. It also shows the overall impact of OCI in relationship to net income. OCI was negative each year and trended downward sharply. The ratio of OCI to net income for the sample was –1.9% for 1999, -3.4% for 2000, and –30.9% for 2001. The modest decrease from 1999 to 2000 was due to the large increase in net income that partially offset the even more dramatic decrease in OCI. The sharp decrease in OCI to net income from 2000 to 2001 was caused by the large drop in net income coinciding with the large increase in negative OCI.

Table 4: Reported Net Income, Other Comprehensive Income, and Comprehensive Income(in millions)				
	Total NI	Total OCI	Total CI	Total OCI/Total NI
1999	$445,516	($8,414)	$437,102	-1.9%
2000	$1,119,697	($37,710)	$1,081,987	-3.4%
2001	$198,405	($61,351)	$137,054	-30.9%

COMPONENTS OF OCI

Table 5 tracks six components of OCI for the three years. Foreign currency translation adjustments are the most significant component of OCI for each year. And for each year the impact of the foreign currency translation is negative. Unrealized gains/losses on marketable securities and minimum pension liability adjustments were more volatile, shifting from large positive amounts in 1999 to negative amounts in 2000, and then to even larger negative amounts in 2001. Reclassification adjustments remained a fairly consistent negative amount over the three years. This indicates that companies realized gains in each year that had previously been included in OCI. Income taxes and minority interest was a volatile category changing from a positive figure in 1999 to a negative amount in 2000, and to an even larger negative amount in 2001. The "other" items were also somewhat volatile, though relatively small in amount. These items changed from negative in 1999 to positive in 2000 and back to negative in 2001.

Table 5: Components of Other Comprehensive Income(in millions)			
Component of OCI	1999	2000	2001
Foreign Currency Translation	($20,714)	($25,704)	($19,471)
Unrealized G/L on Marketable Securities	10,484	($245)	($8,817)
Minimum Pension Liability Adjustment	6,750	($5,252)	($19,800)
Reclassification Adjustment	($5,249)	($5,190)	($6,492)
Income Taxes & Minority Interest	1,166	($2,407)	($3,274)
Others	($851)	1,088	($3,497)
Total OCI	($8,414)	($37,710)	($61,351)

SUMMARY AND CONCLUSIONS

Since the requirement of reporting comprehensive income and its components by the FASB took effect in 1998, concern has arisen over the impact these items would have on the financial statements. Early trends in reporting comprehensive income and its components for the Fortune 500 reveal an overwhelming preference for disclosure in the statement of changes in stockholders' equity, despite the FASB's recommendation of utilizing a combined statement of income/comprehensive income or a separate statement of comprehensive income. This disclosure tends to downplay the importance of other comprehensive income items and focus readers' attention on the traditional net income figure rather than comprehensive income. Data from the Fortune 500 show that OCI items can indeed be volatile and significant, increasing in impact from a -1.9% of net income in 1999 to -30.9% of net income in 2001. The most significant component of OCI was the foreign currency translation adjustment, which was negative in each year examined. Unrealized gains/losses on marketable securities and minimum pension liability adjustments tended to be large and volatile.

It is not uncommon for companies to disregard the expressed preference of the FASB in reporting under its standards. For example the indirect method is utilized predominately over the direct method for reporting cash flows from operations despite the FASB's stated preference for the direct method. The intrinsic method of calculating stock option expense was also utilized predominately over the fair market value method before FASB finally required fair market value accounting for stock options rather than merely expressing a preference for it. Perhaps it is time for the FASB to reconsider the reporting flexibility afforded companies under SFAS No. 130. Requiring the OCI items to be disclosed in a combined statement of income and comprehensive income or in a separate statement of comprehensive income would allow these volatile and potentially significant items to be evaluated more directly by users of the financial statements.

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BELIEFS CONCERNING THE OBJECTIVE OF FINANCIAL ACCOUNTING

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ABSTRACT

Competing viewpoints concerning the objective of financial accounting in the United States were framed in terms of two definitions of accounting: one, the once official 1941 definition (i.e., the processing of transactions) - a surrogate for the stewardship function; and the other, the current FASB definition (i.e., the providing of information useful for decision making). U.S. accounting practitioners and accounting academicians were surveyed to determine their opinions regarding these two objectives of financial accounting. Results indicate that both practitioners and academicians perceive the usefulness objective as being more important than transaction processing. Results also indicate that neither group of respondents disagrees with transaction processing being an objective of financial accounting and that practitioners rated transaction processing significantly higher than academicians.

INTRODUCTION

Since 1978 accounting and the perceived function of accounting in the United States have undergone significant changes, so much so that there may now exist competing viewpoints concerning the objective of financial accounting and reporting. This paper reports the results of a survey of U.S. accounting practitioners and accounting academicians to determine whether any one viewpoint now dominates.

It is not the purpose of this paper to address the theoretical basis underlying any particular viewpoint on the objective of financial accounting. Nor is the purpose to recommend any one viewpoint over other viewpoints. Instead, the purpose is to assess whether any one viewpoint has risen to dominance. Such information should be useful to accounting standard setters, especially in current times as the world moves toward globalization of capital markets.

BACKGROUND

As change has come to accounting, it has manifested itself in the definitions proclaimed by authoritative bodies and others. The definitions themselves then are a relevant mechanism for sketching fundamental changes in accounting.

In 1941 the Committee on Terminology of the American Institute of [Certified Public] Accountants (AICPA, 1953) in *Accounting Terminology Bulletin No. 1* (par. 9) defined accounting in terms of what accounting did, i.e., record, classify, and summarize the transactions of an entity and interpret the results. The 1941 definition was superseded in 1970 by the Accounting Principles Board (APB) of the AICPA in its Statement No. 4, *Basic Concepts and Accounting Principles Underlying Financial Statements of Business Enterprises* (AICPA, 1970, par. 40) which defined accounting in terms of what accounting ought to do, i.e., provide information useful in

making economic decisions. The difference in these two viewpoints, the difference between accounting being a history of the firm versus being a provider of information useful for making economic decisions, is a synopsis of the schism that has surrounded financial accounting theory for most of the second half of the 20th century and on into the 21st century.

The Rise of Stewardship and the Transaction Based Definition

A theoretical basis of accounting (other than the double-entry mechanism) was nonexistent in the early part of the 20th century. Though accounting was a well understood ritual by its participants, the application of that ritual to the evolving modern business phenomenon was less understood.

The stock market crash of 1929, the resultant Securities Acts of 1933 and 1934, and the role of the Securities Exchange Commission hastened efforts to derive a theoretical foundation for financial accounting. The search began for principles of accounting that had general acceptance. Given the mood of the times, it is not surprising that the stewardship function and the transaction basis (which after all was what accounting dealt with) formed the basis of the official definition that eventually was recognized and promulgated in 1941.

The 1930s also witnessed the general acceptance of historical cost and the matching concepts by both practitioners and the academic accounting community. A consensus was therefore reached on both a definition and a theory of accounting, but incorporated therein were the elements of future conflict.

The Rise of the Decision-Usefulness Criteria

By the 1960s it was becoming evident that there was a movement in the accounting literature that favored recognizing that the objective of financial accounting was to provide information useful in making economic decisions. Around this same time, the early 1960s, accounting as an academic discipline adopted the scientific, empirical research paradigm, and the rigorous investigation of accounting phenomena intensified.

The American Accounting Association (AAA) had prepared statements on accounting theory (principles) in 1936, 1941, 1948, and 1957. Each of these statements was in agreement with the old (1941) definition of accounting (or one similar to it). Then, in 1966 the AAA announced the radically different *A Statement of Basic Accounting Theory* (ASOBAT). ASOBAT not only defined accounting as a three phase process that identifies, measures, and communicates economic information that permits informed decisions by users, but also explicitly claimed (AAA, 1966, 1):

> *There is no implication that accounting information is necessarily based only on transaction data.*

ASOBAT was soon followed by APB Statement No. 4 in 1970 (discussed above) and the AICPA Study Group on Objectives of Financial Statements's *Objectives of Financial Statements* (AICPA, 1973) which also held the view that the basic objective of financial statements was to provide information that is useful in making economic decisions.

The early 1970s witnessed the separation of accounting from public accounting (auditing) as represented by the establishment of the Financial Accounting Foundation and the Financial Accounting Standards Board (FASB).

FASB swiftly embarked on its own search for a theoretical basis of accounting in the form of the Conceptual Framework Project. The initial result was FASB Statement of Financial Accounting Concepts No. 1, *Objectives of Financial Reporting by Business Enterprises* (FASB, 1978) which, like its immediate predecessors, asserted that financial reporting should provide information useful in economic decision making and, in addition, be useful in determining present and future cash flows.

The concept of usefulness had now not only replaced stewardship but had become well entrenched in the authoritative literature. (Note that FASB did indicate that the type of information it envisioned could be provided within an accrual accounting framework, though it did not demonstrate that this is so or state how it could be accomplished.)

The FASB Era

For almost thirty years the decision-usefulness objective, the foundation of the FASB Conceptual Framework (CF), has apparently guided the determination of accounting standards. But see Gore for a counterargument that FASB has not followed the Conceptual Framework in determining standards (Gore, 1992, 124).

For just as long, the decision-usefulness objective has dominated theoretical discussions in the majority of intermediate accounting textbooks, inculcating new accountants with the FASB viewpoint. Many current authors consistently cite FASB's decision-usefulness doctrine as if it had universal acceptance. See, for example, Wallman (1995, 82); Glazer and Jaenicke (1991, 43).

But there have been indications that the FASB CF is not universally accepted. In response to an article that he had written criticizing the CF, Anthony reports receiving correspondence that indicates substantial dissatisfaction with the CF (Anthony, 1988, 128).

On the other hand there is indication that the CF does have substantial support. Anthony also states that the managing partners of two of the then Big-6 accounting firms each sent letters maintaining that the CF was basically acceptable (Anthony, 1988, 128). In addition, Sprouse, in referring to FASB Statements of Financial Accounting Concepts 1, 2, and 6, asserts (Sprouse, 1988, 124):

> *... the final Statements of objectives, qualitative characteristics, and elements have not been, and are not likely to be, seriously challenged. Few now find fault with the notions (i) that financial reporting should provide information that is useful in making rational decisions, (ii) ....*

International Accounting Standards

Recently, in the international arena, there has been renewed activity focusing on decision-usefulness versus stewardship as the objective of financial reporting. In 2002 the FASB and the International Accounting Standards Board (IASB) agreed to a future convergence of U.S. generally accepted accounting principles (GAAP) and International Financial Reporting Standards (IFRS) (Johnson, 2002). This move has been given impetus by the SEC's push to base future filings on IFRS and not GAAP. Additionally, the standards will be "principle-based" instead of "rule-based" as GAAP currently is (O'Sullivan, 2007).

