

**PRIVATE ENTITY FINANCIAL STATEMENTS:
ASSURANCES REQUIRED AND ACHIEVED**

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Abstract

Our study investigates non-SEC practicing certified public accountants' (CPAs) quantitative assessments of the levels of assurance required and achieved in the performance of AICPA standards-based audits and reviews of non-SEC entities. Our results indicate that CPAs believe that the required level of audit assurance is lower than that illustrated in the professional standards and practice aids. In addition, CPAs believe that the achieved level of assurance in audit engagements is even lower than their assessment of the level of required assurance. The CPAs reported similar responses for the levels of assurance required and achieved in review engagements. Our results have implications for practicing CPAs as well as professional standards setters, practice regulators, and users of audited and reviewed financial statements.

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INTRODUCTION

Each year CPAs perform over 200,000 AICPA standards-based audits of non-SEC entities. The audit risk model is crucial to compliance with the AICPA's auditing standards. Simply stated audit risk is the risk that the auditor unintentionally reports the financial statements as fairly presented when they in fact contain a material misstatement. Audit assurance is the complement to audit risk and is qualitatively defined in the professional standards. While a significant body of research exists regarding the various audit risk elements that the auditor assesses when planning and performing the audit, essentially no research exists regarding auditors' assessment of the level of audit assurance required in order for the audit to be appropriately planned and performed. Furthermore, recent professional standards for review engagements conceptually require the use of a risk assessment/response process similar to that required for audits. No research exists regarding professional accountants' assessments of review assurance required and achieved.

This exploratory study investigates non-SEC practicing certified public accountants' (CPAs) quantitative assessments of the required assurance level defined in the AICPA's auditing standards and the assurance level actually being achieved in practice. We find that CPAs, regardless of their assurance service experience, consistently assess the audit assurance level required by professional standards and consider it to be significantly lower than the 95 percent level often illustrated (i.e., audit risk is greater than five percent) in the standards and practice aids. Furthermore, CPAs consistently assess the actual level of assurance being achieved in practice even lower. CPAs made similar assessments

of the assurance levels required and achieved in review engagements.

The following sections include a review of the risk model as developed in the auditing and review engagement professional standards, the demand for GAAS-based audits and review engagements, and a review of relevant academic research. This is followed by the development of our research questions and methodology and a presentation and analysis of our results. We conclude with a discussion of the study's findings and implications.

THE AUDIT RISK MODEL

The auditor's professional responsibility is to plan and perform the audit to obtain reasonable assurance that the financial statements are free of material misstatement (whether due to error or fraud). Central to the concept of reasonable assurance expressed in the auditor's report is the risk that the auditor's opinion may be inappropriate given the circumstances or uncorrected misstatement(s) within the financial statements. Risk, therefore, is the complement of assurance and is integral to the audit process. Statement on Auditing Procedures (SAP) No. 54 (AICPA 1972) was the first professional standard to identify the risk associated with the auditor's responsibility and used the term "ultimate risk" (UR).

Statement on Auditing Standards (SAS) No. 39 (AICPA 1981) reiterated the UR definition and expressed UR as the product of the risks associated with the auditor's evaluation of the entity's internal accounting controls (IC), and the substantive tests of details (TD), and analytical review and other relevant substantive tests (AP¹) performed by the auditor. The relationship among the various risk elements was expressed in the model: $UR = IC \times AP \times TD$. The model assumed the auditor predetermines an acceptable

¹ SAS No. 39 used the notation AR to identify the risk associated with analytical review and other relevant substantive tests, but the notation AP is used here to

avoid confusion with the notation AR (audit risk) used later in professional standards and this paper.

level of ultimate risk (UR) but did not discuss the auditor varying the level of audit risk in response to different client situations.

Subsequent AICPA auditing standards redefined the risk model's elements and clarified the risk assessment process. Statement on Auditing Standards No. 47 (AICPA 1983) retained the concept of ultimate risk but renamed the risk as audit risk (AR) and introduced a refined variation of the SAS No. 39 model by combining the concepts of substantive testing AP and TD risks into a new risk element titled detection risk (DR) and incorporating the inherent risk (IR) element. SAS No. 47 defined audit risk as: $AR = IR \times CR \times DR$.

SAS No. 99 (AICPA 2002) clarified the auditor's responsibility for the consideration of fraud in a financial statement audit. The new standard maintained the audit risk model of SAS No. 47 but stipulated that the auditor separately consider the risk of material misstatement due to fraud when planning and performing the audit.

