ACADEMY OF ACCOUNTING AND FINANCIAL STUDIES JOURNAL

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LETTER FROM THE EDITORS

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DO OIL COMPANIES ROUTINELY PRICE GOUGE THE PUBLIC?

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ABSTRACT

This research paper examines the issue of whether or not and to what extent large oil companies may be price gouging the consuming public at the pump. Recent literature on the subject is inconclusive. Some authors attribute the recent abnormal profits to company consolidations and mergers, others to the influence of market conditions, and still others claim misdeeds by the oil companies along the lines of Standard Oil more than a century ago. Instead of focusing on bottom line net income, we focus on analyzing gross profit percentages for oil companies and companies in eight other industries for the period 2003-2007. Gross profit is more meaningful when assessing price manipulation since it contains only product revenue and the costs of product production. We compared the five largest oil companies over the study period. During this time frame, each of the five companies did not exhibit significant changes in gross profit percentages. In addition, when a comparison of each company's gross profit percentage was made between oil companies, again, no significant difference was found over the study period. When gross profit percentages from the industry as a whole were compared to the other eight industries, again, no significant difference was found over the study period. These results infer that it is difficult to ascribe recent oil company profits to price gouging.

INTRODUCTION

In recent years there has been much discussion on whether or not oil companies arbitrarily increase the price of gasoline at the pump. This has been exacerbated by the profits these companies have shown in recent quarters. Many studies have been undertaken to analyze if indeed price gouging is the driving force leading to these profits. Anderson (2006) asserts that oil company profits do not contribute to higher gas prices. Krantz (2007) states that the relationship between oil and gas prices is cyclical. He concludes that profits are influenced by factors such as world-wide demand and the associated cost of production. Barley (2006) posits that the key influencing factor is the series of mergers and joint ventures that preceded the run up in oil company profits. While Jenks and Clark (2007) state that this is an old issue that dates back to the days of the Standard Oil monopoly. We have too few players today, thus resulting in an oligopoly situation where a few control profits.

These findings indicate that there can be quite a bit of disagreement on what has caused oil company profits to spike and to what extent, if any, the oil companies are seeking unfair profits. One thing that cannot be overlooked is the fact that in the fourth quarter of 2007, the net profits of the top five oil companies amounted to $22.55 billion compared to $1.59 billion in the fourth quarter of 2001. And therein lies the crux of the matter. The investing and consuming public is fixated on net profits or the bottom line. And why not? Net Income is used as a basis to determine return to the stockholder, a key indicator of wealth building. But there is also another profit element that goes virtually unnoticed in the financial report, the "gross profit" figure. Many items, both operating and non-operating in nature, are deducted from gross profit in arriving at net profit. These are important items because, among other things, they aid in assessing the company's ability to manage in a responsible manner. So when we look at the net income for an oil company, or any company, we have difficulty in determining if the profits are due to price gouging or maybe just good management skills. Could there be another way of assessing if price gouging exists?

Gross profit is the result of a company's revenue less the costs of manufacturing the product (i.e., material, labor and overhead). If a company finds itself paying more for the costs of production, they have two options; reduce other expenses (operating or non-operating) or increase prices commensurately, in order to maintain net profit. An easy way of maintaining gross profit goals is to pass any increase in production costs on to the consumers. This causes the gross profit percentage to stay constant. If there is an increase in the gross profit percentage, while costs of production are increasing, one can infer that the price charged to the consumers (resulting in the revenue of the company) has increased more than the increase in costs. Regarding the oil companies, their major cost of manufacturing, i.e., oil, has steadily increased over the past five years. How has the gross profit been affected during this period? No research has yet to answer that question.

This study will extend prior research in attempting to ascertain if oil companies do indeed show indications of price gouging the consumers. In doing so three questions will be answered: 1. Have gross profit percentages for the major oil companies increased over the past five years? 2. Do gross profit percentages vary significantly between the major oil companies? 3. Do gross profit percentages for oil companies vary significantly from those in other industries?

HYPOTHESIS DEVELOPMENT

If oil companies have been engaging in price gouging, one would expect to see an increase in gross profit levels over some period(s) in the past five years, indicating that the price charged the consuming public is greater than the cost paid for the elements of production. If, however, the gross profit percentage stays the same, or decreases, it is more difficult to level accusations of price gouging toward these firms. The following null hypothesis is tested:

H1:   *There is no significant difference in the gross profit percentage among each oil company for the past five year period.*

Some oil companies have reported net profits in recent quarters at historic highs and significantly larger than other oil companies. This may be attributed to, what prior researchers theorize as, a "conglomerate" effect. In other words, the larger oil companies can manipulate prices easier since their control is greater. If this is the case, we should have the ability to notice this effect at the gross profit level. If some oil companies reflect gross profit percentages significantly different from other oil companies, this "conglomerate" effect may be in play, along with the ability to manipulate prices favorably. The following null hypothesis is tested:

H2:   *There is no significant difference in the gross profit percentage between oil companies for the past five year period.*

Lastly, many researchers point to the fact that since oil companies operate in an environment with limited competition (oligopoly), that the ability exists to set prices artificially higher than would be the case in an environment with many competitors (pure competition). If so, then we should see a significant difference in the gross profit percentage of the oil industry relative to other industries. The following null hypothesis is tested:

H3:   *There is no significant difference in the gross profit percentage between the oil industry and other industries for the past five years.*

RESEARCH DESIGN

Gross profit percentages were derived from *Hoovers* for the period 2003-2007. Five oil companies were represented in the sample for the oil industry. These companies consisted of; British Petroleum, Conoco/Phillips, Royal Dutch Shell, Chevron, and Exxon/Mobil. In addition, 112 other companies representing 8 additional industries were selected for comparison and their gross profit percentages analyzed. The breakdown by industry is represented in table 1.

Table 1: Industry Representation Sample	
Industry	Number of Firms in Sample
Agriculture	19
Mining	12
Oil	5
Construction	18
Food	20

Table 1: Industry Representation Sample	
Industry	Number of Firms in Sample
Tobacco	6
Transportation	15
Utilities	10
Personal Services	7
Total Firms in Sample	112

In attempting to assess any differences among gross profit percentages of the individual oil companies and between oil companies and firms in other industries, a statistical tool must be used. Walsh (1990) indicates that the tool most suited for these types of tests is the Analysis of Variance (ANOVA). The ANOVA test is used when the researcher wishes to compare means or percentages of two or more groups of samples.

TEST OF HYPOTHESIS 1

In order to test if there were any significant differences in the gross profit percentages for the years 2003-2007 among the oil companies, data were analyzed with the help of ANOVA. The main effect of assessing any difference in the gross profit percentage over the five year period for each oil company was first analyzed as seen in Table 2. The F-ratios for each firm across the years 2003-2007 is less than the F-critical value of 3.073, thus, we fail to reject the null hypothesis that there is no significant difference among each firm's gross profit percentage for the period.

Table 2: Main Effect Difference in Gross Profit Percentage of Each Oil Company 2003-2007						
Group	SS	df	Mean	F	P-value	F-critical
BP(B)	366.278	4	12.81	1.587	.20885	3.073
Conoco(Co)	257.117	4	13.23	1.476	.39820	
Shell(S)	345.286	4	15.21	1.871	.29751	
Chevron(Ch)	277.981	4	13.19	1.382	.40019	
Exxon(E)	324.423	4	15.40	1.592	.27223	

TEST OF HYPOTHESIS 2

In order to test if there were any significant differences in the gross profit percentages between the oil companies for the years 2003-2007, an ANOVA test was performed to assess interaction effects between the firms. As can be seen in Table 3, the computed F-ratios for each

interaction effect again are less than the F-critical value of 3.073. Thus, we fail to reject the null hypothesis that there is no significant difference in gross profit percentages between the oil companies for the period under study.

Table 3: Interaction Effects Difference in Gross Profit Percentage Between Oil Companies						
Group	SS	df	Mean	F	p-value	F-critical
BCo	1286.365	9	13.04	1.679	.25873	3.073
BS	1487.219	9	14.28	1.489	.30276	
BCh	1629.457	9	14.42	1.596	.29861	
BE	1539.002	9	13.39	1.826	.25091	
CoS	1398.012	9	12.92	1.765	.38229	
CoCh	1458.091	9	14.12	1.659	.27413	
CoE	1680.279	9	13.87	1.801	.23023	
SCh	1489.255	9	14.45	1.409	.27892	
SE	1560.209	9	14.87	1.567	.24891	
ChE	1398.463	9	13.67	1.667	.31219	

TEST OF HYPOTHESIS 3

In order to test if there were any significant differences in the gross profit percentages between the oil industry and other industries for the years 2003-2007, an ANOVA test was performed which assessed the effects between the industries. Mean gross profit percentages were calculated for each of the nine represented industries. Interaction effects between gross profit percentages of the oil industry and each sampled industry were computed. As can be seen in Table 4, the computed F-ratios for each interaction effect are less than the F-critical value. No degree of significance is registered for any interaction. Thus, we fail to reject the null hypothesis that there is no significant difference in gross profit percentages between the oil industry and other industries during the period under study.

Table 4: Interaction Effects Difference in Gross Profit Percentage Between Oil Industry and Other Industries						
Group	SS	df	Mean	F	p-value	F-critical
OA	1682.465	9	13.92	2.081	.16253	3.073
OM	1489.762	9	14.09	2.330	.18709	
OC	1426.578	9	12.69	2.129	.17491	
OF	1539.920	9	15.08	2.228	.18002	

Table 4: Interaction Effects Difference in Gross Profit Percentage Between Oil Industry and Other Industries						
Group	SS	df	Mean	F	p-value	F-critical
OT	1499.229	9	14.48	2.389	.15715	
OTr	1509.997	9	13.69	2.019	.16729	
OU	1602.423	9	14.48	2.439	.16821	
OP	1500.303	9	13.56	2.231	.15762	
Symbols Code: O= Oil, A=Agriculture, M=Mining, C=Construction, F=Food, T=Tobacco, Tr=Transportation, U=Utilities, P=Personal Services						

CONCLUSIONS

This study provides empirical research concerning the issue of whether or not companies within the oil industry have sought to set abnormally high prices of gasoline at the pump, i.e., "price-gouge." Because existing research is inconclusive regarding this matter, our research sought to advance the issue beyond net profit, or "bottom line," and instead concentrate on gross profit, where the effects of price setting and material cost could be more readily assessed. Based on a series of ANOVA tests, we conclude that; 1. Gross profit percentages for each oil company are not significantly different for the period 2003-2007. 2. Gross profit percentages between oil companies are not significantly different for the period 2003-2007. 3. Gross profit percentages between the oil industry and eight other selected industries are not significantly different for the period 2003-2007.

Given the results of our study, we cannot conclude that price-gouging by oil companies exists. It is possible that it may occur at a local level or in times of calamity (i.e., natural disasters), however, when the annual financial results of the large oil companies are analyzed, it becomes more difficult to conclude that these firms are taking advantage of the consumer at the pump.

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THE USE OF CERTAINTY THRESHOLD CRITERIA FOR TAX COMPLIANCE ENFORCEMENT IN AMBIGUOUS TAX SCENARIOS

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ABSTRACT

This paper reports on the results and implications of a case study of tax professionals' understanding and application of certainty threshold criteria when formulating a professional judgment for an ambiguous tax scenario. Contrary to prior studies, the results of this study suggest that increased knowledge of the certainty threshold criteria resulted in more aggressive rather than less aggressive tax judgments and decreasing knowledge of the criteria resulted in less aggressive rather than more aggressive tax judgments. In addition, there was a high level of variability between subjects regarding what certainty threshold criteria had been met for a given uncertain tax scenario. However, this variability tended to decrease as the requisite certainty threshold criteria increased.

These results have important implications to both tax practice and financial accounting in sanction and litigation situations. For example, the lack of consensus with respect to certainty thresholds demonstrated in this study suggests concerns for the equitable application of the increased tax preparer penalties of revised IRC §6694. Because certainty threshold criteria impact financial reporting (i.e., Accounting for Uncertainty in Income Taxes (FIN 48)) as well, these results raise similar concerns for the financial accounting profession.

INTRODUCTION

This study examines the role of judgment uncertainty in the evaluation of ambiguous income tax scenarios by tax professionals both for litigation and sanction purposes. Tax professionals have a dual responsibility when advising clients with respect to uncertain tax scenarios. On the one hand, the tax professional has a professional responsibility to be an advocate of the client. On the other hand, the tax professional also has a responsibility to promote and encourage compliance with the tax law. An inability to properly balance these two competing responsibilities will result in adverse consequences to the tax professional. If the tax professional does not adequately fulfill his client advocacy responsibilities, loss of client goodwill may occur and clients may migrate to other tax professionals. On the other hand, advocating overly aggressive tax positions may result in sanctions and/or litigation against the tax professional.

For both tax and financial reporting purposes[1] the determination of whether or not the tax professional has adequately fulfilled this dual responsibility is predicated upon an evaluation of

whether the requisite certainty threshold criteria was met or exceeded for a given tax decision (e.g., the realistic possibility standard). Other examples of certainty threshold criteria that are utilized by the tax code are the more-likely-than-not standard, the substantial authority standard, the reasonable basis standard, and the frivolous standard. Adverse consequences result if the tax professional is deemed to have not met the requisite standard.

Enforcement of these certainty threshold criteria, however, may be problematic if (1) the certainty threshold criteria are inadequately understood by tax professionals, (2) the standards fail to exert the anticipated influence on tax professional aggressiveness, or (3) tax professionals demonstrate a lack of consensus in the application of the standards when formulating tax decisions.

This paper reports on the results and implications of a case study of tax professionals' application and understanding of certainty threshold criteria for evaluating uncertain tax scenarios to an ambiguous tax scenario. Contrary to prior literature, participants in the current study, on average, demonstrated that less understanding of the certainty threshold criterion resulted in more conservative rather than more aggressive tax judgments. In other words, the less understanding participants demonstrated of the criteria, the more likely they were to base their judgment on certainty thresholds that were more conservative than required by the standard. In addition, participants in the current study demonstrated a substantive level of variability in the application of the requisite certainty threshold criteria. These results suggest the need for replications and extensions with respect to expanding understanding of the implications and limitations of the use of consensus in the evaluation of professionals' work for both litigation and sanction settings.

The remainder of this paper will be organized as follows. First, a discussion of the relevant literature and the development of related hypotheses will be presented. The methodology used in this study will be described next. Then, the results of the study followed by conclusions and implications will be presented.

LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

Literature Review

The United States relies on self-assessment for collection of taxes. As tax law has become increasingly complex, more taxpayers rely on tax preparers for professional judgments on a plethora of tax issues. To discourage tax professionals from taking overly aggressive positions as advocates of the taxpayer, various standards of professional conduct (certainty thresholds) have been implemented. For determining whether the professional has met the certainty threshold criteria, the professional must determine the strength of the legal authority supporting the advocated position[2]. This judgment of the strength of the tax position is predicated upon an estimation of the probability of success upon challenge by the IRS (i.e., an IRS audit), and/or litigation in the courts. Different probabilities of success may be required in different contexts. Thus, when applying tax law to tax scenarios, it is incumbent upon the tax professional to be knowledgeable of the various probability

standards (certainty threshold criteria) to avoid overly aggressive tax behavior that could have adverse consequences for the taxpayer (taxpayer penalties) and/or the tax preparer (tax preparer penalties). For example, if a tax preparer advocates a position that is judged to be frivolous (the probability of success if audited is close to or equal to zero) then the tax preparer could be subject to penalties under IRC §6694. If instead the tax preparer believes there is a reasonable basis for the position in existing tax law (probability of success approximately 20%), the position may be taken, but only if it is disclosed on the face of the tax return. If the appropriate disclosure is not made, then the position will be subject to penalty upon audit (§6694(a)). Alternatively, if the tax preparer believes the undisclosed position has a one-in-three chance of success of surviving an IRS and/or court challenge, the position is said to have a realistic possibility of success.

The realistic possibility standard was incorporated into tax law by the Revenue Reconciliation Act of 1989 (IRC §6694(a)). Congress believed there was widespread abuse by tax practitioners of the prior less rigorous reasonable basis standard (Gardner, Willey, and Woehlke 1991). The realistic possibility provision became effective for documents filed after December 31, 1989. This provision required that undisclosed return positions be supported by authority with a "realistic possibility of success" (interpreted by IRS Circular 230 as a one-in-three chance (33%) or better of winning) to avoid the tax preparer penalties.

In addition to the statutory penalties for failure to comply with the standard, the realistic possibility standard was also incorporated into the AICPA Statements on Tax Services SSTS #1 "Tax Return Positions".[3] Failure to comply could result in sanctions including the revocation of a tax practitioner's CPA license. However, unlike the IRS, the AICPA did not seek to quantify the standard recognizing the inherent difficulty in seeking to objectively measure what may be argued is an inherently subjective criteria.

The same 1989 Act also revised the accuracy related penalties for taxpayers (not tax preparers). Taxpayers are subject to accuracy related penalties for a 'substantial understatement' of income tax. The substantial authority standard is the criteria to be used for taxpayers. The substantial authority criteria is something more than a realistic possibility of success (33%) but less than the more-likely-than-not criteria (35 to 40% (Banoff & Coustan, 1992)).

Congress has revised the §6694 tax preparer penalty provisions twice since 1989. The first revision was by Section 8246 of the Small Business and Work Opportunity Tax Act of 2007 (2007 Act). In addition to increasing the penalties and broadening the definition of *tax preparer*, the 2007 Act increased the certainty threshold from the realistic possibility standard to the more-likely-than-not standard. The 2007 Act changes were to be effective for tax returns prepared after the date of enactment (May 25, 2007). On June 11, 2007, the IRS issued Notice 2007-54 providing transitional relief. This Notice delayed implementation of the new rules to returns filed after December 31, 2007. Exhibit 1 provides a comparison of the text of the original §6694(a) and the subsequent revisions.

Exhibit 1
IRC Section 6694. Understatement of taxpayer's liability by income tax return preparer.

Original

Subsec. (a) Negligent or Intentional Disregard of Rules and Regulations.--

If any part of any understatement of liability with respect to any return or claim for refund is due to the negligent or intentional disregard of rules and regulations by any person who is an income tax return preparer with respect to such return or claim, such person shall pay a penalty of $100 with respect to such return or claim.

1989 Revision

Subsec. (a) Understatements Due to Unrealistic Positions.--

If--

6694(a)(1) any part of any understatement of liability with respect to any return or claim for refund is due to a position for which there was not a realistic possibility of being sustained on its merits,

6694(a)(2) any person who is an income tax return preparer with respect to such return or claim knew (or reasonably should have known) of such position, and

6694(a)(3) such position was not disclosed as provided in section 6662(d)(2)(B)(ii) or was frivolous such person shall pay a penalty of $250 with respect to such return or claim unless it is shown that there is reasonable cause for the understatement and such person acted in good faith.

2007 Revision

Subsec. (a) UNDERSTATEMENT DUE TO UNREASONABLE POSITIONS. --

6694(a)(1) IN GENERAL. --Any tax return preparer who prepares any return or claim for refund with respect to which any part of an understatement of liability is due to a position described in paragraph (2) shall pay a penalty with respect to each such return or claim in an amount equal to the greater of --

6694(a)(1)(A) $1,000, or

6694(a)(1)(B) 50 percent of the income derived (or to be derived) by the tax return preparer with respect to the return or claim.

6694(a)(2) UNREASONABLE POSITION. --A position is described in this paragraph if --

6694(a)(2)(A) the tax return preparer knew (or reasonably should have known) of the position,

6694(a)(2)(B) there was not a reasonable belief that the position would more likely than not be sustained on its merits, and

6694(a)(2)(C)(i) the position was not disclosed as provided in section 6662(d)(2)(B)(ii), or

6694(a)(2)(C)(ii) there was no reasonable basis for the position.

6694(a)(3) REASONABLE CAUSE EXCEPTION. --No penalty shall be imposed under this subsection if it is shown that there is reasonable cause for the understatement and the tax return preparer acted in good faith.

2008 Revision

6694(a) UNDERSTATEMENT DUE TO UNREASONABLE POSITIONS. --

6694(a)(1) IN GENERAL. --If a tax return preparer --

6694(a)(1)(A) prepares any return or claim of refund with respect to which any part of an understatement of liability is due to a position described in paragraph (2), and

6694(a)(1)(B) knew (or reasonably should have known) of the position, such tax return preparer shall pay a penalty with respect to each such return or claim in an amount equal to the greater of $1,000 or 50 percent of the income derived (or to be derived) by the tax return preparer with respect to the return or claim.

6694(a)(2) UNREASONABLE POSITION. --

6694(a)(2)(A) IN GENERAL. --Except as otherwise provided in this paragraph, a position is described in this paragraph unless there is or was substantial authority for the position.

6694(a)(2)(B) DISCLOSED POSITIONS. --If the position was disclosed as provided in section 6662(d)(2)(B)(ii)(I) and is not a position to which subparagraph (C) applies, the position is described in this paragraph unless there is a reasonable basis for the position.

6694(a)(2)(C) TAX SHELTERS AND REPORTABLE TRANSACTIONS. --If the position is with respect to a tax shelter (as defined in section 6662(d)(2)(C)(ii)) or a reportable transaction to which section 6662A applies, the position is described in this paragraph unless it is reasonable to believe that the position would more likely than not be sustained on its merits.

6694(a)(3) REASONABLE CAUSE EXCEPTION. --No penalty shall be imposed under this subsection if it is shown that there is reasonable cause for the understatement and the tax return preparer acted in good faith.

Prior to the changes introduced by the 2007 Act, the higher more-likely-than-not criteria was applied, primarily, to issues such as tax shelter opinions. As a result of the 2007 Act, this higher certainty threshold criteria was to become the standard for the §6694 preparer penalties as well. Under the 2007 Act, tax preparers were to be subject to the penalties for undisclosed positions unless the tax return preparer had a reasonable belief that the tax return position was more likely than not

the proper treatment. To arrive at this belief the tax preparer must, after analyzing the pertinent facts and authorities, conclude there is a greater than fifty percent likelihood that the tax treatment of the item will be upheld if challenged by the IRS (Proposed Regulation §6694-2(b)(1)).

Prior to the 2007 Act changes being implemented, Congress, in 2008, revised the §6694 penalties a second time (Section 506 of the Tax Extenders and Alternative Minimum Tax Relief Act of 2008 (2008 Act)). Effective for returns prepared after May 25, 2007,[4] the standard for undisclosed tax positions is now the "substantial authority" standard. Per IRS Notice 2009-5 "Until further guidance is issued, solely for purposes of section 6694(a) "substantial authority" has the same meaning as in §1.6662-4(d)(2) (or any successor provision) of the accuracy-related penalty regulations.Ó The substantial authority standard is generally considered somewhat higher than the realistic possibility standard but less than the more-likely-than-not standard (Cash, Dickens, & Mowry, 2007).[5] However, for tax years prior to 2008, a tax return preparer will generally not be subject to penalties or sanctions under IRC §6694(a) for advocating an undisclosed position that he believes has a realistic possibility of success.

Development of Hypotheses

It may be argued that the effectiveness of the penalty provisions (i.e., §6694) depends upon the tax professional's understanding of the certainty threshold criteria and upon the tax professional's incorporation of the certainty threshold criteria into the aggressiveness of their recommendations to clients regarding tax return positions (Levy, 1997).

In addition, for the certainty threshold criteria approach to operate as intended, there must be an acceptable level of general agreement (consensus) in the tax profession as to level of certainty or authority exhibited by a tax scenario. In other words, if tax professionals disagree on whether or not the requisite certainty threshold has been met for a given tax scenario, imposition of sanctions and/or penalties becomes problematic.

The above conditions suggest that in order for certainty threshold criteria to be effective tax professionals should: (1) understand the certainty threshold criteria, (2) incorporate the use of the certainty threshold criteria into their recommendations to clients, and (3) agree on the level authority a particular tax position exhibits (consensus).

HYPOTHESIS ONE: (*Understanding of Standard*). Kelliher Bandy, & Judd (2001) surveyed AICPA Tax Section members for their interpretation of the phrase "realistic possibility". Kelliher et al reported high familiarity with the phrase and fairly consistent interpretation of the phrase from their respondents, although respondents tended to report that the standard required a higher level of support than did official interpretations. Kelliher et al measured familiarity with the standard by asking the participants to self-report on a 7-point likert scale their "familiarity with the realistic possibility standard". However, Kelliher et al did not attempt to test participants' actual knowledge of the standard. Although prior research has reported some evidence that tax professionals believe they understand the penalty standards, the current study will add to the literature by seeking to

directly measure participant's knowledge of the standard. The expectation is that this study would provide additional confirmation of the Kelliher et al results. This suggests the following hypothesis:

> *H1:   On average, tax practitioners are able to demonstrate an understanding of the realistic possibility standard.*

HYPOTHESIS TWO: (*Recommendation Criteria)*. As stated above, the second condition for the certainty criteria approach to be effective is that tax professionals incorporate the use of the certainty threshold criteria into their recommendations on tax return positions. In other words, when making judgments about tax return positions, the standard, to be effective, must influence the minimum acceptable level of authority that the practitioner adheres to (recommendation criteria) when deciding whether or not to recommend a pro-taxpayer position.

When a tax professional evaluates authority applicable to a specific situation, the goal is to judge the strength of the evidence both favorable and unfavorable to the client's position (Davis & Mason 2003). To make this judgment, the amount of favorable and unfavorable authority must be determined. The relevant authority must then be compared to the client facts, and a professional judgment as to the strength of the evidence is made.

Once this judgment as to the strength of the tax position has been made, the tax preparer must then decide whether to recommend the position to the client. It is anticipated that a positive recommendation on the position would depend upon whether the position meets or exceeds the threshold of authoritative support with which the tax preparer is generally comfortable. It is anticipated that the practitioner's knowledge of the applicable standard (e.g., the realistic possibility standard) will influence the tax preparer's aggressiveness (recommendation criteria) when deciding whether or not to make the recommendation. If the standard is effective in encouraging tax compliance, it is anticipated that familiarity with the standard should operate as a floor to the tax practitioner's aggressiveness (Johnson, 1993). In other words, it is anticipated that the tax practitioner's recommendation criteria would meet or exceed that of the standard.

This may be argued to be the case because the apparent motivation for Congress for raising the applicable legal standard and imposing increased preparer penalties for failure to meet the standard was due to the belief that tax practitioners were too aggressive and were abusing the system (Jackson, Milliron, & Toy, 1988). Kelliher et al reported results that would tend to support this position. The Kelliher et al study reported, "that practitioner aggressiveness is inversely related to familiarity (knowledge) with the standard." However, this causality of this relationship is subject to question since Kelliher et al did not attempt to test participants' knowledge of the standard. Furthermore, Kelliher et al did not attempt to control for the potentially confounding effect of practitioners' level of client advocacy on the aggressiveness of their recommendations.

This may be problematic since some research has reported that tax practitioner judgment may be influenced by the tax practitioner's level of client advocacy. For example, Davis & Mason (2003) reported that when evaluating the level of authority for a tax position, "taxpayer advocacy influences

professionals' views of both similarity and authority". The tax professionals who participated in the Davis and Mason study also demonstrated a large degree of variability in their level of advocacy (similar results were reported by Mason & Levy (2001)). It is anticipated then that higher levels of advocacy will result in more aggressive recommendations (lower recommendation criteria). Thus, it is possible that advocacy may moderate the influence that knowledge of the standard has on aggressive behavior. Ceteris Paribas, tax professionals reporting higher levels of advocacy are expected to be more aggressive (lower recommendation criteria) than those reporting lower levels of advocacy (higher recommendation criteria).

The above discussion suggests the following hypothesis:

> *H2:* *Controlling for level of client advocacy, participants with more familiarity with the realistic possibility standard are anticipated to report less aggressive behavior (higher recommendation criteria) and participants with less familiarity with the realistic possibility standard are anticipated to report more aggressive behavior (lower recommendation criteria).*

HYPOTHESIS THREE: (*Consensus*). Given the prescriptive nature of the certainty threshold criteria in both the tax law and the financial literature, it may be argued that the third condition (consistency) must serve as both a necessary and sufficient condition for the effective and equitable enforcement of the certainty threshold criteria (Bonner, 2008). The third condition is concerned with the level of agreement (consensus) across tax professionals regarding their judgment as to the level of authority a particular tax scenario exhibits. This is necessary because enforcement is predicated upon what may be termed a peer review process.[6] A peer professional(s) will examine the data and the judgment of the tax professional and then determine if he (they) is (are) able to arrive at the same or similar judgment as to the level of authority the particular tax scenario exhibits. For example, if the tax professional determined that there was a realistic possibility (>33%) that the tax position taken would be sustained on its merits then the 'peer' professional would need to arrive at the same certainty judgment (or something greater) for the peer to not recommend sanctions and/or penalties for failure to meet the standard. For purposes of enforcement of the standards, it is important that there is some acceptable level of agreement between peers as to the level of certainty exhibited in a given uncertain tax scenario.

However, it has been argued that achieving such agreement through the 'scientific approach' to quantifying odds of winning is problematic. For instance, shortly after the quantification approach was first proposed by the IRS, one author has stated:

> "With respect to the return preparer penalties under Section 6694, the leading professional societies and many practitioners remain upset with the quantitative approach to the realistic possibility standard (defined to be an "approximately one in three" or greater chance of success in both Notice 90-20 and the proposed

regulations). It is doubtful that the courts (much less IRS agents) will be able to fairly and accurately administer such a test" (Banoff, 1991).

Several years later another author made the following statement:

"The idea that even the most experienced tax practitioners-let alone taxpayers or the average tax preparer-are capable of refining the prospects of prevailing in litigation down to scientific percentages is questionable at best. The author has always viewed with bereaved amusement the whole concept of determining what chance one might have had of winning a case that couldn't be won (after all, the standard here is much lower than the "more likely than not" standard used elsewhere in the code). However, it is understandable that given the nature of the statute, the IRS would attempt to quantify the rule in some fashion" (Dillinger, 1999).

The results of prior research, albeit mixed, would lend credence to these concerns expressed in the above quotes regarding the ability of tax practitioners to arrive at consensus in the quantifying of certainty threshold judgment. Two early studies examining tax authority evaluation found that tax practitioners were fairly consistent in their judgments of what constitutes substantial authority (Chang & McCarty, 1988; Chow, Shields, & Whittenburg, 1989). However, later studies on similarity judgment reported substantive variability between tax professionals on their tax authority judgments for an ambiguous tax scenario (e.g., Levy 1997, and Mason & Davis, 2003). Also interesting is that similar results were reported by Davis & Mason (2003) for both IRS agents and CPAs who participated in their study. Furthermore, these studies were only able to explain some of this variability.[7] The prior literature then would suggest the following hypothesis:

> *H3:*   *The professional judgment of the level of authority for an ambiguous tax scenario will vary across participants.*

METHODOLOGY

To gather evidence on H1, H2 and H3, a questionnaire was administered to 42 tax practitioners incorporating a case-study approach similar to that used in Davis & Mason (2003). A case from Davis & Mason (2003), constructed from prior court decisions addressing the categorization of financial instruments as debt or equity, was used in the present study. Davis & Mason (2003) developed the scenario using actual court cases; however, court dicta were not included in the scenario. The scenario represented an ambiguous area of tax law (classification of bonds as debt or equity in a closely held corporation). The scenario included features favorable to debt classification, unfavorable to debt classification, and features that were generally regarded as neutral by the courts. The scenario was designed such that the proper tax treatment was uncertain.