In 2005 the FASB and the IASB began a joint project to develop a common Conceptual Framework for Financial Reporting on which the IFRS could be based (Bullen and Crook, 2005). In their 2006 Discussion Paper

Preliminary Views on an improved Conceptual Framework for Financial Reporting only one objective of financial reporting was suggested, the decision-usefulness view (IASB, 2006, p.12).

In response to this discussion paper the Pro-Active Accounting Activities in Europe (PAAinE) initiative, a consortium of the European Financial Reporting Advisory Group and the European National Standards Setters, suggested that stewardship/accountability be identified as a separate objective of financial reporting. The PAAinE reports that 78 per cent (i.e., 128 of 179) of the responses to the discussion paper commented on the discussion paper's treatment of stewardship or accountability, with a very large majority supporting the view that Stewardship/accountability should be a specific objective in the new framework (PAAinE, 2007, p.4).

Mackintosh, chairman of the UK's Accounting Standards Board, also argues the importance of stewardship as an objective of the new framework (Mackintosh, 2006, p.20). In addition, Damant, Chairman of the Consultative Advisory Group of the International Auditing and Assurance Standards Board, points out the importance of the traditional concept of stewardship, and cautions that if the two approaches lead to compromise, then a logical mess could result (Damant, 2006, 30).

It may be difficult, then, for the IASB and the FASB to just define away stewardship in the new international financial reporting conceptual framework. O'Connell's proposal for a stewardship-based research agenda supports this observation (O'Connell, 2007).

RESEARCH METHOD

A research study was designed to examine the following questions. How accepted in the U.S. is the decision-usefulness doctrine, i.e., the FASB position? And, though no longer cited in most U.S. accounting textbooks, how much support remains for the stewardship function as evidenced by transaction-processing, i.e., the 1941 definition?

The differing viewpoints of the objective of financial accounting were framed as follows:

*   The transaction-processing view (i.e., the 1941 objective):

The current objective of financial accounting is to record, classify, summarize, and interpret the transactions of an entity.

*   The decision-usefulness view (i.e., the FASB objective):

The current objective of financial accounting is to provide information useful in making economic decisions and in assessing the future cash flows of an entity.

Hypothesis

Hypotheses were formulated to examine whether a consensus currently exists among accounting practitioners and accounting academicians regarding these objectives of financial accounting.

H1:   For accounting practitioners, there is no significant difference between the perceived importance of the transaction-processing view and the decision-usefulness view.

> *H2:*   *For accounting academicians, there is no significant difference between the perceived importance of the transaction-processing view and the decision-usefulness view.*

> *H3:*   *There is no significant difference between the responses of practitioners and academicians regarding the transaction-processing view.*

> *H4:*   *There is no significant difference between the responses of practitioners and academicians regarding the decision-usefulness view.*

Questionnaire Design

A questionnaire was developed to gather data. The questionnaire opened with a purpose statement. Instructions then asked respondents to indicate the extent of their agreement or disagreement with statements concerning two issues: (1) the current objective of financial accounting, and (2) and what the objective of financial accounting should be. The two issues were necessary to insure that respondents made a clear distinction between what the respondents believe the objective currently is versus what the respondents believed the objective should be. It is the "should be" statements that reflect the respondent's preferences and therefore indicate respondent's acceptance of the objectives.

Under each of the two issues were two statements - one relating to the transaction-processing view, and one relating to the decision-usefulness view. The specific wording of the two issues was:

THE CURRENT OBJECTIVE OF FINANCIAL ACCOUNTING:

1.   The Transactions View: The current objective of financial accounting is to record, classify, summarize, and interpret the transactions of an entity.

2.   The Decision-Usefulness View: The current objective of financial accounting is to provide information useful in making economic decisions and in assessing the future cash flows of an entity.

WHAT THE OBJECTIVE OF FINANCIAL ACCOUNTING SHOULD BE:

1.   The Transactions View: The objective of financial accounting should be to record, classify, summarize, and interpret the transactions of an entity.

2.   The Decision-Usefulness View: The objective of financial accounting should be to provide information useful in making economic decisions and in assessing the future cash flows of an entity

In addition, for each issue there was an open statement to be completed and rated by the respondent if the respondent felt the choices presented did not adequately express the issue.

A five-point Likert-type scale was used for the responses because it was believed respondents would have difficulty distinguishing between more items and because of the language problems encountered in clearly defining more classifications. Response choices were: Strongly Disagree, Disagree, Neither Agree nor Disagree,

Agree, Strongly Agree. The questionnaire also requested selected demographic data. The questionnaire was pilot studied by ten colleagues at the author's university and other universities.

Accompanying the questionnaire was a cover letter that explained the reasons for the study. The letter also contained instructions for completing the questionnaire as well as a statement of confidentiality.

Sample and Responses

One thousand practitioners were chosen by random sample from the 1998 members of the American Institute of Certified Public Accountants who had indicated a specialty of auditing. Questionnaires were mailed directly to each person included in the sample. Each packet included a questionnaire, a postage-paid return envelope, a postcard to be used for requesting a copy of findings from the study, and a letter of instruction that specifically requested that the respondent, to ensure anonymity, return only the questionnaire in the return envelope and mail the postcard separately.

There were 201 responses. Of these there were 92 that were from non-auditors. There were 103 usable responses from auditors, for a response rate of 10%.

Five hundred academicians were chosen by random sample from the 1998 members of the American Accounting Association Auditing Section. Accounting academicians with a primary interest in auditing were chosen because the initial need for generally accepted accounting principles and the related objective of accounting arose in an auditing context. Questionnaires were mailed directly to each person included in the sample. Each packet included a questionnaire, a postage-paid return envelope, a postcard to be used for requesting a copy of findings from the study, and a letter of instruction that to ensure anonymity specifically requested that the respondent return only the questionnaire in the return envelope and mail the postcard separately.

There were 186 responses. Seventy-one responses indicated that auditing was their primary area of interest. Of these, sixty-seven respondents answered both what the objective "is" and what the objective "should be" questions for a usable response rate of 13.4%.

Tests of Hypothesis

Hypotheses were tested using nonparametric statistics. The Wilcoxon matched-pairs signed-ranks test was used to test the significance of differences between the ratings assigned to the 1941 objective and to the FASB objective [H1, H2] as well as the significance of differences between practitioners and academicians [H3, H4].

RESULTS

Table 1 presents the mean ratings on the "should be" statements on the survey. Both practitioners and academicians rated the decision-usefulness view (i.e., the FASB Objective) higher than the transaction-processing view (i.e., the 1941 Objective).

Results of tests of differences between the "should be" ratings of the decision-usefulness view and the transaction-processing view [H1, H2] are presented in Table 2. The differences between the objectives are significant at the .01 level for both practitioners and academicians, indicating that the null hypotheses for H1 and H2 can be rejected. Both groups tend to perceive a significant difference between the decision-usefulness objective and the transaction-processing objective.

Table 1: Mean Scores for "Should Be" Statements on Survey		
Respondents	Mean* for 1941 Objective	Mean* for FASB Objective
Academicians	3.24	4.43
Practitioners	3.51	4.05
* Mean is based on a 5-point scale.		

Table 2: Tests of Differences Between "Should Be" Responses for 1941 Objective and FASB Objective				
Respondents	Mean for 1941 Obj.	Mean for FASB Obj.	Wilcoxin z-score	Wilcoxin p-value*
Academicians	3.24	4.43	-4.636	.000**
Practitioners	3.51	4.05	-2.938	.003**
* two-tailed p ** significant at .01				

Table 3 presents the results of tests of differences between the responses of practitioners and academicians regarding the "should be" statements on the decision-usefulness objective and the transaction-processing objective. The differences of ratings on the transaction-processing objective is significant at the .05 level, indicating H3 can be rejected at the .05 level and that there is a significant difference between practitioners and academicians concerning the transaction objective. The difference of ratings on the decision-usefulness objective is not significant, indicating the null hypothesis for H4 cannot be rejected.

Table 3: Tests of Differences Between "Should Be" Responses of Academicians and Practitioners				
Objective	Mean for Academicians	Mean for Practitioners	Wilcoxin z-score	Wilcoxin p-value*
1941 Obj.	3.24	3.51	-2.028	.043**
FASB Obj.	4.43	4.05	-.366	.715
* two-tailed p ** significant at .05				

In order to control for the possibility that the differences noted might be the result of other sample factors, Kruskal-Wallis one-way analysis of variance tests were conducted for differences based on years of accounting and/or teaching experience, highest earned degree, and CPA certification status. There were no significant tests. A test for differences in responses of early and late respondents disclosed no significant difference.

CONCLUSIONS

Findings imply that both accounting practitioners and academicians in the United States accept the decision-usefulness objective of financial accounting. While both practitioners and academicians rate decision-

usefulness higher than transaction-processing, the ratings given transaction-processing, i.e., 3.51 (practitioners) and 3.24 (academicians) does not indicate that the respondents disagree with that objective (a rating of 3 indicating Neither Agree Nor Disagree). It should be noted that practitioners rated transaction processing significantly higher than academicians.

From this one can conclude that complete polarization has not occurred. While one view, i.e., decision-usefulness, has risen to dominance, the other view, i.e., transaction-processing, has not been discarded. And since in this study decision-usefulness and transaction-processing are surrogates for the FASB Objective and the 1941 Objective (i.e., stewardship) respectfully, the same can be said for them.

Results suggest that in establishing or modifying an accounting conceptual framework accounting standard setters should consider that stewardship has not been rejected as an objective of financial accounting. To summarily discard it may be met with resistance.

Limitations urge caution in interpreting the study's results. Non-response could have been a factor. In addition, financial market events occurring in 2001 and subsequently may have altered beliefs concerning the two views of financial accounting included in the study.

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MANAGING PENSION EXPENSE TO MEET ANALYSTS' EARNINGS FORECASTS: IMPLICATIONS FOR NEW FASB PENSION STANDARD

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ABSTRACT

This paper presents evidence that pension expense is used by firms to manage bottom-line reported earnings in order to meet their targeted analysts' earnings forecasts. Firms are predicted and shown to manipulate reported earnings in the direction that will move them closer to their targeted analysts' earnings forecasts than they would be otherwise.

Firms with actual reported earnings in the vicinity relatively close to their targeted analysts' earnings forecasts are selected for examination. Based on a proxy for premanaged earnings, two distinct groups are formed. These groups consist of firms hypothetically missing their targeted analysts' earnings forecasts firms hypothetically meeting or exceeding their targeted analysts' earnings forecasts.

Both groups of firms are shown to directionally manipulate pension expense to affect reported earnings in the direction that most feasibly meets their economic needs to achieve their targeted analysts' earnings forecast.