The questionnaire packet delivered to participants contained instructions for the participant, the debt/equity scenario and related law and analysis, and four sections for responses from participants. The four sections for responses were labeled Part A, B, C, and D respectively. Part A asked the respondents to respond to 5 questions related to the debt/equity issue and the level of authority exhibited by the scenario (Exhibit 2). In addition, question 5 of Part A gathered evidence on the comfort level of the participant. Part B requested various demographic data. Part C asked participants to respond to a set of 9 questions that was used to assess participants' level of client advocacy (Mason & Levy, 2001). For Part D, participants were asked to define four penalty terms. The four terms were: realistic possibility, substantial authority, reasonable basis, and frivolous. To guard against biasing the survey in the direction of getting results, the questions did not specifically explain any of the four criteria of Part D.

Exhibit 2
Sample of responses requested from participants in Part A
of the debt/equity questionnaire.

A1.   If the IRS examines this transaction, what is the likelihood that the IRS will reclassify the bonds as equity?
          _____ %
Enter a number from 0 to 100, where 0 indicates no chance that the bonds will be reclassified as equity and 100 indicates that you are certain that the bonds will be reclassified as equity.

A2.   If the IRS reclassifies the bonds as equity and the taxpayer litigates, what is the likelihood that the IRS's treatment of the bonds as equity will be overturned by the courts? (Please circle the selection that best fits your opinion.)

          a.   Certain taxpayer victory.
          b.   Taxpayers' position is frivolous.
          c.   Realistic possibility taxpayer will prevail.
          d.   Taxpayer is certain to lose.
          e.   More likely than not taxpayer will prevail.
          f.   Reasonable basis to believe taxpayer will prevail.

A3.   Please attach a numerical probability from 0 to 100 to your answer in question 2, where 0 indicates taxpayer is certain to lose(answer d) and 100 indicates certain taxpayer victory (answer a).
          _____ %

A4.   If the bonds were treated as debt, would you recommend the taxpayer attach disclosure information to the tax return using form 8275 or form 8275R?

          _____ yes
          _____ no
          _____ not familiar with form 8275 or form 8275R

A5.   In general, when you are deciding whether or not to recommend a particular tax position to a client in an uncertain (gray) area of tax law, how much certainty do you need in order to recommend the tax position? _____ %

Enter a number from 0 to 100, where 100 indicates certain probability of taxpayer victory if the position is challenged and 0 indicates no probability of taxpayer victory if the position is challenged

Participants were asked for percentages or numerical estimates (in line with those developed as interpretations of the standards in the penalties). In addition, participants were asked to relate their percentage probability estimates to the appropriate terminology for the level of authority chosen. For example, if a participant reported that the realistic possibility standard had been met, then it was expected the participant would report a probability estimate of approximately 33 percent.

Questionnaires were distributed to participants through a coordinator at their respective CPA firms. Participants then completed the questionnaires and returned the questionnaires to the firm coordinator. The firm coordinator returned the questionnaires to the researchers. Forty-two tax professionals participated in the study.

RESULTS OF STUDY

Demographic Data

Participants were tax practitioners at three of the Big Four accounting firms. All but 2 of the participants had passed the CPA exam. Experience in the tax area ranged from 1 to 35 years with an average of 11 years in tax. Three-fourths of the participants had 4 or more years of experience. Twenty-six of the 42 participants reported they had had at least 1 tax research class. Seventeen of the participants indicated they had 1 or more graduate degrees in accounting, tax, or law.

Results for Hypothesis One (*Understanding of Standard*)

According to Hypothesis One and the prior literature, participants were expected to be able to demonstrate a high familiarity with the various standards including the realistic possibility standard. To test this hypothesis, participants were asked to provide a written explanation of the standard. Explanations were also requested for the terms reasonable basis, frivolous, and substantial authority.

Responses were evaluated by comparison to the following definitions:

Realistic Possibility (~33%). The realistic possibility standard is met if analysis of the tax return position by a reasonable and well-informed person knowledgeable in the tax law(s) would lead such person to conclude that the position has approximately a one in three (or greater)

likelihood of being sustained on its merits (IRS Circular 230 as described on page 492 Tax Research by Raabe).

Substantial authority (>33% but <50%). What is substantial authority differs somewhat from the "realistic possibility" standard, but it is clearly a much higher standard than is required under the realistic possibility test. It is also a lower standard than the commonly described criminal standard "beyond a reasonable doubt" (from p 319-320 Tax Research by Karlin). More than a 1 in 3 chance of success but less than 50%.

Reasonable basis (~20%). Any arguable position taken in good faith on a return (from p. 420 Tax Research by Raabe). Approximately 20% chance of success. "A position that is not frivolous" (AICPA SSTS # 1.2c, p. 9). "The committee intends that "reasonable basis" be a relatively high standard of tax reporting, that is, significantly higher than "not patently improper." This standard is not satisfied by a return position that is merely arguable or that is merely a colorable claim." Committee Reports on P.L. 103-66 (Omnibus Budget Reconciliation Act of 1993). CCH COM-RPT, 2002FED ¶39,651.45.

Frivolous. (<20%) A position is frivolous if it is patently improper (Circ 230, §§10.34). A frivolous position is one that is knowingly advanced in bad faith and is patently improper (AICPA SSTS #1.8, p. 11). Less than 20% chance of success. "…as one without basis in fact or law, or that espouses a position that has been held by the courts to be frivolous or groundless." Rev. Proc. 2001-2, I.R.B. 2001-1, 79, section 2.01.

Each participant's explanation was rated for agreement independently by two raters using a 5-point likert scale with a '5' indicating the participant's statement agreed in substance with the above interpretation of the term and a '1' representing failure of the participant to adequately define the term. The Kappa coefficient (Cohen, 1960) for interrater reliability was 0.709 and significant. Of the 42 participants, 9 had missing responses, leaving 33 usable responses. Table 1 contains the results for the 33 participants. For the realistic possibility term, only 6 of the 33 usable responses agreed substantially with the above definition (rated a 5 on the likert scale by the rater) for realistic possibility. Two of the participant's responses (rated a 4) suggested strong familiarity with the term, while 17 participants responses (rated a 1) suggested an inability to explain or unfamiliarity with the term. Similar results occurred for the substantial authority and reasonable basis terms. The only term that seemed familiar to the participants was frivolous, with approximately one-half of the participants (13 rated a 5 and 2 rated a 4) correctly defining the term.

These results contradict the prior research (high familiarity with the realistic possibility standard). The tax practitioners herein were unable to demonstrate 'high familiarity' with the realistic possibility standard, substantial authority standard, or the reasonable basis standard. Yet,

these results suggest participants were able to demonstrate familiarity with the frivolous standard. To further test the participants' level of familiarity of the standards a second analysis was performed.

Table 1 Stem-and-Leaf Plots of familiarity of participant's with certainty threshold criteria using a 5-point likert scale with '1' representing lack of familiarity with the term and '5' representing high familiarity (*Stem width: 1, Each leaf: 1 participant).	
Term: Realistic Possibility	
Frequency	Stem & Leaf*
17.00	1.00000000000000000
5.00	2.00000
3.00	3.000
2.00	4.00
6.00	5.000000
Term: Substantial Authority	
Frequency	Stem & Leaf*
24.00	1.000000000000000000000000
5.00	2.00000
2.00	3.00
2.00	Extremes (>=4.0)
Term: Reasonable Basis	
Frequency	Stem & Leaf*
12.00	1.000000000000
13.00	2.0000000000000
6.00	3.000000
2.00	Extremes (>=4.0)
Term: Frivolous	
Frequency	Stem & Leaf*
7.00	1.0000000
5.00	2.00000
6.00	3.000000
2.00	4.00
13.00	5.0000000000000

The second analysis performed on the data also included the more-likely-than-not term. The responses of participants to questions 2 and 3 of Part A of the questionnaire were analyzed for this second analysis. For question 2, participants were asked to rate the outcome of litigation for the hypothetical debt/equity issue, by selecting the phrase that best represented their assessment of the likelihood that the IRS's treatment of the bonds as equity would be overturned by the courts (see Question A2 in Exhibit 1). In question A3, participants reported the probability they believed that was represented by the term selected in Question A2. A comparison of these responses provides a second measure of the participants' understanding of the certainty threshold criteria. If participants are highly familiar with the term it was anticipated that the probability they reported in question A3 should be appropriate for the term they reported in question A2.

Table 2 Descriptive statistics of participants' probability of taxpayer victory (Question A3) grouped according to descriptive term chosen by participants (Question A2) to represent the probability.			
Question A2 from Exhibit 1	N	Question A3 from Exhibit 1	
Certain taxpayer loss	4	Mean	31.25
		Maximum	45
		Minimum	20
		Range	25
		Range	75
Frivolous position	4	Mean	43.75
		Maximum	95
		Minimum	20
		Range	75
		Range	35
Realistic possibility	17	Mean	45.29
		Maximum	75
		Minimum	15
		Range	60
More likely than not for taxpayer	2	Mean	41
		Maximum	51
		Minimum	30

Table 2 reports the frequency distributions for this second analysis. As can be seen from Table 2, the participants reported a large degree of variability across participants within each term

with respect to the probability reported for that term. Furthermore, as seen from Table 2, participants' probability choice, on average, resulted in a probability of success for the term that was substantially higher than the standard.

For example, for the term realistic possibility of success (one in three chance of success), the average certainty threshold of participants was 45.29% with a range of responses from 15% to 75% for the 17 participants that selected this term. Similar results are reported for frivolous (less than 20%) with the average reported by participants of 43.75%. For reasonable basis (approximately 20% chance of success), the participants report was a mean of 39.44%.

This second analysis reinforces the findings of the first analysis. Both the analyses suggest an inability of participants to demonstrate high familiarity with the penalty standards of realistic possibility, reasonable basis, substantial authority and the more likely than not. Thus these results contradict prior research.

Results for Hypothesis Two (*Recommendation Criteria*)

To evaluate the influence that the practitioner's understanding of the realistic possibility standard has on the practitioner aggressiveness, data were obtained by asking practitioners (Question A5 in Exhibit 1) to indicate: "In general, when deciding whether or not to recommend a particular tax position to a client in an uncertain (gray) area of tax law, how much certainty is needed in order to recommend the tax position?" Since the realistic possibility standard was enacted, ostensibly, because of concerns that tax practitioners' were too aggressive, practitioners should be expected to, on average, have recommendation criteria equal to or greater than the standard if they are familiar with the standard. As familiarity with the standard decreases, then the data would be expected to show increased aggressiveness (lower recommendation criteria). Since the results from Hypotheses One suggest that practitioners, on average, are not highly familiar with the standards, it might be anticipated that practitioners should report recommendation criteria that is lower (more aggressive) than the standard. The other factor that is expected to encourage more aggressive rather than more conservative recommendations is the level of advocacy exhibited by participants.

Table 3 summarizes the descriptive statistics for the recommendation critieria reported by the participants. Part 1 of the table reports summary descriptive statistics, and Part 2 reports the frequency distributions. On average, participants reported using a recommendation criteria of 55.68%. The majority of the participants reported recommendation criteria that was more conservative than the realistic possibility standard of 33%. Only four of the participants reported a criteria that was more aggressive than the realistic possibility standard. Less than 15.8 % of the participants reported recommendation criteria of less than or equal to the realistic possibility standard. These results suggest that participants in this study, on average, set a recommendation criteria for themselves that was considerably more conservative than the historic realistic possibility standard.[8] To test if familiarity with the standard while controlling for client advocacy can explain these results the following analysis was performed.

Participant responses to Question A5 (recommendation criteria) were regressed on familiarity with the realistic possibility standard (explanation of term from Hypothesis One results) while controlling for level of advocacy of participant. Both level of advocacy and familiarity with the realistic possibility standard were significant and explained 26.1 % of the variance. See Table 4.

Table 3 **Descriptive statistics and frequencies of participants' responses to Question A5** **(self-reported recommendation criteria).**			
Part 1. Descriptive statistics for practitioner comfort levels.			
Practitioner Recommendation Criteria			
Mean	55.7		
Median	51.00		
Std. Deviation	19.57		
Minimum	20		
Maximum	90		
Range	70		
Part 2. Practitioner Recommendation Criteria frequencies.			
Threshold %	Frequency	Percent	Cumulative Percent
0	3	7.9	7.9
30	1	2.6	10.5
35	2	5.3	15.8
40	5	13.2	28.9
45	1	2.6	31.6
50	3	7.9	39.5
51	6	15.8	55.3
60	3	7.9	63.2
70	4	10.5	73.7
75	5	13.2	86.8
80	3	7.9	94.7
90	2	5.3	100.0
Total	38	100.0	
Missing	4		
Total	42		

The results suggest that both advocacy and familiarity with the realistic possibility standard are significantly related to the participant's reported certainty threshold. Increasing levels of both advocacy and familiarity with the standard were inversely related to the reported aggressiveness of the participant. The statistically significant advocacy results support prior research in that the more aggressive participants reported higher levels of advocacy and less aggressive participants reported lower levels of advocacy. This result is intuitive and tends to support the belief that aggressive tax practitioners are more likely to advocate positions on tax issues that have less authoritative support for the position.

	Coefficient	t-statistics	Sig.
Table 4 **Test of Hypothesis Two: Regression of recommendation criteria of participants (Question A5) on level of advocacy and familiarity with realistic possibility standard.**			
Constant	6.431	.000	
Level of advocacy	-.475	-3.071	.005
			Familiarity with realistic possibility standard
			-.318
			-2.054
			.049
Adjusted R^2 = 0.261			

However, the results of the analysis for the effect of familiarity with the standard on reported aggressiveness is interesting in that the results of the analysis contradict rather than provide support for the original motivation for increasing the tax preparer penalty standards. Furthermore the results contradict prior studies. For instance, Kelliher et al. reported that familiarity with the standard tended to reduce tax practitioner aggressiveness. The results of the current study suggest the opposite. Familiarity with the standard is associated with increased rather than decreased aggressiveness. Apparently practitioners with less knowledge of the legal threshold of the standard are more likely to be conservative (less aggressive) and report higher recommendation criteria than those practitioners more knowledgeable of the standard.[9]

Results for Hypothesis Three (*Consensus*)

To test the level of consensus among participants in evaluating the certainty threshold of the tax scenario in this study, the variability of participants' answers to Questions A1 and A3 were evaluated. Both questions were designed to elicit information on the participant's judgment as to

probability of success if the treatment of the bonds as debt was challenged by either the IRS (Question A1) or the courts (Question A3). The results of the analysis are presented in Table 5.

Table 5 Descriptive statistics for hypothesis three (consistency). Participants' likelihood of success judgments if debt treatment of bonds is challenged.	
Part A. Responses of participants to Question A3: probability of taxpayer victory if case is litigated.	
Percent probability of taxpayer victory if case is litigated	
Mean	41.8
Median	40.00
Std. Deviation	19.39
Minimum	15
Maximum	95
Range	80
Part B. Responses of participants to Question A1: probability of taxpayer victory if case is audited.	
Percent probability of taxpayer victory if IRS audit	
Mean	33.69
Median	30.00
Std. Deviation	20.03
Minimum	0
Maximum	70
Range	70

Responses of participants to both questions exhibited a wide range of variability. For likelihood of success if audited by the IRS, the range was from a certainty level of 70% to 0% with a mean response of 33.69% and a standard deviation of 20.03. Likelihood of success judgments by participants if the case was litigated demonstrated a range of responses from a certainty threshold of 95% to 15%, with a mean response of 41.8% and a standard deviation of 19.3.

To determine the effect this variability in responses might have on enforcement of sanctions and/or penalties for over-aggressive behavior a further analysis was performed by evaluating the responses with respect to a specific standard (e.g., the realistic possibility standard). For Question A1 44.4% of respondents believed the likelihood of success was greater than the realistic possibility threshold (33%), and 55.6% believed it was less. Results for Question A3 showed that 62.6% believed the likelihood of success if litigated met or exceeded the realistic possibility threshold and 37.4% chose a certainty threshold of less than the realistic possibility standard. These results would suggest that consistent enforcement of the standards is problematic.

However, when the results are evaluated by reference to the more-likely-than-not standard, only 16.7 % of respondents believed the likelihood of success if audited (Question A1) was greater than 50% and 83.3% believed the likelihood of success was less than the more-likely-than-not standard. If the case were to be litigated (Question A3), 22.9% of respondents believed it was more likely than not that the taxpayer would prevail while 77.1% believed there was less than a 50% certainty the court would rule in favor of the taxpayer.

Although the impact of the variability in responses becomes less problematic with the higher standard, the relative number of participants who would disagree on whether the requisite threshold had been met continues to represent a substantive minority.

These results provide support for Hypothesis Three. In this study participants' lack of consistency replicates prior research such as Davis & Mason (2003) and provides additional evidence as to the problematic nature of consistent enforcement of the penalty standards.

CONCLUSION AND IMPLICATIONS

The conclusions to be drawn from this study are twofold. First, the results suggest that, on average, the practitioners who participated in this study were unable to demonstrate a high familiarity with the various penalty standards applicable to tax practitioners. In general, participants reported the probability for the standard as being higher than required by the standard. The results suggest that practitioners, when unfamiliar with a probability standard, are more conservative in their estimate of the correct probability for the standard. This conclusion is interesting in that, as previously mentioned, it contradicts Congress' motivation for increasing the standards under §6694 as reported in prior tax literature. Prior literature suggested practitioners tended to be overly aggressive in making tax recommendations to clients, but increasing familiarity with the standard was reported to reduce aggressive behavior. This study suggests the opposite. As tax preparers become more familiar with the standards, they also become more aggressive.

The results of this study also suggest that when participants sought to apply the certainty threshold criteria to a specific fact scenario, there was a lack of agreement among the participants as to what certainty threshold the tax scenario represented. However, the disagreement is mitigated somewhat (but not eliminated) by raising the requisite certainty threshold criteria. Thus, employing the higher more-likely-than-not standard (rather than the lower realistic possibility standard of 33%) would, arguably, increase the ability of tax professionals to agree on when the standard had been met for a particular tax scenario. However, even at the higher more-likely-than-not standard a substantive minority of the participants could not agree on whether the standard had been met. This variability in judgment would introduce an element of uncertainty in the use of certainty threshold criteria in evaluating professional judgment since whether or not a tax professional had met the requisite certainty criteria may become dependent upon the peer making the evaluation. It has been suggested that tax professionals may be able to mitigate this potential risk by retaining a peer to substantiate their certainty threshold judgments (Seigel 2007).

With the recent enactment of FIN 48 and the revised IRC §6694, the implications of the use of certainty threshold criteria to evaluate professional judgment on the implementation of these criteria, in both financial reporting and tax compliance, raise important, interesting and pressing issues for additional research by both the academic and the applied perspectives of the accounting profession. The present study contributes to this emerging line of research. In particular, the results suggest the need for replications and extensions with respect to expanding understanding of the effect of familiarity with the standards and also the scope of the various implications of consensus in the evaluation of professionals' work for both litigation and sanction settings.

ENDNOTES

[1]   FIN 48 ("Accounting for Uncertainty in Income Taxes" (FIN 48), the FASB Interpretation of FASB 109), prescribes methods for the recognition and measurement of all tax positions taken by an entity with GAAP financial statements predicated upon the more-likely-than-not certainty threshold criteria. FIN 48 is far-reaching because it applies to any entity that prepares a GAAP basis financial statement, not just publicly traded companies. FIN 48 sets a more conservative standard (more-likely-than-not) for measuring uncertainty than is generally required in tax practice.

[2]   Implied in this statement is also an evaluation by the tax professional of the strength of the legal authorities that might be in conflict with the position.

[3]   The ABA has also incorporated the realistic possibility standard into their professional code of conduct.

[4]   The 2008 Act's change in the general standard under section 6694(a) to substantial authority is retroactively effective for tax returns and claims for refund prepared after May 25, 2007 (IRS Notice 2009-5).

[5]   Tax Shelters and Reportable transactions are still subject to the more-likely-than-not standard.

[6]   The term 'peer' is used in this paper in its broadest sense and would include not only review of a professional's judgments by a supervisor, but also by those professionals in a position to judge a professional's work to determine if fines and/or other forms of punishment should be imposed for substandard performance. Thus, for purposes of this paper, the term would include IRS agents examining the work to see if it complies with IRC §6694.

[7]   Mason and Davis (2003) reported there was some evidence that a portion of the variability was related to the level of client advocacy exhibited by the participant.

[8]   A comparison of these results to the results for the percentages reported for the realistic possibility standard in Table 2 generates a similar result. The mean response for the realistic possibility standard in Table 2 was 45.29 % as compared to a mean of 55.7% for the comfort level of participants in Table 3.

[9]   A second regression analysis was performed replacing participants' score on familiarity with the realistic possibility standard with participants' familiarity score for all four terms participants were asked to define. The

results were similar with both variables significant and inversely related to participants' self-reported recommendation criteria.

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GEORGE DAVIS BAILEY
FIRST EXECUTIVE PARTNER OF
TOUCHE, NIVEN, BAILEY, AND SMART
(A PREDECESSOR FIRM TO
DELOITTE TOUCHE TOHMATSU)

Michael M. Grayson, Texas A&M International University

ABSTRACT

George D. Bailey was a practitioner who was active in the profession. He founded one of the three firms which merged, and which, with additional mergers, would become Touche Ross & Co., a predecessor firm to Deloitte Touche Tohmatsu. He served on many professional committees, including the Committee on Accounting Procedure, and was president for a year of the American Institute of Accountants (now the American Institute of Certified Public Accountants). Some of the issues he dealt with are still the subject of discussion today within the accounting profession.

BIOGRAPHICAL DATA

George D. Bailey was born in Sioux City, Iowa on June 6, 1890 to Henry Moore Bailey and Mary Louise Davis Bailey. (Accounting Hall of Fame; Burns and Coffman, 1976) His family were originally from New England, his father having attended the Sheffield Scientific School at Yale, and his mother Mt. Holyoke College. (The History Factory) He graduated from Sioux City High School in 1908. (Accounting Hall of Fame) He entered the University of Wisconsin intending to study engineering, but changed to accounting. (The History Factory)

In 1912, he graduated with a bachelor's degree from the University of Wisconsin, and joined Ernst & Ernst in Cleveland. He became a partner in 1916 and moved to Detroit. He also married in 1916. (Accounting Hall of Fame) In 1917 he first became a CPA, in Wisconsin. (Accounting Hall of Fame) In 1922 he became the managing partner of the Detroit office of Ernst & Ernst. (The History Factory)

In 1947, while he was one of the senior partners of Ernst & Ernst and still in charge of the Detroit office (Carey 1970, p. 65), he left the firm, taking the Chrysler audit and other work with him, one Ernst partner, and eleven staff people, and started his own firm, George Bailey & Company. (Accounting Hall of Fame, Deloitte & Touche, and The History Factory) However, he did not have sufficient staff to do the work (The History Factory), so on September 1 of that same year he combined with two other firms (Touche, Niven & Co., founded in 1900, and Allen R. Smart

& Co., founded in 1927) to form Touche, Niven, Bailey & Smart, serving as chairman of the first management committee of three senior partners. (The History Factory) The combined firm had ten offices in ten cities, with thirty-three partners. (The History Factory) He was an executive partner of the firm until his retirement in 1957. (Accounting Hall of Fame)

The firm forged ties with the Canadian firm of Ross, Touche and the British firm of George A. Touche. In 1960, the firm was renamed Touche, Ross, Bailey & Smart. On September 1, 1969, the name was simplified to Touche Ross & Co. (Deloitte & Touche and The History Factory) The firm is now part of Deloitte Touche Tohmatsu.

LIFE SUMMARY BY OTHERS

George Bailey was chairman for two years of the nominating committee for the Accounting Hall of Fame (Journal of Accountancy, March 1958, p. 8). He was elected posthumously to membership in 1968. According to a biographical sketch obtained from the Accounting Hall of Fame,

> He was active in numerous government, civic, and community organizations, particularly with the affairs of Michigan and the city of Detroit. He worked extensively with the federal government, largely as an unpaid advisor and consultant. Early in World War II, he participated in the formation of accounting and tax decisions in the War Department. He was consultant to the Office of Contract Settlement (1944-45), the Board of Governors of the Federal Reserve System (1955-56, during its study of consumer credit regulations), and the Statistical Division of the United Nations Secretariat (1958-59). He was president, Michigan Council for Tax Research; trustee, citizens' Research Council of Michigan, and in Detroit he was president, United Community Services (1946-48); director, Board of Commerce (1945-58); and trustee, Grace Hospital, and Visiting Nurse Association. He was active in the formation of the United Foundation, the first organization to unite fund-raising for national and local charities.

> He married Edna Gillen in 1916; he later married Fern Crawford in 1962. There were no children by either marriage. An active clubman, he enjoyed fishing, golf, travel, and the Detroit Symphony Orchestra. He collected old English dictionaries and owl figurines. He died December 2, 1966 at the age of 76.

SIGNIFICANT POSITIONS WITHIN THE PROFESSION

He was active in professional organizations, serving on twenty-three committees of the organization now known as the American Institute of Certified Public Accountants. Among those

committees were the Trial Board, Committee on Terminology, Committee on Relations with the Bar (Accounting Hall of Fame), and Committee on Cooperation with SEC (American Institute of Accountants 1947, p. 123). He was vice president of the American Accounting Association in 1942, vice president of the American Institute of Accountants (now the American Institute of Certified Public Accountants) 1943-1944, member of the Committee on Accounting Procedure 1938-1947 and its chairman from 1944-1947, and president of the American Institute of Accountants 1947-1948 (Accounting Hall of Fame).

During the time George Bailey was chairman of the Committee on Accounting Procedure, the committee issued seven bulletins (American Institute of Accountants 1948, p. 124):

No. 25	Accounting for Terminated War Contracts
No. 26	Accounting for the Use of Special War Reserves
No. 27	Emergency Facilities
No. 28	Accounting Treatment of General Purpose Contingency Reserves
No. 29	Inventory Pricing
No. 30	Current Assets and Current Liabilities--Working Capital
No. 31	Inventory Reserves

WRITINGS ATTRIBUTED TO GEORGE D. BAILEY

An examination of the entries in the *Accountants Index* shows that most of the writings were actually speeches being printed in house organs of various institutions, or disclosure by a committee member or chairman of the work of the committee. A scan of speech manuscripts shows editing done by more than one person, which suggests that George Bailey did not write those items himself, but rather put his name on what was produced by others. Another document, *Consumer Instalment* (sic) Credit, Part III, Views on Regulation, claims to be a survey done by George D. Bailey. Considering that, per page 4 of the book, there were 787 replies, and that he was close to retirement, it is obvious that the study was actually done by staff people in his firm, though possibly operating under his general direction. The *Journal of Accountancy* of March 1958 stated that he was directing the study (page 8).

POSITIONS HELD BY BAILEY ON ACCOUNTING MATTERS

Accounting Research Bulletin Number 8 had been in favor of an all-inclusive concept of reporting net income. With an all-inclusive concept, net income leaves a historical record of all the earnings and losses of a company, whether asserted to be from ordinary operations or from one-time events. An opposing viewpoint, the current operating performance concept, included in net income only those items allegedly occurring year in and year out. Thus, expenses not recorded in prior periods, losses on sales of fixed assets, and uninsured losses could all be recorded as direct charges

to retained earnings rather than as charges against the income statement. Proponents of the current operating performance concept referred to it as "sharpening net income."

"George D. Bailey ... was a strong advocate of 'sharpening net income.' ... He believed that net income should reflect earning capacity--earnings from the regular business of a company, exclusive of windfalls such as gains on the sale of a plant--and should be determined in a way that would permit comparison of results of one year with those of another, and the results of one corporation with those of others...." (Carey 1970, pp. 65-66) Earle King, who had succeeded William Werntz as chief accountant of the SEC when Werntz had resigned to join Touche, Niven, Bailey & Smart, argued that the procedures "seem to be susceptible to abuse...." (Carey 1970, p. 66) As a result, "the Commission authorized the staff to take exception to financial statements which appeared to be misleading," even though they might be in accordance with Bailey's view which was the one adopted in Accounting Research Bulletin No. 32. (Carey 1970, p. 66)

"In 1950, the SEC circulated for comment a draft of a proposed amendment to its Regulation S-X," with a portion of the amendment being in direct conflict with Accounting Research Bulletin No. 32. Although indignation was expressed by the accountants, they reached a compromise by agreeing that any special items excluded from the period's determination of net income would nevertheless be shown on the income statement under the line item captioned Net Income, added or subtracted as appropriate, and producing a line item to be captioned Net Income and Special Items. (Carey 1970, p. 67)

In the inflationary period following World War II, George O. May emerged as one of the proponents of reporting price-level depreciation rather than depreciation as computed on historical cost. George Bailey "emerged as one of the leaders" of those in favor of depreciation as computed on historical cost, a position in which he concurred with the thinking of the SEC. (Carey 1970, p. 68) However, neither side was able to convince the other, so in 1947, the Institute put up $30,000 and obtained a matching grant from the Rockefeller Foundation to sponsor a study of business income. Forty to fifty people took part in the deliberations, which took place over approximately a five-year period. The major thrust of the report advocated price-level accounting, but Earle C. King, George Bailey, Carman Blough, William Werntz, Edward Wilcox, and Charles Smith were among the dissenters (Carey 1970, pp. 68-69).

It is interesting that Carey depicted Bailey as favoring historical cost. In "Concepts of Income," (*Harvard Business Review*, Volume 26, November 1948, page 691), which was listed as being written by Bailey, there is this statement.

> ...the suggestions so far being made deal mostly with adjustments of cost through index figures rather than through consideration of all the other matters that influence fair value. But it seems to me almost necessary that any change of concept on earnings carry forward into the balance sheet. ... Its use would show clearly the replacement problems for industry; there would be generally acceptable index figures for use; and there could be changes from year to year if there continue to be violent

fluctuations in our economy. Earnings, for instance, could then be stated in percentage of return on investment at current values and not on old book values which mean little."

Carey started at the Institute in 1925 (Journal of Accountancy, June 1968, p. 31), and retired in May 1969 as executive director of the AICPA (Carey 1970, p. 272). His book includes a photograph of six people attending the American Institute of Accountants' speakers party, 1944 Wartime Accounting Conferences. In the photograph, Carey is standing directly behind a seated George D. Bailey (Carey 1970, p. 275). Carey was managing editor of *Journal of Accountancy* while Bailey was president of the Institute. The two men must have known each other. The above passage seems clear in its intent to base depreciation on price-level-adjusted figures rather than historical cost. Thus, either Carey is wrong about Bailey's position, or Bailey did not write his own speeches.

In three speeches in 1948, Bailey variously advocated historical cost only (see comments in Appendix B, 1948, Depreciation and inventory reserves), depreciation based on general-price-level-adjusted statements (see the above quote), and historical cost but potentially with current replacement cost given as supplemental disclosure (see comments in Appendix B, 1948, Management of reserves for inventories and depreciation). Accordingly, it appears that either Bailey was terribly inconsistent or that someone else wrote Bailey's speeches, including the material which was given as the Dickinson lecture and published in two parts in *Harvard Business Review* under his name. A scan of available manuscripts of Bailey's speeches indicates at least three different persons' handwriting.

Just to make matters more confusing, William A. Paton described a presentation in 1948 when the two of them made presentations to the Joint Committee on the Economic Report. Paton is quoted as saying, "...we managed to make vigorous and sophisticated pleas for putting the depreciation deduction on a current-dollar basis...." (Touche, Ross, Bailey & Smart, 1967, p. 13) Appendix B contains a listing of writings attributed to Bailey, together with selected annotations concerning subject matter and views expressed therein. As explained immediately preceding, some of the materials contradict each other.

THE BAILEY COMMISSION

In 1951, Donald P. Perry "delivered an address at the annual meeting of the Institute in which he described the great variety among the states in preliminary requirements for the CPA certificate." (Carey 1970, p. 264) Perry was named chairman of an independent 24-member Commission on Standards of Education and Experience for Certified Public Accountants. (Carey 1970, p. 265) The Commission's report, published in 1956, outlined the following characteristics of a profession (Carey 1970, pp. 265-266; the following list is quoted from page 266) in Table 1.

Table 1: Characteristics of a Profession	
1.	A body of specialized knowledge.
2.	A recognized formal educational process for acquiring the requisite specialized knowledge.
3.	A standard of professional qualifications governing admission to the profession.
4.	A standard of conduct governing the relationships of the practitioners with clients, colleagues, and the public.
5.	Recognition of status.
6.	An acceptance of the social responsibility inherent in an occupation endowed with public interest.
7.	An organization devoted to the advancement of the social obligations of the group.
Source: Carey 1970, 266	

That part of the report was supported by general agreement, but another part considered the concept of the CPA certificate itself and what it should represent. The report envisioned the elimination of the experience requirement, "and that the CPA certificate be regarded as a mark of competence to *enter* the profession--rather than as a mark of competence to practice as a principal." (Carey 1970, p. 267) Some of the Commission members dissented violently, mainly to elimination of the experience requirement and to this view of the CPA certificate. (Carey 1970, p. 268)

George Bailey was appointed chairman of a special committee to determine the extent to which the Institute should adopt the recommendations of the Commission on Standards. The special committee, which became known as the Bailey committee, worked for nearly three years, surveyed the accounting profession and others, and recommended (among other things) "that the long-established meaning of the CPA certificate as evidence of demonstrated competence for the practice of public accounting be continued" and "that an experience requirement be retained." (Carey 1970, pp. 269-270) Another committee, the Hansen committee, was then formed to describe the nature of acceptable experience. (Carey 1970, p. 272)

INTERPRETATION OF DATA

My impression is that George Bailey was one of those people who does well in life by simply being likable, and who is eminently successful at obtaining credit for work done by others. He took firm employees and clients (including Chrysler) with him when he left Ernst & Ernst as managing partner of its Detroit office, was chairman of the Committee on Accounting Procedure, and was president of the American Institute of Accountants. With the resources of a large firm behind him, he was able to participate in activities in Detroit and Michigan which gave him and his firm publicity. He was also able to work at no charge for the federal government both during and after World War II, thereby gaining entry into situations which would produce goodwill and potential

business for his firm; a small firm would not have had the resources to enable its owners or staff to do this without charge. Obviously, he was a rainmaker, one who brings in business.

Given the resources of a large firm, firm staff probably prepared speeches for him, which were then printed in various publications which listed him as the author. Information about what was decided by the government or by accounting committees were attributed to him, without credit given to other members of the committees. While some portion of the ideas contained in the writings may have been original, there is no way to ascertain which were his, which originated within his firm(s), and which originated with other people but for which George Bailey has been credited with authorship.

SUMMARY OF MAJOR WRITINGS

As a result of the research done for this paper, it appears that most of the writings attributed to Bailey are actually speeches which may have been written by others. In some cases, the written materials contradict each other. Nevertheless, certain themes stand out. First, accounting should be useful. Second, he was in favor of "sharpening net income," implying the current operating performance concept of net income.

I have not found any written record of disagreement with the concept that accounting should be useful. However, on the issue of which concept of net income to use, Henry T. Chamberlain, William A. Paton, and Maurice H. Stans, all of whom were members of the Committee on Accounting Procedure, objected to the issuance of ARB 32 "because they believe that the so-called 'all-inclusive' concept provides the proper measure of net income and best serves the public interest because it is least subject to reader misinterpretation." (ARB 32 as reprinted in *Journal of Accountancy*, January 1948, p. 24) As noted earlier in this paper, Earle C. King, chief accountant of the SEC, also objected.

PROCEDURES USED TO SEARCH FOR MATERIALS ON GEORGE D. BAILEY

I searched every copy of the *Accountants Index* and its successor, the *Accounting & Tax Index*, from the commencement of the index to 1994. For a fee plus air shipping cost, I obtained copies of all materials, other than *Journal of Accountancy* articles, available from the American Institute of Certified Public Accountants library. I obtained one government document from a library which is a full government depository.

I searched Dissertation Abstracts. Using the key word phrase "Bailey and accounting," I ascertained that no dissertations about George D. Bailey appeared in the data base through 2006. I contacted Dan Jensen of the Accounting Hall of Fame, who informed me that the Accounting Hall of Fame had very little information about George Bailey. Dan Jensen faxed me what information they did have at the Accounting Hall of Fame.

I contacted the headquarters of Deloitte & Touche (as it was then known) in Wilton, Connecticut, and Ellen Hegarty of that firm was kind enough to not only fax me what limited information she had available, but also to put me in touch with The History Factory in Washington, DC, which was working on a project for the firm. The History Factory faxed me the information they had available.

I searched the library shelves at Louisiana Tech University for all old material which might have mentioned George Bailey.

I read every written work attributed to George Bailey which I could find, including every article in *Journal of Accountancy* for which he was listed as author. I also read other materials which discussed Bailey or the positions he took. However, for the most part, the writings simply related what a group of people had been discussing or had decided.

TIME LINE

(Note: Chronology within years not guaranteed correct)

1890   June 6--born in Sioux City, Iowa to Henry Moore Bailey and Mary Louise Davis Bailey
1908   Graduated Sioux City High School
       Entered University of Wisconsin intending to study engineering, but changed to accounting
1912   Graduated University of Wisconsin with bachelor's degree; one of the first accounting majors in the U. S.
       Joined Ernst & Ernst in Cleveland
1916   Made partner in Ernst & Ernst
       Married Edna Gillen
       Moved to Detroit with Ernst & Ernst
1917   Became a CPA (Wisconsin)
1922   Became managing partner of Detroit office of Ernst & Ernst
       Joined organization which became the American Institute of Certified Public Accountants
1938   Became member of Committee on Accounting Procedure until 1947; chairman 1944-1947
1941   Became member of Executive Committee of American Institute of Accountants until 1944
1942   Became vice president of American Accounting Association
1943   Became vice president of American Institute of Accountants until 1944
1944   Became consultant to Office of Contract Settlement until 1945
1945   Became director, Board of Commerce in Detroit, 1945-1958
1946   Became president, United Community Services in Detroit, 1946-1948
1947   Left Ernst & Ernst, taking Chrysler audit with him
       Set up own firm with one Ernst partner and eleven Ernst employees
       September 1--joined his firm with two others to form Touche, Niven, Bailey & Smart, the forerunner of the Touche Ross firm (now part of Deloitte & Touche); chairman of the first

management committee of three senior partners (the other two were Jackson W. Smart, son of the deceased founder of the Smart firm, and Henry E. Mendes, who had been executive partner of Touche Niven)

Became president of American Institute of Accountants, 1947-1948

August 20, announcement of partnership of Touche, Niven, Bailey & Smart

1948   Dickinson Lecturer at Harvard

1952   Honorary member of University of Michigan chapter of Beta Alpha Psi

1955   Became consultant to Board of Governors of the Federal Reserve System during its study of consumer credit regulations, 1955-1956

1957   Retired

1958   Received Michigan Association of CPAs' Service Award

Became visiting professor at University of Michigan, 1958-1959

Became consultant to Statistical Division of the United Nations Secretariat, 1958-1959

1959   Chairman of a special coordinating committee to study the report of the Commission on Standards of Education and Experience for CPAs

1960   Received AICPA's Gold Medal Award for Distinguished Service to the Profession

1961   Regents' Professor at University of California--Los Angeles, 1961-1962

National president of Phi Gamma Delta (college fraternity), 1961-1962

1962   Married Fern Crawford

1966   Died December 2, age 76; survived by his wife, brother, and sister

1968   Elected to Accounting Hall of Fame posthumously

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APPENDIX A

Listing of Writings Attributed to George D. Bailey

(Note: Chronology within years not guaranteed correct)

1938   Practical application of municipal accounting principles. In American Institute of Accountants *Addresses presented at the conference on municipal accounting and finance*, Chicago, March 28 and 29, pp. 13-18. Accountants' certificates. *Fourteenth annual Michigan accounting conference*, pp. 15-20, discussion pp. 20-21.

    Introduction to round table discussion on: Accountants' certificates. In American Institute of Accountants *Papers on accounting principles and procedures*, pp. 75-77.

1939   Practical problems in governmental accounting. *Accounting Review*, Volume 14, Number 1, pp. 52-56.

    Auditing procedure--a development to meet changing conditions. In Ohio State University *Proceedings of the second annual institute on accounting....* May 19 and 20. pp. 63-75.

    Testimony of the S.E.C. hearings on auditing practice and procedures at the Central states accounting conference, June 2, 1939; first section presented by George D. Bailey.

    Adaptation of programs for independent audits to internal audit and control. Address before Michigan association of certified public accountants, December 14, 1939.

1940   Research work of the American Institute of Accountants. Address presented at the Southern states accountants' conference, New Orleans, La., April 26, 1940. *Journal of Accountancy*, July 1940, pp. 50-57.

    Some thoughts on the theory of inventory pricing. In American Institute of Accountants, *Experiences with extensions of auditing procedure*, 1940, pp. 60-67.

1941   Problems of inventory pricing. *Journal of Accountancy*, August 1941, pp. 143-148. Reprinted from Central states accounting conference, *Addresses delivered at Accounting clinic...Stevens Hotel, Chicago*, May 28-29, 1941, pp. 87-94.

        Cost problems in national defense contracts. *Robert Morris Associates monthly bulletin*, October-November 1941, pp. 106-111.

1942   Accounting in war time. At a joint meeting of the Minnesota Society of Certified Public Accountants and the School of Business Administration of the University of Minnesota, held in Minneapolis, on April 28.

        Practice of public accounting in wartime, *Journal of Accountancy*, July 1942, pp. 18-24.

        Accounting problems in presentation of cost-plus-fixed-fee contracts in financial statements. In Michigan accounting conference, *Technical papers of the seventeenth annual Michigan Accounting conference, 1942*, pp. 23-27. Also in *Journal of Accountancy*, December 1942, pp. 503-510.

1943   Accounting problems of war contracts. *California Certified Public Accountant*, August 1943, pp. 2 and 6-13. Also in *Journal of Accountancy*, September 1943, pp. 211-219.

        Government procedures--existing and proposed. In automotive council for war production. *Proceedings of the contract termination conference*, September 28, 1943, pp. 4-14.

        Public accountant and war contract termination. In Michigan accounting conference, *Technical papers of the eighteenth conference*, November 1943, pp. 1-7.

        Remarks of the chairman. In American Institute of Accountants, *Audits under terminated war contracts*, 1943, pp. 1-2 and 5-8.

        War contract problems; remarks of the chairman. In American Institute of Accountants, *Accounting problems in war contract termination*, pp. 1-2.

        United States Senate Committee on military affairs. Statement of George Bailey, chairman, contract termination committee, American Institute of Accountants. *Journal of Accountancy*, December 1943, pp. 526-531.

1944   The public accountant and war contract termination. *Journal of Accountancy*, February 1944, pp. 106-108.

        Termination of government contracts from the viewpoint of industry and the certified public accountant. *New York Certified Public Accountant*, Volume 14, May 1944, pp. 351-361.

        The accountant and war contract termination. Printed elsewhere and in *Journal of Accountancy*, July 1944, pp. 36-41.

        Cost phases of war contract termination, New York, National Association of Cost Accountants (now the Institute of Management Accountants), August 1, 1944. *N.A.C.A. bulletin*, Volume 25, Number 23, section 1, pp. 1235-1254.

Termination problems. (In Controllers Institute of America, *Contract termination and industry reconversion: number 1 of annual meeting proceedings*, pp. 10-20.) The Controllers Institute of America is now called the Financial Executives Institute.

1945   Significance of pronouncements on accounting procedure. (Remarks at meeting of committee on accounting procedure of American Institute of Accountants, held December 14, 1944.) *Certified Public Accountant*, volume 25, February 1945, pp. 2-3.

Special items arising out of the war. In American Institute of Accountants, *Contemporary Accounting*, Chapter 10.

1946   Address before New York society of security analysts, February 6.

Problems of corporate financial reports and accounting in the reconversion period. (Summary of address before the New York society of security analysts.) *Analysts Journal*, Volume 2, Second quarter, 1946, pp. 39-46.

Some current developments in accounting principles. (Address before the Ohio society of certified public accountants, September 27, 1945.) *Ohio Certified Public Accountant*, Volume 5, Summer, 1946, pp. 1-9.

1947   Recent developments in accounting in the United States. *Accountancy*, January 1947, pp. 6-9; February 1947, pp. 31-34.

Remarks of the incoming president. In American Institute of Accountants, *Challenges to the accounting profession*, 1947, pp. 4-5.

The increasing significance of the income statement. (In Michigan accounting conference, *Technical papers...Michigan accounting conference, November 13, 1947*, pp. 17-23.) Reprinted in *Journal of Accountancy*, Volume 85, January 1948, pp. 10-19.

Institute's new president sees freedom as accountancy's goal. *Journal of Accountancy*, December 1947, pp. 451-452.

1948   Depreciation and inventory reserves. (Address before American Management Association, January 16, 1948.)

The accounting profession in 1948. *New York Certified Public Accountant*, Volume 18, May 1948, pp. 351-360.

Problems in reporting corporation income. *Harvard Business Review*, Volume 26, September 1948, pp. 513-526. (Paper presented as the Dickinson lectures before the Harvard University Graduate School of Business Administration, April 21 and 22, 1948. Published in two parts in *Harvard Business Review*.)

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Problems of the accountancy profession in the United States in 1948. *Canadian Chartered Accountant*, Volume 53, October 1948, pp. 189-198.

Relationship of accounting to other factors in accurate reporting of inflationary income. *Journal of Accountancy*, Volume 86, November 1948, pp. 361-369.

Retiring president says profession exerts wide influence on outside world. *Journal of Accountancy*, Volume 86, December 1948, pp. 476-477.

Some thoughts about the future of public accounting for women. *Woman C.P.A.*, Volume 11, December 1948, pp. 9-12.

Management of reserves for inventories and depreciation. In American Management Association, *Financial Controls and Breakeven Points*, pp. 30-39.

Truth about your property values--the accounting point of view. In Controllers Institute of America, *Replacement Costs and Depreciation Policies*, pp. 12-28.

1949   Economic restrictions on earnings determined under present accounting conventions. *Journal of Accountancy*, Volume 87, January 1949, pp. 77-80.

Lessons from industrial accounting. *Municipal Finance*, Volume 22, August 1949, pp. 3-8.

Current accounting problems in the presentation of financial statements. (Speech presented at the Great Lakes accounting conference, Milwaukee, September 12, 1949.)

Accelerated depreciation; criteria for its use. *Journal of Accountancy*, Volume 88, November 1949, pp. 372-377.

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1950   Current auditing problems. *Accounting Review*, Volume 25, Number 2, April 1950, pp. 125-132.

Are too many liabilities kept off the balance-sheet? Pension plans, leases, salary contracts have increased in frequency, amount, and risk since the war. *Journal of Accountancy*, Technical and professional notes, Volume 89, May 1950, pp. 419-420.

Show difference between lifo and fifo figures wherever possible. *Journal of Accountancy*, Technical and professional notes, Volume 90, July 1950, pp. 59-60.

1957   Consumer Instalment Credit, Part III, Views on Regulation. United States Federal Reserve System Board of Governors. Washington, DC: Government Printing Office.

1960   New countries...with new problems; a visit to India, Pakistan, Thailand and other countries of the Far East. *Quarterly*, Volume 6, June 1960, pp. 24-31. Publication by Touche, Ross, Bailey and Smart.

1964   Henry Mendes; a memorial. *Quarterly*, Volume 10, March 1964, p. 39. Publication by Touche, Ross, Bailey and Smart.

APPENDIX B

Listing of Writings Attributed to George D. Bailey,
With Selected Annotations

(Note: Chronology within years not guaranteed correct)

1938   Practical application of municipal accounting principles. In American Institute of Accountants *Addresses presented at the conference on municipal accounting and finance*, Chicago, March 28 and 29, pp. 13-18.

Accountants' certificates. *Fourteenth annual Michigan accounting conference*, pp. 15-20, discussion pp. 20-21.

Introduction to round table discussion on: Accountants' certificates. In American Institute of Accountants *Papers on accounting principles and procedures*, pp. 75-77.

1939   Practical problems in governmental accounting. *Accounting Review*, Volume 14, Number 1, pp. 52-56.

> Teach accounting students about governmental accounting. Governments should centralize accounting except for treasury functions. Nobody pays attention to inventories. Depreciate fixed assets of government-owned utilities. It is not necessary for governments to be on a full accrual basis.

Auditing procedure--a development to meet changing conditions. In Ohio State University *Proceedings of the second annual institute on accounting....* May 19 and 20. pp. 63-75.

Testimony of the S.E.C. hearings on auditing practice and procedures at the Central states accounting conference, June 2, 1939; first section presented by George D. Bailey.

> (Speech.) Auditing is based on the auditor's judgment, based on a test of selected transactions. Much of the writing is based on what is done in an audit, degree of knowledge of the client by audit personnel, and internal structure and procedures of audit firms.

Adaptation of programs for independent audits to internal audit and control. Address before Michigan association of certified public accountants, December 14, 1939.

> (Speech.) Audits are not a complete verification of what was done, but rather rest on a test conducted by the auditor. The auditor should consider the state of internal controls, including whether internal auditors are actually doing internal auditing and producing reports or instead are being used for special projects. There has been a shift in emphasis from the balance sheet to the income statement. An auditor "is bound to approach each audit assignment in a spirit of intelligent skepticism." It is advisable for companies to have written accounting policies.

1940   Research work of the American Institute of Accountants. Address presented at the Southern states accountants' conference, New Orleans, La., April 26, 1940. *Journal of Accountancy*, July 1940, pp. 50-57.

(Speech.) "One of the immediate necessities of accountancy is greater uniformity of understanding of accepted accounting principles." (page 50) Despite any findings of scientific research, it has to be applied by, and acceptable to, practicing accountants, and if the research says to do the opposite of what accountants have been doing for so long, then they just won't do it. (colloquial interpretation of page 51)

One of the reasons the Committee on Accounting Procedure and its research staff were formed about November 1, 1938 was the shift of emphasis from the balance sheet to the profit-and-loss statement and a move away from conservatism which might affect future income statements. (page 51) There was a growing demand for uniformity in accounting. "...while experienced accountants abhorred uniformity as such, they did appreciate that it should be possible for two different accountants working with the same set of facts to arrive at the same determination of the proper principle. There was recognition of the fact that some corporate practices permitted by law were not necessarily good accounting...." (page 52)

The committee experimented with the concept of having two separate considerations of a proposed release, one for small or unlisted companies and the other from the standpoint of listed or regulated companies, but found "that the soundness of an accounting principle is not dependent upon the size of the company or whether it is subject to governmental regulations." (page 53)

Regarding the authority of the committee's pronouncements, "...it was realized that the pronouncements of the committee could have no authority beyond that of the standing and integrity of the participants in the decision and the reasoning behind it. If a pronouncement stands the test of challenge by the profession and the test of practice, it will have authority, but if it should survive neither of these tests it would have to be re-examined." (page 53)

There was a discussion of some of the topics the committee had dealt with. For example, the committee favored showing assets at historical cost, but where companies had written up the assets, the related depreciation should be based on the written-up value, and should flow through the income statement. However, that particular subject was especially controversial, and therefore the committee was unable to obtain agreement and issue a complete statement on the matter, issuing only a statement that depreciation should flow through the income statement. (page 56)

Some thoughts on the theory of inventory pricing. In American Institute of Accountants, *Experiences with extensions of auditing procedure*, 1940, pp. 60-67.

(Speech.) Should lower of cost or market be discarded in favor of cost only? If lower of cost or market is used, should it be in the aggregate or item by item? Can accounting approve any other bases of determining cost than first-in, first-out?

1941   Problems of inventory pricing. *Journal of Accountancy*, August 1941, pp. 143-148. Reprinted from Central states accounting conference, *Addresses delivered at Accounting clinic...Stevens Hotel, Chicago*, May 28-29, 1941, pp. 87-94.

(Speech.) Bailey disclosed the issues the research staff and committee had been working on, which had resulted in a release by the committee, printed in the April 1941 *Journal of Accountancy*. In effect, he was simply doing what today would be called continuing professional education, with the subject being an accounting and auditing update.

There were two approaches to "lower of cost or market," that of always writing down to market when lower, or writing down to market only when the sales value of the inventory is impaired. The decision was made to write down only when the value of the inventory was impaired.

Cost problems in national defense contracts. *Robert Morris Associates monthly bulletin*, October-November 1941, pp. 106-111.

(Speech.) He was assigned this topic, but was unprepared to discuss it, so he talked about government contracting in general, and said that some things could happen, but did not specify how they should be handled.

1942   Accounting in war time. At a joint meeting of the Minnesota Society of Certified Public Accountants and the School of Business Administration of the University of Minnesota, held in Minneapolis, on April 28.

(Speech.) The government contracts in this war are bigger in dollar terms than those in the last war, so the auditing needs are bigger, too. Since many of the contracts are cost plus, or cost plus fixed fee, there is a need to know what costs are. Given the increased demands on the accounting profession, and the reduced supply of accountants as many went to war, extensions of time to file SEC reports and tax returns are advisable. Audit work should be spread out; where good internal control exists, some work should be done ahead of year end.

Practice of public accounting in wartime, *Journal of Accountancy*, July 1942, pp. 18-24.

Reprint of speech listed immediately above.

Accounting problems in presentation of cost-plus-fixed-fee contracts in financial statements. In Michigan accounting conference, *Technical papers of the seventeenth annual Michigan Accounting conference, 1942*, pp. 23-27. Also in *Journal of Accountancy*, December 1942, pp. 503-510.

Bailey was chairman of the American Institute of Accountants committee on government audit of contractors' costs. During World War I, the federal government had used cost plus a percentage of cost as the payment basis for contracts, but this basis gave contractors incentives to cheat by padding costs. The government had switched to cost plus fixed fee contracts. Due to the entry of the United States into World War II, there were suddenly a large number of such contracts. This item was a technical discussion of the contracts and special accounting treatments arising from them, such as the fact that material belongs to the government as soon as it is delivered to the contractor's plant, rather than when the finished product is completed.

1943   Accounting problems of war contracts. *California Certified Public Accountant*, August 1943, pp. 2 and 6-13. Also in *Journal of Accountancy*, September 1943, pp. 211-219.

(Speech.) By this time, the Committee on Accounting Procedure had issued Accounting Research Bulletin 19. He quoted from that bulletin, and summarized its provisions. He also told the audience some of the things the government was doing to audit contract performance, given the government's inability to obtain sufficient personnel to do detailed checking. He discussed the fact that termination claims (claims made by contractors against the government when contracts are terminated early) were to be negotiated, the accountants' role in assisting the firm to prepare the claim, and the hoped-for acceptance by the government of claims audited by outside accountants without doing any more checking. With regard to auditing procedure, the government was refusing to verify amounts payable to contractors, thus making auditors unable to verify receivables. Also, some clients were claiming that due to production pressures for the war effort, they simply did not have time to take a physical inventory.

Government procedures--existing and proposed. In automotive council for war production. *Proceedings of the contract termination conference*, September 28, 1943, pp. 4-14.

Public accountant and war contract termination. In Michigan accounting conference, *Technical papers of the eighteenth conference*, November 1943, pp. 1-7.

Remarks of the chairman. In American Institute of Accountants, *Audits under terminated war contracts*, 1943, pp. 1-2 and 5-8.

(Speech.) Introduction of Commander J. H. Stewart, United States Navy, who gave a speech.

War contract problems; remarks of the chairman. In American Institute of Accountants, *Accounting problems in war contract termination*, pp. 1-2.

(Speech.) Introduction of Commander J. H. Stewart, United States Navy, who gave a speech.

There were two listings in the *Accountants Index*, but this item and the one immediately above are both the same item.

United States Senate Committee on military affairs. Statement of George Bailey, chairman, contract termination committee, American Institute of Accountants. *Journal of Accountancy*, December 1943, pp. 526-531.

(Speech.) He was in favor of the government's accepting the termination claim prepared by the contractor with the accountant's assistance. In accordance with a resolution adopted at the annual meeting of the American Institute of Accountants, he wanted one government agency to be able to bind all government agencies through negotiated settlements, although the General Accounting Office would be permitted to audit after the fact for fraud only. Accountants would not certify the reasonableness of the termination claim, though, which seemed to surprise Senator Revercomb, who was asking questions of Bailey. Bailey asserted that certifying the claim would slow down the process, plus require trained personnel who were in short supply.

1944   The public accountant and war contract termination. *Journal of Accountancy*, February 1944, pp. 106-108.

> "...at the present time the prime contractor is made responsible for settling the claims of his subcontractors...." (p. 106) The accountant can perform a lot of services in this area, but he should know what he is doing.

Termination of government contracts from the viewpoint of industry and the certified public accountant. *New York Certified Public Accountant*, Volume 14, May 1944, pp. 351-361.

> (Speech.) When a war contract has been terminated, get together good documentation of costs involved in winding up the contract to buttress your case, which will be decided in negotiations with a government team. The General Accounting Office says there have been a lot of fraudulent cases approved, so some people want to do something about it. They are considering getting the office of the Comptroller General involved, but we want to keep him out of it. In fact, we'd like for one government agency to be able to settle on behalf of all government agencies contracting with the same firm, even when that particular agency has no knowledge of the other agencies' requirements. We also want contractors to be able to settle claims with sub-contractors and not have them reviewed by the government. So far, claims submitted to the government have been cut an average of 30% to 40% because the costs apparently were not justified under the contract. Public accountants are not often called upon by clients to certify costs claimed in these termination claims.

The accountant and war contract termination. Printed elsewhere and in *Journal of Accountancy*, July 1944, pp. 36-41.

> (Speech.) The government will not accept the independent public accountant's report as evidence that the amount of the claim is proper. However, many subcontractors' claims are settled by the contractor, and the contractor can have the public accountant check the subcontractor's claim, plus help the contractor in filing his claim with the government. Keep the General Accounting Office out of the contract termination process, except to allow them to audit after the fact.

Cost phases of war contract termination, New York, National Association of Cost Accountants (now the Institute of Management Accountants), August 1, 1944. *N.A.C.A. bulletin*, Volume 25, Number 23, section 1, pp. 1235-1254.

> Termination problems. (In Controllers Institute of America, *Contract termination and industry reconversion:* number 1 of annual meeting proceedings, pp. 10-20.) The Controllers Institute of America is now called the Financial Executives Institute.

1945   Significance of pronouncements on accounting procedure. (Remarks at meeting of committee on accounting procedure of American Institute of Accountants, held December 14, 1944.) *Certified Public Accountant*, volume 25, February 1945, pp. 2-3.

Special items arising out of the war. In American Institute of Accountants, *Contemporary Accounting*, Chapter 10.

This book was intended as a refresher course for accountants who had been serving in the military during World War II. This chapter discussed war reserves (purported estimates of cost to reconvert from war production to peacetime production, plus unspecified "contingencies"), cost-plus-fixed-fee contracts, renegotiation (government changing the price of a contract retroactively because it turned out the contractor made too much profit on it), claims under terminated war contracts, and inventories frozen by war controls (inventory not permitted to be sold for civilian purposes so it would be available for the war effort). It also reproduced some Accounting Research Bulletins which dealt with those subjects.

1946   Address before New York society of security analysts, February 6.

Problems of corporate financial reports and accounting in the reconversion period. (Summary of address before the New York society of security analysts.) *Analysts Journal*, Volume 2, Second quarter, 1946, pp. 39-46.

Some current developments in accounting principles. (Address before the Ohio society of certified public accountants, September 27, 1945.) *Ohio Certified Public Accountant*, Volume 5, Summer, 1946, pp. 1-9.

> (Speech.) He discussed the work and structure of the Committee on Accounting Procedure, which was interested in narrowing differences in accounting practice. Purchased goodwill should be amortized. "...there has been a shift in the emphasis of accounting from the balance sheet to the statement of income." (p. 3) There has been a lot of discussion on "what constitutes the most practically useful concept of income for the year...." (p. 3) Historical cost is sometimes not adequate for the financial statements. (p. 4) Quasi-reorganization is receiving attention. (pp. 4-5) The increase of the federal corporate income tax rate to 85% highlighted some problems, such as charging an expense to retained earnings but the related tax benefit to operations. (p. 6)

1947   Recent developments in accounting in the United States. *Accountancy*, January 1947, pp. 6-9; February 1947, pp. 31-34.

Remarks of the incoming president. In American Institute of Accountants, *Challenges to the accounting profession*, 1947, pp. 4-5.

> (Speech.) The accounting profession has to do a good job if it wants to be free of intrusive government regulation.

The increasing significance of the income statement. (In Michigan accounting conference, *Technical papers...Michigan accounting conference, November 13, 1947*, pp. 17-23.) Reprinted in *Journal of Accountancy*, Volume 85, January 1948, pp. 10-19.

> (Speech.)
>
> The Committee on Accounting Procedure had issued Accounting Research Bulletin Number 32, "Income and Earned Surplus." This issue of *Journal of Accountancy* contained an editorial about ARB 32, a paper attributed to George Bailey defending ARB 32, the text of ARB 32, and a letter from the chief accountant of the SEC saying that application of ARB 32 seems "to be susceptible to abuse and may result in misleading income and earned surplus

statements in conflict with published rules and opinions of the Commission.... ... Under these circumstances the Commission has authorized the staff to take exception to financial statements which appear to be misleading, even though they reflect the application of Accounting Research Bulletin No. 32." (*Journal of Accountancy*, January 1948, p. 25)

Bailey did not directly defend ARB 32. Instead, he figuratively "waved the flag," saying shortly after World War II had ended, "We know that our free society, a free, competitive enterprise, and our corporate economy go hand in hand." (page 10) He then briefly discussed ARB 23 (Accounting for Income Taxes), 24 (Accounting for Intangibles), 25 (Accounting for Terminated War Contracts), 26 (Accounting for the Use of Special War Reserves), 27 (Emergency Facilities), 28 (Contingency Reserves), 29 (Inventory Prices), and 31 (Inventory Reserves).

ARB 32, Income and Earned Surplus, was defended on the grounds of "sharpening net income." Bailey used that phrase, but he appears not to be the only one. ARB 32 discussed the all-inclusive concept of net income and the current operating performance concept. ARB 32 imposed the current operating performance concept. Accordingly, companies were to exclude from the determination of the year's net income all "material charges or credits ... specifically related to operations of prior years, ... (or) resulting from unusual sales of assets not acquired for resale and not of the type in which the company generally deals, (or) not usually insured against, such as those resulting from wars, riots, earthquakes, and similar calamities or catastrophes ... (or) the write-off of a material amount of intangibles ... (or) the write-off of material amounts of unamortized bond discount or premium and bond issue expenses at the time of the retirement or refunding of the debt before maturity." (ARB 32 as printed in *Journal of Accountancy*, January 1948, p. 23)

That would give companies an incentive to hide expenses of one year until the following year, at which time they would be **<u>required</u>** to exclude them from the income statement. That is one of the reasons the SEC was opposed.

ARB 32 was in contrast to ARB 8, which expressed a preference for the all-inclusive concept. The topic was revisited after ARB 32 was issued, resulting in ARB 35, ARB 41, ARB 43, APB 9, APB 11, APB 30, SFAS 4, and SFAS 16 (Kiger and Williams 1977).

Institute's new president sees freedom as accountancy's goal. *Journal of Accountancy*, December 1947, pp. 451-452.

(Speech.) Excerpts from "Remarks of the incoming president;" see above.