INTRODUCTION

This research study focuses on whether or not managers manipulate pension expense to meet analysts' earnings forecasts. The primary motivation for this study is the integrity of financial statement reporting.

Various stakeholders, such as investors, creditors, directors, auditors, regulators, and standard setters rely heavily on the integrity of financial statement information in assessing firm value and in making a wide range of business decisions. Therefore, when the true economic condition of a firm is distorted by financial statement manipulation the ultimate outcome is poor decisions based on flawed information. Capital markets are weakened and public confidence in the accounting profession is impaired as a result of financial statement manipulation. For these reasons, this study based on the directional change in pension expense to meet analysts' earnings forecasts is relevant to decision makers in today's business environment and makes an important contribution to the accounting literature.

This study differs from most prior studies in that it examines whether or not analysts' earnings forecasts create incentives for managers to use pension expense as an earnings management vehicle for financial statement manipulation. The research design raises public awareness and provides important information about the predicted directional change in pension expense that is indispensable in detecting and preventing future earnings management of this kind. This study provides basic information and practical analyses for stakeholders, particularly standard setters, to more carefully monitor the changes in pension expense to reduce future financial statement manipulation.

One problem associated with attempting to identify financial statement manipulation is that of determining what a firm's financial statements would report absent the manipulation. The Statement of Financial Accounting Standards No. 87, Employers' Accounting for Pensions (SFAS No. 87), provides a unique measure of what pension expense should be from year to year based on its built-in smoothing[1] technique. Firms are allowed to smooth pension expense to avoid the immediate recognition of wide swing market fluctuations that affect pension investments. The logic behind the allowed smoothing of pension expense is a long-term perspective where market fluctuations are expected to average out over the long-term. The problem is overcome of reasonably estimating what a firm's pension expense would be absent the manipulation because of the transparency of the allowed smoothing technique (Parker and Sale 2007).

A basic characteristic of the research design is modeling the behavior of pension expense to identify its discretionary and nondiscretionary components. This study builds on an approach similar to the random walk approach whereby the prior year's pension expense is assumed to be the most relevant and reliable approximation for predicting the current year pension expense. So theoretically, pension expense is expected to be the same from year to year. Therefore by design, any change in pension expense from year to year is considered discretionary and is the primary focus of explanation in the present study. In addition, the specific accruals research design is used because it is more powerful in detecting earnings management than the aggregate accruals research design as the explanatory factors for the discretionary portion of pension expense can be tested directly.

An earlier study by Powall et al. (1993) finds evidence that earnings forecasts are value relevant, and thus, establishes their importance in capital markets. Investors often use analysts' earnings forecasts in assessing firm value rather than using more costly and complex valuation tools. According to Collinwood (2001), firms convey good news by meeting analysts' earnings forecasts and firms convey bad news by missing analysts' earnings forecasts. Roen et al. (2003), in studying the effect of preliminary voluntary disclosure and preemptive preannouncement on the slope of the regression of returns on earnings surprise, find when firms manage earnings by attempting to inflate them; the response to negative earnings surprise is stronger than the response to positive earnings surprise. Accordingly, managers are motivated to meet analysts' earnings forecasts to avoid stock price penalties and to receive stock price rewards.

Most prior studies are unable to provide convincing evidence that pension expense is used as an earnings management vehicle. This lack of empirical evidence is surprising because auditors as well as many others perceive pension expense as being a frequently used earnings management vehicle. Parker and Sale (2007) suggest that most prior studies are unable to detect earnings management via pension accounting for two fundamental reasons. The first reason is that most prior studies focus on contracting incentives rather than on capital market incentives for explaining earnings management. The second reason is that most prior studies focus on the manipulation of pension rates rather than on the direct manipulation of the pension expense amount. So following Parker and Sale (2007) this study focuses directly on the manipulation of pension expense in response to capital markets incentives.

GAAP REGULATIONS AND PRIOR LITERATURE

In 1966, shortly after 4,000 auto workers lost their promised retirement benefits[2], the Accounting Principles Board (APB) issued APB Opinion No. 8, *Accounting for the Cost of Pension Plans*. This opinion was issued to avoid possible government intervention in the financial reporting and disclosure process as well as to address public demands for pension reform.

In 1980, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards (SFAS) No. 35, *Accounting and Reporting by Defined Benefit Pension Plans*, for the purpose of providing additional pension information to help interested parties determine whether pension plans were funded in a manner adequate to provide for payments of retirement benefits when due. In 1985, the FASB issued SFAS No. 87, *Employers' Accounting for Pensions*, which remains the primary standard influencing pension expense measurement for defined benefit pension plans. In 1998, the FASB issued SFAS No. 132, *Employers' Disclosures about Pensions and Other Postretirement Benefits,* which was intended to make pension disclosures more informative.

Then again in 2006, the FASB issued SFAS No. 158, *Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans*, which improves financial reporting by requiring an employer to recognize the overfunded or underfunded status of a defined benefit plan as an asset or liability in its statement of financial position and to recognize changes in that funded status in the year in which the changes occur through comprehensive income of a business entity or changes in unrestricted net assets of a not-for-profit organization. Although SFAS No. 158 is an amendment of SFAS No. 87, 88, 106, and 132 (R), SFAS No. 87 is not amended for the calculation of pension expense. The changes in SFAS No. 158 represent Phase 1 of the Board's planned two-phase project to reconsider the accounting for pensions and other postretirement benefits. The second phase is expected to be a multi-year, comprehensive review of the fundamental issues underlying SFAS No. 87 and 106, including measurement of liabilities and the determination of pension expense. As a result, the *public can expect more pension accounting changes to be implemented in the not so distant future*.

VanDerhei and Joanette (1988) show earnings management incentives are correlated with the permitted actuarial cost method choices made by sponsors in the pre-SFAS No. 87 era. The findings lend credibility to the FASB's decision in SFAS No. 87 to mandate a standardized actuarial cost method for the purpose of averting sponsors from manipulating pension expense through the strategic choice of different actuarial cost methods.

Kwon (1989) focuses on the explanation of the discount rate. The results provide evidence that managers use the assumed discount rate to manipulate financial statements. The finding highlights policy implications in connection with the two opposing schools of thought on strict FASB guidelines. One school asserts the assumed discount rate should be elastic in order to reflect the characteristics of different pension plans. The other school advocates strict FASB guidelines in establishing specific benchmark rates for all pension plans in order to stop rate manipulation by managers.

Blankley (1992) investigates incentives for managerial selection of pension rate estimates by incorporating two distinct paradigms, efficient and opportunistic behavior,[3] rather than assume one or the other applies to accounting choice. A learning effect is discovered, whereby as managers get more familiar with SFAS No. 87 opportunistic incentives play a greater role in the choice of pension rates.

Weishar (1997) focuses on the explanation of the simultaneous effects of the three pension rates and finds pension rates are not changed independent of each other. Brown (2001) not only focuses on explaining the three pension rates but changes the direction of research by using a market valuation model.

In an auditing survey paper, Nelson et al. (2000) find twenty-three potential areas where managers attempt earnings management along with several factors that affect the frequency of decisions of managers and auditors with respect to earnings management. Pensions are included as one of the twenty-three potential areas where managers attempt earnings management. Results indicate managers attempt earnings management to increase earnings, however, forty percent of the determinable current year income effects are income decreasing.

Evidence supports income-decreasing earnings management attempts are more likely to occur with respect to imprecise financial standards such as SFAS No. 87.

Parker and Sale (2007) use a specific accrual model to investigate whether or not firms use pension expense as an earnings management tool to maintain a steady stream of earnings. The results indicate that pension expense is an active tool used by firms to manage actual earnings when the firm would otherwise miss achieving its current year earnings target that is equal to its prior year earnings.

The post-SFAS No. 87 research primarily uses contracting variables in attempting to explain pension rate assumptions. A paradigm shift where pension rates are no longer the primary focus of explanation is expected because of SFAS No. 132 and 158.

Whether managers act in self-interest or in the interest of shareholders, their performance is monitored by directors, investors, creditors, and regulators, which in turn, creates strong incentives to manage earnings. The capital markets based incentive known as analysts' earnings forecasts is expected to capture financial statement manipulation as it relates to pension expense. This approach is conceptually similar to that used by Parker and Sale (2007) where the change in pension expense is explained by the capital market incentive known as prior year earnings.

Burgstahler and Dichev (1997) theorize that investors in publicly traded firms use simple low-cost heuristics[4], more specifically earnings-based benchmarks, in determining firm value. Burgstahler and Dichev (1997) use frequency distribution as a method for demonstrating the existence of earnings management. Evidence indicates a disproportionally low incidence of firms reporting small decreases in earnings and small losses relative to a high incidence of firms reporting small increases in earnings and small positive earnings.

DeGeorge et al. (1999) use a similar research design as Burgstahler and Dichev (1997) and report earnings are the single most value relevant item provided to investors in financial statements. Earnings are used as performance measures that provide the enticement for managers to manipulate earnings. Empirical evidence reveals how efforts to exceed thresholds, that is, to sustain recent performance, to report positive earnings, and or to meet analysts' expectations, induce particular patterns of earnings management. Clearly emerging patterns show earnings falling just short of thresholds are managed upward. Whereas earnings falling far from thresholds, regardless of the direction, call for the thresholds to be adjusted for future ease of attainment.

In summary, a number of relatively recent studies provide evidence firms are managing earnings to continue a steady stream of earnings (Burgstahler and Dichev 1997, Barth et al. 1999, DeGeorge et al. 1999, Moehrle 2002), to avoid reporting a loss (Burgstahler and Dichev 1997; DeGeorge et al. 1999), and or to meet analysts' earnings forecasts (DeGeorge et al. 1999, Brown 2001). In addition, Matsunaga and Park (2001) show evidence of manager compensation-based incentives to avoid earnings declines and to meet analysts' earnings forecasts.

Based on the logic of prior findings, this study examines whether firms use the discretionary portion of pension expense as a vehicle to accomplish earnings management to meet analysts' earnings forecasts.

RESEARCH DESIGN

The aggregate accruals method, the specific accruals method, and the earnings-based distribution method are the three research designs prevalent in the earnings management literature (McNichols 2000). Each particular research design has its own advantages, disadvantages, and tradeoffs. The common themes of these designs are

the discovery of how managers manipulate earnings, what motivates managers to manipulate earnings, and the costs and benefits associated with earnings management.

The aggregate accruals research method considers the aggregated outcome of the multiple vehicles used by managers in managing earnings. However, the disadvantages of this research method include the limitations of its models to detect manipulation, as well as its inability to identify specific accounting vehicle used by managers in managing earnings (Francis 2001, Fields et al. 2001).