1948   Depreciation and inventory reserves. (Address before American Management Association, January 16, 1948.)

(Speech.) Inventory reserves assume that the replacement cost of inventory will fall. Revaluation of fixed assets, and depreciation on the higher value, assumes that the replacement cost of fixed assets will not fall. The two positions are not consistent. "It is my belief that corporate financial reporting and our corporate society is better served by keeping the gains we have made in the sharpening of corporate income...rather than to have the

disorder, confusion and even frustration that would come from the use of arbitrary methods of reducing income...." (page 7 of speech manuscript)

"The position which I have just stated is also that of the Committee on Accounting Procedure of the American Institute of Accountants, as published in September. This release took the position that the time had not come to scrap the traditional policy of depreciation on cost, nor had the time come to give Committee approval to a choice of the two methods...." (pages 7-8 of speech manuscript)

The accounting profession in 1948. *New York Certified Public Accountant*, Volume 18, May 1948, pp. 351-360.

(Speech.) This was essentially the president of the American Institute of Accountants visiting the meeting of the New York Society and giving the members an update on the political situation faced by certified public accountants.

Problems in reporting corporation income. *Harvard Business Review*, Volume 26, September 1948, pp. 513-526. (Paper presented as the Dickinson lectures before the Harvard University Graduate School of Business Administration, April 21 and 22, 1948. Published in two parts in *Harvard Business Review*.)

(Speech.) This speech was delivered to the Harvard School of Business Administration. The Harvard class of 1949 was the first postwar class, and was subsequently referred to as "the class the money fell on" because the class members did so well in their careers.

If corporations do not provide information about themselves, then people might demand that the government take over the responsibility of providing information. People do not believe corporate reporting. (p. 514) People do not understand the role of profits. (p. 515) He recommended adult education in accounting because so many people were ignorant about it and the business press was inadequate. (p. 517) Someone needs to determine who reads corporate reports and what they use the reports for. (pp. 518-519) The stockholder needs qualitative information, not just quantitative information, and the information needs to be comparable across companies. (p. 520) Instead of showing various steps in the computation of net income, there should be just one figure. (p. 521) He discussed the evolution in accounting terminology. (p. 522) Comparability across companies is desirable, even if that means reducing the variety of accounting principles. (p. 523)

Concepts of income. *Harvard Business Review*, Volume 26, November 1948, pp. 680-692. (Paper presented as the Dickinson lectures before the Harvard University Graduate School of Business Administration, April 21 and 22, 1948. Published in two parts in *Harvard Business Review*.)

(Speech.) This speech was delivered to the Harvard School of Business Administration. The Harvard class of 1949 was the first postwar class, and was subsequently referred to as "the class the money fell on" because the class members did so well in their careers.

There is discussion concerning whether the income statement is intended to show the results of operations for the year or whether it is to be the channel whereby all items of income, cost, and expense get into the accumulated earnings of the company. "...obviously, the figure of

earnings for the year is the important item." (p. 680) "I regard the all-inclusive argument as a dangerous doctrine...." (p. 681) The Committee on Accounting Procedure has regularly supported exclusion of items from earnings "which would result in distortion or possible misleading inferences," and reaffirmed its position in Accounting Research Bulletin Number 32 which *recommended* exclusion under stated standards, but "the American Accounting Association has consistently advocated the all-inclusive theory...." (p. 682) The SEC is disinclined to accept the position of the Committee on Accounting Procedure. (p. 683) He complained that the financial press tended to call the bottom-line figure "earnings," after inclusion of special items, instead of the allegedly single-year figure above which purported to be earnings, although on page 681 he had conceded that there had been many abuses in calling items special items. (p. 684) A research group is trying to define accounting terminology, including the various concepts of income. Financial statements are a combination of accounting, tax, legal, and economic concepts. (p. 687) It is desirable to minimize the variety of accounting practices among companies. (p. 689) Corporate income taxes should not be based on annual corporate income, unrealized income, nor "inventory profits except on the basis of current replacement costs," nor to income based on depreciation at historical cost. Corporate income taxes would be levied only on what was paid out as dividends to shareholders; income retained in the business apparently would escape taxation. (pp. 689-690) Financial statements adjusted for general price level changes might be desirable; we observe that other people have advocated their use. (p. 691)

Problems of the accountancy profession in the United States in 1948. *Canadian Chartered Accountant*, Volume 53, October 1948, pp. 189-198.

Relationship of accounting to other factors in accurate reporting of inflationary income. *Journal of Accountancy*, Volume 86, November 1948, pp. 361-369.

(Speech.) A survey showed that most user groups of financial statements do not want general-price-level-adjusted figures for fixed assets to replace historical cost. Of those in favor, many would be satisfied with supplemental disclosures, rather than replacing the historical-cost financial statements.

Retiring president says profession exerts wide influence on outside world. *Journal of Accountancy*, Volume 86, December 1948, pp. 476-477.

(Speech.) He was glad he had been president for the past year. The Institute is a good organization.

Some thoughts about the future of public accounting for women. *Woman C.P.A.*, Volume 11, December 1948, pp. 9-12.

Management of reserves for inventories and depreciation. In American Management Association, *Financial Controls and Breakeven Points*, pp. 30-39.

(Speech.) Most of this is a rehash of earlier speeches. For example, it includes this wording, which also appears in Depreciation and inventory reserves. (Address before American Management Association, January 16, 1948.) See that entry above.

"The position which I have just stated is also that of the Committee on Accounting Procedure of the American Institute of Accountants, as published in September. This release took the position that the time had not come to scrap the traditional policy of depreciation on cost, nor had the time come to give Committee approval to a choice of the two methods...." (page 34)

Although Bailey advocated historical cost, this speech contains the possibility that current replacement cost could be disclosed as supplemental information (page 35). On page 37, however, he says, "it is still possible to set up on the books current values of facilities and take depreciation on such current values against earnings. This, of course, requires objective evidence as to the propriety of the amount written up and requires a continuation of the new position, once started. It requires that the transaction be entered into in good faith in order to avoid the aura of impropriety that in the past has surrounded such write-ups. But it is a possible method. I think, myself, that it has more to recommend it than appears at first glance...."

Truth about your property values--the accounting point of view. In Controllers Institute of America, *Replacement Costs and Depreciation Policies*, pp. 12-28.

1949   Economic restrictions on earnings determined under present accounting conventions. *Journal of Accountancy*, Volume 87, January 1949, pp. 77-80.

He discussed inventories, plant facilities, and taxation as impacted by changing price levels.

Lessons from industrial accounting. *Municipal Finance*, Volume 22, August 1949, pp. 3-8.

Current accounting problems in the presentation of financial statements. (Speech presented at the Great Lakes accounting conference, Milwaukee, September 12, 1949.)

Accelerated depreciation; criteria for its use. *Journal of Accountancy*, Volume 88, November 1949, pp. 372-377.

With the changing price level whereby cost of fixed assets are rapidly rising, companies have been reporting straight-line depreciation on older, less-costly assets. That straight-line depreciation is nowhere near the amount it will take to replace the assets. Since we are not revaluing the assets on the balance sheet, accelerated depreciation will yield a result which is part of what is desired.

United States Congress. Corporate profits, hearings before the Joint committee on the economic report, Congress of the United States, eightieth Congress, second session, pursuant to Sec. 5(A) of Public law 304, 79th Congress, December 6 ... 21, 1948. Washington, DC: Government Printing Office, 1949.

1950   Current auditing problems. *Accounting Review*, Volume 25, Number 2, April 1950, pp. 125-132.

(Speech.) Accountants in small towns are adequate to audit small companies because they know the small companies very well. (page 126) However, what was of interest to Bailey was larger businesses. The auditor should obtain a knowledge of the company's internal

control, and should lay out an audit program. (page 127) "It is a commonplace to be critical of college graduates because of their inability to write either legibly or logically. ... The way to be able to write is to have practice in writing. If it is possible in the colleges to find more specific problems to be developed in writing analytically and logically, there will be much benefit." (page 128) He also discussed timing of audit procedures, mandatory procedures (page 129), accounts receivable (page 130), and inventories (page 131). "The profession is not satisfied that it has reached proper standards of disclosure. At the present time, the desires of the public for more information clash with the desires of management to disclose no information that will be competitively harmful...." (page 132)

Are too many liabilities kept off the balance-sheet? Pension plans, leases, salary contracts have increased in frequency, amount, and risk since the war. *Journal of Accountancy*, Technical and professional notes, Volume 89, May 1950, pp. 419-420.

Regarding leases, "there has been some suggestion that the footnotes show the minimum liability by years or blocks of years. This is likely to be misleading. As leases run out, new ones have to be written. I suggest that the basic information can be given by showing each year the total rentals for that year with the other correlated leasehold expenses, thus showing the extent of annual charges and the expectations thereof." (page 420)

Regarding pensions, "the important point is to show all current pension costs each year as an expense. I see no need to show the liability for past service as a liability, and a corresponding amount as a deferred charge." (page 420)

Show difference between lifo and fifo figures wherever possible. *Journal of Accountancy*, Technical and professional notes, Volume 90, July 1950, pp. 59-60.

The title is an accurate description of the piece.

1957   Consumer Instalment Credit, Part III, Views on Regulation. United States Federal Reserve System Board of Governors. Washington, DC: Government Printing Office.

Businesses were generally opposed to imposition of controls on consumer installment credit. Where businesses did not oppose such controls, that was only if the controls were severely limited in their impact.

1960   New countries...with new problems; a visit to India, Pakistan, Thailand and other countries of the Far East. *Quarterly*, Volume 6, June 1960, pp. 24-31. Publication by Touche, Ross, Bailey and Smart.

1964   Henry Mendes; a memorial. *Quarterly*, Volume 10, March 1964, p. 39. Publication by Touche, Ross, Bailey and Smart.

THE CHANGING LIFO-FIFO DILEMMA AND ITS IMPORTANCE TO THE ANALYSIS OF FINANCIAL STATEMENTS

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ABSTRACT

This paper examines how the probable demise of the LIFO inventory costing method will affect companies currently using LIFO as well as the financial analysis of those companies. Key financial ratios are examined along with how these ratios may be affected by the switch away from LIFO. A mixed bag of changes to key ratios, both improvements and deteriorations, are presented, along with a discussion of more complex topics for whom the impact of these changes are less clear.

INTRODUCTION AND BACKGROUND

Financial statements are the lifeblood of finance. Whether trying to evaluate a potential debt or equity investment or assess the creditworthiness of a potential borrower, the ability to properly analyze financial statements is crucial to the success of decision-making. One key element in this process is the determination and assessment of various financial and accounting ratios that allow one to better interpret the results of operations and the financial condition of the entity being evaluated. As this is almost wholly dependent on accounting numbers arising out of the accounting process, it is imperative that one understands the process and the reporting standards in place to guide such a process.

One important aspect of many-a-company's activities is the accumulation and subsequent sale of its inventory. Although there are many rules and guidelines in place governing the reporting of inventory, no other factor affects the analysis of financial statements greater than the method used to allocate costs between the units of inventory sold and those remaining unsold at the end of the reporting period.

For most entities, this decision comes down to one of three choices: the average cost method, the FIFO (first-in, first-out) method, and the LIFO (last-in, last out) method. Of particular interest are the polar extremes of FIFO and LIFO because the use of each causes the greatest differences in various figures reported on the balance sheet and income statement, and, ultimately, the financial ratios based on those figures.

The FIFO method assumes that the costs associated with the inventory that has been on hand the longest are the ones that are matched against the revenues generated from selling the inventory in the current period. Typically, in times of rising prices, the result is a lower amount assigned to

the cost of goods sold on the income statement and a higher amount allocated to the valuation of the unsold inventory. Conversely, the LIFO method instead matches the most recent costs of inventory against current revenues, resulting in a higher amount associated with the cost of goods sold and a lower amount going towards inventory on-hand.

The choice between the two is typically based on a comparison of the advantages from using LIFO with the disadvantages. One of the more persuasive arguments for using LIFO is that it better fulfills a key assumption in accounting of matching current expenses with current revenues. On the other hand the most *pervasive* reason for choosing LIFO is the resulting tax benefits and improved cash flow situation. The so-called "LIFO conformity rule" states that a firm choosing LIFO must do so for both financial accounting and tax purposes. Under the LIFO method, more costs are charged off against current revenues, resulting in a lowering of before-tax earnings as well as the amount of taxes paid. This reduction in taxes paid (perhaps it is more accurate to say the deferral of taxes paid) improves the current cash flow situation for the reporting entity.

The tax benefits associated with using the LIFO method must in turn be balanced against the other reality of reporting lower earnings. For example, reporting lower earnings may have negative repercussions in meeting various debt covenants as well as in the valuation of the company's common stock. Furthermore, the remaining inventory is reported at an understated value on the balance sheet. To lessen much of the uncertainty regarding this information, companies that use the LIFO method are required to report the extent to which their inventory is undervalued relative to using the FIFO (or average cost) methods; this valuation adjustment is typically referred to as the LIFO reserve account.

However, the crucial choice of inventory costing method will soon likely vanish. There has been a long-term effort under the auspices of the International Accounting Standards Board to harmonize global accounting standards so that a single set of international financial reporting standards (IFRS) could be used anywhere. The Securities and Exchange Commission (SEC) has recently proposed that U.S. firms will have the opportunity to switch from U.S. generally accepted accounting principles to the new IFRS beginning in 2010 and would be *required* to do so by 2014. One important aspect of this change is the elimination of the use of the LIFO method because the IFRS simply does not allow it. This will likely have a dramatic impact on companies that currently use LIFO. This paper examines how this change in reporting standard would likely affect the financial statements of companies using LIFO and, more importantly, the analysis of those statements.

INVENTORY COSTING METHODS AND FINANCIAL STATEMENTS

The choice of inventory costing method effects a company's financial statements in a variety of ways. On the balance sheet, the use of the LIFO method tends to understate the value of a company's inventory. Consequently, it also understates the amount of current assets, as well as total

assets, of the company. This ultimately will affect any ratio calculation involving inventory (e.g., days' sales in inventory), current assets (e.g., current ratio), or total assets (e.g., return on assets).

On the income statement, the use of the LIFO method typically overstates the cost of goods sold and thus understates gross profits, operating profits, and net profits. In turn, any ratio involving profit figures will be affected. However, there is one important exception. Occasionally, companies will sell sufficient inventory so that not only do current-cost inventory items get matched against the revenues, but also earlier *layers* of older costs and the value of the resulting LIFO reserve account is reduced. This leads to the *understating* of the cost of goods sold and an *overstating* of reported profits.

In any case, analyzing financial statements for companies using the LIFO method has always been difficult, particularly if comparisons are made with companies using the FIFO method. With the probable elimination of LIFO, this analytical problem will be minimized in the future. However, the elimination of LIFO can profoundly affect the analysis of companies currently using the LIFO method. Some of these potential effects are examined here.

DATA AND METHODOLOGY

All financial statement data were gathered from Compustat based on the data that was current through January 30, 2009. Relevant figures from the balance sheet and income statement were taken from the most recent annual reports as well as the three years prior. Several traditional financial ratios (the current ratio and quick ratios, days' sales in inventory, debt and debt-equity ratios, return on assets, and Altman Z-score) were then calculated based on the equations summarized below.

Exhibit 1
Calculation of Financial Ratios
Current ratio = Current assets ÷ Current liabilities
Quick ratio = (Current assets - Inventory) ÷ Current liabilities
Days' sales in inventory = Inventory ÷ Daily cost of goods sold [COGS/365]
Debt ratio = Total liabilities ÷ Total assets
Debt-equity ratio = Total liabilities ÷ Total common equity
Return on assets = Net income ÷ Average total assets
Altman Z-score = $1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5$, where X_1 is defined as net working capital (current asset - current liabilities) divided by total assets, X_2 as retained earnings divided by total assets, X_3 as earnings before interest and taxes divided by total assets, X_4 as market value of the company's equity to the book value of its liabilities, and X_5 as sales divided by total assets Free cash flow (as taken from and defined by Compustat) = Net cash flows from operations less cash dividends and less capital investment

The current and quick ratios, as well as the days' sales in inventory, are commonly used ratios to evaluate a company's short-term liquidity. Higher current and quick ratios all typically associated with greater amounts of liquidity, as is a lower amount of days' sales in inventory. The debt and debt-equity ratio are used to assess the overall amount of external financing used to support a company's operations. Higher amounts, particularly when they become extreme, are typically viewed more negatively than smaller amounts. The return on assets is one of the more common measures of the profitability of the company's operations with higher amounts unsurprisingly viewed as more desirable. The Altman Z-score is a common metric used to assess a company's creditworthiness. An overall score of 3.0 is typically considered a minimum threshold below which the likelihood of default or of bankruptcy would become a serious concern. Because the score itself includes a wide variety of ratios, it was included to assess the potential impact on the change in credit standing of companies if they are no longer able to use the LIFO method. Likewise, many valuation models use the free cash flows generated by a company in evaluating a company's stock so these amounts were examined to assess the potential impact on the change in the valuation of the stock of companies using the LIFO method.

After calculating the various ratios based on the reported results found in the companies' financial statements, they were recalculated under the assumption that the LIFO method was no longer allowed. Ratio involving inventory, current assets or total assets was adjusted to include the value of the LIFO reserve account for that period. Note that the liabilities of the company would also be affected as the underreported profits from using the LIFO method would now be reported, creating an immediate tax liability. Current tax regulations allow for the payment of this liability to be spread over four years (Bloom, 48). Thus, for purposed of this study, twenty-five percent of the newly-created tax liability is allocated to current liabilities (due within one year) and the remaining amount to noncurrent liabilities. The equity (retained earnings) of the company would subsequently be affected by the resulting difference between the adjustment made to assets and made to the liabilities.

Ratios involving before-tax income statement items (e.g., cost of goods sold, earnings before interest and taxes) were adjusted to account for any positive or negative increments in the cost of goods sold. If the LIFO reserve account increased (decreased) during a particular time period, the assumption was that the cost of goods sold was overstated (understated) by that amount and adjusted accordingly. After-tax figures (e.g., net income) were adjusted to also remove the tax expense associated with the increase or decrease in cost of goods sold. For simplicity, a marginal tax rate of thirty-five percent was assumed in each case to eliminate the impact of other items (e.g., capital gains and losses and tax loss carryforwards) in the calculation of individual company's effective-tax rates for any given period.

OVERALL RESULTS

From the Compustat database we found that 385 companies were listed as using the LIFO method. However, only 333 of these actually reported a LIFO reserve account balance. Further reductions in the database (e.g., companies that did not report a stock price or another relevant variable such as current assets) resulted in a final sample size of 262 companies. The sample ranged in size from some of the largest and best-known companies in the world (ExxonMobil, Dow Chemical) to others with scarcely $10 million in total assets. Although heavily concentrated in specific industries (e.g., energy and minerals), companies using the LIFO method were found across a wide spectrum of industries and included companies as distinct as Walgreens, Colgate-Palmolive, Harley-Davidson, and Whirlpool.

As seen below in Exhibit 2, the use of the LIFO method can have a significant effect on various financial ratios. Depending on the extent to which LIFO had understated inventory and overstated cost of goods as well as other company-specific factors, we find a wide range of changes to many of the ratios. For example, the median days' sales in inventory figure increases by over thirteen days, a twenty percent increase over the current median of 63.7 days. This is not necessarily surprising given the extent to which the inventories are understated and to a lesser degree the extent to which cost of goods sold may have been overstated.

Exhibit 2: Selected Figures for Entire Sample: As-Reported and Adjusted Values			
	As-Reported (Medians)	Adjusted (Medians)	Percentage Change
Current Ratio	1.89	1.96	3.8%
Quick Ratio	1.10	1.09	-1.3%
Days' Sales in Inventory	63.66	76.75	20.5%
Debt Ratio	54.93%	54.52%	-0.8%
Debt-Equity Ratio	117.43%	114.01%	-2.9%
Return on Assets	4.01%	4.10%	2.3%
Altman Z-Score	3.63	3.59	-1.1%
Free cash flow	$81.1	$75.3	-7.1%

Other ratios did not demonstrate as large of a change but may be equally important. Adding the LIFO reserve amount to the reported inventory figure and the related tax liability to current liabilities has the effect of increasing the current ratio (by almost four percent on average), yet also reducing the quick ratio. This apparent disparity occurs because inventory is included in the current ratio but not the quick ratio (affecting the numerator of each ratio differently), but the current tax

liability increases the amount of current liabilities and thus affects the denominator of both ratios equally.

On the other hand the debt and debt-equity ratios both decrease, which makes the average company appear less leveraged. This is not surprising, given that, except for companies with extremely low amounts of debt, the adjustments to the denominator (total assets and equity, respectively), are proportionately larger than the adjustments to the numerator (total liabilities).

Similar comments can be made about the average increase in the return on assets. Although the denominator (average total assets) is typically increased, often by large amounts because of the nominal size of the LIFO reserve account, net income typically rises as well, and proportionately in greater amounts, particularly when the LIFO reserve account increases substantially in any given time period.

The average Altman Z-score fell by approximately one percent. Although it would appear that the ratio should fall with the inclusion of the LIFO reserve in the total asset figure that appears in the denominator of four of the five variables, this effect is offset in large degree by increases in working capital, earnings before interest and taxes, and retained earnings that make up three of the numerators.

One component of the Z-score, however, is more difficult to assess, that being the ratio of market value of equity to book value of liabilities. The market value of a company's equity could be positively affected by the higher reported profits but more likely will be negatively affected by the reduction in cash flows from the company having to make higher tax payments. We found that the median amount of free cash flows fell by over seven percent. Simple common stock valuation models would thus forecast a reduction in a company's stock price by at least seven percent; and likely significantly more. This point will be examined in more detail later.

COMPANY-SPECFIC RESULTS

The changes in the ratios highlighted above are by no means consistent across the board. In fact, the possible impact from the elimination of the LIFO method on individual companies can be almost *grotesquely* affected. To examine this, we select three random case histories to demonstrate how differently the changes may affect individual companies.

We begin by examining ConocoPhillips, one of the largest companies in the world. Over the past three years, Conoco has expanded in size from $107 billion in total assets to nearly $178 billion. During this period, the reported value of its total inventories went from $3.7 billion, up to $5.2 billion, and then more recently back down to $4.2 billion. At the same time, the value of its LIFO reserve moved from $4.7 billion, down to $4.2 billion, and then jumped up to $6.7 billion. Conoco represents a classic case of the typical effects on key financial ratios. A summary of the results for Conoco is found below in Exhibit 3.

Exhibit 3: Selected Figures for ConocoPhillips: As-Reported and Adjusted Values			
	As-Reported Figures	Adjusted Figures	Percentage Change
Current Ratio	0.92	1.14	24.3%
Quick Ratio	0.76	0.75	-2.1%
Days' Sales in Inventory	11.21	29.44	162.6%
Debt Ratio	49.94%	49.40%	-1.1%
Debt-Equity Ratio	99.77%	97.63%	-2.1%
Return on Assets	5.90%	6.63%	12.5%
Return on Assets (previous year)	2.68%	2.34%	-12.6%
Altman Z-Score	2.73	2.76	1.0%
Free cash flow	$11,891.0	$11,307.6	-4.9%

If not for using LIFO, Conoco would have reported a much higher current ratio. Likewise, days' sales in inventory would have more than doubled in length to almost thirty days. Its return on assets would have been more than twelve percent higher. On the other hand, we also find at least one of the problems that can occur in cases where the value of the LIFO reserve falls, as it did for Conoco two years ago. The dual components of having net income overstated and total assets (because of the inventory) understated combine to produce an actual return on assets figure that is more than twelve percent less than the one based on the reported results.

Exhibit 4: Selected Figures for Central Steel & Wire: As-Reported and Adjusted Values			
	As-Reported Figures	Adjusted Figures	Percentage Change
Current Ratio	2.87	4.34	51.2%
Quick Ratio	1.95	1.62	-17.2%
Days' Sales in Inventory	35.35	133.23	276.8%
Debt Ratio	44.76%	41.05%	-8.3%
Debt-Equity Ratio	81.01%	69.63%	-14.0%
Return on Assets	-7.57%	-0.21%	-97.3%
Return on Assets (previous year)	8.32%	4.75%	-42.9%
Altman Z-Score	5.43	4.42	-18.6%
Free cash flow	$11.8	($2.8)	-123.5%

We next move to Central Steel & Wire. Over the past three years, the size of CS&W has remained relatively stable, beginning with $299 million in total assets two years ago, growing to $307 million the subsequent year, and then shrinking to $272 million last year. However, the size of its inventory did not follow the same pattern, as it moved from $73 million to $58 million and then to $64 million. Even more remarkable is the extent to which the LIFO reserve valuation dwarfed the actual value of the inventory, as it shifted from $141 million to $134 million and finally ending at $167 million. A summary of the results for CS&W is found below in Exhibit 4.

With CS&W we find many of the same changes as we found with Conoco. However, given how much larger the LIFO reserve account is relative to the size of the company, the changes are more profound. We have a current ratio increasing by more than fifty percent and a quick ratio falling by more than seventeen percent. The days' sales in inventory amount almost triples, adding nearly 100 days to the reported amount. The debt and debt-equity ratios also fall precipitously. The Altman Z-score falls an entire point. Although still well above the 3.00 threshold, the reduction from 5.43 to 4.42 would likely not be seen in a very favorable light. Nor would the elimination of the reported free cash flows. For example, CS&W would likely not have had sufficient free cash flows to cover the additional taxes that would have been due had the LIFO method been eliminated. Lastly, as with Conoco, we find the conflicting impact on return on assets due to increases and decreases to the LIFO reserve account. Two years ago, in a period with the LIFO reserve account fell, the return on assets figure would have been cut in half had the LIFO method not been used. The following year, when the LIFO reserve increased, we find that the reported losses would have been all but eliminated and the significantly negative return on assets reduced to essentially nil.

Lastly, we move to Hancock Fabrics, a smaller company that shrank during this period from $242 million to $151 million in total assets. Its inventory, which makes up an extremely very large percentage of its total assets, unsurprisingly followed the same pattern, falling from $192 million to $114 million. On the other hand, the LIFO reserve valuation remained relatively constant over this period, beginning at $39 million, and then moving up to $42 million before declining last year to $36 million. A summary of the results for Hancock is found below in Exhibit 5.

Again, we find many of the same results as with both Conoco and CS&W, the only differences being a matter of degree. However, perhaps more noteworthy, is the impact on the Altman Z-score. Based on its reported results we find its Altman Z-score from last year would have been a sold, but not stellar, 3.28. But after making the adjustments associated with eliminating LIFO, we find this number fall to 2.94, below the "magic" 3.00 threshold. And this does not include any adjustment to the stock price (and value of its common equity) that might result from the reduction in its cash flows associated with having to pay additional taxes!

Exhibit 5: Selected Figures for Hancock Fabrics: As-Reported and Adjusted Values			
	As-Reported Figures	Adjusted Figures	Percentage Change
Current Ratio	2.63	3.34	27.3%
Quick Ratio	0.46	0.42	-8.1%
Days' Sales in Inventory	180.42	256.10	41.9%
Debt Ratio	82.08%	72.93%	-11.1%
Debt-Equity Ratio	457.83%	269.38%	-41.2%
Return on Assets	18.36%	13.55%	-26.2%
Return on Assets (previous year)	-4.29%	-2.97%	30.9%
Altman Z-Score	3.28	2.94	-10.2%
Free cash flow	(24.3)	(27.5)	13.1%

SUMMARY AND CONCLUSIONS

Many companies (albeit a declining amount) have enjoyed the ability to reduce or delay payments for taxes on profits through their use of the LIFO inventory costing method. However, with the impending disallowance of the use of the LIFO method under International Financial Reporting Standards, these companies face a situation where their balance sheets and income statements (and cash flow statements) face significant changes. The analysis and interpretation of these financial statements also face an uncertain future.

We have shown that many of the key financial ratios used in business can be severely affected by a switch from the LIFO method. Balance sheets will likely be larger and income statements will report higher earnings. Liquidity ratios (particularly the quick ratio and days' sales in inventory) will largely suffer while leverage ratios (e.g., debt and debt-equity ratios) will likely improve. Profitability ratios (e.g., return on assets) will typically improve although they may also deteriorate depending on the relative impact of changing costs and the growth or shrinkage of inventories.

More complex ratios can be affected in a variety of ways. For example, although the Altman Z-score can be negatively affected by larger amounts of assets and liabilities, it is also positively affected by increased amounts of working capital and retained earnings as well as higher reported earnings. What is unknown is the possible influence on stock prices. It is conceivable that if the elimination of the LIFO method results in lower cash flows, the value of a company's stock will be negatively affected. Many valuation models are in large part driven by estimates of cash flows. If cash flows fall by seven percent, which was the average amount shown in this study, stock prices could fall by some seven percent using a very conservative no-growth perpetuity model. And if a

company would be expected to have increases in future cash flows the impact on its stock price could be significantly higher.

As with other studies of this type, many liberties had to be taken regarding assumptions. For example, we have assumed that the companies using the LIFO method would have operated in the same way with the same results as if they did not have the ability to use LIFO. Nonetheless, the impending demise of the LIFO method as an inventory valuation option will likely have a significant effect on companies that employ the technique. The analysis of these companies will also be affected, particularly in terms of trend analysis, as analysts will need to restate past financial statements in ways similar to those described here prior to make any long-term assessments of these companies. We await this major shift in the accounting landscape with baited breath.

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THE INTEREST RATE EFFECTS OF CERTIFICATION AWARDS AND UNDERWRITER TYPES IN THE SCHOOL DISTRICT BOND MARKET

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ABSTRACT

New school district bond issues in the U.S. have averaged nearly $50 billion for each of the past few years. Since bond issues are a major source of capital for school districts, the school districts have a strong incentive to minimize the interest costs associated with them. One option school districts have is to obtain financial statement certification from independent organizations. This certification provides assurance to buyers of the quality of financial reporting, which, in turn, should reduce risks that affect interest rates. We investigate differences in interest rates between school districts that provide financial statement certification and school districts that do not. When controlling for important factors that influence interest rates in a cross-sectional sample of school district bonds, we find that school districts that obtain certification end up paying, on average, higher interest rates. This implies that school districts with higher costs of capital are more likely to engage in costly activities to reduce information asymmetry, such as the certification of financial statements. The choice for certification is driven by rational behavior on the part of individual school districts, who attempt to minimize their financing costs prior to the bond offering. We also investigate the association between underwriter type and interest costs. We find evidence that interest costs are lower when the issue is lead-managed by regional underwriters.

INTRODUCTION

Although the municipal securities literature has had difficulty articulating a theory of accounting relevance, the empirical results of several studies reveal a reasonable and statistical link between accounting variables and the net interest cost of bond issues in the primary market. In particular, these studies suggest that accounting disclosure quality is associated with lower municipal borrowing costs. These studies, however, focus almost exclusively on counties and local governments, without consideration of other sectors of the tax-exempt securities market.

While school district bonds have been included in some research, their numbers have usually been a negligible part of overall samples. This sector, however, is quite large: the issuance of school district securities accounted for approximately 12 percent of the overall annual municipal market during the period 1995 to 1999, with a dollar amount averaging over $31 billion per year.

Independent measures of accounting disclosure quality are typically provided by professional organizations. The Government Finance Officers Association (GFOA) awards its Certificate of Achievement for Excellence in Financial Reporting to various types of public sector entities whose financial reporting exceeds minimum GAAP standards. The Association of School Business Officials International (ASBO) offers a comparable Certificate of Excellence in Financial Reporting specifically to public school districts. The fee-based application for certification is voluntary, and awards denote high quality financial reporting practices, but not necessarily strong financial health. Essentially, the certification process begins with a checklist analysis of audited financial statements contained in the entity's comprehensive annual financial report (CAFR), and then assesses the quality of other reporting features and methods – such as individual fund reporting, management discussion, and statistical tables. The application fees for certification are scaled according to the entity's size determined by financial data, but are quite inexpensive. Thus, for public sector organizations whose reporting exceeds minimal GAAP requirements, GFOA or ASBO certification provides a low cost signal of disclosure quality.