The specific accruals research method is a disaggregated or piece-meal approach. This approach advocates the examination of individual accounting items that are subject to substantial manager judgment and are able to significantly impact reported earnings. One advantage of this research method is the specification for yielding directional predictions based on researcher knowledge, skill, and scrutiny of individual accounting vehicles used by managers in managing earnings. However, this research method lacks the ability to analyze simultaneously aggregated effects of accounting vehicles used by managers in managing earnings (McNichols 2000, Fields et al. 2000, Francis 2001, Parker and Sale 2007).

A relatively new stream of earnings management literature is a result of the seminal work by Burgstahler and Dichev (1997) in the area of earnings-based distributions. The advantage of this research method is that it provides the ability for strong predictions about the frequency of earnings realizations that are unlikely to be due to nondiscretionary components of earnings. McNichols (2000) uses the frequency of earnings realizations in the vicinity above and below benchmark earnings to analyze whether the number of companies reporting that level of earnings is more or less than expected. One disadvantage of this research method is its inability to identify specific accounting vehicles used by managers in managing earnings. In essence, there is not adequate information provided by this method to prevent future earnings management (Parker and Sale 2007).

According to Healy and Wahlen (1999), future research contributions in the earnings management area are expected from documenting the extent and magnitude of the effects of specific accruals and from identifying factors that limit the ability of managers to manage earnings. So following Parker and Sale (2007), this study uses a specific accruals research model with earnings-based benchmarks as the explanatory variables. The distinction from prior research is determining whether or not there is an association between the change in pension expense and the amount by which firms would otherwise miss or beat their targeted analysts' earnings forecasts.

The methodology for this study is a newly revised model that investigates the impact of a particular capital market incentive (i.e., analysts' earnings forecasts) instead of focusing only on contracting incentives. Most prior pension studies focus on contracting variables in attempting to explain pension manipulation. However Parker and Sale (2007), use a capital market incentive model to investigate whether or not firms use pension expense as an earnings management tool to maintain a steady stream of earnings. Parker and Sale (2007) make clear the argument for investigating capital market incentives. Therefore this study follows the premise established in Parker and Sale (2007) and investigates one more capital incentive (i.e., analysts' earnings forecasts).

The theoretical concepts discussed above are formalized in alternate form in the following hypothesis.

$H1_A$: *Pension expense is managed to meet analysts' earnings forecasts.*

The estimated cross-sectional regression model is presented below.

$$PEchg = \alpha_0 + \alpha_1 Miss\_UE\_Dummy + \alpha_2 UE + \alpha_3 Interact + \alpha_4 \Delta Employ +$$

$$\sum_{t=1996}^{t=2001} \alpha_t \times yrD_t + \sum_{i=1}^{i=54} \alpha_i \times indD_i + e$$

- PEchg is the change in pension expense equal to current year pension expense minus prior year pension expense all scaled by lagged assets.
- Miss_UE_Dummy is a dummy variable that equals 1 if the continuous variable, UE < 0, and 0 otherwise.
- UE is a continuous variable equal to pretax income absent manipulation minus the applicable benchmark all scaled by lagged assets.
- Interact is an interaction variable equal to Miss_UE_Dummy times UE.
- ΔEmploy is a control variable equal to the number of employees for the current year minus the number of employees for the prior year all scaled by lagged assets.
- yrD_t is a dummy variable for each applicable year 1995-2001 with the 1995 dummy effects captured in the intercept.
- $indD_i$ is a dummy variable representing 55 industries.
- α_0 is the intercept for UE ≥ 0 where Miss_UE_Dummy = 0.
- $\alpha_0 + \alpha_1$ is the intercept for UE < 0 where Miss_UE_Dummy = 1.
- α_2 incentive slope for UE ≥ 0 where Miss_UE_Dummy = 0.
- $\alpha_2 + \alpha_3$ incentive slope for UE < 0 where Miss_UE_Dummy = 1.
- PI is pretax income.
- PIAM is pretax income absent manipulation. The basic calculation is $PI + (PE_t - _{Pet-1})$.
- A_{t-1} is assets lagged one period.
- BM is or target earnings. The applicable benchmark is analysts' earnings forecasts on a pretax basis.
- PE is pension expense.

As is the case in all earnings management studies, a reasonable proxy for earnings management is developed. The regression analysis incorporates PEchg as the earnings management proxy which is the dependent variable. The proxy development is accomplished by using the unique smoothing feature of SFAS No. 87 whereby the prior year pension expense provides a logical approximation for the firm's premanaged pension expense. Assuming the number of employees remains unchanged, current pension expense should be approximately the same as the prior year pension expense. PEchg is defined as the current year pension expense minus the prior year pension expense all scaled by lagged assets. Thus, PEchg is a proxy for the extent of manipulation in pension expense after controlling for the change in the number of employees. So that, earnings management is measured by PEchg.

Premanipulation earnings relative to analysts' earnings forecasts represent the level of capital markets incentives for earnings management. The capital markets based incentive measure to manipulate earnings is represented by the variable called UE. The independent variable, UE, is a continuous scaled variable and is calculated as the difference between pretax earnings absent pension manipulation (i.e., PIAM) and the analysts' earnings forecasts.

Following Burgstahler and Eames (2002), a benchmark representing target earnings is necessary. The benchmark for target earnings is pretax analysts' earnings forecasts. Pretax analysts' earnings forecasts are used

for consistency because pension expense is reported in the financial statements on a pretax basis. Earnings absent pension manipulation are constructed using pretax income adjusted for the change in pension expense and is called PIAM. The measure for pension expense absent pension management is, therefore, the prior year pension expense.

A dummy variable (i.e., Miss_UE_Dummy) for hypothetically missing analysts' earnings forecasts is included in the analysis. Miss_UE_Dummy is coded zero for firms that hypothetically beat their analysts earnings forecasts using premanaged earnings. Whereas, Miss_UE_Dummy is coded one for firms that hypothetically miss their analysts' earnings forecasts using premanaged earnings. If α_1 is significant and positive, firms missing their analysts' earnings forecasts have a higher intercept than the other firms. If α_1 is significant and negative, firms missing their analysts' earnings forecasts have a lower intercept than the other firms. If α_1 is insignificant, there is no difference between the two groups of firms.

After controlling for the change in the number of employees, the association between PEchg and the level of capital markets incentive (i.e., UE) for earnings management constitutes this study's test of interest. Because both smoothing and benchmark incentives exist and may not be equally important, the slope coefficient on UE is allowed to vary with the prediction on Interact (i.e., α_3) being nondirectional.

The dependent variable, PEchg, is expected to be positively correlated with the incentive variable UE. The slope coefficient for the group of firms that hypothetically beat their analysts' earnings forecasts is represented by α_2. The slope coefficient for the group of firms that hypothetically miss their analysts' earnings forecasts is represented by $\alpha_2 + \alpha_3$. Thus, I predict that $\alpha_2 > 0$, and that $\alpha_2 + \alpha_3$ is > 0.

The logic behind the predictions for α_2 and $\alpha_2 + \alpha_3$ is that the dependent variable, PEchg, is expected to move in the same direction as the independent incentive variable, UE. For example, if a firm has premanaged earnings equal to $.20 per share and forecasted earnings equal to $.18 per share, the firm is expected to manipulate actual earnings by increasing pension expense by $.02 in order to offset the $.02 excess in premanaged earnings. In this situation, there is a positive $.02 excess in premanaged earnings and the change in pension expense (i.e., PEchg) is expected to move $.02 in a positive direction as well. The variable UE (i.e. α_2) captures the positive $.02 excess in premanaged earnings. Therefore, because PEchg and UE move together in the same direction, a positive correlation is predicted.

On the other hand, if a firm has premanaged earnings equal to $.18 per share and forecasted earnings equal to $.20 per share, the firm is expected to decrease pension expense by $.02 to offset the $.02 negative premanaged earnings. The variable UE (i.e., $\alpha_2 + \alpha_3$) captures the negative $.02 deficiency in premanaged earnings. Here again, because PEchg and UE move together in the same direction, a positive correlation is predicted.

Since the coefficient on Interact (i.e., α_3) is predicted as nondirectional, it will be interpreted as follows. If α_3 is positive, this will indicate that firms hypothetically missing their analysts' earnings forecasts are actually decreasing pension expense (i.e., increasing earnings) more, to avoid missing their analysts' earnings forecasts, than firms hypothetically beating their analysts' earnings forecasts are actually increasing pension expense (i.e., decreasing earnings) to smooth income downward in the direction of their analysts' earnings forecasts. On the other hand, if α_3 is negative, this will indicate that firms hypothetically missing their analysts' earnings forecasts are decreasing pension expense (i.e., increasing earnings) less, to avoid missing their analysts' earnings forecasts, than firms hypothetically beating their analysts' earnings forecasts are actually increasing pension expense (i.e., decreasing earnings) to smooth income downward in the direction of their analysts' earnings forecasts.

In other words, if α_3 is significant and positive, firms missing their analysts' earnings forecasts have a steeper slope than the other firms. Whereas, if α_3 is significant and negative, firms missing their analysts' earnings forecasts have a flatter slope than the other firms. However, if α_3 is insignificant, then both groups of firms have the same slope.

In summary, analysts' earnings forecasts create incentives for firms that are in opposite directions depending on the level of premanaged earnings relative to their earnings targets. So that, if firms hypothetically miss their analysts' earnings forecasts they are expected to exhibit benchmark behavior by manipulating pension expense to increase actual earnings in order to reach their benchmark. On the other hand, if firms hypothetically beat their analysts' earnings forecasts they are expected to exhibit smoothing behavior by manipulating pension expense to decrease actual earnings so that their actual earnings are closer to their analysts' earnings forecasts than they would otherwise be (Parker and Sale 2007).

Big bath behavior is another consideration. However, because the research design uses a sample screening process this behavior is not expected to cause confounding effects. The screening process eliminates firms whose performance is not close to their analysts' earnings forecasts. The logic is that firms closer to their analysts' earnings forecasts are more likely to exhibit sensitivity to earnings management incentives such as benchmark behavior[5] and smoothing behavior[6], whereas, firms missing their analysts' earnings forecasts by a large amount are expected to exhibit big bath behavior (Parker and Sale 2007).

∆Employ is a control variable to account for any variation in the dependent variable (i.e., PEchg) caused by the change in the number of employees from year to year. ∆Employ is calculated as the current year number of employees minus the prior year number of employees all scaled by lagged assets. In addition, the inclusion of the control variable, ∆Employ, should lessen confounding results attributable to changes in organizational structure such as mergers and acquisitions. A positive relationship is expected between the change in pension expense (i.e., PEchg) and the change in the number of employees from year to year (i.e., ∆Employ). The reasoning is likely because an increase in the number of employees is expected to result in an increase in pension expense, whereas a decrease in the number of employees is expected to result in a decrease in pension expense. Therefore, a positive slope coefficient is predicted for ∆Employ.

On the other hand, if an economy of scale exists, then a negative slope may occur for ∆Employ. For example, when a higher paid employee is replaced by two new lesser paid employees and the overall pension expense is less for the two new employees than it was for the one higher paid employee, an economy of scale occurs. In this situation, the addition of one new employee (2 - 1 = 1) actually decreases pension expense; whereas, adding an additional employee would normally be expected to increase pension expense.

A merger or acquisition may also cause an economy of scale for ∆Employ. Another possible scenario is where the actuarial assumptions are different for the acquiring firm's pension plan and the purged plan automatically becomes overfunded as a result of using the acquiring firm's actuarial assumptions.

Two additional control variables ($indD_i$ and yrD_t) are included in the model. These are intended to control for industry and time fixed effects.

Recent studies (Schwartz 2001, Dhaliwal et al. 2002) indicate managers may attempt to guide analysts' earnings forecasts in order to then meet the analysts' forecasts. Therefore, if managers do not manage pension expense or do effectively guide analysts' earnings forecasts, there should be no association between the change in pension expense (i.e., PEchg) and the amount that firms hypothetically miss or hypothetically beat their analysts' earnings forecasts (Dhaliwal et al. 2002, Parker and Sale 2007).

RESULTS AND INTERPRETATIONS

The sample begins with the total number of firms with defined benefit pension plans and no missing data from the Compustat files for the period 1995-2001. Following the rationale used by Dhaliwal et al. (2002) a twelve cent earnings per share screening process is applied. Afterwards there are 968 firm observations and 55 industries in the final sample. Table 1 summarizes these results.

TABLE 1: Sample Selection	
Firms in original sample covering 1995-2001	21,608
Firms that do not have defined benefit plans and firms with missing observations	-18,704
Firms eliminated in the $.12 screening process	-1,936
Firms in the final sample	968

Table 2 reports the results or the regression analysis. The rationale for explaining Table 2 results is based on the belief that pension expense manipulation is a function of the value of the magnitude of hypothetically missing or hypothetically beating the benchmark based on premanaged earnings. Therefore, the economic substance is captured by the regression main effects of the incentive variable for the two distinct groups of firms. For simplicity, the results of the control variables are not reported because they are not important for interpretation.

Table 2: Cross Sectional Pooled Effects Estimation Using $12 Screen with Time and Industry Fixed Effects				
Variable		*Prediction*	*Coefficient*	*One Tail p-value*
intercept		+	0.0003	.4602
miss_ue_dummy		-	0.0017	.8158
ue		+	0.5466	.0377
interact		+ / -	-0.1726	.0016
$\alpha_0 + \alpha_1$		-	0.0020	.7028
$\alpha_2 + \alpha_3$		+	0.3740	.1912
F-statistic as p-value	.0001			
R^2	.2391			
Adjusted R^2	.1852			

PEchg, representing firm manipulation, is expected to be positively correlated with UE, the incentive variable of interest. The incentive slope is captured in the model for the firms that hypothetically beat their benchmark by α_2 and for the firms that hypothetically miss their benchmark by $\alpha_2 + \alpha_3$. The slope on UE

(i.e., α_2 and $\alpha_2 + \alpha_3$) represents the estimated average change in pension expense when the applicable incentive variable increases or decreases by one unit. If managers are more concerned with reaching their benchmark than smoothing, then the prediction is that $\alpha_3 > 0$.

The slope coefficient (i.e., $\alpha_2 > 0$) for the firms that hypothetically beat their benchmark is expected to be statistically significant and is tested with a t-test. The slope coefficient (i.e., $\alpha_2 + \alpha_3$) for the firms that hypothetically miss their benchmark is expected to be statistically significant and is tested with an F-test.

The results of the association test using the twelve cent pretax earnings per share screen are reported in Table 2. The significant F-statistics (i.e., p-value = .0001) indicates strong evidence that the linear relationship between the change in pension expense (i.e., PEchg) and the independent explanatory variables does, in fact, exist as expected. The R^2 and adjusted R^2 are .2391 and .1852 respectively, which indicate a high proportion of the change in pension expense is explained by the combination of independent variables.

The slope on UE captures the average magnitude of change in pension expense (PEchg) when there is a one unit change in the incentive variable for the two distinct groups of interest. The incentive for the group of firms that hypothetically miss their analysts' earnings forecasts is not statistically significant. The predicted sign, however, is in the right direction indicating firms are using pension expense in a predictable manner. The overall inference is that the change in pension expense (i.e., PEchg) is not significantly explained by the amount firms hypothetically miss their analysts' earnings forecasts. It is important to mention the dollar impact of this behavior on financial reporting. As for every \$1 that premanaged earnings are below the earnings benchmark (i.e., analysts' earnings forecasts) pension expense decreases \$.37.

Since $\alpha_2 > 0$ is statistically significant, firms' smoothing behavior is stronger than their benchmark behavior. The inference here is that the change in pension expense can be significantly explained by the amount firms hypothetically beat their analysts' earnings forecasts. Again the predicted sign on α_2 is in the right direction indicating firms are using pension expense in a predictable manner. The dollar impact is greater than for the benchmark behavior. For every \$1 premanaged earnings are above the analysts' earnings forecasts pension expense increases by \$.54.

The findings in the Nelson et al. (2000) survey study suggests income-decreasing earnings management attempts are more likely to occur with respect to imprecise financial standards. The results in this study support that more actual manipulation is occurring in financial statement reporting in the direction of income decreasing earnings management through pension expense. So that more earnings manipulation attempts in this direction appears to lead to more actual manipulation in this direction. Again assuming the incentive to manipulate earnings upward to meet the benchmark is at least equal to the incentive to manipulate earnings downward to meet the benchmark, the pattern of evidence suggests auditors are less vigilant in constraining downward earnings management than upward earnings management.

Sensitivity analyses are conducted using screening criteria slightly different than those reported with essentially the same findings. Sensitivity analyses also support the research findings are not driven by a few influential outlier observations.

SUMMARY CONCLUSIONS

Managers have strong incentives to manage earnings to achieve analysts' earnings forecasts in order to reap stock price advantage and to avoid market devaluation. In addition, many contracting incentives are tied directly or indirectly to earnings based measures which also provide strong incentives for earnings management.

This research study contributes to the literature by providing evidence that managers are, in fact, using pension expense to manipulate reported earnings in a predictable rational economic manner. The research provides evidence that analysts' earnings forecasts create capital market incentives in opposite directions depending on the economic status as measured by whether or not firms will miss or beat their analysts' earnings forecasts based on premanaged earnings.

By using "what if" analyses, firms that hypothetically miss their analysts' earnings forecasts are shown to manipulate actual pension expense downward to increase actual reported earnings; whereas firms that hypothetically beat their analysts' earnings forecasts are shown to manipulate actual pension expense upward to decrease actual reported earnings. As predicted, both groups of interest are successfully manipulating pension expense in the direction that moves their actual reported earnings closer to their analysts' earnings forecasts than they would be otherwise. The results suggest that smoothing behavior is stronger than benchmark behavior. One reason may be that auditors are more cautious in constraining effort to manage earnings upward than in constraining earnings downward.

This research is timely as it has relevant implications in support of FASB's planned upcoming Project - Phase 2 to again comprehensively review the determination of pension expense. As a result of the recently completed Project's Phase 1, FASB issued SFAS No. 158 addressing pension reform exclusive of pension expense. Since the research findings indicate both groups of firms use pension expense in managing their actual reported earnings, FASB will again want to consider more stringent rules for measuring pension expense to mitigate predictable earnings management in future financial statements through the use of pension expense.

Capital markets and the U.S. economy are heavily influenced by the integrity of financial statement reporting. Thus, this research should be of interest to investors, directors, creditors, auditors, regulators, and standard setters.

ENDNOTES

[1] The term smoothing is used in this paper in two different contexts. In this instance, smoothing indicates spreading over time. Later, the term smoothing is used in another context as a means for identifying firm behavior.

[2] The Financial and Estate Center published this information at www.worldtraffice.com in All About Pension Plans.

[3] Efficient behavior proxies for the three pension rates are (1) the Pension Benefit Guaranty Corporation's (i.e., PBGC's) published discount rate, (2) the industry average compensation rate, and (3) the firm's actual rate of return on plan assets. Opportunistic behavior proxies for the three pension rates are (1) the firm's discount rate adjusted for the PBGC's published discount rate, (2) the firm's compensation rate adjusted for the industry average compensation rate, and the firm's expected rate of return on plan assets adjusted for the actual rate of return on plan assets. The theory is that firms are simultaneously influenced by both efficient and opportunistic behavior. Therefore, Blankley's study controls for efficient behavior and attempts to explain opportunistic behavior in terms of the independent variables which are cash constraints, debt-covenant constraints, monitoring by union concentration, tax management incentives, and the number of analysts covering the firm.

[4] When it is expensive for investors to retrieve and process detailed information about earnings, it is conjectured that investors use information processing heuristic cutoffs, i.e., zero changes in earnings or zero earnings, to assess firm value.

5.   Benchmark behavior is where a firm decreases pension expense to increase actual earnings in an attempt to reach their target performance.

6.   Smoothing behavior is where a firm increases pension expense to decrease actual earnings in an attempt to store up reserves and be closer to their target performance than they would otherwise be.

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AUDIT COMMITTEE CHARACTERISTICS AND AUDITOR CHANGES

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ABSTRACT

This study investigates whether audit committee characteristics (independence, financial expertise, diligence, governance expertise, and firm-specific knowledge) recommended by the Blue Ribbon Committee (BRC) and widely supported by regulators are related to external auditor changes. Using a logistic model, we examine firms that changed auditors due to accounting disagreements, auditor resignation, fee disputes, and issuance of a qualified audit opinion. Our results indicate that auditor changes are less likely if audit committee members are more independent, have more financial expertise, and more firm-specific knowledge.

When several of the recommendations of the BRC were adopted into law by the Sarbanes Oxley Act of 2002 (SOX), corporate executives and practitioners argued that the cost of these regulations far outweighed the benefits. An objective of this research is to identify a significant benefit of this regulation that results in an indirect effect on audit cost. We intend to show that audit committees, with the BRC characteristics, are less likely to change auditors. Prior research has shown that auditor changes can cause higher auditor fees and a temporary reduction in audit quality. In addition, SOX mainly directs attention to independent and financial expert audit committee members as critical to the effectiveness of the audit committee. This research extends the audit literature by examining a comprehensive set of auditor change variables and audit committee member characteristics. The significant findings of this study concur with the suggestions made by the BRC and SOX.