The model developed here draws upon techniques of prior research and integrates them to test the association between voluntary financial statement certification and school bond interest costs. The fundamental question is whether there is any association between interest rates and voluntary certification. The secondary question is whether school districts that choose to obtain (purchase) this certification have lower costs of debt than school districts that do not obtain this certification, or, through self-selection, are the riskier school districts those that choose to obtain the additional certification.

In additional analysis, we investigate differences between bond issues that are lead managed by regional or national underwriters. We are also interested in whether there is any evidence of an interrelationship among bond issue costs, certification, and underwriter type.

LITERATURE REVIEW

Historically, the most common interest cost calculation used by issuers for awarding bids is the net interest cost, or NIC. Accordingly, most municipal bond research has used NIC information gathered from winning bid sheets. NIC is "the average annual cost of borrowing, expressed as a percent per year" and is calculated by taking the total interest paid over the life of the bond, plus or minus the amount of any discount or premium, respectively, and dividing the total net interest amount by the total number of bond years (Zipf, 1995). Bond years are calculated by multiplying each serial maturity amount by the number of years to maturity.

Empirical research generally shows that accounting disclosure quality variables manifest a negative statistical relationship with bond interest cost variables. Wallace (1981) examines the influence of accounting information on bond interest costs within the primary market using a sample of Florida GO and revenue bonds. The accounting and auditing variable coefficients generally lack statistical significance, even under alternative model specifications. However, when the bond-rating

variable is removed from the model, the accounting variable coefficients are generally negative and significant, suggesting a reduction of interest costs associated with the bonds.

Noting the data limitations of the Wallace study, Wilson and Howard (1984) use a similar approach as Wallace, but broaden both the size and scope of the bond sample to include those across several states. Reporting quality variables include timeliness of financial reporting, extent of GAAP disclosure, and whether the issuer was awarded a certificate of achievement in financial reporting from the Municipal Finance Officers Association (original name of the GFOA). The timeliness variable measures the span of time from fiscal year-end to audit report issuance; the GAAP disclosure variable measures the scope of general fund reporting. Model results reveal that only the timeliness and certification variables impact NIC.

Fairchild and Koch (1998) examine the impact of state disclosure requirements for municipal bond official statements on NIC. Based upon a 1990 survey of individual state disclosure standards for official statements conducted by the National Association of State Auditors, Comptrollers, and Treasurers (NASACT), the authors categorize each state's standards as full disclosure, partial disclosure, or nondisclosure in accordance with GFOA official statement guidelines. Empirical results comparing full and nondisclosure states suggest that debt issuers in full disclosure states save about 14 basis points on their net interest costs, compared to issuers in nondisclosure states.

The nature of the information available on municipal bond securities has changed over the last twenty years. Reck and Wilson (2006) find evidence that improvements in information sources about municipal issuers during the 1990s, including SEC-required annual financial disclosures, has resulted in greater information transparency and improved pricing in the municipal bond secondary market. Plummer, Hutchison, and Patton (2007), examining 530 school districts, find that GASB 34's Statement of Net Assets provides incremental information relevant for assessing default risk. However, neither study evaluates the impact of cross-sectional differences in reporting.

Baber and Gore (2008) note that not all states require GAAP-based reporting disclosure. Comparing municipal borrowing costs of issuers in states that require GAAP reporting and those that do not, they find that debt interest costs are lower in GAAP-mandated states. They also demonstrate that issuers are less likely to resort to privately negotiated debt arrangements than issue debt publicly in the bond market.

The construct underlying these papers is that investors, when faced with little information about municipal management quality, weigh these disclosure quality factors heavily as a proxy for management quality (Banker, Cooper and Potter, 1992). To the extent that management quality is perceived favorably, the risk of default falls, and the interest rate charged on the debt is lowered.

HYPOTHESES DEVELOPMENT

We first introduce two competing hypotheses for why school districts obtain certification. Other things being equal, voluntarily providing certification of financial disclosure quality should lower the net interest cost for a given bond issue. This leads to the following hypothesis:

*H1a: Those school districts that obtain certificates for financial disclosure quality
excellence will have lower net interest costs than those school districts that
do not obtain certificates for financial disclosure quality excellence.*

However, this may not apply when examining data across school districts. As Leuz and Wysocki (2007) point out, empirical results between cost of capital and quality of disclosure have lacked robustness. They note that results appear to be sensitive to the presence of other intermediaries, across type of disclosure, across type of investor, and across different institutional environments. The problem with doing cross-sectional tests of the relationship between costs of capital and voluntary quality of disclosure is that firms with high costs of capital may self-select into the higher quality of disclosure group (depending on how disclosure quality is measured).

In this environment, school districts that have low costs of capital have little incentive to obtain outside certification. In fact, there is no indication that the market would value additional outside certification for low cost of capital school districts. This implies that the marginal value of high disclosure quality, as measured by additional certification, decreases as the value of the underlying debt issue increases.

School districts that have higher costs of capital, which could be driven by the quality of the underlying debt issue or the demand for capital, have incentives to provide higher quality disclosures to minimize the cost of raising capital. It is precisely this group of school districts that have the incentive to purchase additional outside certification. This leads to the following alternative hypothesis.

*H1b: Those school districts that obtain certificates for financial disclosure quality
excellence will have higher net interest costs than those school districts that
do not obtain certificates for financial disclosure quality excellence.*

Another factor that can affect disclosure quality is whether the underwriter is a regional or national firm. Daniels and Vijayakumar (2007) examine a sample of 10,239 tax-exempt municipal bonds of all types and find that bond issues lead managed by large underwriters tend to have lower borrowing costs. However, they do not investigate specific categories within the broader municipal bond market. Feroz and Wilson (1992) cite several anecdotal and empirical sources documenting the market segmentation of regional and national municipal bond issues. While the existence of market segmentation has been clearly established, the interest cost relationships across these

segments is an unresolved issue. National underwriters may possess certain economies of scale and informational advantages with respect to bond issues overall. Regional underwriters may possess an informational advantage on individual school districts that may provide them a competitive advantage. Because of these conflicting arguments, predicting whether higher NICs will be associated with regional or national underwriters is not possible. This discussion leads to the following hypothesis:

> *H2:* *Those school district bond issues that are associated with regional underwriters will have different net interest costs than those school district bond issues that are associated with national underwriters.*

Feroz and Wilson (1992) posit that the ability of accounting disclosure quality to lower interest rates rests on the availability of alternative information sources, that smaller bond issuers have fewer alternative sources than larger issuers do, and that, citing Cook (1982), the costs of acquiring additional information about small issuers is high. By extension, regional underwriters, who tend to service mainly smaller, local issuers, would tend to be more familiar with the type of accounting practiced by municipalities, especially in those states where GAAP reporting is not mandated. Given a paucity of information, they would rely more heavily on financial information when bidding competitively compared to national underwriters, who generally rely upon multiple information sources. As a result, they believe that the winning NIC rates on bond deals tend to be more closely associated with financial disclosure factors for regional underwriters than national ones.

However, they also acknowledge that regional underwriters may have a more intimate knowledge of the school district that would allow them to make non-quantifiable assessments. For example, Butler (2008) explores whether this familiarity provides "soft" information that can be impounded into an underwriter's competitive calculus. In his analysis of taxable municipal bonds, he demonstrates that borrowing costs are lower for those issues underwritten by local investment banks. This would seem to imply that there is a relationship between the underwriter type and the decision to purchase the certification. Because there may be an association between underwriter type and the purchase of additional certification, we also test the interaction effects between underwriter type and certification. Since we have a two-tailed hypothesis for the relationship between certification and interest rates, we do not hypothesize the effects of the interaction terms.

DATA

To test these hypotheses, NIC is modeled as a function of the disclosure quality variables and interaction variables, controlling for several factors found to be relevant in prior literature.

Various controls are used in several studies to account for the influence of both market factors and investment security features. For example, the interest rate term structure – perhaps the

strongest determinate of NIC – is typically operationalized as a three-part variable cluster: (1) a measure of prevailing municipal interest rates, usually represented by the Bond Buyer weekly 20-bond index, (2) a measure of maturity, given by the average life of the bond issue and weighted by bond-years, and (3) a measure of credit risk, denoted by credit rating indicator variables. The NIC should move in the same direction as the first variable, since investors will demand a return comparable to current market rates. Similarly, a higher average life suggests that the bond issue will be priced further out along an upwardly sloping yield curve and result in a higher NIC. In contrast, higher credit ratings suggest lower default risk, and vice-versa; higher ratings should lower NIC.

Other control variables incorporated by Ingram and Wilson (1999) into a baseline NIC model include credit enhancement, issuing frequency, and callability. Credit enhancements such as bond insurance lower default risk for investors, and therefore, the NIC demanded on the bond issue. In addition, the more frequently an issuer comes to market, the more familiar investors are with the issuer. Such familiarity arising from issuing frequency may reduce uncertainties for investors and result in a lower NIC. Due to the risks associated with valuable call options granted to the issuer, investors should demand a higher rate of return, thereby increasing the NIC.

Investors generally rely on the tax-exempt interest stream when deciding to purchase municipal bonds. When federal income taxes are raised, the tax sheltering value of the interest income increases. While federal income taxes apply to all investors at the national level, the level of each state's personal income tax rates vary and may affect the tax sheltering value of interest income within individual states. To control for this effect, a state tax rate variable is included.

One final control variable for consideration is the size of the school district. Economies of scale may exist for larger school districts whereby administrative costs are diluted with greater dollar volumes. For competitive purposes, the cost savings may be subtracted from the offered NIC rate to increase an underwriter's chances of winning the bid.

The model is stated as follows:

$$NIC_i = \alpha_0 + \alpha_1 BBGO_i + \alpha_2 WAVGLIFE_i + \alpha_3 STATETAX_i + \alpha_4 ENHANCED_i + \alpha_5 CALLABLE_i + \alpha_6 ENROLL_i + \alpha_7 CERT_i + \alpha_8 UNDERWRT_i + \epsilon_i$$

NIC   The net interest cost of the winning bid, in percent

BBGO   The Bond Buyer 20-bond index for GO's for the week of issue, in percent

WAVGLIFE The weighted average life of the bond issue, in years

STATETAX Highest marginal state income tax rate for individuals, in percent

ENHANCED Indicates whether the issue is guaranteed by bond insurance or a state credit enhancement fund (1 = yes; 0 = no)

CALLABLE   Indicates whether the issue is callable (1 = yes; 0 = no)

ENROLL   Total enrollment of the issuing school district, in thousands

CERT   Indicates whether the issuing school district was awarded a certificate for financial reporting excellence by either the GFOA or ASBO (1 = yes; 0 = no)

UNDERWRT Indicator variable denoting whether the winning syndicate is managed by a regional or national underwriter (1 = regional; 0 = national)

Bond market behavior is represented by the winning interest cost bid on the new bond issue. As noted earlier, most municipal bond studies operationalize interest costs using NIC, the net interest cost. Accordingly, NIC is used in all models.

In keeping with prior research, we use the Bond Buyer 20-bond index for general obligation bonds (BBGO), and the weighted average life of the overall bond issue (WAVGLIFE).

The Bond Buyer index (BBGO) has been used extensively in statistical models as a measure of prevailing municipal market interest rates. It is based upon a weekly survey of municipal bond traders, and represents a simple average of theoretical Aa3-rated market yields derived from 20 general obligation bonds that mature in 20 years. Since it is a measure of weekly GO yields, the interest costs of the sample bond issues are expected to move in the same direction.

The weighted average life of a bond issue (WAVGLIFE) refers to the chronological balancing point, in years, of its individual maturity payouts, weighted by amount. It is used to add another dimension to current interest rates and credit ratings by capturing the effects of an upwardly sloping yield curve across increasing maturities. That is, the greater the average maturity of a bond issue, the higher up along the yield curve the issue is priced by underwriters, and commensurately, the greater the interest cost to issuers. Note that the average maturity is an aggregate measure since the individual bonds within the overall issue will have longer and shorter maturities.

Four other control factors incorporated into the model are state income taxes, credit enhancements, callability, and the size of the school district.

The unique effect of state income tax regimes is captured by the STATETAX variable, defined as the highest marginal state income tax rate for individuals. While a major motivation for investing in municipal bonds is the federal income tax exemption granted to qualified issues, the level of state taxation also modulates the benefit of tax exemption. That is, the higher the level of state taxation, the greater the benefit of state tax exemption and demand for tax-exempt securities. This results in a lower demanded yield, or equivalently, a lower NIC for bonds in states with relatively high tax levels.

Another control factor is whether the bond issue is insured or guaranteed by a state credit enhancement fund. Bond issues with a financial guarantee take on the (usually) higher credit rating

of the enhancing entity, and should therefore result in a lower net interest cost. All insured bonds have the Aaa bond rating. The use of dichotomous indicator variables for enhancements is the convention in prior research. Hence, the variable ENHANCED will take on a value of 1 if the bond issue is insured or supported by a state credit enhancement program and a value of 0 if not enhanced.

Callable bonds contain embedded options known as calls, which allow a bond issuer to refund all, or a portion of the proceeds to the investor in accordance with the terms set forth in the bond's official statement. The issuer's discretion to exercise the option and the resulting call risk to the investor result in a compensatory investment premium, and therefore a higher overall NIC for the issuer. To control for the risks arising from callability, a dummy variable (CALLABLE) is used, where a value of 1 indicates a callable issue and a value of 0 indicates a non-callable issue.

Another variable commonly incorporated into this line of research is issuer size. Several studies have found that larger bond issuers enjoy relatively lower interest costs on their debt. Although population is typically used to gauge issuer size, population data for school districts is only collected every ten years by the U.S. Census Bureau, and would therefore be insufficient for modeling purposes. Instead, enrollment data are used to assess the size of the school district. Such data are reported annually for individual school districts. Thus, the variable ENROLL denotes total school district enrollment as of October 1st of every school year, as documented by the National Center for Education Statistics. The October 1st enrollment data are applied to bonds sold in the preceding months of July through September and the prospective months of October through June to reflect more closely the typical school year cycle.

We use financial reporting awards to measure accounting disclosure quality. A dummy variable is used to indicate whether a school district was awarded a certificate for financial reporting excellence (CERT) by either the GFOA or ASBO. A value of 1 indicates "yes" and a value of 0 indicates "no".

To incorporate bond market segmentation effects, an underwriter variable (UNDERWRT) is used, denoted as 1 for winning syndicates led by a regional underwriter and 0 for winning syndicates led by a national underwriter. We define national underwriting firms as those with offices in New York City as well as in several states. Note that this definition includes large "semi-national" firms not necessarily headquartered in New York City, but conducting business within many states. Regional underwriters are deemed to service no more than two states.

DATA SOURCES

The data sample consists of tax-exempt new issue school district bonds issued from 1995 to 1999. All issuers are U.S. public school districts (or boards of education) that are organizationally and fiscally independent. Table 1 lists the issuers represented in the data sample. All bond issues are competitively bid general obligation bonds with fixed-rate coupons, and represent new financing of at least $1 million. Financial reporting certification awards data come from the Government Finance Officers Association and the Association of School Business Officials International.

Supplementary enrollment data were provided by the National Center for Education Statistics. All other information was obtained from Thompson Financial Municipals Group.

State	Issuer	State	Issuer
Table 1: List of School Districts			
AZ	Casa Grande Union High SD #82	MI	Grass Lake Community Schools
AZ	Chino Valley Unified SD #51	MI	Hanover-Horton SD
AZ	Glendale Elementary SD #40	MI	Harper Woods SD
AZ	Mesa Unified SD #4	MI	Hart Public Schools
AZ	Paradise Valley Unified SD #69	MI	Howell Public Schools
AZ	Pendergast Elementary SD #92	MI	Littlefield Public Schools
AZ	Scottsdale Unified SD #48	MI	Marshall Public Schools
AZ	Tempe Elementary SD #3	MI	Okemos Public Schools
AZ	Tempe Union High SD #213	MI	Plymouth-Canton Community Schools
AZ	Washington Elementary SD #6	MI	Port Huron Area SD
AZ	Wilson Elementary SD #7	MI	Tekonsha Community Schools
CA	Ojai Unified SD	MI	Walled Lake Consolidated SD
CA	San Carlos SD	MI	Wyandotte SD
CT	Connecticut Regional SD #10	MN	Esko Independent SD #99
IA	North Scott Community SD	MN	Scott County Independent SD #720
IA	Ottumwa Community SD	MO	Carthage R-IX SD
IA	West Des Moines Community SD	MO	Columbia SD
IL	Joliet Public SD #86	MO	Fort Zumwalt SD
IL	Kinnikinnick Community Consol. SD #131	MS	Biloxi Public SD
IL	Moline SD #40	MS	Greenwood Public SD
IL	River Forest SD #90	MS	Hattiesburg Public SD
KS	Leavenworth CountyUnified SD #458	MS	Holly Springs SD
KS	McPherson County Unified SD #423	MS	Kemper County SD
LA	Bossier Parishwide SD	MS	Monroe County SD
LA	Jefferson Parish SD #1	MS	North Panola Consolidated SD
LA	Lafayette Parish School Board	MS	Prentiss County SD
LA	St Bernard Parish SD #1	MS	Senatobia SD
LA	St Charles Parish SD #1	MS	Union County SD
LA	St John Baptist Parish SD #1	ND	West Fargo Public SD #6

Table 1: List of School Districts			
State	Issuer	State	Issuer
LA	St Tammany Parish SD #12	NE	Douglas County-Millard Public SD #17
LA	Tangipahoa Parish Consolidated SD #1	NH	Chester SD
LA	Winnfield SD #5	NJ	Great Meadows Regional SD
MA	Triton Regional SD	NJ	Jamesburg Board of Education
MI	Calumet Laurium Public Schools	NJ	Kingsway Regional SD
MI	Deerfield Public Schools	NJ	Manchester Township Board of Education
MI	East Grand Rapids Public Schools	NJ	Mount Olive Township Board of Education
MI	East Jordan Public Schools	NJ	Randolph Township Board of Education
MI	Farmington Public SD	NJ	Verona Township Board of Education
MI	Fowler Public SD	NJ	West Windsor-Plainsboro Regional SD
NM	Bloomfield SD #6	TX	Big Sandy Independent SD
NM	Farmington Municipal SD #5	TX	Birdville Independent SD
NM	Ruidoso Municipal SD #3	TX	Brownsville Independent SD
NM	Silver Consolidated SD #1	TX	Bryan Independent SD
NY	Averill Park Central SD	TX	Clear Creek Independent SD
NY	Bay Shore Union Free SD	TX	Coldspring-Oakhurst Consol. Independent SD
NY	Binghamton City SD	TX	College Station Independent SD
NY	Cohoes City SD	TX	Conroe Independent SD
NY	Lynbrook Union Free SD	TX	Cypress-Fairbanks Independent SD
NY	Nanuet Union Free SD	TX	Denton Independent SD
NY	New Rochelle City SD	TX	Edgewood Independent SD
NY	Oneida City SD	TX	Fort Bend Independent SD
NY	Somers Central SD	TX	Garland Independent SD
NY	South Colonie Central SD	TX	Gary Independent SD
NY	South Country Central SD	TX	Harlandale Independent SD
NY	Sweet Home Central SD	TX	Harleton Independent SD
OK	Oklahoma County Independent SD #12	TX	Hidalgo Independent SD
OK	Tulsa County-Jenks Independent SD #5	TX	Jim Ned Consolidated Independent SD
SC	Beaufort County SD	TX	Judson Independent SD
SC	Berkeley County SD	TX	Katy Independent SD
SC	Clarendon County SD #2	TX	Klein Independent SD
SC	Darlington County SD	TX	La Vernia Independent SD

	Table 1: List of School Districts				
State	Issuer	State	Issuer
SC	Dorchester County SD #2	TX	Laredo Independent SD
SC	Edgefield County SD	TX	Leander Independent SD
SC	Fairfield County SD	TX	Lewisville Independent SD
SC	Florence County SD #2	TX	Lufkin Independent SD
SC	Greenville County SD	TX	Natalia Independent SD
SC	Laurens County SD #55	TX	North East Independent SD
SC	Lee County SD	TX	North Lamar Independent SD
SC	Lexington County SD #1	TX	Northside Independent SD
SC	Richland County SD #1	TX	Plano Independent SD
SC	Richland County SD #2	TX	Progreso Independent SD
SC	Rock Hill SD #3	TX	River Road Independent SD
SC	Spartanburg County SD #7	TX	Round Rock Independent SD
TX	Alamo Heights Independent SD	TX	San Antonio Independent SD
TX	Arlington Independent SD	TX	Schertz-Cibolo-Universal City Independ. SD
TX	Beaumont Independent SD	TX	Spring Independent SD
TX	Bells Independent SD	TX	Valley View Independent SD

RESULTS

Table 2 presents the univariate statistics for the variables used in the models. We also include mean comparisons across certification (CERT) and underwriter (UNDERWRT) statuses, since these variables represent the two main partitioning categories in our analysis. Of the 209 total observations for each variable, 112 pertain to bond issuers with GFOA or ASBO certification, and 97 to issuers without certification. Similarly, 93 observations are associated with regional underwriters while 116 are associated with national underwriters. The means are compared through two-tailed t-tests except the NIC mean comparison by certification, which uses a one-tailed test.

Statistically significant differences exist between the means of certified and non-certified subsets for CALLABLE and ENROLL at the 0.01 level, and for WAVGLIFE, STATETAX, and ENHANCED at the 0.05 level. For WAVGLIFE, STATETAX, ENHANCED and CALLABLE the mean for the certified financials is less than the mean for the non-certified financials. For ENROLL, the mean for the certified financials is higher. Ignoring the interrelationship of the relevant variables, this indicates that, in general, school districts obtaining the certification have debt with shorter weighted average lives, lower state tax rates, are less likely to be enhanced, are less likely

to be callable, and have higher enrollments when compared to school districts that do not obtain the additional certification.

Table 2: Summary Statistics								
Variable	Number	Mean	Std Dev	Min	Q1	Median	Q3	Max
NIC (in percent)	209	4.98	0.52	3.33	4.64	5.01	5.28	6.21
By Certification								
With GFOA/ASBO Cert.	112	4.95	0.53	3.33	4.60	4.97	5.27	6.21
Without GFOA/ASBO Cert.	97	5.01	0.49	3.97	4.67	5.04	5.36	6.01
By Underwriter ***								
Regional Underwriter	93	4.87	0.48	3.73	4.53	4.79	5.14	6.03
National Underwriter	116	5.06	0.53	3.33	4.76	5.09	5.44	6.21
BBGO (in percent)	209	5.52	0.38	4.96	5.17	5.45	5.86	6.49
By Certification								
With GFOA/ASBO Cert.	112	5.52	0.38	4.96	5.17	5.45	5.83	6.49
Without GFOA/ASBO Cert.	97	5.51	0.37	4.96	5.15	5.41	5.86	6.18
By Underwriter *								
Regional Underwriter	93	5.47	0.35	4.96	5.14	5.36	5.78	6.44
National Underwriter	116	5.56	0.39	4.96	5.21	5.57	5.89	6.49
WAVGLIFE (in years)	209	10.64	4.83	1.24	6.43	11.31	13.67	22.36
By Certification **								
With GFOA/ASBO Cert.	112	9.89	5.31	1.24	5.49	9.63	13.74	21.16
Without GFOA/ASBO Cert.	97	11.51	4.07	3.38	9.06	12.03	13.67	22.36
By Underwriter								
Regional Underwriter	93	10.28	4.86	1.46	6.11	10.18	13.13	22.36
National Underwriter	116	10.93	4.81	1.24	7.66	11.89	13.89	21.74
STATETAX (in percent)	209	4.23	3.11	0.00	0.00	5.10	6.85	12.00
By Certification **								
With GFOA/ASBO Cert.	112	3.74	3.16	0.00	0.00	5.10	6.00	9.98
Without GFOA/ASBO Cert.	97	4.79	2.97	0.00	4.40	5.00	6.85	12.00
By Underwriter								
Regional Underwriter	93	4.09	3.12	0.00	0.00	5.00	6.00	12.00
National Underwriter	116	4.34	3.12	0.00	0.00	5.60	6.93	9.98
ENHANCED (dichotomous)	209	0.88	0.33	0.00	N/A	N/A	N/A	1.00

Table 2: Summary Statistics								
Variable	Number	Mean	Std Dev	Min	Q1	Median	Q3	Max
By Certification **								
With GFOA/ASBO Cert.	112	0.83	0.50	0.00	N/A	N/A	N/A	1.00
Without GFOA/ASBO Cert.	97	0.94	0.24	0.00	N/A	N/A	N/A	1.00
By Underwriter								
Regional Underwriter	93	0.89	0.32	0.00	N/A	N/A	N/A	1.00
National Underwriter	116	0.87	0.34	0.00	N/A	N/A	N/A	1.00
CALLABLE (dichotomous)	209	0.80	0.40	0.00	N/A	N/A	N/A	1.00
By Certification ***								
With GFOA/ASBO Cert.	112	0.72	0.45	0.00	N/A	N/A	N/A	1.00
Without GFOA/ASBO Cert.	97	0.87	0.32	0.00	N/A	N/A	N/A	1.00
By Underwriter								
Regional Underwriter	93	0.84	0.37	0.00	N/A	N/A	N/A	1.00
National Underwriter	116	0.75	0.43	0.00	N/A	N/A	N/A	1.00
ENROLL (in thousands)	209	16.61	18.18	0.26	2.65	9.40	26.11	70.18
By Certification ***								
With GFOA/ASBO Cert.	112	25.98	19.24	1.05	11.83	20.24	35.20	70.18
Without GFOA/ASBO Cert.	97	5.79	8.21	0.26	1.68	2.92	5.26	49.36
By Underwriter **								
Regional Underwriter	93	13.83	16.11	0.49	1.94	7.14	20.75	61.36
National Underwriter	116	18.84	19.46	0.26	3.42	12.89	26.95	70.18

Note: Mean difference t-tests are two-tailed, except those for NIC, which are one-tailed.
* p < 0.10;   ** p < .05;   *** p < .01

Statistically significant differences are also found between the underwriter subsets. The mean NIC is different at the 0.01 level. The means for ENROLL are significant at the 0.05 level, while the means for BBGO are significant at the 0.10 level. In each case, the regional underwriters are associated with lower means. On a general level, this indicates that regional underwriters are associated with lower NIC, lower enrollment and lower BBGO.

Table 3 displays the correlation coefficients with their respective p-values. Pearson correlation coefficients are presented in the top, right-hand diagonal, Spearman correlation coefficients are presented in the bottom, left-hand diagonal. Pearson correlation coefficients are most appropriate when comparing continuous, parametric variables. Spearman correlation coefficients are most appropriate when comparing rank-ordered, non-parametric variables. The

exogenous variables having the strongest correlations with NIC are BBGO and CALLABLE. Of greater concern are statistically significant correlations exceeding 0.600 among the exogenous variables – such as between WAVGLIFE and CALLABLE (0.668) – as this may indicate multicollinearity. We calculated the variance inflation factors (VIF) for all the models run in this study and did not find evidence of multicollinearity problems.

Table 3: Correlation Coefficients and Associated p-values									
	NIC	BBGO	WAVGLIFE	STATETAX	ENHANCED	CALLABLE	ENROLL	CERT	UNDERWRT
NIC	1.000	0.712	0.566	-0.280	0.114	0.608	-0.005	-0.062	-0.182
		0.000	0.000	0.000	0.102	0.000	0.948	0.373	0.009
BBGO	0.707	1.000	-0.035	-0.088	-0.070	0.149	-0.012	0.014	-0.122
	0.000		0.611	0.206	0.318	0.031	0.865	0.846	0.077
WAVGLIFE	0.563	-0.024	1.000	-0.316	0.261	0.668	0.062	-0.168	-0.067
	0.000	0.726		0.000	0.000	0.000	0.371	0.015	0.339
STATETAX	-0.276	-0.056	-0.331	1.000	-0.196	-0.156	-0.365	-0.169	-0.041
	0.000	0.418	0.000		0.004	0.025	0.000	0.014	0.560
ENHANCED	0.141	-0.074	0.256	-0.155	1.000	0.257	0.073	-0.166	-0.026
	0.041	0.287	0.000	0.025		0.000	0.296	0.017	0.709
CALLABLE	0.585	0.162	0.645	-0.187	0.257	1.000	-0.079	-0.203	-0.104
	0.000	0.019	0.000	0.007	0.000		0.257	0.003	0.136
ENROLL	-0.009	0.013	-0.002	-0.191	0.005	-0.131	1.000	0.555	-0.137
	0.895	0.850	0.982	0.006	0.943	0.059		0.000	0.047
CERT	-0.049	0.005	-0.154	-0.136	-0.166	-0.203	0.649	1.000	-0.074
	0.478	0.938	0.026	0.049	0.017	0.003	0.000		0.286
UNDERWRT	-0.221	-0.113	-0.078	-0.097	-0.026	-0.104	-0.140	-0.074	1.000
	0.001	0.105	0.261	0.164	0.709	0.136	0.043	0.286	

Note: Pearson correlation coefficients and associated p-values are presented in the top right diagonal.
Spearman correlation coefficients and associated p-values are presented in the bottom left diagonal.

The certification variable is highly correlated with enrollment. This implies that large school districts are more likely to voluntarily obtain the additional financial statement certification. The underwriter variable shows some degree of negative correlation with enrollment, indicating that school districts with high enrollment are more likely to engage a national underwriter. There does

not, however, appear to be a relationship between the underwriter type and the decision to obtain additional financial statement certification. This reduces the likelihood of an interaction effect being present between voluntary certification and underwriter type.

The NIC is negatively correlated with the underwriter type and not significantly correlated with the certification choice. For the underwriter type, this indicates that higher NICs are associated with national underwriters. For the certification choice, there does not appear to be a first-order relationship between NIC and the decision by the school district to obtain additional financial statement certification. This does not, however, rule out a second-order effect that will become apparent once control variables are introduced in the model. In the next section of the analysis, we will show that a second-order effect is, in fact, present between the NIC and the certification decision.

We find no significant correlation between NIC and either ENROLL, our proxy for school district size, or CERT, our variable of interest for Hypothesis 1. In addition, there is not a statistically significant difference between the means of the certified and non-certified financials for the dependent variable, NIC. Recall that NIC represents a raw interest rate, unadjusted for variations across time or bond characteristics. As we will see in the results section, both ENROLL and CERT have explanatory power after controlling for factors such as the index for government offerings in the week of issue (BBGO) and the weighted average life of the bond issue (WAVGLIFE).

REGRESSION ANALYSIS

We present the primary results from the regression analysis in Table 4. The F-statistics for the models range from approximately 195 to 218 and the adjusted R-squared statistics are near constant at approximately 88 percent. These results indicate that the model provides an excellent fit of the data and that it explains most of the variance in the dependent variable, NIC.

The control variables are in the direction predicted, well behaved and generally consistent across the model specifications. As expected, BBGO is the dominant factor in the determination of interest rates. WAVGLIFE and CALLABLE also show strong relationships with NIC in the directions predicted. STATETAX coefficients are all statistically significant at the 0.05 level. ENHANCED displays a relationship in the hypothesized direction, but this relationship is not statistically significant in any model. The levels of significance vary for ENROLL across specifications: it is significant at the 0.05 level in model 1, not significant at all in model 2, and significant at the 0.01 level in model 3.