Keywords: auditor changes; audit committee; Blue Ribbon Committee; Sarbanes-Oxley Act 2002
Data Availability: All data are available from public and private sources.

INTRODUCTION

Since 1992 Audit committees have been mandated for all listed companies and registrants on the New York Stock Exchange (NYSE), the American Stock Exchange (ASE), and the National Association of Securities Dealers (NASD). A rash of fraudulent financial reporting cases, earnings misstatements, auditor changes, and questions about external auditor independence have led to calls for more effective audit committees (Blue Ribbon Committee 1999; NYSE 2002; and the Sarbanes-Oxley Act 2002). Research suggests that both the *presence* of the audit committee and the *characteristics* of committee members influence the effectiveness and reliability of financial reporting (Wild 1996; McMullen 1996). Section 301 of the Sarbanes-Oxley Act makes the audit committee responsible for the appointment, compensation, and oversight of the external auditor (Sarbanes-Oxley Act 2002). Thus, the audit committee oversees auditor changes. Centering this responsibility in the audit

committee is more likely to produce the desired financial reporting quality if, committee members possess key characteristics.

Research suggests that certain committee member *characteristics* positively influence audit committee effectiveness (Abbott et al. 2004; Abbott and Parker 2000; Carcello and Neal 2000, 2003). For example, the probability of auditor dismissal after a new going-concern report decreases when independent audit committee members have more governance expertise and less stock ownership. (Carcello and Neal 2003). There are, however, many reasons for auditor changes other than a going-concern report. Accounting disagreements, auditor resignations, audit fee disputes, and qualified audit opinions are associated with auditor changes. Prior studies indicate that auditor changes may signal an attempt by management to shop for a new auditor who will agree with financial reporting and or disclosure decisions (Whisenant et al. 2003; Lennox 2002; McMullen 1996). If the current auditors are terminated as a result of accounting disagreements with management, the likelihood of inappropriate financial reporting and disclosure may increase.

In addition, research has shown that audit fees are related to auditor changes. With auditor resignations, fees are higher one year before and after the auditor change indicating that both the incumbent and incoming auditors charge a premium (Owens et al. 2008, Asthana et al. 2004, Griffin and Lont 2005, Simon & Francis 1988, Walker & Casterella 2000). With auditor dismissals, the pattern in fees is the opposite due to the discounting hypothesis (Griffin and Lont 2005). Also, the learning curve of subsequent auditors can result in a temporary reduction in audit quality at a time when management may be shopping for a favorable audit opinion. It is almost universally accepted that the first year or two of an audit engagement is sub-optimal (Latham, Jacobs & Roush 1998). If audit committees with independent and financial expert members can reduce auditor resignations then they may prevent significant increases in auditor fees and reductions in audit quality.

A variety of other member characteristics have the potential to impact audit committee effectiveness. Five vital characteristics identified by the Blue Ribbon Committee (BRC) are independence, financial expertise, commitment to duties and responsibilities, firm specific knowledge, and governance expertise. Evaluating the auditor changes in light of the BRC recommendations provides a more complete picture of the association between auditor changes and audit committee member characteristics.

The current research examines the association between the five audit committee characteristics recommended by the BRC and auditor changes following disagreements, auditor resignations, audit fee disputes, and qualified audit opinions (hereafter *auditor changes*). The results indicate that three of the characteristics are inversely related to auditor changes. In other words, auditor changes are less likely when audit committee members are more independent, have more financial expertise, and more firm-specific knowledge.

These findings offer contributions to three constituencies. First, our results extend the auditing literature by examining a comprehensive set of auditor change variables and audit committee member characteristics. An expanded set of variables can lead to a richer understanding of the relationships between auditor changes and audit committee effectiveness. The current findings also provide useful information for boards of directors seeking to select effective audit committee members. Knowing which characteristics play a role in reducing the probability of auditor changes should assist boards in selecting members with characteristics that are compatible with corporate governance goals. Finally, these results have the potential to inform regulators seeking to curb financial reporting abuses and add support that the inherent benefits of SOX outweigh the cost of complying with SOX.

The remainder of this paper is organized as follows. We first review prior literature, develop hypotheses, and state empirical predictions. The next sections explain the methodology and empirical results. The final section acknowledges limitations and offers conclusions.

RELEVANT PRIOR RESEARCH

The audit literature includes a growing body of empirical research examining the association between audit committee characteristics and a variety of undesirable financial reporting outcomes. Existing research has established the existence of statistically significant relationships between audit committee characteristics and the incidence of earnings management, financial reporting restatements, client litigation against outside auditors, audit fees, auditor selection, auditor dismissals, and non-audit services (Agrawal and Chadha 2005, Bedard et al. 2004, Abbot and Parker 2000; Abbot et al. 2003a, 2003b, 2004; Carcello and Neal 2003; Park 1998). The variables of interest in this study are drawn primarily from the work of Abbott et al. (2003, 2004) and Carcello and Neal (2000, 2003). Accordingly, these studies provide the principal foundation for the current research.

Abbott et al. (2003b) investigate the association of three audit committee characteristics with audit fees. They examine 492 non-regulated Big 5-audited firms that filed proxy statements with the SEC from February 5, 2001 to June 30, 2001. Results of the regression model indicate that independent, financially competent audit committees influence the level of external auditor coverage, resulting in higher audit fees. However, Abbott et al. (2003b) find no evidence that meeting frequency affects audit fees.

Subsequent work by Abbott et al. (2004) explores the association between annual earnings restatements and four audit committee characteristics: independence, financial expertise, diligence (measured as meeting frequency), and size of the audit committee. The results indicate that firms with independent, expert, and diligent, audit committees are less likely to experience restatement. However, neither study investigates the relation between audit committee characteristics and auditor changes.

Carcello and Neal's (2000, 2003) studies provide the most direct foundation for the current study of audit committee characteristics and auditor changes. Carcello and Neal (2003) examine the relationship between audit committee characteristics and auditor dismissals. Their findings suggest that auditor dismissal following the issuance of a new going-concern report may result from management's belief that it can find a more pliable auditor. Alternatively, auditor dismissals may simply be punishment for the report. Both explanations suggest possible reasons for auditor changes.

There are however, a variety of events that may imply an auditor change. Possible reasons for changes include accounting disagreements between management and the external auditor, auditor resignations from the engagement due to independence issues or personal reasons, audit fee disputes between the auditor and the firm, and the issuance of a qualified opinion of any type. Expanding the auditor dismissal set to include these additional reasons provides a more thorough test of the ability of members with key characteristics to decrease the likelihood of auditor changes. We focus on these specific auditor changes because these are the ones that are likely to decrease financial reporting quality. The key characteristics chosen correspond to those identified by the Blue Ribbon Committee (BRC) as being vital for improving the effectiveness of corporate audit committees: independence, financial expertise, diligence (commitment to duties and responsibilities), governance expertise, and firm-specific knowledge. Of these five characteristics, only independence and governance expertise were found to be significant by Carcello and Neal (2003).

HYPOTHESES AND EMPIRICAL PREDICTIONS

Prior research suggests that certain audit committee member characteristics may inhibit auditor changes. Accordingly, we expect to observe fewer auditor changes when more of the characteristics are present among

audit committee members. We hypothesize inverse relationships between *each* of the five audit committee characteristics and the incidence of auditor changes. The remainder of this section explores the rationale underlying each of the five hypotheses.

Independence and Financial Expertise

Of the five characteristics, independence has the most compelling theoretical and empirical support. An independent director is defined in this study as one who is not a current employee of the firm, former officer or employee of the firm or related entity, a relative of management, professional advisor to the firm, officer of significant suppliers or customers of the firm, interlocking director, and/or one who has no significant (e.g. greater than $60,000) transactions with the firm. This is virtually the same independence measure as that used by Carcello and Neal (2000, 2003). Committee members are likely to be more objective and better able to monitor management actions if there are no economic or personal ties to the firm. Thus, we expect more independent committees to be a greater deterrent to auditor changes than less independent committees. Furthermore, Carcello and Neal (2003) provide supporting evidence that independent committees are less likely to side with management in disputes with auditors thus decreasing the likelihood of auditor changes. This evidence supports the first hypothesis tested in the current study. This and all subsequent hypotheses are stated in alternative form:

> *H1: Firms with a higher proportion of independent audit committee members experience fewer incidences of auditor changes.*

The Sarbanes-Oxley Act of 2002 emphasizes the need for audit committee members with financial expertise. Section 407 defines a financial expert as one who has an understanding of generally accepted accounting principles, financial statements, and audit committee functions. Carcello et al. 2006 examine SEC registered company disclosures post SOX. They found that most audit committee financial experts do not have a background in accounting or finance. However, SOX recognizes financial experts as individuals who are public accountants or principal financial officers. For purposes of this study audit committee members who have experience as either a CPA or CFO will be considered a financial expert.

Relatively few studies explore the proposition that financial expertise enables members to better assess and monitor management actions relating to financial reporting. Moreover, empirical support for this belief is minimal. Abbott et al. (2004) find a significant negative association between an audit committee with at least one financially competent member and the occurrence of financial restatements. However, Carcello and Neal (2003) are unable to establish that financial expertise is associated with auditor dismissals. Expanding the analysis to include more types of auditor changes may allow the detection of the expected association. Hypothesis two is:

> *H2: Firms with a higher proportion of financially expert audit committee members experience fewer incidences of auditor changes.*

Diligence

The audit committee's commitment to its responsibilities, according to the BRC, is a function of committee members who have "adequate time for meeting preparation and near perfect attendance." Audit

committees that meet often show greater commitment and interest and are more likely to be effective monitors. Park (1998) demonstrates that audit committee commitment is associated with a reduced incidence of litigation against external auditors. Abbott et al. (2004) find that stronger audit committee commitment, measured in terms of a minimum number of meetings, reduces the likelihood of financial restatements. These findings lay the foundation for Hypothesis three:

> *H3:* *Firms with a higher number of audit committee meetings experience fewer incidences of auditor changes.*

Governance Expertise and Knowledge

DeZoort (1998) finds that experienced audit committee members make more consistent judgments, have better self-insight, and reach consensus more often than members without experience. He measures oversight experience as the amount of time members spend working in areas related to assigned corporate oversight responsibilities such as, auditing experience. Audit committee members with a broad base of director experience should be better able to anticipate and assist companies in avoiding financial reporting difficulties. Carcello and Neal (2003) report that audit dismissals are less common when boards have more governance expertise. In this study governance expertise is measured as the average number of boards on which audit committee members have served. We posit in hypothesis four that governance expertise reduces the probability of auditor changes.

> *H4:* *Firms whose audit committee members served on a higher number of boards of directors will experience fewer incidences of auditor changes.*

Hermalin and Weisbach (1991) note that outside directors, who acquire firm specific knowledge over time, tend to improve firm performance. Using Tobin's q as a measure of profitability, the authors find a statistically significant, positive association between average board tenures and profitability (Tobin's q is computed as the ratio of the firm's market value to replacement cost of its assets). Park (1998) extends Hermalin and Weisbach's (1991) reasoning to consider the tenure of audit committee directors. Park (1998) determines that when audit committee directors serve longer on the board of directors, the likelihood of client litigation against the auditor is smaller. These findings support the assertion that audit committees with longer firm-specific tenure accumulate knowledge about the firm, and are better able to monitor and improve the firm's reporting quality. Hypothesis five expresses this expectation.

> *H5:* *Firms will experience fewer incidences of auditor changes as the average number of years audit committee members serve on the current board of directors and / or work with the firm increases.*

METHODOLOGY

Sample Selection

The test sample was taken from firms that simultaneously appear on Auditor-Trak[1] and the NYSE, ASE, or NASD from 1993 through 2001. Initially, 170 auditor change firms were identified because of either accounting disagreements between management and the external auditor; auditor resignations from the audit engagement due to independence issues or personal reasons; audit fee disputes between management and the external auditor; or receipt of a qualified audit opinion by the firm. A review was performed to ensure that each test firm selected had only auditor changes as a financial reporting problem. To avoid confounding the results, no firms with auditor changes for other reasons, incidences of fraud, or financial restatements were included in the sample of test firms. The sample selection process for test firms resulted in a final sample of 60 firms, as summarized in Table 1.

Table 1: Selection of Auditor Change Firms					
	Accounting Disagreement	Auditor Resigned	Fee Dispute	Qualified Audit Opinion	Total
Auditor Change Firms 1993 - 2001	99	33	31	7	170
Less:					
Firms with no proxy or financial statement data	-72	-3	-29	-5	-109
Firms with other financial reporting quality indicators	0	0	0	-1	-1
Total auditor change firms included in sample	27	30	2	1	60

Selection of Control Firms

Control firms were selected from Research Insight COMPUSTAT Database. Consistent with Carcell and Neal (2003), each sample firm was matched with a control firm based on time period, firm size, and industry. Information for a control firm was chosen for the same year that proxy and financial statement data were obtained for each test firm. Firm size was measured based on the net sales recorded for the year of auditor change for each firm. A four-digit Standard Industrial Classification (SIC) Code was used to match firms by industry. When unable to match firms at the four-digit level, the three-digit or two-digit level was employed.

In providing the cleanest sample possible, firms with earnings restatements, fraud incidences, and / or auditor changes for any reason were excluded from the control sample. The 60 control firms selected were examined for two years beyond the auditor change year to ensure that no incidences of auditor changes occurred subsequent to the change year.

Research Design

Test Variables

Proxy statements filed with the SEC supply information for committee activity and member characteristics. BRC recommendations provide guidelines in defining characteristics for each audit committee member. Independence **(*INDP*)** is coded as the percentage of independent members on the audit committee. The proportion of members on the audit committee who have experience as either a CPA and / or CFO is the measurement for financial expertise (*TECH*). Diligence (*MEET*) is measured as the number of audit committee meetings held within the auditor change year. The number of boards that each firm's audit committee members served on is summarized. Then the average number of boards each committee as a whole served on is used in coding governance expertise (*GEXP*). Finally, the coding for knowledge of the firm (*KNOW*) is determined by averaging the number of years the audit committee members served on the current board and / or worked with the current firm.

Control Variables

We control for other firm-specific attributes that may affect auditor changes. Specifically, earnings growth, firm size, and audit firm size are included in the model as control variables.

McMullen (1996) and DeFond and Jiambalvo (1991) provide evidence that firms that restate earnings have lower growth than firms without earnings corrections. If growth in earnings is less than expected, managers tend to manage earnings (Dechow and Skinner 2000, Skinner and Sloan 2000, and DeGeorge et al. 1999). Managers may use auditor turnover to gain acceptance for their earnings management decisions. Thus, a negative relationship between auditor changes and firm growth is expected. Following Beasley (1996), *GROWTH* is measured as the average percentage change in total assets for two years ending before the occurrence of the auditor change (assumes a lag between growth and the auditor change).

Kinney and McDaniel (1989) indicate that larger firms tend to have better internal controls, more resources for hiring qualified accounting employees, and better information systems, and therefore increased reporting quality. Seemingly, this would reduce the reasons for auditor changes. On the other hand, size may increase a management's sense of power and lead them to change if their will is not carried out by the external auditors. Arguments can be made for both positive and negative relationships between size and auditor changes. Therefore, a particular sign effect for this variable is not predicted. Firm size *(SIZE)* is measured as the natural logarithm of the book value of total assets.

Early research implies that financial reporting quality is affected by the size of the auditing firm. Knapp (1987) determined that when audited firms are in a poor financial condition and major disputes between management and the external auditor exists, audit committee members are more likely to support auditors if they are from one of the large auditing firms. This is true especially when the disputed issue relates to objective technical standards, such as the materiality of a financial statement amount. Palmrose (1988) found that the largest auditing firms (the Big 8 at that time), as a group, provided higher quality audit services than smaller firms. However, recent events have caused many to question the validity of these relationships, particularly when the volume of non-audit services provided to the client threatens external auditor independence (although this concern is clearly mitigated by the Sarbanes-Oxley act). Given these viewpoints, there is no directional prediction for this

variable. The dummy variable ***AUDIT*** will show a value of one when a large auditing firm performs the audit (Big 5 during the test period) or a value of zero otherwise.

Statistical Model and Variable Definitions

A logistic regression model is used to estimate the relationships between auditor changes and the five audit committee characteristics. This model is consistent with those used in Abbott et al. (2004), Beasley (1996), and Carcello and Neal (2003). The dependent variable (***AC***) equals one if there is an auditor change attributable to accounting disagreement, auditor resignation, fee dispute, or qualified opinion and zero if there is no auditor change. Independent variables are described in prior sections.

RESULTS

Descriptive Statistics

Table 2 compares each independent variable's mean and median for the test and control samples. The auditor change model provides a rich set of statistical differences between the control and test firms. All but one of the committee characteristics is significantly different for the test and control firms. Specifically, firms not changing auditors have a significantly higher number of independent audit committee members, who have more financial expertise, meet more often, and have more governing experience. The only exception is that there does not appear to be any significant difference between the two groups relative to firm-specific knowledge (although the direction of the difference is as expected). Firms not changing auditors also experience significantly higher growth.

Table 3 presents the correlation coefficients for the independent variables. These coefficients were examined to determine whether multicollinearity exists in the model. According to Kennedy (1998), the presence of high correlations, 0.80 or greater (in magnitude), may cause problems. The highest correlation is -0.330, suggesting that multicollinearity is not an issue of concern.

Correlation between GROWTH and audit committee variables tends to be positive. Thus, firms with higher growth tend to have more of the desirable audit committee characteristics. On the other hand, SIZE and audit committee characteristics tend to be negatively correlated. This suggests that smaller firms are more likely to have the desired audit committee composition, which seems somewhat counterintuitive. The relationship between AUDIT and the audit committee variables is mixed. Smaller audit firms in this sample are more likely to be associated with audit committees that have more meetings while the larger audit firms appear to be associated with audit committees that have more independent members and more members with financial expertise.

Table 2: Descriptive Statistics Univariate Results								
	Auditor Change Firms (n = 60)			Control Firms (n = 60)				
Variable [a]	Mean	Median	Std Dev	Mean	Median	Std Dev	Diff. in Means	t-test
INDP	0.71	0.67	0.31	0.81	1	0.29	-0.1	-1.82*
TECH	0.1	0	0.21	0.22	0	0.44	-0.12	-1.93*
MEET	1.66	1	1.49	2.21	2	1.73	-0.55	-1.88*
GEXP	1.38	1	1.17	1.88	1.58	1.7	-0.5	-1.88*
KNOW	5.83	4.67	4.43	6.49	5.83	4.02	-0.66	-0.86
GROWTH	0.13	0.14	0.51	0.45	0.14	0.83	-0.32	-2.55**
SIZE	3.84	3.58	1.59	3.8	3.56	1.64	0.04	-0.14
AUDIT	0.8	1	0.4	0.85	1	0.36	-0.05	-0.72

[a] Variable definitions:
*, **, *** = p-value <0.10, 0.05, 0.01, respectively

= the proportion of independent audit committee members on the committee;
= the proportion of audit committee members on the committee with financial expertise (defined as having a CPA or experience as a Chief Financial Officer);
= the number of audit committee meetings held during the firm's reporting year;
= the average number of boards of directors audit committee members have served on;
= the average number of years audit committee members have served on the current board of directors and/or with the particular firm;
= the average percentage change in total assets for two years ending before the occurrence of the financial reporting quality indicator;
= the natural logarithm of the book value of total assets; and
= the size of the external audit firm where 1 = an audit by any Big 5 (6) and 0 = smaller auditing firm.

Table 3: Correlation Matrix: Independent Variables								
	INDP	*TECH*	*MEET*	*BEXP*	*KNOW*	*GROWTH*	*SIZE*	*AUDIT*
INDP	1.000	.302	-.124	-.075	.153	.197	-.155	.172
TECH		1.000	.180	-.045	-.047	.071	-.035	.029
MEET			1.000	-.079	.005	.110	-.330	-.061
GEXP				1.000	.062	.056	-.213	-.005
KNOW					1.000	.285	-.082	-.026
GROWTH						1.000	-.151	-.097
SIZE							1.000	-.196
AUDIT								1.000

Regression Analysis

Table 4 presents the findings of the logistic regression model. The model is significant at the p < .01 level. The measure of goodness of fit (R^2 /pseudo-R^2) is 0.28 while the measure of concordant pairs is 0.70. The goodness-of-fit value is similar to other audit committee studies (e.g., Carcello and Neal 2000, 2003; Abbott and Parker 2000; Klein 2002, and Park 1998). The model generally supports the overall hypothesis that more of the desirable audit committee characteristics reduce the incidence of auditor changes. Three of the five committee characteristics show up as significant explanatory variables: independence, financial expertise, and firm-specific knowledge by board members. Diligence and governance experise were not significant. The control variables firm size and growth were significant.