In model 1, we include the CERT dummy variable to indicate the school district's decision to attain additional certification. The coefficient is positive and significant at the 0.05 level. This indicates that school districts that obtained additional certification are, on average, paying higher NICs. While this test does not put a quantifiable measure on the value to a given school district of obtaining additional certification, it does indicate that school districts subject to higher costs of capital are more likely to voluntarily provide information that school districts with low costs of

capital do not. These results are consistent with rational behavior on the part of school districts. Only those school districts that could plausibly benefit from providing this additional disclosure would choose to apply for it and advertise independent certification of their financials prior to the bond offering. The school districts most likely to benefit from this disclosure are those districts with inherently high costs of capital. The results of model 1 show that, even after controlling for several factors that determine the NIC, there is still a statistically significant positive relationship between NIC and those school districts that obtained the additional certification.

Table 4: Regression Results with NIC as Dependent Variable				
Variable	Predicted Sign	Model 1	Model 2	Model 3
Constant		-0.987	-0.824	-0.885
		(-4.78)***	(-3.92)***	(-4.23)***
BBGO	+	0.955	0.945	0.946
		-27.52***	-26.96***	-27.31***
WAVGLIFE	+	0.049	0.047	0.049
		-13.01***	-12.68***	-13.07***
STATETAX	-	-0.010	-0.012	-0.011
		(-2.10)**	(-2.54)**	(-2.42)**
ENHANCED	-	-0.004	-0.026	-0.006
		(-0.10)	(-0.65)	(-0.15)
CALLABLE	+	0.262	0.254	0.255
		-5.92***	-5.71***	-5.82***
ENROLL	-	-0.002	-0.001	-0.002
		(-2.31)**	(-1.54)	(-2.64)***
CERT	?	0.079**		0.078
		-2.50		-2.47**
UNDERWRT	?		-0.06	-0.059
			(-2.31)**	(-2.28)**
N		209	209	209
F-value		218.43	217.35	195.78
Adj R^2		0.88	0.88	0.88
Note: t-values given in parentheses. Tests are one-tailed except F-tests. * p < 0.10; ** p < .05; *** p < .01				

We investigate the relationship between the NIC and the underwriter type. Recall that in this relationship, the underwriter prefers a high NIC and the school district prefers a low NIC. Underwriters bid, with the lowest bid winning. There may be inherent differences between those school districts where national underwriters had the winning bid and those school districts where regional underwriters had the winning bid. National underwriters may possess an advantage if the bond issue is very large, or they may be able to accommodate a greater degree of risk. Regional underwriters may have a more intimate knowledge of specific school districts, but they may also have to rely more on disclosed information for school districts in general.

We are primarily concerned with whether there are fundamental differences in the NIC associated with underwriter type that are not captured in other variables in the model. If there are differences, there may also be an interrelationship between the underwriter type and the school district's decision to obtain certification. In model 2, we show that the underwriter type is negatively associated with NIC at a statistically significant level of 0.05. This provides evidence that regional underwriters, on average, may be associated with slightly lower NICs. This indicates that regional underwriters may be more likely to have a winning bid if they possess intimate knowledge of an individual school district.

We did additional model specifications to investigate the potential relationship between the certification decision and the underwriter type. Model 3 contains both variables. There is almost no change in the coefficient values or the t-values. We also ran tests (not reported) on each of the three model specifications with a CERT_UNDERWRT interaction term included. The interaction term did not add explanatory value to the models, nor was it statistically significant for models 1 and 3. While the interaction term was significant at the 0.05 level in model 2 (as was the UNDERWRT variable), its coefficient effect (0.096) largely offset the underwriter coefficient (-0.109) in the model.

DIAGNOSTICS

We performed regression diagnostics on all the models to determine the potential of multicollinearity, heteroscedasticity, and omitted variables. We used variance inflation factors (VIF) to test for the presence of multicollinearity. The Cook-Weisberg test was used to detect heteroscedasticity, and the Ramsey test was used to gauge the potential for omitted variables. We found no evidence of multicollinearity or heteroscedasticity problems.

We employed alternative variables in additional model specifications (not reported in the tables). Given the strong influence of the BBGO variable within the baseline model, an alternative measure was devised in order to dampen the effects of prevailing interest rates in the model. This alternative measure, RATEDIFF is defined as the net interest cost of the bond issue minus the Bond Buyer 20 bond index rate for the corresponding week of sale. The results do not affect our conclusions.

CONCLUDING COMMENTS

With new school district bond issues averaging nearly $50 billion for each of the past few years, we have an incentive to investigate the determinants of the interest costs associated with these bonds. We incorporate several variables found in prior research to be related to municipal bond issues, and focus on two experimental variables: (1) the decision of the school district to obtain independent certification of their financial statement reporting quality and (2) the relationship between the net interest costs in the regional and national bond markets. This study is unique in that we examine school district bonds, as opposed to the more broadly defined municipal bonds and we find consistent results not reported in prior empirical literature. Specifically, we find that those school districts that incur the cost of additional certification incur, on average, higher net interest costs on their bond issues. This implies that voluntary financial statement certification has value to school districts that have higher underlying costs of capital. We also find that for our sample period, the net interest costs associated with regional bond issues were lower than the net interest costs associated with national bond issues. There could be several reasons for this observed relationship, from an informational advantage by regional issuers, to differences in risk tolerance between regional and national underwriters. Additional research is necessary to identify the underlying cause of these results and whether the results are specific to particular types of municipal bonds.

One issue that we do not investigate in the study is the quantifiable value of voluntary external financial statement certification. While our results show that school districts paying higher interest costs are more likely to obtain certification, we cannot say how much that certification lowered the individual school district's NIC. Future research may focus on developing a research design that may allow the estimate of the value of the financial statement certification to an individual district. Our results also imply that there may be little value to external certification if the school district's cost of capital is already low. Future research may focus on the refinement of the research design to capture specific characteristics of the underlying capital structure and the value of voluntary disclosures of all types. Finally, our results showing a difference between the NICs associated with regional and national markets and the absence of the relationship between underwriter type and voluntary certification bear greater investigation. This is especially true where the results we report are inconsistent with results from studies utilizing broader types of municipal securities.

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AN INTERNATIONAL COMPARISON OF SOCIAL INTERACTION ATTRIBUTES OF INTERNAL AUDITORS: AN ANALYSIS USING THE FIRO-B

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ABSTRACT

This study examines the social interaction attributes of international and U.S. internal auditing personnel. The study found that internal auditors from the U.S. have significantly different social interaction attributes than their Asian counterparts. Understanding differences between social interaction attributes is significant because such information may shed light on the type of individuals who are most likely to succeed in different environments. The study used Thompson and Schutz's (2000) FIRO-B instrument to obtain social interaction attributes from U.S. and Asian internal auditors. The tasks undertaken in the internal audit function require a set of social skills which may vary across work environments and economies. These findings have implications for firm hiring and assignment practices of individuals from different cultures to appropriate functions within the corporation, consideration of the role of employee participation in teams, and educators who advise students pursing post-education employment positions consistent with their social skill preferences.

KEYWORDS: FIRO-B, Social Interaction; Culture; Inclusion; Affection; Control; Warmth

INTRODUCTION

The role of the internal auditor has been enhanced in the light of the plethora of financial statement fraud. Publicly-traded companies are now mandated to improve internal business processes and financial reporting. In light of well-publicized scandals such as Adelphia, HealthSouth, ENRON, and WorldCom, regulators, investors, and the general public have questioned the effectiveness of the audit function in serving as a "watchdog" by analyzing, testing, and reporting management and corporate activities. As a result of these investor concerns and media scrutiny, the U.S. Congress, the accounting profession, and the New York Stock Exchange have taken actions to increase the responsibility and role of the internal audit function.

In accordance with the Sarbanes-Oxley (SOX) Act of 2002, internal auditors have revised many processes and procedures to provide additional support to management and the board of directors' audit committee. Specifically, Auditing Standard No. 5 (PCAOB, 2007) charges internal

auditors with (1) meaningful participation in preliminary audit activities, (2) responsibility for evaluation of results, and (3) communication with the board of director's audit committee. According to a PricewaterhouseCoopers (2007) study, "technology, enterprise risk management, antifraud measures, and globalization [are] predicted to boost internal audit responsibilities" (page 23). Although the internal auditor's expanded responsibilities may be in alignment with the technical accounting skill set expected of accounting graduates, corporations and the internal audit profession also may be well served by assessing the social interaction attributes required for overall effectiveness in the profession.

Internal auditing standards have been promulgated worldwide in an effort to standardize internal audit practices globally. The Internal Audit Association's Standards for Professional Practice provides a vehicle for maintaining consistency across a wide array of legal and economic situations. Research, however, suggests that differing cultures have an effect on the development of auditing standards specific to each individual country (Abdolmohammadi & Burnaby, 2006). The extant literature has documented that there is significant explanatory power of national cultural differences on the development of control systems, the creation and implementation of audit standards, behavior, motivation, and job performance (Wood, 1996; Siegel, Omer & Karim, 1997; Chow, Deng & Ho, 2000; Patel & Psaros 2000; Awasthi, Chow & Wu, 2001; Salter & Sharp, 2001; Chow, Harrison, McKinnon & Wu, 2002; Stevenson, 2002; Ding, Jeanjean & Stolowy, 2005; Abdolmohammadi & Burnaby, 2006).

Differentiating among individuals who possess the attributes necessary for effectiveness in the internal audit profession is made even more complex when considering the effect of cultural differences. Culture has been defined as the collective view of human beings residing in a specific society (Hofstede, 1980). Culture gives a society the basic underpinnings for cognitive processes for individuals within the group and sets the ground rules for human behavior within the culture. Cultural elements such as beliefs, attitudes, and norms of social behavior influence human behavior and will affect how individuals react to ethical codes or standards.

CULTURAL RELATIONSHIPS IN STANDARDS AND PRACTICES AND IN BEHAVIOR AND DECISION-MAKING

Wood (1996) reported that global harmonization efforts have met with little success. Cultural and environmental factors appear to present a barrier to audit standardization. Taking into account the culture and historical development of auditing of three European Union members states (France, Italy, and the United Kingdom), Stevenson (2002) examined the statutory auditor independence. He found significant variances across the countries. Specifically, the development of the concept of independence in Italy differed substantially from the conceptual development of independence in Britain. Patel and Psaros (2000) studied senior-level accounting students from India, Malaysia, Great Britain, and Australia and measured perceptions of the independence of the external auditor. Their study indicated that the accounting students from countries that have greater

cultural interaction, such as Britain and Australia, have different perceptions of auditor independence than those from countries with less acculturation, such as India and Malaysia.

Ding et al. (2005) studied the level of divergence of national accounting standards from international accounting standards. Cultural factors provided the most explanatory power in identifying departures from the international standards. MacArthur (1996) found support for cultural differences in corporate comment letters concerning the International Accounting Standard Committee's Exposure Draft 32. Abdolmohammadi and Burnaby (2006) reported that attempts to standardize internal audit practices worldwide were influenced by cultural and legal economic differences in each country. Moreover, these differences were important factors in influencing divergent practice development. Birkett, Barbera, Leithhead, Lower and Roebuck (1999) reported major difficulties in efforts to arrive at a shared understanding across cultures for terms such as "compliance" and "internal control."

Sarens and De Beelde (2006) found that auditors' attitudes toward the control environment had a significant influence on the internal auditing practice. Those cultures that are trust-based tend to follow internal controls somewhat more on an "ad hoc" basis rather than on a formal rule basis. Cultures that are rule-based, such as the United States, have a different perspective on the internal control environment. As reported by Yamamura, Stedham and Satoh (2004), cultural differences were noted in job satisfaction and performance evaluation preferences across Japanese and American accountants. Van de Stede (2003) explored variations in corporate compensation schemes. The study showed that for small businesses, cultural differences played a role in the effective application of management control and incentive systems. Chow et al. (2002) examined the organizational cultural differences of public accounting firms. They found that there were cultural differences among the firms and also among ranks within the firms (partner, manager, senior). Responsibilities and behavior, job satisfaction, and job-fit differences were noted based upon rank at all levels which were attributed to culture. Awashti et al. (2001) explored the behavioral impacts of imposing evaluation and performance reward systems in a cross-cultural setting (American and Chinese). They found significant differences between the two cultures. The American workers were significantly less satisfied with the imposition of the reward system. Chow et al. (2000) researched the sharing of knowledge with co-workers. Workers in the Peoples Republic of China were far less likely to share knowledge with workers who were not in their "group" than their American counterparts. Siegel et al. (1997) compared the impact of cultural background on the understanding and interpretation of the Code of Ethics. They found that there were cultural differences on the understanding and interpretation of the Code of Ethics.

Salter and Sharp (2001) investigated the impact of national culture on the management control system. They found that cultures that are presumed to be traditionally culturally close, such as Canada and the United States, may exhibit significant differences in their approach to the commitment and implementation of control systems. Bayou, Siegel, and Smith (2006) studied the social interaction preferences of international public accounting personnel. They found that there were differences between the CPA firms' personnel of North American extraction and those with

non-North American heritage. These differences were attributed to North Americans' sense of individualism in contrast to the dominance of the family in Asian cultures. This study emphasized the need to understand the differences in predispositions because such information will assist decision makers on selecting personnel who are more likely to succeed in different work environments. The research on internal auditor selection has had limited exposure in the extant literature. Seol and Sarkis (2006), however, presented a study examining a method for internal audit personnel selection. In light of the evidence that shows considerable cultural differences do exist, it is useful to consider the potential role of social interaction attributes in the internal auditor hiring process.

Previous studies using psychological tests have yielded inconsistent results. In addition, studies using locus of control personality variables (Hyatt & Prawitt, 2001; Patten, 2005) also had findings that were different than those studies using the FIRO-B. Prior studies using the FIRO-B, however, have yielded consistent results (Whetten & Cameron, 1988; Siegel, Smith & Mosca, 2001; Siegel & Smith, 2003; Bayou et. al., 2006).

Based on this literature review, this study further explores the social interaction attributes of internal auditors from different cultures to better understand the interrelationships between social interactions and work relationships. In the next section, the personality and social attributes of accounting internal audit professionals is briefly discussed. Then the nature of the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) instrument is explained before the research methodology and results are presented. In the last section, the summary and conclusions are noted.

PERSONALITY AND SOCIAL SKILL OF ACCOUNTING PROFESSIONALS

As noted by Scarborough (1993), it is important to align social attributes with job characteristics. Misalignment of personality and social attributes can lead to lower performance levels and increased job dissatisfaction (Poznanski & Bline, 1997; Kleinman & Palmon, 2000). Prior research indicates that accounting employees exhibit particular personality characteristics which relate to their eventual career success (Satava, 1996; Scholoemer & Schloemer, 1997; Hyatt & Prawitt, 2001; Siegel & O'Shaughnessy, 2008). Internal auditors are facing increasing pressure to comply with management, regulators, and investors' expectations. Thus, it is crucial from both behavioral and communications perspectives for the internal auditor to understand and exhibit effective social and communications competencies. Dittenhoffer (1997) reported that future employees self-selected into potential work environments that matched their personalities. Similarly, Wheeler (2001) indicated that, while differences in need existed across accountants in various settings, individual accountants tended to "self-select" into work settings which are compatible with their individual personalities and need structures.

Prior studies of personality and social attributes of accountants have utilized three primary measures: Locus of control (LOC), Myers-Briggs Type Indicator (MBTI), and FIRO-B. The LOC measure was utilized by Hyatt and Prawitt (2001) to quantify external auditors' personality

characteristics. Results of this study indicated that auditors who have an internal locus of control perform better at unstructured CPA firms. These auditors outperform colleagues with external locus of control tendencies. Patten (2005) used a similar locus of control instrument to identify whether or not internal auditors' job satisfaction and performance measurement were related to locus of control.

A number of studies have utilized the MBTI to appraise the personality types of accountants and internal auditors. Wheeler (2001) summarized the results of sixteen studies which incorporated the MBTI in various accounting education research studies. Wheeler reported that the personality types of accountants did not differ over time. The use of measures other than those posited by the MBTI may yield different results.

FIRO-B

Since the FIRO-B theory and research instrument was developed by Schutz (1958), it has undergone material changes and expansions (Schutz 1992, 1994; Thompson & Schutz 2000). The FIRO-B theory identifies three basic interpersonal needs – *inclusion*, *control*, and *affection* – that should be considered to describe interpersonal behavior. Each of these interpersonal needs has two aspects, *expressed* and *wanted*. Individuals desire to express their needs for inclusion, control, and affection toward others, and tend to want others to express similar needs toward them.

A basic assumption of this theory is that all individuals seek to establish compatible relationships with others in their social interactions. In order to satisfy their needs and avoid stress and frustration, people strive for compatible relationships in inclusion, control, and affection (Whetten & Cameron, 1988; Thompson & Schutz, 2000).

The FIRO-B attribute of **inclusion** refers to a person's general social orientation and need for interaction and belonging. In maintaining relationships with other individuals, there is a need to be included in their activities or to include them in one's activities. To varying extents, individuals seek to belong to a group; but there is also a need to be left alone. People also differ in the strength of their need for inclusion and their associated level of comfort. The need to include or display interest in others is termed *expressed inclusion*. *Wanted inclusion* is defined as the need to be included by others in order to gain acceptance.

At the extremes, "under social" people are generally introverted and withdrawn, and "over social" people are usually extroverted, narcissistic, and superficial. Schutz (1966) indicated that inclusion involves an individual's feelings of self-worth; i.e., a need to feel worthwhile and respected. "Under social" individuals usually feel socially abandoned, uninvolved, and uncommitted. "Over social" people seek to focus attention on themselves, to be prominent, to be listened to, and to be noticed as a way of increasing their self-worth.

The FIRO-B aspect of **control** refers to the need for power and influence. This need includes maintaining a satisfactory balance of power and influence in relationships. Individuals often need to demonstrate leadership or control of others. The FIRO-B labels this need as *expressed control*.

In addition, individuals also have a *wanted control* need. To some degree, they want to be controlled or guided by others. Even though individuals want freedom and individuality, there is a need for varying levels of expressed and wanted control.

The FIRO-B attribute of **affection** refers to the need for intimacy and friendship. The concept of affection includes the dimension for intimacy and love; i.e., the need to feel close to others. *Express affection* involves the need to show warmth toward other individuals. But, they also need to maintain distance. They want affection or liking expressed toward them, e.g., *wanted affection*. These needs, of course, often vary in strength. The affection attribute does not necessarily include physical or romantic relationships.

The personality trait of **warmth** has also received some attention in the literature. Wiedmann, Waxenberg, and Mona (1979) suggest that the inclusion and affection scores added together are a measure of warmth. Like the FIRO-B needs, this warmth measure has "expressed" and "wanted" aspects. Fisher, Macrossen, and Walker (1995) study of this warmth variable indicated that "'warmth' springs from the adoption of common goals" (page 203). Furthermore, they showed that there is "a significant correlation between the rank-ordered performance and the combined Inclusion and Affection scores" and in the participation and management of software creation teams (page 202). Fisher et al. (1995) indicated that these findings give further justification for the inclusion by researchers of the warmth variable as designed by Wiedmann et al. (1979). Because of the importance given by Fisher et al. (1995) to warmth, and since internal auditors usually work in teams, the *warmth* variable is included in this study.

Schutz (1966) developed the FIRO-B instrument to measure interpersonal orientation. The instrument uses scores ranging from 0 to 9 for expressed and wanted needs for each of the three behavioral aspects - inclusion, control, and affection. The total score, referred to as the Social Interaction Index (SII) can range from 0 to 54. This index measures the overall interpersonal need. The higher the score, the higher the overall interpersonal need. Schutz (1994) has extensively revised and improved the FIRO-B. The result is a much more valid and reliable instrument.

The FIRO-B theory has been widely applied and validated. Schutz (1966) used the FIRO-B instrument to study over 6,000 individuals from the educational community. Lifton (1975) suggested that the FIRO-B scales are useful when studying interpersonal relationships. Both studies demonstrate that the scales are valid and reliable. Additionally, FIRO-B has been applied (1) to the organization of the major theories of family therapy (Doherty & Colangelo, 1984), and (2) to the classification of approaches to decision-making (Schutz, 1987). Fisher et al. (1995) noted that the FIRO-B theory and its scales have been widely accepted by professionals ever since its inception. Thompson (1998) indicated that the FIRO-B instrument has been used widely by business practitioners and noted its advantages in working with teams, team leaders, and executives. He found that FIRO-B can provide insights with regard to individual interactions, team dynamics, member compatibility, development, effectiveness, and member satisfaction.

McRae and Young (1990) reported no significant gender differences for the FIRO-B, with SII scores for Canadian undergraduate business male and female students. Kubes' (1992) study of

research and development professionals indicated significant correlations of interpersonal needs with adaptation/innovation scores. In Kubes' study, there were no significant gender differences in SII scores.

Siegel et al. (2003) found that accounting professionals employed by big international CPA firms have, on average, lower SII scores (lower preference for social interaction) than the national average of other business professionals. Other findings of this study were also interesting. Accounting professionals showed significant gender differences. The females had higher SII scores. Accounting professionals as a whole had higher scores than undergraduate accounting and business students. In a later study, Siegel and Smith (2003) report that CPA professionals at regional firms had significantly higher SII score than those employed at the big international CPA firms.

Bayou et al. (2006) examined the SII scores of CPAs at big international firms and compared the scores of North Americans and Non North-Americans. They reported significant differences in SII scores between these groups. The scores of North Americans were higher than the Non-Americans.

While FIRO-B studies report consistent results for those in the accounting profession, MBTI and LOC studies do not. Some studies using the MBTI psychometric instrument (Otte, 1984; Satava, 1996; Schloemer & Schloemer, 1997) found a relationship between personality type and accounting firm size. However, Wheeler (2001), using the same methodology, found no personality differences among accountants in different size CPA firms. Similarly, studies using the LOC methodology show inconsistent results. For example, Hyatt and Prawitt (2001) and Patten (2005) reported auditing professionals with more internal tendencies outperformed those with external tendencies. However, other LOC studies (Bernardi, 1994; Tsui & Gul, 1996) reported auditing professionals with higher external tendencies outperformed those with internal social tendencies.

Thus, using the FIRO-B theory and measures may be more useful to assess the attributes necessary to be effective in the internal audit function. As noted above, the LOC and MBTI studies have not been consistent predictors of professional effectiveness. Since the FIRO-B method has consistently measured social interaction in the past, it may be a more effective measure of requisite attribute critical for internal auditors.

This study calculated and compared the SII scores of internal auditors in different international regions. Chow et al. (2002) noted that those cultural differences significantly influenced organizational behavior. Significant differences between the groups may indicate that a different set of social interaction attributes are required for an internal auditor working in different cultures. This information could be useful in selecting personnel working in internal auditing either in their own culture or having multinational assignments.

RESEARCH METHODOLOGY AND RESULTS

The FIRO-B instrument was sent to certified internal auditors in corporations located in Hong Kong, Singapore, and Taiwan. This group constituted the Asian sample. These cultures are different from that of the U.S., U.K., Western Europe, and Australia (Pratt, Mohrweis & Beaulieu, 1993). As Hosfstede (1983) found, those Western and Asian cultures have significant differences in individualism and power distance. He places the U.S., U.K., Australia, and Western Europe in the small power distance and high individualism quadrants. In addition, the FIRO-B instrument was sent to a sample of U.S.-based internal auditors. The U.S. subjects were randomly surveyed from the Western and Southeastern sections of the United States. A coordinating representative of the local Institute of Internal Auditors (IIA) distributed the FIRO-B instrument to the selected subjects. This instrument is shown in Appendix A. Respondents anonymously returned the completed questionnaires directly to the researchers by mail. Table 1 provides a profile of the respondents. Internal auditor profiles are based on responses to the survey instrument. Ninety-nine useful responses were returned for the U.S. group and 102 responses for the Non-North American group.

Table 1: Respondents' Profiles		
Demographic	United States CIAs	Asian CIAs
Sample Size	99	102
Average Age (Years)	40.9	37
Gender:		
Male	50	52
Female	49	50
CIA and/or CPA	99	102
Experience in Field (Years)	11.9	13
Highest Degree:		
Bachelor Degree	54	66
Masters Degree	45	36

The profiles for the U.S. and Asian internal auditors were similar. For both groups, the gender division was approximately equal. The U.S. sample had 49 women and 50 men, and the Asian respondents consisted of 50 women and 52 men. The educational background was also fairly similar; all of the participants were college graduates. More U.S. auditors than their Asian counterparts, however, had graduate degrees; 45 of the U.S. subjects and 36 of the Asian participants indicated that they had a Masters Degree. The profiles of these subjects are not significantly different from the gender and educational profiles in similar studies by Siegel et al. (2001), Siegel et al. (2003), Kwon and Banks (2004), and Oxner and Oxner (2006). The average age was 40.9

years for the U.S. subjects versus 37 years for the Asian respondents. The years of experience were 11.9 for the U.S. subjects and 13 for the Asian respondents. These results are also similar to those in studies by Siegel et al. (2001), Siegel et al. (2003), and Kwon and Banks (2004). No differences were identified between earlier and later responses.

The null hypotheses of this study was that there were no significant differences between practicing internal auditors and public accountants regarding the following measures: *SII scores*, *expressed inclusion*, *wanted inclusion*, *total inclusion*, *expressed control*, *wanted control*, *total control*, *expressed affection*, *wanted affection*, *total affection*, *expressed warmth*, *wanted warmth*, and *total warmth*.

Table 2: FIRO-B Results (Average Scores)			
Attribute	United States CIAs	Asian CIAs	p-value
SII*	29.00	25.65	.010**
Inclusion:			
Expressed Inclusion	4.86	4.78	.855
Wanted Inclusion	4.98	4.96	.895
Total Inclusion	9.84	9.74	.395
Control:			
Expressed Control	4.55	4.45	.656
Wanted Control	3.55	3.10	.062*
Total Control	8.10	7.55	.553
Affection:			
Expressed Affection	4.55	4.52	.875
Wanted Affection	4.75	3.77	.022**
Total Affection	9.30	8.29	.064*
Warmth:			
Expressed Warmth	9.41	9.30	.952
Wanted Warmth	9.73	8.73	.080*
Total Warmth	19.14	18.03	.010**
*Significant at the .10 level, 2-tailed test			
**Significant at the .05 level, 2-tailed test			

The results in Table 2 show the mean SII score for internal auditors was 29. The average score for public accountants in the Bayou et al. (2006) study was 26.88. This difference was significant at the .05 level. The SII score was higher than prior research of CPAs employed in large international CPA firms, who scored 25.1 (Siegel et al., 2001). However, the SII score was not

significantly different than the average score of accountants at regional CPA firms (28.6) in the Siegel et al. (2003) study nor than the average score of national business professionals (29.3) in the Whetten and Cameron study (1988). Two attributes were significant at the .05 level, *wanted affection* and *total warmth*, and three more attributes were significant at .10 level, *wanted control*, *total affection*, and *wanted warmth*.

The significant differences on the *wanted affection* (p = .022) and *total warmth* (p = .01) attributes indicate that the U.S. internal auditors have a higher need for warmth and encouragement from others at work than do their Asian counterparts. These results suggest that supervisors of U.S. internal auditors should provide more continuous feedback. A lack of positive reinforcement and communication may be perceived by U.S. auditors as a lack of concern on the part of leadership. On the other hand, too much feedback and warmth may be perceived by the Asian internal auditors as offensive and distracting.

Differences between the two groups also occurred for *wanted control* (p = .062), *total affection* (p = .064), and *wanted warmth* (p = .080). The U.S. group's slightly higher score on *wanted control* implies that they have a greater desire than their Asian counterparts to work in a controlled environment with a set of clear instructions. It is interesting to note, however, that both groups scored low on this attribute, which indicates that both groups feel fairly comfortable working in a non-structured environment. Internal auditors are often called upon to be creative and work in a setting where there is not a set standard of steps that must be followed in order to fulfill their internal audit function. The slightly higher scores by U.S. internal auditors for the attributes of *total affection* and *wanted warmth* lend further evidence to the statements made in the previous paragraph. That is, U.S. auditors have a greater desire to receive warmth and encouragement from those that they work with than their Asian counterparts.

While significant differences are important, a noteworthy outcome of this study is the lack of significant differences in certain attributes between the U.S. and Asian internal auditors. No differences, for example, were found in any of the expressed attributes (i.e., *expressed inclusion*, *expressed control*, *expressed affection*, and *expressed warmth*). **Expressed** refers to the preferred actions or initiative taken by an individual. While differences exist between the two groups on how they want to be treated, the overt dealings with others by the U.S. and Asian internal auditors appear to be similar. In addition, no differences were found for the *inclusion* characteristic. Both groups scored high for this attribute with means near 5 on a 6-point scale. Internal auditors from both the U.S. and Asia want to be included in activities with others, have a sense of belonging, and be favorably looked upon by their group.

SUMMARY AND CONCLUSIONS

Using the FIRO-B as designed by Thompson and Schutz (2000), the social interaction preferences of internal auditors was examined. This is the first exploratory study of internal auditors using the FIRO-B theory and measurement. Unlike prior studies of internal auditors, which used

psychological metrics, this study used the FIRO-B instrument, which measures the ability of internal auditors to work effectively within their new work environment. Social interaction skills are of increasing importance to the working success of internal auditors.

This study found that internal auditors from the U.S. have significantly different social interaction attributes than their Asian counterparts. U.S. internal auditors appear to have a greater need for positive reinforcement and feedback from leadership. Along the same lines, internal auditors from the U.S. also have a greater desire for those around them to behave warmly toward them and be supportive of them.

Similarities between the U.S. and Asian internal auditors also exist. Both groups seem to have a high need for inclusion. That is, they want to be included in social activities and be accepted and recognized. In addition, no differences were found in the expressed attributes (i.e., *expressed inclusion*, *expressed control*, *expressed affection*, and *expressed warmth*). Perhaps with increased technology and globalization, cultural differences may be diminishing.

LIMITATIONS AND FUTURE RESEARCH

One limitation of the research is that it did not segment the sample by industry to determine if there are any industry or company size affects. Another limitation is that the research used auditors from just a single North American country (i.e., the United States) and three Asian countries (i.e., Hong Kong, Singapore, and Taiwan). Internal auditors from China or Japan may not have the same attributes as those from the Asian countries used in this study nor might internal auditors from Mexico have the same attributes as those from the U.S. In light of increasing corporate globalization, future research may want to include other countries. Additionally, combining the Myers-Briggs Type Indicator with the FIRO-B may provide insight into a combined social preference or psychological profile that might give clearer insights into the internal audit milieu.

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APPENDIX A: FIRO-B (ABBREVIATED FORMAT)

To begin this questionnaire, please answer a few questions to help with the orientation.

How old were you on your last birthday: _____

What is your sex: _____ Female _____ Male

How many hours per week do you work on average: _____

What is your position in the firm: _____

How long have you been working in your specific field overall: _____

Please indicate your highest level of education:

    _____ High School   _____ Ph.D.

    _____ Bachelor's Degree   _____ J.D.

    _____ Post-Baccalaureate   _____ Other

    _____ Master's Degree

What is your marital status?

    _____ Never Married

    _____ Married / Cohabitating

    _____ Widowed / Divorced / Separated

What is your current employment status?

    _____ Full-time   _____ Part-time

Which department do you currently work in: _____

How many months has it been since your last promotion: _____

Rate your job satisfaction on a scale from one (1) Dissatisfied to seven (7) Very Satisfied: _____

List the geographic location of your heritage (by birth or rearing):

    _____ North America   _____ South America

    _____ Western Europe   _____ Eastern Europe

    _____ Middle East   _____ Far East

    _____ Africa   _____ Australia

    _____ Pacific Islands   _____ Other

For each statement below, decide which of the following answers best applies to you. Place the number of the answer at the left of the statement.