Table 4: Logistic Regression Results Auditor Change Model			
Variable	Predicted Sign	Estimated Coefficients	Wald Statistic
INTERCEPT	None	2.70	7.60***
INDP	-	-1.85	5.36**
TECH	-	-2.32	5.16**
MEET	-	-0.25	2.59
GEXP	-	-0.22	2.17
KNOW	-	-0.09	2.93*
GROWTH	-	-1.12	7.21***
SIZE	None	0.25*	2.78*
AUDIT	None	-0.29	0.28
Number Of Observations		120	
Pseudo R^2/R^2		0.28	
Concordant Pairs		70%	
*** Statistically significant at less than the .01 level ** Statistically significant at less than the .05 level * Statistically significant at less than the .10 level			

Independence of Audit Committee Members

Independence of audit committee members is the most prominent audit committee characteristic. It shows up as a significant factor with the right sign, a negative coefficient. Of particular interest is the effect of independence of audit committees on auditor changes. The auditor change model is a logistic model, and, thus, reveals the probability of changes for various levels of audit committee independence. Setting all other variables in the model at their average values, the effect of varying the levels of audit committee independence is portrayed in Figure 1. As the proportion of independent committee members increases from 0 to 1, the probability of auditor change decreases from 0.79 to 0.37. This analysis emphasizes the key role this characteristic plays in safeguarding

the interests of shareholders and other key external parties. Furthermore, the outcome supports the decision by the Sarbanes-Oxley act to require independence for members of the audit committee.

Figure 1
Effect of Independence of Audit Committee Directors on
Probability of Being in the Auditor Change Group
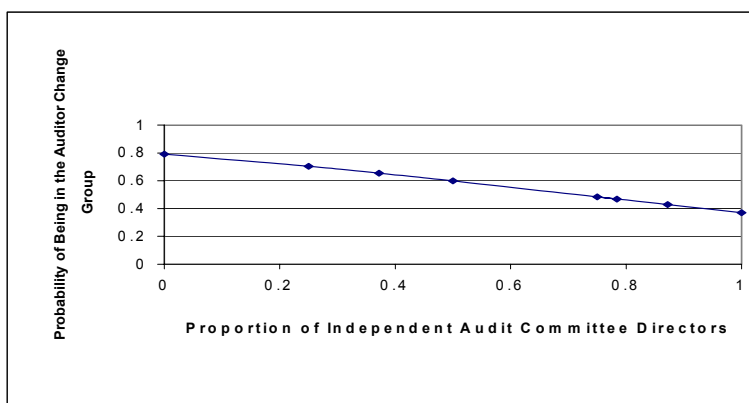
Financial Expertise of Audit Committee Members

The coefficient *TECH*, which represents the proportion of audit committee members with financial expertise, is negative and statistically significant at the $p < 0.05$ level. This evidence implies that firms, whose audit committees have a higher percentage of directors with financial expertise, are more likely to reduce changes in external auditors. Figure 2 illustrates that the probability of change is reduced from 0.57 to 0.12 as the proportion of members with financial expertise increases from 0 to 1. This outcome emphasizes the importance of committee members having financial expertise and again supports the requirements of the Sarbanes-Oxley Act.

Figure 2
Effect of Financial Expertise on the Probability of Being in the Auditor Change Group
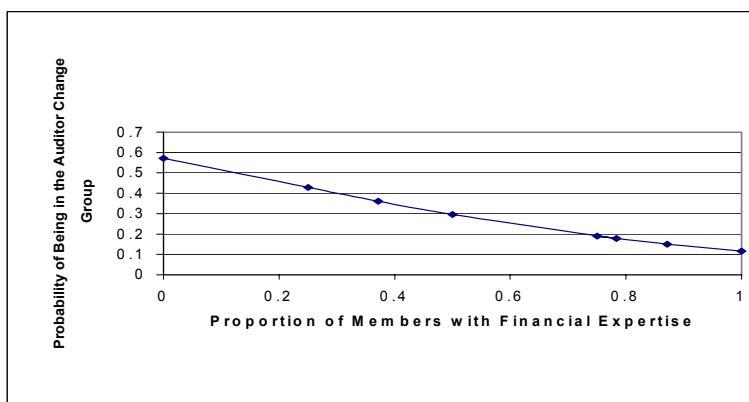
Firm-Specific Knowledge of Audit Committee Members

The coefficient for *KNOW*, which represents the average number of years an audit committee member serves on the current board of directors and/or works with the firm, is negative and statistically significant at the $p < .10$ level for the auditor change model. Thus, the likelihood of changing auditors decreases as audit committees increase their firm-specific knowledge. The probability analysis shown in Figure 3 reveals that the probability of auditor change reduces from 0.56 to 0.17 as the years of firm-specific experience go from zero to 20.

Figure 3
Effect of Years of Service on the Probability of Being in the Auditor Change Group
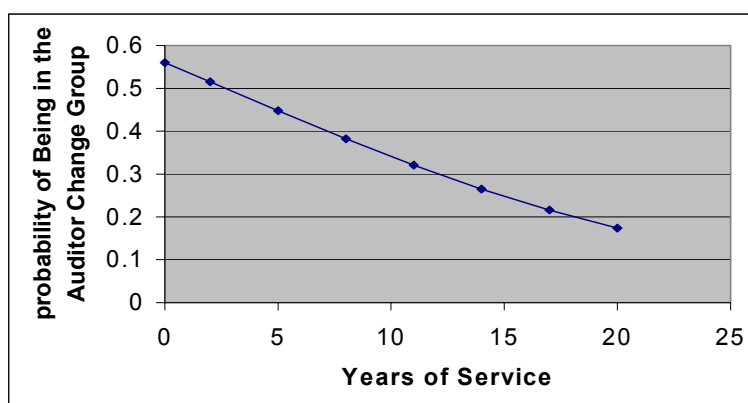
Control Variables

Firm size and growth control variables are significant. Higher growth firms are less likely to change auditors, as expected. However, larger firms are more likely to change auditors. Although *audit* firm size is significant interestingly it is negative, suggesting that the larger the audit firm, the less likely they will be changed.

One interesting question is whether specific large public accounting firms have a greater or lesser chance of being dropped by their clients. Therefore, additional tests were performed to determine whether auditor changes occur in firms that are audited by specific CPA firms. Logistic regression was repeated where the *AUDIT* variable was coded 1 for the Big 5 firm tested and 0 for all other CPA firms. The regression was run for all Big 5 CPA firms. The results of these five regressions are shown in Table 5. Of the five large CPA firms, only two showed up as having a significant effect on the likelihood of auditor changes: Ernst & Young and KPMG. In both cases, the probability of an auditor change decreases for these two firms relative to all other firms. Why this occurs is not obvious. Perhaps these two firms are better at avoiding or resolving auditor-client disagreements than other large firms. An alternative interpretation is that a decrease in auditor changes is attributable to less strict standards for Ernst & Young and KPMG than for other large firms.

	Arthur Andersen		Deloitte & Touche		Ernst & Young		KPMG		PWC	
Variable	Estimated Coefficient	Wald Statistic	Estimated Coefficient	Wald Statistic	Estimated Coefficient	Wald Statistic	Estimated Coefficient	Wald Statistic	Estimated Coefficient	Wald Statistic
INDP	-1.78	5.087**	-1.65	4.212**	-2.07	6.338**	-1.807	5.064**	-1.93	5.774**
TECH	-2.3	5.069**	-2.4	5.402**	-2.5	5.770**	-2.093	4.073**	-2.198	4.647**
MEET	-0.25	2.729*	-0.26	2.874*	-0.28	3.244*	-0.223	1.985	-0.258	2.742*
GEXP	-0.23	2.221	-0.22	2.199	-0.19	1.586	-0.254	2.745*	-0.198	1.709
KNOW	-0.09	2.966*	-0.09	3.235*	-0.09	3.065*	-0.071	1.936	-0.073	2.036
AUDIT	0.08	0.023	0.61	0.466	-1.44	4.001**	-1.067	3.058*	0.694	2.128
GROWTH	-1.15	7.536***	-1.16	7.611***	-1.2	8.01***	-1.155	7.403***	-1.135	7.383***
SIZE	0.23	2.568	0.23	2.541	0.31	3.946*	0.245	2.829*	0.238	2.68
Constant	2.47	7.630***	2.41	7.222***	2.662	8.337***	2.499	7.801***	2.239	6.172**

Table 5: Logistic Regression Results with Modified Audit Variable[a]

*** Statistically significant at less than the .01 level

** Statistically significant at less than the .05 level

* Statistically significant at less than the .10 level

[a] In the logistic regression, Audit = 1 for a *specific* Big 5 audit firm and 0 otherwise.

LIMITATIONS AND CONCLUDING REMARKS

SOX emphasizes the need for audit committee members to acquire and retain key characteristics. Foremost, independent and financially expert members are considered vital to the effective utility of an audit committee. However, regulators and the accounting profession have also pinpointed other critical characteristics that would enhance the value of the audit committee. Therefore, we examine whether five audit committee characteristics (independence, financial expertise, diligence, governance expertise, and firm-specific knowledge) are related to external auditor changes. The results of this research study provide evidence that audit committee characteristics are associated with auditor changes. Increased independence, financial expertise and firm-specific knowledge are significantly associated with reduced incidences of auditor changes. Alternatively, diligence and governance experience did not seem to have any real effect on reducing auditor changes.

There are limitations to the results of this study. First, the study documents only an association between audit committee characteristics and auditor changes, and does not identify causal relationships. Furthermore, in the overall model, no significance was found for the audit committee characteristics diligence and governance expertise. Future research in this area may explore a more precise measure for these variables. For example, the total number of years an audit committee member served in the capacity of board oversight might serve as a better gauge for governance expertise.

Evidence from this research is especially beneficial to boards of directors, regulators, and accounting professionals. Knowing which audit committee characteristics affect a particular financial reporting indicator has the potential to enable boards of directors to select audit committee members with the mix of characteristics needed to address reporting problems unique to a specific firm. The significant findings obtained for audit committee characteristics add credence to the suggestions made by the BRC and SOX.

Regulators and accounting professionals are constantly evaluating the role of the audit committee in providing more meaningful financial reporting to investors and other financial statement users. After the enactment of SOX, corporate managers began to complain that the costs of the increased regulation would outweigh the benefits. The results show that improvements in the composition of audit committee members can have a positive effect on the relationship between the firm and its auditor. If this improved relationship results in fewer auditor changes, companies can avoid the negative effects of auditor dismissals and resignations. Prior research has shown that dismissals and resignations can be accompanied by increased auditor fees and lower audit quality.

Many regulators and accounting professionals have made recommendations beyond those implemented by SOX. We examined the requirements of SOX as well as additional recommendations in this research study. The results of this study provide evidence for regulators, standard setters, and the accounting profession as they further define and refine standards relating to audit committee effectiveness.

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1. Auditor-Trak is a comprehensive database that summarizes all external auditor changes as reported on SEC Form 8-K. This database discloses auditor changes by year and provides reasons for such changes. Auditor Trak is developed and licensed by Strafford Publications, Inc., www.straffordpub.com.

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