Score from 1 to 6:   1. Always   6. Never

_____ I try to be with people.

_____ I let other people decide what to do.

_____ I join social groups.

_____ I try to have close relationships with people.

_____ I tend to join social organizations when I have an opportunity.

_____ I let other people strongly influence my actions.

_____ I try to be included in informal social activities.

_____ I try to have close, personal relationships with people.

_____ I try to include other people in my plans.

_____ I let other people control my actions.

_____ I try to have people around me.
_____ I try to get close and personal with people.
_____ When people are doing things together I tend to join them.
_____ I am easily led by people.
_____ I try to avoid being alone.
_____ I try to participate in group activities.
_____ I like people to invite me to things.
_____ I like people to act close and personal with me.
_____ I try to influence strongly other people's actions.
_____ I like people to invite me to join in their activities.
_____ I like people to act close toward me.
_____ I try to take charge of things when I am with people.
_____ I like people to include me in their activities.
_____ I like people to act cool and distant toward me.
_____ I try to have other people do things the way I want them done.
_____ I like people to ask me to participate in their discussions.
_____ I like people to act friendly toward me.
_____ I like people to invite me to participate in their activities.
_____ I like people to act distant toward me.

WEAK-FORM MARKET INEFFICIENCY AND FRAUDULENT FINANCIAL REPORTING

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ABSTRACT

The purpose of this study is to determine if the security prices of firms that are revealed to have engaged in fraudulent financial reporting (FFR) are weak-form inefficient. Incentives of institutional investors to incur information processing costs that can reveal biases (including fraud) in reported accounting information provide a rationale for hypothesizing weak-form inefficiency for FFR firms.

Results support the hypotheses that security prices of firms accused of FFR are weak-form inefficient both before and after the public announcement of fraud. Additionally, results suggest the frequency of weak-form inefficiency for fraud firms is significantly greater than that of nonfraud firms.

INTRODUCTION

The purpose of this study is to determine if the security prices of firms that are revealed to have engaged in fraudulent financial reporting (FFR) are weak-form inefficient. The incentives of institutional investors to incur information processing costs that can reveal biases (including fraud) in reported accounting information provide a rationale for hypothesizing weak-form inefficiency for FFR firms.

This study examines how the bias in accounting data due to FFR can prevent the contemporaneous impounding of accurate information in the security prices of FFR firms prior to the revelation of FFR. The bias effect is observed in a failure on the part of firms engaging in FFR to achieve weak-form market efficiency. This study tests for this failure in the year prior and the year following the public announcement of FFR for firms accused of fraud by the Securities and Exchange Commission (SEC) during 1998-2002.

Two factors motivate this study. First, Kothari (2001) asserts that the prices of securities establish the wealth that is allocated to both firms and individuals. Kothari (2001), like Lee (2001), considers the primary goal of market efficiency research to be the improvement of the market's allocation efficiency. Lee argues that accounting researchers have a distinct advantage in the arena of market efficiency research because this efficiency can be accomplished through the better application of accounting information to solve existing problems. Since accounting data affect the valuation of securities, the examination of abnormal market behavior associated with fraudulent accounting information adds value by increasing knowledge of the wealth allocation process and

the process by which accounting information is impounded in security prices. In particular, it is important to understand the extent to which fraudulent accounting information is impounded in security prices prior to public revelation of fraud and the extent to which investors who have incentives to process information are able to detect biases in the information prior to revelation of the fraud. Second, Bloomfield's (2002) Incomplete Revelation Hypothesis takes a cost-benefit approach to market efficiency. He suggests that investors will weigh the costs of becoming more informed against the anticipated benefits of trading with superior information. This study tests the implications of the Incomplete Revelation Hypothesis.

This research study makes a number of contributions that incorporate and extend the current literature. Fama (1991) believes that contributions to the market efficiency body of literature must be rated on their capacity to explain securities' time-series and cross-section performance. He contends that daily stock price data provide precise measurement of market efficiency while avoiding the joint hypothesis problem. This study extends the literature as Fama recommends. The joint hypothesis problem is avoided by the use of daily stock price data. It moves beyond current market efficiency literature by testing price response on an individual stock basis. Given that researchers (Chan, 1993; Sias and Starks, 1997) have concluded that individual stock autocorrelations are statistically insignificant, finding significant autocorrelations for FFR firms provides stronger evidence that these firms' behavior is unique with respect to market efficiency. Bushee (1998) supports research that focuses on a small, distinct sample of firms. This study does that with its examination of market inefficiency for firms accused of FFR by the SEC. To increase the validity of significant market inefficiency for FFR firms, a matching sample is employed that can be compared to conclusions of previous literature and the FFR sample.

The results of this study support both H1 and H2, which posit that the security prices of firms accused of FFR are weak-form market inefficient both before and after the public announcement of fraud. In addition, the results suggest that the frequency of weak-form market inefficiency for fraud firms is significantly greater than the frequency of weak-form market inefficiency for nonfraud firms. Results differ by category of FFR for fraud firms. For both the Asset Misappropriation and Understated Expenses categories, 80% of the firms in these categories achieved weak-form market inefficiency. 50% of firms accused of Overstating Revenues achieved weak-form market inefficiency, while only 25% of the firms accused of both Overstating Revenues and Understating Expenses achieved weak-form market inefficiency.

This study is organized as follows. Section I introduces a theoretical model of information processing and presents hypotheses of market and institutional investor behavior surrounding the announcement of FFR. Section II discusses the research design employed, which includes the sample selection and methodologies used in the study. The section begins with details of how the fraud firm and matching firm samples are chosen. This is followed by a description of the statistical methods and empirical models utilized in the study. Augmented Dickey-Fuller (Mills, 1999) and Box-Ljung testing (Woodfield, 2003) are used to test for weak-form market inefficiency. This testing is conducted on the time period that begins one year before and extends to one year after the

SEC's acknowledgement of FFR through the issuance of an *Accounting and Auditing Enforcement Release*. Between samples t-test analyses are used to test whether institutional investors act as if they are engaging in costly information processing that uncovers the FFR bias.

Section III presents the results of statistical testing. Descriptive statistics are provided along with the results of hypotheses testing of weak-form market inefficiency. Conclusions of the study are discussed in Section IV. The section begins with a summary of the major results. This is followed by commentary on the implications for both research and practice. Finally, limitations of the study and avenues for future research are discussed.

THEORY AND HYPOTHESES DEVELOPMENT

This section introduces and describes a theoretical model of information processing and presents hypotheses of market and institutional investor behavior. This model proposes a process by which FFR is discovered by a subset of market participants who choose to become informed and bear the cost of doing so. This behavior manifests itself in the fraudulent firm's inability to achieve weak-form market efficiency.

Fraudulent Financial Reporting and Security Price

The price of a security is determined by information impounded by investors (Fama, 1976).[1] The complete set of information at time t, T_t, that leads to observed price at time t, P_t, consists of relevant information impounded by the market, I_t, plus noise, ϵ_t.[2]

$$P_t = f(T_t) \tag{1}$$

$$T_t = I_t + \epsilon_t \tag{2}$$

I_t is information the market uses to estimate price. This set of information consists of two parts – information directly controlled by the firm, C_t, and information not directly controlled by the firm, U_t.

$$I_t = f(C_t, U_t) \tag{3}$$

Information controlled directly by the firm includes financial statements, press releases, pro forma earnings, product information, etc. Information not directly controlled by the firm includes external data such as industry averages, macroeconomic data, end user product sales, etc.

The information directly controlled by the firm can be further subdivided into two parts:

$$C_t = f(A_t, B_t) \tag{4}$$

A_t is the set of information controlled by the firm that reports actual economic events. B_t is information controlled by the firm that does not report actual economic events. B_t creates bias in the information set. FFR is bias introduced by management into information reported by the firm.[3]

For example, HealthSouth engaged in FFR from 1986 to 2003. At the time of each earnings announcement, senior management would have a "family meeting." In these meetings, management would decide what accounting entries to make in order to inflate HealthSouth's earnings to a level that met or exceeded the market's expectations (SEC, 2003). The difference between the true condition of the firm and information HealthSouth released to the public is included in the information bias B_t.

Substituting these factors, equation (2) becomes:

$$T_t = f (A_t, B_t, U_t) \qquad\qquad (5)$$

A_t and B_t are not readily observable by market participants, who observe C_t, the information reported by the firm. Bias (and FFR) is potentially revealed by inconsistency between C_t and U_t.[4]

As an example, consider inconsistencies between C_t and U_t observed in the Xerox fraud. At the same time Xerox was issuing information that demonstrated earnings growth that consistently met Wall Street earnings expectations, external industry information was revealing that Xerox was facing severe competition on both pricing and products. Ultimately, the SEC charged Xerox with FFR totaling $3 billion of improperly recognized revenue from 1997-2000. This improper recognition led to an overstatement of pretax profit during the period of $1.5 billion, 29% of Xerox's pretax earnings over the four-year period. If Xerox had not committed FFR (i.e., not biased their accounting information), the firm would have fallen short of Wall Street earnings expectations for 11 of the 12 quarters of 1997 through 1999 (WSJ, 2002).

Since U_t is not directly controlled by the firm, it is independent and less likely to be manipulated than company controlled C_t. When C_t and U_t are inconsistent, investors have an incentive to investigate this discrepancy in order to become more informed. However, there is a cost to processing the information. This processing cost is especially true when the inconsistency between U_t and C_t is high because more evidence must be gathered in order to make fully informed investment decisions. In addition, uncovering the full extent of the bias often takes time. The time and cost associated with additional information processing can result in a systematic price adjustment subsequent to the reporting of C at time t.

The price adjustment is subsequent to the firm's release of fraudulent information, embedded in company controlled information, C_t, as the bias, B_t. Even if C_t is highly inconsistent with U_t, not all investors will choose to find out why. The cost of additional information processing for many investors may be greater than their perception of any benefits from more informed trading (Bloomfield, 2002). In fact, many investors may not even consider this inconsistency a problem. Forsythe et al. (1999) find that buyers are sometimes influenced by overoptimistic information, so

much so that they may believe fraudulent announcements more than truthful ones. Therefore, many investors are likely to trade as if C_t equaled A_t.

If a subset of investors finds the inconsistency disturbing, they can choose to investigate the data to gather evidence on the true condition of the firm (Bloomfield, 2002). As they uncover evidence of FFR and separate C_t into A_t and B_t, they are able to trade with superior information and earn profits in excess of those earned by other investors.[5] However, because of the cost and time needed to distinguish A_t from B_t, systematic changes in price are likely to occur over a period of time. As informed investors identify B_t, their incentives to incur additional information processing costs increase, especially when the magnitude of B_t appears to be large. Consequently, in the case of FFR, the full magnitude of B_t is likely to be discovered over time, systematically affecting the behavior of a firm's stock price over that period.

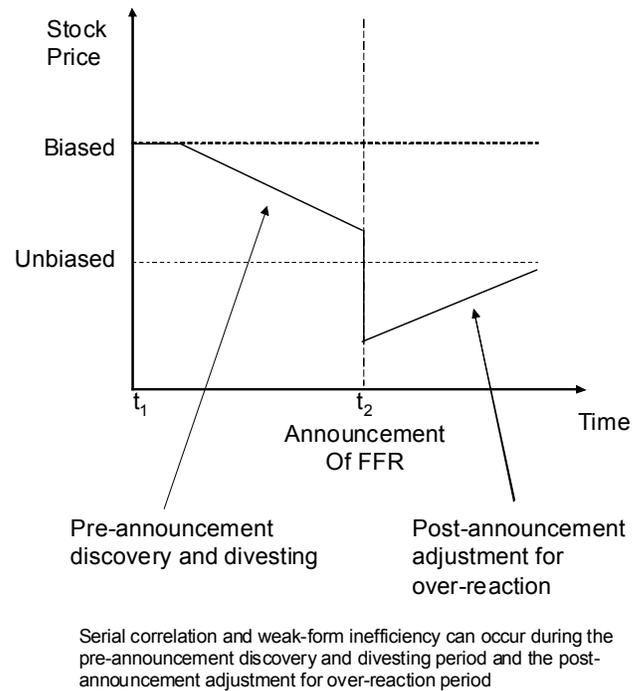## Fraudulent Financial Reporting and Market Inefficiency

Fama (1976, p. 133) defines market efficiency:

An efficient capital market is a market that is efficient in processing information. The prices of securities observed at any time are based on "correct" evaluation of all information available at that time.

There are three forms of market efficiency – strong, semi-strong, and weak. Weak-form efficiency occurs when past stock prices cannot be used to predict future stock prices (Magnusson and Wydick, 2002). If firm prices are not weak-form efficient, then prices are serially correlated (also referred to as autocorrelated); successive prices over time are significantly statistically related to each other (Hanke and Reitsch, 1986).

Figure 1 illustrates a hypothetical FFR-weak-form inefficiency process. At the first disclosure of fraudulent accounting data (t_1), trading is based upon that information as if firm controlled information, C_t, contains only reliable firm data, A_t. Subsequent to t_1, inconsistencies between C_t and U_t prompt a subset of investors to incur the time and money to further process information available for the FFR firm. During the fraud discovery process, participating investors work through multiple cycles of uncovering more of the bias, getting a more accurate estimate of the full extent of the fraud, and trading on their superior information. Their trading behavior is systematic as they divest of their holdings from t_1 to t_2.

Figure 1
Serial Correlation in Stock Prices of Firms Engaging in
Fraudulent Financial Reporting

Serial correlation and weak-form inefficiency can occur during the
pre-announcement discovery and divesting period and the post-
announcement adjustment for over-reaction period

At the announcement of FFR at t_2, uninformed investors are made aware that the company controlled information also includes an FFR bias. Since investors react more strongly to information easier to obtain (Bloomfield, 2002), the divesting and ensuing price drop may be greater (as illustrated in Figure 1) than necessary to adjust the price to its appropriate unbiased level at t_2. At this point, informed investors are again in a position to use their superior information to earn profits in excess of those earned by uninformed investors. Informed investors possess a more accurate estimate of the bias, and the unbiased level at which the stock should trade. During the post-announcement period, the complete set of information available is again not fully impounded in price for some time subsequent to t_2. Therefore, weak-form inefficiency is also evident during the adjustment period for over-reaction to the news of FFR.[6]

A distinction needs to be made between market efficiency and market equilibrium. Market equilibrium is achieved when at time t-1 the market arrives at a predicted pricing structure for time t, considers the risk of stocks and the desired return, and discounts the time t pricing structure to

arrive at a stock price for time t-1. A market equilibrium can be reached that is not efficient. Efficiency requires that all available information, including U_t, that is relevant to estimating the pricing structure at time t be used at time t and be used "correctly" (Fama, 1976). If the information set used is biased or incomplete, the equilibrium that is a result of interactions among investors is informationally inefficient, and as a result allocationally inefficient. This is true even if at the time investors assume that the false or incomplete information is the complete, unbiased information set that contains information relevant for determining pricing structure.

FFR in itself does not result in weak-form inefficiency. It is the price discovery process conducted by informed traders that prompts weak-form inefficiency. As informed investors gradually uncover B_t, their trades reflect this knowledge. As the magnitude of B_t is further realized, trades in the same direction – divesting – continue. As these investors continue to divest over time, prices become serially correlated. Price decreases occur as investors divest, as divesting continues, and again as informed investors' urgency to divest mounts. Knowledge of earlier price movements can be used to predict subsequent price behavior, resulting in serial correlation and weak-form inefficiency. Consequently, I hypothesize:

H1:   The security prices of firms engaging in fraudulent financial reporting are weak-form inefficient prior to the public announcement of fraud.

Serial correlation is also possible following the revelation of fraud. Bloomfield (2002) posits that investor reaction is stronger to information that is easier (less costly) to collect. Following the public announcement of FFR, previously uninformed investors will react to the announcement of fraud. This reaction may result in price adjustments larger than needed to fully impound the effect of the FFR's bias, B_t. Informed investors possess a more accurate estimate of B_t than previously uninformed investors. In this situation, informed investors can continue to use their knowledge to predict future prices, given past prices. Informed investors potentially can trade on their information advantage until price adjusts to its unbiased level. The result of this trading behavior is again serial correlation. Therefore, I hypothesize:

H2:   The security prices of firms engaging in fraudulent financial reporting are weak-form inefficient following the public announcement of the fraud.

Further testing is conducted to determine if the security price behavior of fraud firms differs significantly from nonfraud firms. Analysis of stock price behavior to determine the prevalence of weak-form market inefficiency will be completed for both fraud firms and a matching set of nonfraud firms. If a significant difference between the samples is present, then the use of weak-form efficiency testing to identify fraud firms before the revelation of FFR is possible.

Not all FFR may result in weak-form inefficiency. The magnitude of weak-form inefficiency and reaction to the announcement of FFR will depend on the magnitude of B_t and the availability

of U_t. For instance, the magnitude of B_t may be small enough that even if some investors choose to investigate and uncover the bias, it is done quickly enough that no serial correlation in prices emerges, or the amount of stock divested by informed traders is minimal. Additionally, a viable U_t inconsistent with C_t may not exist, so a basis for further investigations may not exist. Empirically, both of these conditions bias results toward failing to reject the null hypotheses for my study.

RESEARCH DESIGN

This section discusses the research design employed for hypotheses testing, including sample selection and methodologies used in the study. It begins with details of how the fraud firms and matching firm samples are chosen. This is followed by a description of the statistical methods and empirical models utilized in the study. These include Augmented Dickey-Fuller (Mills, 1999) and Box-Ljung testing (Woodfield, 2003) for weak-form market inefficiency testing and between samples t-test analyses that examine institutional investor behavior with respect to information processing efforts.

Sample and Data Selection

Fraud events are identified using SEC *Accounting and Auditing Enforcement Releases* (AAERs). Specifically, the sample includes AAERs that accuse firms of violating the antifraud provisions of the 1933 Securities Act (Rule 17(a)) and the 1934 Securities and Exchange Act (Rule 10(b)-5) from 1998 to 2002. From 1998 to 2002, the SEC issued 571 AAERs alleging FFR. This period includes a number of significant market events – the internet bubble, a bear market, and a rash of major accounting scandals including Enron, WorldCom, and Xerox.

More importantly, the dissemination of investment and trading-related information during this period occurs at a speed unheard of in previous years. For example, day trading became a common man's game, not just that of professional arbitragers. This speed of communication suggests that the market was likely to impound information into stock prices far more quickly than in the past.

Daily stock price activity was drawn from the Center for Research in Security Prices (CRSP) database for one year before to one year after the date of each relevant AAER. More than one AAER can relate to a specific case of FFR. The SEC may accuse the firm of FFR in one AAER; then later issue another AAER accusing firm management. In these cases, the earliest AAER issued alleging FFR is used as the event date for testing. The possibility that the news of FFR reached the market before the SEC issued the AAER could reduce market reaction at the time of the announcement. However, Feroz et al. (1991) demonstrated that even with a *Wall Street Journal* announcement of FFR prior to the release of an AAER, companies experienced a significant drop in price at the release of the AAER. The hypotheses tested in this study do not rely on precise timing of the public disclosure of FFR. A sufficiently long interval is used to test market behavior

so that some variation in public disclosure from the time of the AAER should have minimal effect on results.

Methodology

Weak-form market inefficiency is examined using Augmented Dickey-Fuller (ADF) testing (Franses, 1998; Tsay, 2002; Yaffee, 2000) and the Box-Ljung Chi-Square Test for White Noise (Woodfield, 2003). ADF testing resembles an ordinary least squares (OLS) regression equation. However, ADF is designed to account for the fact that the time series data are assumed to be autocorrelated. OLS assumes that autocorrelation does not exist. When autocorrelation exists, the variability of the OLS regression coefficients and the error term are underestimated. In addition, comparing regression results to the t and F distributions for hypothesis testing results in rejecting the null in many cases where it should not be rejected. Finally, the resulting R^2 estimate is overstated (Hanke and Reitsch, 1986).[7]

A difference between ADF and OLS is the critical distribution used for hypothesis testing. OLS uses the t distribution and assumes normality. The ADF conversion process results in a normal critical distribution. However, Monte Carlo simulation has demonstrated that the proper distribution for comparison is one that is shifted to the left of the t distribution (Tsay, 2002). This distribution is referred to as the τ (tau) distribution, and its critical values differ from the t distribution. For example, where the t distribution's negative, two-tailed critical value for an α level of 5% is -1.96, the same critical value for the τ distribution is -2.23 (Mills, 1999). Using the τ distribution results in more accurate conclusions with respect to rejecting or failing to reject the null hypotheses.

ADF testing determines whether the time series of stock price data is stationary. When the series is not stationary, a trend exists in the data that is strictly related to time. In other words, part or all of an observation's value depends on where in time its measurement was taken (Greene, 2000). An example of this is inflation. Prices rising over time may be due to inflation, a significant statistical relationship between prices, or both. Inflation causes non-stationarity in the sense that it forces prices to rise over time, and the price measured earlier in time will be less than one measured later in time because of the inflation. ADF testing examines whether the inflationary trend is present in the data or has been removed. The ADF regression equation used to test H1 and H2 is

$$\Delta P_{it} = \alpha_i + \beta_i P_{it-1} + \epsilon_i \qquad (6)$$

where $\Delta P_{it} = P_{it} - P_{it-1}$. The ΔP variable is referred to as first-differencing. It is an attempt to center the data and achieve stationarity. First-differencing removes the effect of inflation and exposes any underlying relationships in the data not related to the passage of time. Only one lag variable, P_{it-1}, is needed in the testing for weak-form efficiency (Fama, 1991). Stationarity is present when $\beta_i = 0$, i.e., there is no systematic relationship in prices due to time, either positive or negative (Yaffee,

2000). The second hypothesis tested is a joint test, H_0: $\alpha_i = 0$, $\beta_i = 0$. Again if the null hypothesis is not rejected, prices are assumed to be stationary.[8]

Once stationarity is achieved, the Box-Ljung Chi-Square Test for White Noise is used to detect autocorrelation in the stationary data (Woodfield, 2003). The null hypothesis for this test is that no autocorrelations are present in the data. Rejecting the null hypothesis in favor of the alternative means that statistically significant autocorrelation is present in the stock price data, even after the ADF testing showed the data to be stationary over time (Woodfield, 2003). If the null hypothesis is rejected, then prices are weak-form inefficient (Tsay, 2002). Past prices can be used to predict future prices, and weak-form efficiency is not achieved (Yaffee, 2000).

ADF and Box-Ljung testing are conducted on daily prices for one year before to one year after the issuance of an AAER. There are nine Quarterly Analysis Periods defined for this study, which include in chronological order QMinus4, QMinus3, QMinus2, QMinus1, QZero, QPlus1, QPlus2, QPlus3, and QPlus4. QZero is the fiscal quarter in which the AAER was issued. The four QMinus quarters denote which fiscal quarter preceding QZero is under analysis. For example, QMinus4 is the fourth fiscal quarter prior to QZero. The QPlus quarters denote those fiscal quarters following QZero. For example, QPlus2 refers to the second fiscal quarter following QZero. There are three longer Analysis Periods which include YM1, YP1, and Full2Yr. YM1 is comprised of the four fiscal quarters preceding the quarter in which the AAER was issued (QZero), which include QMinus4, QMinus3, QMinus2, and QMinus1. YP1 is the counterpart to YM1, only it refers to the four fiscal quarters following QZero, which are QPlus1, QPlus2, QPlus3, and QPlus4. Full2Yr is the longest Analysis Period and includes all nine Quarterly Analysis Periods – all four QMinus Analysis Periods, QZero, and all four QPlus Analysis Periods.

A matched sample of firms not accused of FFR is compared with the FFR firms to control for confounding factors that could affect market efficiency during the test period. An assumption in using a matched sample is that none of the matching firms engaged in FFR. Undetected FFR biases test results downward. Nonfraud firms are matched with the FFR firm sample on industry, size, and time period using data from the Compustat database. The matching firms have a minimum of a two-digit SIC Code match to their respective fraud firms. Nonfraud firms are within +/-30% of the total assets of its fraud firm. Finally, firms are matched on fiscal year end date if possible. For a number of firms, no match was available that met the industry and size requirements and had the same fiscal year end date. In these cases, the match was chosen based upon the industry and size components only. The Quarterly Analysis Periods for the nonfraud firms are based upon the AAER release date of its specific matching fraud firm. Given that the AAER release date is unique to each fraud firm, the dates corresponding to the Quarterly Analysis Periods will differ.

Chi-square contingency table testing (Hanke and Reitsch, 1986; Daniel, 1978) is conducted to determine if the proportion of firms in the fraud sample failing weak-form efficiency tests is significantly different than the same proportion for nonfraud firms. Chi-square contingency table testing analyzes data from matched samples where the possible output for each subject, in this case

a firm, is one of two alternatives (Daniel, 1978). For this study, the two alternatives are whether the firm achieved or failed weak-form market efficiency for the Analysis Period under examination.[9] The null hypothesis for this testing is that the proportions of firms in the fraud and nonfraud samples that are weak-form market inefficient are the same. The alternative hypothesis is that a significant difference exists between the fraud and nonfraud samples with respect to the proportion of firms that are weak-form market inefficient (Daniel, 1978). If FFR firms fail weak-form efficiency tests and non-fraud firms pass these tests, stronger implications can be drawn from the test results.

RESULTS

This section presents the results of statistical testing. Selection of the sample of fraud firms and the matching sample of nonfraud firms is discussed first. Next, descriptive statistics for each and comparison of the two samples are provided. Then the results of hypotheses testing of weak-form market inefficiency are presented. Results of institutional investor behavior testing as well as the outcome of further tests based upon the results of the hypotheses testing are then provided.

Sample and Data Selection

Of the 693 AAERs issued by the SEC from 1998-2002, 571, or 82.4% of the AAERs allege FFR. The allegations made in the 571 AAERs were made against 173 companies. For a firm to be included in the final sample, it must have trading data listed on CRSP for the relevant time period, there must be a matching, nonfraud firm listed in Compustat that meets the eligibility criteria discussed in the previous section, and this matching firm must have CRSP trading activity data as well. 42 firms met these criteria. The remaining firms were disqualified for one of four reasons. One firm's stock was not traded for over 150 consecutive days during the two year time frame of interest. Four other firms met the trading data requirements, but there was no matching firm available from the Compustat database that met the size and industry criteria and had trading data available on CRSP. Forty-eight other fraud firms were never listed in the CRSP database, so their stock price behavior was unavailable. Finally, the remaining firms in the initial sample were disqualified because CRSP had stopped tracking their trading activity prior to the date the AAER was issued for each firm. For many of these firms, delisting from a major stock exchange due to minimum size requirements was a precursor to delisting from the CRSP database. All of the three major exchanges, the New York Stock Exchange, NASDAQ, and the American Stock Exchange, have minimum firm size requirements for listed firms. If a firm falls below these, they are normally given six months to recover, and if they fail they are then delisted. When they are delisted, these firms are primarily then traded in pink sheets, or over the counter. Not all of these firms are tracked by CRSP, and these firms in particular were no longer followed by the CRSP database. The remaining 42 firms constitute the final fraud firm sample.

Despite the firm attrition, the final sample proved to be representative of the greater population of listed firms. The 42 fraud firms were respondents in 143 AAERs, 25% of the AAERs alleging FFR. Thirty-two separate industries are represented by these 42 firms. The only industry with more than two firms is Prepackaged Software with 5 fraud firms. This result aligns with former SEC Chairman Arthur Levitt's attack on microcap stocks in the late nineties. Chairman Levitt's strategy was stated repeatedly in the text of AAERs (SEC, 1998; SEC, 1999). Additionally, the size of firms in this sample range from $12.52 million to $111,287.30 million in assets, with an overall average of $8,855.91 million. These factors allow the examination of the weak-form market inefficiency-FFR relationship across a broad range of firm sizes and industries.

A second factor supports this sample as one that is representative of the population of listed firms. Evaluating weak-form market inefficiency to detect FFR prior to its public revelation requires that a firm's stock is still trading publicly. Excluding firms that were not trading at the time of AAER issuance provides a more accurate test in the sense that it considers only firms where the results of the weak-form market inefficiency-FFR relationship are usable in a timely manner. Knowledge of the usefulness of this relationship is not valuable if an inconsistent, external piece of information emerges and triggers investigation after a firm stops trading and the ability to divest has passed. In this case, no benefits of superior information are attainable, only the costs are incurred.

Another advantage to eliminating firms that ceased trading prior to AAER issuance is the avoidance of confounding factors affecting results. At the time a firm ceases trading, it may be involved in bankruptcy proceedings, having its registration revoked, or both. Each of these factors may affect testing in a way that the effects of the bankruptcy or registration problems cannot be disentangled from the FFR. It may be that these factors are interrelated and contribute to weak-form market inefficiency. When a firm's stock ceases trading, it is impossible to gauge the timing and process of how the complete information set is obtained by investors. The final sample provides an opportunity to examine the effects of ceased trading. A number of firms stop trading during the 4 quarterly analysis periods following the revelation of FFR.

Finally, with respect to judging the implications of the IRH, the eliminated firms may be a sample of firms where either all investors were aware of a firm's problems or none of the investors recognized the bias caused by FFR prior to a public announcement. In the former case, knowledge of financial distress by investors may exacerbate any market inefficiency results since investors react more strongly to information more easily obtained (Bloomfield, 2002). Each of these factors supports the final fraud firm sample as one whose results will be applicable to the greater population of listed firms.

All companies listed in Compustat were examined for their potential as a matching, nonfraud firm. As previously discussed, the search parameters include total assets within +/-30% of a fraud firm, a minimum of a two digit SIC Code match, and shares trading at the time of the corresponding fraud firm's AAER issuance date. When available, a matching firm was chosen with the same fiscal year end date as the fraud firm.[10] The 42 nonfraud firms represent 37 different industries. Size in

total assets ranges from $12.91 million to $98,651 million, with an average size in assets of $8,281.36 million. Recall that the size of the firms in the fraud sample range from $12.52 million to $111,287.30 million in assets, with an overall average of $8,855.91 million. The result of a t-test of a paired sample for differences in means that compares the asset size of the fraud and nonfraud firm samples shows that the two groups are not significantly different in the size of the firms, with a t-statistic of 0.13 and a corresponding p-value of 0.89.

Before utilizing daily stock prices from CRSP for hypotheses testing, two factors in the data need to be addressed. First, when a closing price is not available for a firm in the database, the average of the latest bid-ask spread is provided instead. To signify the difference, these values are preceded by a negative sign. Within the 84 fraud and nonfraud firms, 11 had bid-ask spreads within the data, with only three firms having more than 4 daily observations. The negative signs were removed from these observations, and they were incorporated into the daily pricing data. Second, the SEC instituted short-term, temporary trading suspensions for two of the firms. Daily prices for these days were recorded as zero. These days were excluded from the analysis.[11]

When discussing the FFR committed by the sample of fraud firms in AAERs, the SEC describes allegations from an income statement perspective. Charges of FFR fall into four categories. Firms are accused of Overstating Revenues, Understating Expenses, both Overstating Revenues and Understating Expenses, or engaging in FFR to hide widespread Asset Misappropriation by firm executives. Similar to the HealthSouth example provided earlier, for the first three categories the SEC consistently alleges that FFR is committed to meet or beat market expectations. Of the 42 fraud firms, 36% are accused by the SEC of Understating Expenses; 33% are accused of Overstating Revenues; 19% are accused of both Overstating Revenues and Understating Expenses; and the remaining 12% are accused of Asset Misappropriation. These categories will be evaluated later in the context of weak-form market inefficiency results.

Hypotheses Testing

Comparison of the frequency of weak-form market inefficiency is required to draw conclusions with respect to H1 and H2. A count of Quarterly Analysis Periods for the fraud and nonfraud firms and the number of these Analysis Periods that are weak-form market inefficient is provided in Table I. Chi-square Contingency testing for H1 and H2 requires a one-for-one match. Therefore, the 319 nonfraud firm Quarterly Analysis Periods that matched the available fraud firm Quarterly Analysis Periods exactly were used in the weak-form market efficiency Chi-Square Contingency testing. The ADF/Box-Ljung analyses (896) that were run on 42 fraud firms and another 896 analyses that were run on the 42 matching nonfraud firms are utilized.

Analysis Period	Number of Fraud Firms	Number of Weak-Form Market Inefficient Fraud Firms	Number of Nonfraud Firms	Number of Weak-Form Market Inefficient Nonfraud Firms
Table I: Count of Weak-Form Market Inefficient Fraud and Nonfraud Firms by Analysis Period				
QMinus4	41	13	42	1
QMinus3	42	11	42	0
QMinus2	42	12	42	2
QMinus1	42	18	42	1
QZero	39	16	40	1
QPlus1	33	12	36	4
QPlus2	28	9	32	3
QPlus3	22	11	25	4
QPlus4	22	5	25	3

a) Full2Yr denotes an Analysis Period that emcompasses all nine fiscal quarters surrounding the AAER issuance.
b) YMinus1 denotes an Analysis Period comprised of the four fiscal quarters preceding the fiscal quarter in which the AAER was issued.
c) YPlus1 denotes an Analysis Period comprised of the four fiscal quarters following the fiscal quarter in which the AAER was issued.
d) QZero denotes the fiscal quarter during which the AAER was issued.
e) QMinus1 denotes the fiscal quarter preceding QZero, QMinus2 denotes the second quarter preceding QZero, etc.
f) QPlus1 denotes the fiscal quarter following QZero, QPlus2 denotes the second quarter following QZero, etc.

In order to determine if the weak-form market inefficiency results for fraud firms is statistically different than the weak-form market inefficiency results for nonfraud firms, a Chi-Square Contingency Table (Daniel, 1978) compares the proportions of weak-form market inefficiency responses for each group. The fact that the two-samples are matched pairs is incorporated into the calculations of statistical significance. Table II provides the Chi-Square Contingency Table results that directly compare the weak-form market inefficiency results between the matched pairs of fraud and nonfraud firms for every Analysis Period. The number of available matched pairs for each Analysis Period is provided in the second column. The proportion of fraud firms that are weak-form market inefficient for each Analysis Period are presented in the third column. Following this are the proportion of nonfraud firms that are weak-form market inefficient for each Analysis Period. The difference between the proportions of weak-form market inefficient fraud and nonfraud firms are presented in the fifth column. In every Analysis Period, the percentage of fraud firms that are weak-form market inefficient exceeds that of nonfraud firms. The sixth and

final column provides the z-statistic that is a result of the matched pair testing in the Chi-Square Contingency Table. For all of the longer Analysis Periods and every Quarterly Analysis Period with the exception of QPlus4, the results demonstrate that the fraud firms are significantly more weak-form market inefficient than the nonfraud firms.[12] These results support both H1 and H2, which posit that the security prices of firms accused of FFR are weak-form market inefficient both before and after the public announcement of fraud. In addition, the results suggest that the frequency of weak-form market inefficiency for fraud firms is significantly greater than the frequency of weak-form market inefficiency for nonfraud firms.

Table II: Comparison of Weak-Form Market Inefficiency Results for Fraud Firms and Non-fraud Firms by Analysis Period					
Analysis Period	Number of Matched Pairs	Proportion of Fraud Firms that are Weak-Form Market Inefficient	Proportion of Nonfraud Firms that are Weak-Form Market Inefficient	Difference in Proportions of Weak-Form Market Inefficient Firms	z-Statistic
Full2Yr	42	0.60	0.17	0.43	-4.02 **
YMinus1	42	0.40	0.19	0.21	-2.06 *
YPlus1	33	0.45	0.24	0.21	-1.94 *
QMinus4	41	0.32	0.02	0.29	-3.21 **
QMinus3	42	0.26	0.00	0.26	-3.32 **
QMinus2	42	0.29	0.05	0.24	-2.67 **
QMinus1	42	0.43	0.02	0.40	-3.90 **
QZero	39	0.44	0.03	0.41	-4.00 **
QPlus1	33	0.36	0.09	0.27	-2.50 **
QPlus2	28	0.32	0.11	0.21	-1.90 *
QPlus3	22	0.50	0.18	0.32	-2.11 *
QPlus4	22	0.23	0.14	0.09	-0.71

Table II: Comparison of Weak-Form Market Inefficiency Results for Fraud Firms and Non-fraud Firms by Analysis Period	
a)	* and ** indicate significance at the 5 percent and 1 percent levels respectively. All tests are two -tailed.
b)	Full2Yr denotes an Analysis Period that emcompasses all nine fiscal quarters surrounding the AAER issuance.
c)	YMinus1 denotes an Analysis Period comprised of the four fiscal quarters preceding the fiscal quarter in which the AAER was issued.
d)	YPlus1 denotes an Analysis Period comprised of the four fiscal quarters following the fiscal quarter in which the AAER was issued.
e)	QZero denotes the fiscal quarter during which the AAER was issued.
f)	QMinus1 denotes the fiscal quarter preceding QZero, QMinus2 denotes the second quarter preceding QZero, etc.
g)	QPlus1 denotes the fiscal quarter following QZero, QPlus2 denotes the second quarter following QZero, etc.
h)	When evaluated at the 10 percent significance level, all categories become significant at the 5 percent level or less.

Table III focuses attention on the fraud firm sample and whether significant differences exist in stock price behavior between firms that achieve weak-form market inefficiency and those that do not. The average and standard deviation of stock prices by Analysis Periods for weak-form market inefficient and efficient fraud firms are compared for significant differences. T-test results indicate that weak-form market inefficient fraud firms have significantly lower average stock prices in the QMinus2, QMinus1, QPlus2, QPlus3, and QPlus4 Quarterly Analysis Periods. No significant differences in average stock price are evident for the remaining Quarterly Analysis Periods.

Table III: Comparison of Average Stock Price by Analysis Period for Weak-Form Market Inefficient and Efficient Fraud Firms					
	Market Inefficient Fraud Firms		Market Efficient Fraud Firms		
Analysis Period	Average Stock Price	Std. Dev. Stock Price	Average Stock Price	Std. Dev. Stock Price	t-statistic
QMinus4	$16.31	$17.37	$16.33	$30.52	-0.02
QMinus3	$16.65	$22.61	$16.23	$28.50	0.35
QMinus2	$7.28	$7.27	$18.63	$30.14	-10.28 **
QMinus1	$10.69	$14.65	$19.03	$31.89	-8.12 **
QZero	$14.65	$22.48	$14.29	$14.61	0.48
QPlus1	$16.43	$24.39	$15.63	$30.98	0.60
QPlus2	$9.78	$8.66	$18.00	$34.33	-5.63 **
QPlus3	$7.56	$6.98	$23.23	$42.34	-9.50 **
QPlus4	$2.88	$1.50	$19.67	$34.81	-8.55 **

Table III: Comparison of Average Stock Price by Analysis Period for Weak-Form Market Inefficient and Efficient Fraud Firms
a)   * and ** indicate significance at the 5 percent and 1 percent levels respectively. All tests are two -tailed.
b)   t-statistic is based upon the paired sample t-test for differences in means.
c)   Full2Yr denotes an Analysis Period that encompasses all nine fiscal quarters surrounding the AAER issuance.
d)   YMinus1 denotes an Analysis Period comprised of the four fiscal quarters proceeding the fiscal quarter in which the AAER was issued.
e)   YPlus1 denotes an Analysis Period comprised of the four fiscal quarters following th e fiscal quarter in which the AAER was issued.
f)   QZero denotes the fiscal quarter during which the AAER was issued.
g)   QMinus1 denotes the fiscal quarter preceding QZero, QMinus2 denotes the second quarter preceding QZero, etc.
h)   QPlus1 denotes the fiscal quarter following QZero, QPlus2 denotes the second quarter following QZero, etc.

Table IV examines the categories of FFR and the frequency with which firms within them achieve weak-form market inefficiency for the Full2Yr Analysis Period. For both the Asset Misappropriation and Understated Expenses categories, 80% of the firms in these categories achieved weak-form market inefficiency. Fifty percent of firms accused of Overstating Revenues achieved weak-form market inefficiency, while only 25% of the firms accused of both Overstating Revenues and Understating Expenses achieved weak-form market inefficiency.

Table IV: Comparison of Fraud Categories for Weak-Form Market Inefficient and Efficient Fraud Firms			
Fraud Category	Number of Weak-Form Market Inefficient Fraud Firms	Number of Weak-Form Market Efficient Fraud Firms	Percentage of Firms in Fraud Category that are Weak-Form Market Inefficient
Asset Misappropriation	4	1	80.0%
Both Overstated Rev. and Understated Exp.	2	6	25.0%
Overstated Revenues	7	7	50.0%
Understated Expenses	12	3	80.0%
a) Weak-form market inefficient and efficient results are based upon the Full2Yr Analysis Period testing. Full2Yr denotes an Analysis Period that encompasses all nine fiscal quarters surrounding the AAER issuance.			

CONCLUSIONS

This section presents the conclusions of this study. First, a summary of the major results is presented. Next, a commentary on the implications for both research and practice is provided. Finally, limitations of the study and avenues for future research are discussed.

The results of this study support both H1 and H2, which posit that the security prices of firms accused of FFR are weak-form market inefficient both before and after the public announcement of fraud. In addition, the results suggest that the frequency of weak-form market inefficiency for fraud firms is significantly greater than the frequency of weak-form market inefficiency for nonfraud firms. Results differ by category of FFR for fraud firms. For both the Asset Misappropriation and Understated Expenses categories, 80% of the firms in these categories achieved weak-form market inefficiency. 50% of firms accused of Overstating Revenues achieved weak-form market inefficiency, while only 25% of the firms accused of both Overstating Revenues and Understating Expenses achieved weak-form market inefficiency.

In addition to the specific fraud-related research objectives, this study also serves as a test of the implications of the IRH (Bloomfield, 2002). Whether investors choose to become informed is a decision based on an analysis of expected costs of gathering information and expected benefits of trading with superior information. Significant results suggest that the IRH may be a viable theory for analyzing market-wide behavior.

Since results suggest that FFR firms systematically fail the weak-form of market efficiency before the public revelation of fraud, both investors and auditors can use the FFR-weak-form market inefficiency tests to improve trading and auditing. For investors, knowledge of this FFR-weak-form inefficiency can result in an inexpensive arbitrage mechanism. If recent past prices reveal weak-form inefficiency, uninformed investors can simply divest their holdings (or sell short). Informed investors can earn the highest level of excess profits because when divesting or selling short during the bias discovery process, they can use the added knowledge of the amount of bias to predict future prices better than other investors.

For auditors, the FFR-weak-form market inefficiency relationship can affect different stages of the audit process. If auditors find this relationship is present in prices prior to an audit, they could choose to either refuse a potential new client or not continue with a current client. Next, in the planning stage auditors have access to a client's stock price behavior during the interim period. If FFR is suspected as a result of market inefficiency testing, auditors can make changes to the audit plan. First, auditors can increase their estimate of control risk used to determine audit risk. Second, analytical procedures can be conducted in the planning stage to determine if the firm is manipulating estimates or pushing expenses to other periods. With respect to the scope of the audit, one option is to adopt a no reliance strategy, which increases the nature, timing, and extent of substantive testing. Finally, during the final review process auditors can include market inefficiency testing of

stock price behavior during the fiscal year and subsequent period as a final effort to exert professional skepticism and detect fraud.

There are two primary limitations to this study. First, inferences about FFR firms and market inefficiency are made using a sample of firms where the FFR was detected and disclosed. It is unknown whether the behavior of firms engaging in FFR that is not detected and disclosed is similar to this sample. This limitation affects my nonfraud sample as well, since the assumption is that none of these firms have engaged in FFR. The second limitation affects weak-form market inefficiency testing. To be used as an arbitrage mechanism, serial correlation tests for weak-form inefficiency require a time series of prices. If the time required by informed investors to uncover a bias is short in duration, serial correlation may not materialize for use by uninformed investors in real time.

One avenue for future research involves the IRH (Bloomfield, 2002). Future research could conduct additional tests of the implications of this theory. Other factors affecting market efficiency could be analyzed from this cost-benefit perspective, such as earnings management, insider trading, and firm disclosures. A second avenue for future research involves the magnitude of FFR. AAERs do not necessarily disclose the full extent of FFR. For some cases, further investigation is needed before the full magnitude of FFR is known. Future research could examine the amount of FFR for this sample of firms. Data on the full extent of the financial statement restatement necessary to counteract the FFR bias can be collected from 10K's and 10K/A's. These data could then be used to determine the magnitude of bias necessary to prompt market inefficiency during the price discovery process.

ENDNOTES

[1] Subscript for individual firms is omitted for simplicity.

[2] Noise causes the price to fluctuate about its equilibrium value. However, it is random – a white noise process – with an expected mean of zero, constant variance, and normally and independently distributed observations (Yaffee (2000)). An example is the fluctuation from trades by investors whose purpose is to meet liquidity needs.

[3] It is not assumed that all bias results from FFR. Bias may be intentional or unintentional and may result from reporting rules imposed by external authorities as well as from discretionary management decisions.

[4] No assumption is made about whether information controlled by the firm leads or lags information not controlled by the firm. Both leads and lags are possible. For example, an industry forecast will lead a company's earnings announcement, while an industry performance index will lag the firm's earnings announcement.

[5] Excess earnings can come from divesting of securities or selling short those securities prior to the revelation of FFR.

[6]   The scenario illustrated in Figure 1 is only one of several possible outcomes. I do not assume that all FFR cases will fit this description.

[7]   Statistical packages such as SAS Enterprise Guide contain the ADF testing function, which eliminates the need to calculate complicated converging statistical processes by hand.

[8]   SAS reverses these hypotheses in its ADF stationarity testing. The null hypothesis is non-stationarity and the alternative hypothesis is stationarity. Although this is counterintuitive, this reversal provides a much stronger test of stationarity, requiring significant evidence of its existence. If first-differencing of daily stock prices does not lead to stationarity in ADF testing, then the log of prices needs to be used and ADF testing rerun to find under what condition prices are stationary.

[9]   Daniel (1978) provides a detailed description of how to conduct Chi-square contingency table testing. Given that there are two outcomes, the results can be compared for differences in frequencies (Daniel (1978)). In other words, when a firm Analysis Period is weak-form market efficient, it is assigned a value of zero. When it is weak-form market inefficient, it is assigned a value of one. The results for the FFR firms' Analysis Periods are matched with the results for its matched nonfraud firms' Analysis Periods. The number of ones can now be treated as frequencies. Four categories of results emerge, where matched pairs are either 0-0, 0-1, 1-0, or 1-1. Data are evaluated on a matched pair basis. N is the number of pairs of fraud/nonfraud firms tested for that Analysis Period. Within pair observations are dependent while between pair observations are independent. The two proportions to be compared are calculated as the total number of pairs where fraud firms (or nonfraud firms) demonstrate weak-form market inefficiency divided by the number of pairs included in that Analysis Period (Daniel (1978)). The test statistic compares the difference between the 0-1 and 1-0 results, divided by the square root of the sum of pair observations in these two categories. This isolates the pairs where a difference in outcome of weak-form market inefficiency testing exists. This test statistic has a standard normal distribution under the null hypothesis, is compared to the critical value of z at the $\alpha/2$ significance level, and the null is rejected if the test statistic z value exceeds the critical z value (Daniel (1978)).

[10]   For 16 of the 42 fraud firms no match was available that met the size and industry requirements and the fiscal year end match as well. Results that exclude these matched pairs are qualitatively the same as the full sample results presented.

[11]   Results that exclude the bid-ask spread and zero observations are qualitatively the same as the results presented.

[12]   All Analysis Periods are significant at the 10% level of significance.

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FINANCIAL STAKE AND CPA SUPPORT FOR EXPANDING SARBANES-OXLEY TO NONPUBLIC ENTITIES

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ABSTRACT

This paper examines the relationship of CPAs' financial stake in the practice of public accounting and their support for expanding Sarbanes-Oxley (SOX) to cover nonpublic entities. SOX represents a significant regulatory change relative to the CPA profession and is aimed at improving corporate governance and the audit function. Findings indicate that CPAs with higher financial stake in the practice of public accounting support expanding SOX to nonpublic entities less than CPAs with lower financial stake. The current study strengthens prior research which shows financial stake to be a significant factor relative to CPAs' preferences toward changing ethical issues. CPAs are required to be independent and objective in their judgments and findings that financial stake significantly factors into their support for changing ethics-based regulation must be viewed with concern. Future research should look closely at the financial stake variable relative to CPA views to determine whether self-interest among CPAs may be jeopardizing the public interest.

INTRODUCTION

In these troubling times of economic and financial crises facing our nation, it is imperative that financial accounting information be fairly presented. Certified Public Accountants (CPAs) must render unbiased judgments toward the financials of corporate America or the whole capitalistic market system can disintegrate. If we ever needed a deep sense of integrity among market participants, it is now.

Following the Enron and WorldCom fiascos at the beginning of this century, the Securities and Exchange Commission (SEC) was empowered by Congress to administer the Sarbanes-Oxley Act of 2002. Its provisions are intended to strengthen corporate governance and the audit function. The provisions of SOX extend to companies which trade equity shares over a public stock exchange overseen by the SEC. SOX does not, at this time, apply to nonpublic companies. However, there is debate over whether SOX should be expanded to nonpublic entities. Nonpublic entities include those that are not currently subject to securities law (i.e. privately owned companies, nonprofit entities, etc.). If stock is available for sale, it is not sold over an open market exchange.

Regardless of whether an entity trades its stock over a public stock exchange regulated by the SEC (therefore "public" in the context of SOX) or not ("nonpublic" in the context of SOX), there are stakeholders who provide the capital to keep those entities going. In other words, regardless of whether the entity is public or nonpublic, a commonality is the need of quality financial information provided to those who have their money invested in that entity. These stakeholders comprise the critical element of the public interest when it comes to maintaining a healthy capital marketplace.

Prior studies (Allen and Ng, 1997; Allen and Ng, 2001) found that a CPA's financial stake bore a significant relationship to the CPA's preferences for ethical changes wrought by the Federal Trade Commission (FTC) in its consent order to the American Institute of CPAs (AICPA) in 1990. The financial stake variable was established in the 1997 study via the FTC's challenge that CPAs included certain ethics bans in their professional conduct code as a means of restraining trade. That is, CPAs were basically accused of banning certain activities in order to increase the size of their pocketbooks.

PROBLEM AND RESEARCH QUESTION

The problem addressed by this paper is that financial stake appears to be a significant variable when related to CPAs' preferences for regulatory changes, specifically, changes aimed at addressing certain ethical issues. SOX is viewed in this paper as a regulatory change, expressly intended to improve the integrity of corporate governance and the audit function of CPAs. There is much debate today over whether SOX should be extended to cover nonpublic entities, better known as the cascading of SOX. The research question then is to address whether the financial stake of CPAs is a significant variable relative to their support for cascading SOX to nonpublic entities. The question is:

> *Given a CPA's level of financial stake in the practice of public accounting, does she/he support expanding SOX provisions to nonpublic entities?*

LITERATURE REVIEW

In 1990, the FTC issued a cease and desist order (FTC, 1990) to the AICPA, mandating the profession stop banning certain types of fees and certain types of advertising, bans incorporated within the AICPA Professional Code of Conduct. The FTC alleged that the bans represented restraint of trade violations. The FTC's charges implied that CPAs were financially motivated to retain the bans. Allen and Ng (1997) sought to determine whether the FTC's allegations appeared reasonable. To do so, they studied the relationship between CPAs' financial stake in the practice of public accounting and their support for bans being overturned by the FTC's consent order to the AICPA. The authors' research actually established the proxy for measuring a CPA's financial stake

in the practice of public accounting which is used in the current study. Specifically, Allen and Ng's research studied the relationship between CPAs' financial stake and their support of three fee-type AICPA bans challenged by the FTC as restraint of trade violations, namely bans prohibiting CPAs from accepting commissions, referral fees, and contingent fees. Additionally, their study separately studied the relationship between CPAs' financial stake and their support for an AICPA ban against advertising with trade names. This ban was also challenged by the FTC as a restraint of trade violation.

Allen and Ng (1997) reasoned that if the FTC was right about its allegations, which again implied the CPA profession was trying to restrain trade by retaining the subject bans, it would follow that CPAs with a higher financial stake in public practice would support retaining the bans more strongly than would CPAs with lower financial stake. However, they questioned that logic relative to the fee-type bans since relaxing those bans would actually open up new revenue streams to CPAs. Literature is abundant that shows that advertising bans restrain trade by stifling competition, reducing information available to consumers, all leading to higher prices to consumers. Accordingly, Allen and Ng reasoned that the FTC's allegation toward the ban on advertising with trade names was intuitively appealing.

Two-tailed tests were performed by Allen and Ng to ascertain the nature of any potential relationships found between a CPA's financial stake and her/his support for retaining or relaxing the fee-type bans covered by the FTC order. No directional hypothesis was stated since there were opposing angles to take as to how CPAs might gain. That is, the FTC's allegations strongly implied that support for retaining the fee-type bans was consistent with a CPA having a higher financial stake in public accounting practice. Conversely, realizing new revenue streams by removing the bans suggested that CPAs with higher financial stake would favor relaxing the bans relative to CPAs with lower financial stake. The study found that CPAs with higher financial stake, as measured by their position in the public accounting firm, preferred the FTC's position of relaxing fee-based bans more than did CPAs with a lower financial stake, a finding not consistent with the related FTC's allegations…..but consistent with what Allen and Ng expected since it is intuitively appealing that new revenue streams would be favored more by those with a higher financial stake in those revenue streams.

With regard to CPAs' support for retaining an advertising ban on use of trade names, and consistent with the FTC's restraint of trade allegation, Allen and Ng (1997) hypothesized that CPAs with a higher stake would favor retaining the ban relative to CPAs with a lower stake. Again, advertising bans had already been shown to result in restraint of trade activity whereas no priors showed fee-type bans to be restraint of trade activity. Indeed, Allen and Ng determined that CPAs preferred retaining a ban on advertising with trade names, a finding consistent with the related FTC allegations, and consistent with what Allen and Ng expected since stifling competition among CPAs by banning advertising would financially benefit CPAs with a higher financial stake the most.

The net effect of results from the Allen and Ng 1997 study is that it appeared that CPAs would gain financially by an ability to charge previously banned fees, and would also gain by stifling advertising. The financial stake variable used in the Allen and Ng study identified the expected link of a CPA's financial stake in public practice and her/his support of specific ethical regulation.

In another work, Allen and Ennis (2007) concluded that the socialization of CPAs described by Ponemon (1992) whereby CPAs exhibit lower moral reasoning as they move up in rank within the public accounting firm may plausibly be described as socialization toward, or a culture of, self-interest. That is, what is likely taking place is a growing financial stake that comes with a higher rank in the public accounting firm is lending to a compromise of ethical decision-making by the CPA. Since financial stake of a CPA in the practice of public accounting is a relatively new variable, the continuation of studying its relationship to CPAs' preferences in the context of a change in ethics-based regulation is profoundly important. This is because the CPA, in effect, must ultimately render an ethical opinion (decision) as to the fairness of management representations in the financials by way of the most important role played by a CPA, namely, external auditor. Thus, the CPA must remain untarnished by anything that would filter into that decision resulting in a biased judgment.

METHOD

The present study views SOX as bringing significant change to the self-regulatory activity of the CPA profession, especially with regard to the audit role of the CPA toward publicly traded companies. Since the audit role is specifically a function in place to serve the public interest, not to serve the companies being audited, SOX is seen as an attempt at strengthening the integrity of the audit function. It, therefore, is viewed as a change that deals with ethical issues.

Hypothesis

While there is no prior research showing that CPAs have gained financially by SOX, it is intuitively appealing to think that the regulation adds to the workload of the auditor, thereby raising her/his fees. However, an extension of SOX to nonpublic companies might be viewed from opposite perspectives as to whether CPAs would gain financially or not.

Toward the perspective that the CPA might not gain, there are two notions proffered. First, if the profession is overly occupied with its big publicly-traded corporate clients, it might not be that interested in investigating adherence to SOX by nonpublic companies. That is, extending SOX to nonpublic entities might interrupt the ability of CPAs to enjoy the higher fees derived by monitoring for compliance their "big fish" publicly-traded audit clients. This would be due to the "necessity" of CPAs taking on the additional work mandated by SOX expansion to nonpublic entities. It is

likely that CPA firms would all have to share in taking on the work imposed by an expansion of SOX to nonpublic companies. Second, and to be taken independent of the first, CPAs might think that many nonpublic entities would be hard-pressed to afford compliance with SOX. This would likely translate to a loss of fees should adherence to SOX contribute to nonpublic entities failing at a greater rate than can be offset by the ability of CPAs to charge higher fees for SOX compliance. Since SOX was implemented, for example, there are numerous small-cap publicly-traded companies that have intentionally delisted their stock from public stock exchanges for the express reason of getting out of the huge relative expense of compliance with SOX. Given either of the foregoing notions toward the perspective that the CPA might not gain financially should SOX be expanded to nonpublic entities, one would expect CPAs with a higher financial stake in the practice of public accounting to be more opposed to expanding SOX toward nonpublic entities than CPAs with a lower stake.

Toward the perspective that the CPA might gain, CPAs might see an expansion of SOX to nonpublic entities as additional revenue streams and thereby favor the opportunity to gain financially. Given this thinking, one would expect CPAs with greater financial stake to be more supportive of expanding SOX to nonpublic entities than CPAs with a lower stake.

Thus, in the absence of a clear directional expectation, the following non-directional hypothesis in the alternative form is established:

> *The financial stake of a CPA in the practice of public accounting is related to her/his preference for expanding SOX to nonpublic entities.*

Data Collection

A mail survey collected the data for this study during late 2004 and early 2005. Data was collected from a random sample of the AICPA membership. A 32.4 percent response rate resulted from gaining 305 usable responses out of 941 CPAs solicited. Based on comparing responses of late respondents from a follow-up mailing to the responses of early respondents from the initial mailing, nonresponse bias was not evidenced. A questionnaire was included in the survey which collected the data for testing the hypothesis in this study. CPA's were asked to indicate their financial stake by choosing an answer descriptive of their position in the public accounting firm. They were also asked to indicate whether they supported expanding SOX to nonpublic entities.

Data Coding

Allen and Ng (1997) measured financial stake by combining the type and position of CPAs. Type dichotomizes CPAs into those not in public accounting and those in public accounting. CPAs not in public accounting practice proxy for those with no (or nil) direct financial stake and, as such,

represent those CPAs with the least potential financial bias toward a regulatory change aimed specifically at public accounting practice. Position reflects the employment rank of those CPAs in the practice of public accounting. Thus, the continuum for the financial stake variable ascends from CPAs not in public accounting, to staff members in the public accounting firm, to managers in the firm, and finally to partners or proprietors in the firm, coded as 1, 2, 3 and 4, respectively. Given this proxy, established by the Allen and Ng 1997 study and strengthened later by the Allen and Ennis 2007 work, the current study measured the financial stake of a CPA in public practice in the same manner as already described.

Support for expanding SOX to nonpublic entities was measured by coding CPAs into two groups, either for or against. This was accomplished by capturing CPAs' responses to a question which elicited respondents to indicate support by selecting "yes" (coded 1) or to indicate opposition by choosing "no" (coded 0).

Importance of Analysis

Analyzing the relationship of a CPA's financial stake in the practice of public accounting to her/his support for expanding SOX to nonpublic entities offers the opportunity to determine whether financial stake is an important variable relative to CPAs' preferences toward ethical issues. That is, given that it has been found to be an important variable in prior research settings, a finding of significance in a new setting, that being an expansion of SOX to nonpublic entities, would strengthen the notion that financial stake may be an important factor relative to CPAs' ethical decision-making. Given the growing level of accounting and auditing scandals reported on over recent years, any study which adds to the notion that financial stake of CPAs in public practice significantly impacts their ethically-based decisions builds the case that self-interest may be afflicting the profession. This would pose a gargantuan problem since capital formation, in large measure, depends upon the confidence of the public to invest in companies. The audit role serves as a critical monitoring mechanism in sustaining that confidence among investors. An investor wants to know whether the financial representations of company management are fair. Clearly, if the CPA is significantly influenced by any type of monetary self-interest when passing a "fairness" judgment on management representations in the financials, the public interest is greatly endangered and confidence in investing could collapse. Given the fragility of the current state of the U.S economy, and for that matter, the world economy, it's incumbent on the CPA profession to quickly face and address any ethical conflicts of interest it has invited upon itself by allowing money to become more important than the public interest.

Correlation analysis was used to test the hypothesis in this study. Both Pearson's R and Spearman Rank were calculated to determine whether the proposed relationship may exist.

RESULTS

Two tables are presented to reveal the relevant results for this study. Table 1 shows the frequency of CPA responses relative to both financial stake and to support for expanding SOX to nonpublic entities. Of the 305 CPA respondents, 98 were not in public accounting (had no financial stake), 33 were staff members in a public accounting firm, 95 were managers and 79 were partners.

Table 1: Frequency of CPA Responses			
Financial Stake	No to Expansion	Yes to Expansion	Totals
Not in Public Accounting	64	34	98
Staff	22	11	33
Manager	68	27	95
Partner	64	15	79
Totals	218	87	305

Of the 305 respondents, 218 indicated they did not support the expansion of SOX to nonpublic entities while 87 did support its expansion. Clearly, the majority of CPA respondents did not support the expansion of SOX to nonpublic entities

Table 2 reveals the correlation results from testing the hypothesis in this study. Pearson's R analysis resulted in a coefficient of -.130, significant at the .05 level. Applying Spearman Rank analysis resulted in a coefficient of -.133, also significant at the .05 level. Based on these results, the hypothesis may be accepted. That is, the financial stake of CPAs is significantly related to their support for expanding SOX to nonpublic entities. The direction of the relationship found, which, by the way was not included in the non-directional hypothesis developed for the study, was negative. Therefore, the results indicate that as CPAs move to a higher financial stake in the practice of public accounting, they tend to support an expansion of SOX to nonpublic entities less.

Table 2: Correlation Results of Testing Hypothesis		
	Coefficient Value	Significance
Pearson's R	-.130	.023
Spearman Rank	-.133	.021

CONCLUSIONS AND SUGGESTED FUTURE RESEARCH

Allen and Ng (1997) discovered that financial stake of CPAs was an important variable relative to their support for the ethical regulatory changes made by the FTC's consent order to the

AICPA. The current study found that financial stake is, again, an important variable relative to a CPA's support for expanding ethical regulatory change, in the form of SOX, to nonpublic entities. Specifically, the higher a CPA's financial stake in the practice of public accounting, the lesser her/his support for expanding SOX becomes. One possible explanation may be that CPAs with a higher financial stake in public practice are not that interested in expanding SOX to nonpublic entities because their plates are full servicing their publicly traded American behemoths. Additionally, it may be that the costs of SOX compliance by nonpublic entities would be prohibitive such that many of the entities might be unable to stay afloat financially. Regardless of the reason behind the relationship found herein, it remains that a relationship between the financial stake of CPAs in the practice of public accounting and their support of an ethical regulatory change is concerning.

While it may be reasonable outside of the domain of public accounting to expect that a person will be financially motivated toward many aspects of doing business, the CPA profession is different. The profession must serve the public over self. It has been said that the CPA auditor's client is not really the company being audited, albeit that company pays the auditor, but rather the users of the financials of that company. Of course, that auditor fee ultimately comes out of the equity holder's pocket. The point is that the CPA must look out for the markets which are putting up the capital to permit the companies to function. The integrity of financial information is of paramount import.

Future research should continue to look at the role financial stake plays relative to ethics-based decisions CPAs make. The profession must address any self-interest among its membership or the public interest can become seriously compromised. Our world today is already standing on shaky ground, financially speaking.

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