SAS No. 107 (AICPA 2006b) redefined the audit risk model by combining the inherent and control risks of SAS No. 47 into a new element, the risk of material misstatement (RMM). The risk of material misstatement could be assessed separately or as a function of separate assessments of IR and CR. Detection risk remained a product of tests of details risk (TD) and substantive analytical procedures risks (AP).

SAS No. 109 (AICPA 2006c) and SAS No. 110 (AICPA 2006d) clarified the risk assessment/response process. The auditor should assess the risk of material misstatement (RMM) (based on an understanding of the entity, its environment, and internal controls) and develop a planned response with an appropriate level of DR to afford the auditor sufficient competent audit evidence to support the high, but not absolute assurance provided in the auditor's report.

Throughout the development and discussion of the audit risk model, and its application, the standards do not address the possibility of the auditor considering alternative levels of audit risk for engagements of differing circumstances. As presented in the standards, application of the model assumes a predetermined low AR (left side of the model) and the risk elements on the right hand side of the model are based on the auditor's assessment of client characteristics (IR, CR, and fraud risk factors) and the auditor's planned responses (AP and TD) to achieve the desired level of AR.

The audit risk model has also been incorporated into the audit methodology for public companies. The model was originally developed within the auditing standards of the AICPA, but also applied to public company audits. With the creation of the Public Company Accounting Oversight Board (PCAOB), the then existing AICPA standards were initially adopted to formally guide the audit of public companies (SEC, 2003). The PCAOB, however, subsequently issued its own set of audit risk-based standards (PCAOB, 2010) which mirror the AICPA's guidance.

DEFINING AUDIT RISK

SAS No. 104 (AICPA 2006a) qualitatively defined the level of assurance reflected in the term "reasonable assurance" expressed in the auditing standards and the auditor's report. Specifically, the auditor should plan and perform the audit to provide high, but not absolute assurance that the financial statements are free of material misstatement (whether caused by error or fraud). SAS No. 104 reinforced the concept that risk is the complement of assurance and requires the auditor to plan and perform the audit to limit audit risk to a low level. SAS No. 104 does not address or illustrate the auditor varying the planned "reasonable assurance" or "audit risk" in engagements with differing circumstances. "The auditor may, for reasons of business risk, provide a higher level of assurance; he wouldn't provide a lower level without violating GAAS" (Brumfield, et al., 1983, 62).

Over the years, professional standards have illustrated the audit risk model in a quantified format to demonstrate the interrelationship among the elements on the right side of the model (AICPA 1973, 1981, 2006e). The examples always assume a single predetermined level of AR set at .05. Various levels of IR and CR (or RMM) are defined and the resulting levels of DR reported. The examples are structured to emphasize the assessment of the risks of misstatement (IR, CR, or RMM) and the auditor's planned response (DR), assuming the desired .05 predetermined level of AR.

THE REVIEW RISK MODEL

The principles in the audit risk model also appear in the professional standards related to the performance of review level engagements for non-SEC entities. Statement of Standards on Accounting and Review Services (SSARS) No. 19 (AICPA 2009) clarifies the performance and reporting standards for compilation and review engagements and includes a limited discussion of a risk model for review engagements. When performing a review engagement, the accountant must perform procedures (primarily inquiry and analytical procedures) designed to accumulate review evidence to support the limited assurance provided in the accountant's report.

Conceptually, SSARS No. 19 requires the application of a model of risk assessment and response similar to that required in the audit standards. When planning and performing the review engagement, the accountant should consider the risk that the accountant may unknowingly fail to modify the accountant's review report on financial statements that are materially misstated. Although not specifically named in SSARS No. 19, the described review risk can be analogized to audit risk in an audit.

In applying the review risk model, the accountant obtains an understanding of the industry and knowledge of the client; utilizes this information to design and perform analytical procedures; makes inquiries and performs other procedures, as

appropriate (the equivalent to the auditor's response in the audit risk model) to accumulate review evidence to obtain limited assurance that there are no material modifications that should be made to the financial statements in order for the statements to be in conformity with the applicable financial reporting framework. The accountant should focus the analytical procedures and inquiries to those areas where the accountant believes there are increased risks of misstatements (AICPA 2009). SSARS No. 19, however does not define "limited assurance" in either quantitative or qualitative terms.

DEMAND FOR GAAS-BASED AUDITS AND REVIEW ENGAGEMENTS

Audits performed according to the standards promulgated by the AICPA are central to three major sectors of the US economy: pension plans, entities receiving federal assistance, and private companies. Collectively, these three types of entities represent over 200,000 annual audits.

The Employee Benefits Security Administration (EBSA) requires private sector employee benefit plans to annually file GAAS-based audited financial statements. For plan year 2010, some 84,000 pension plans filed audited financial statements with the EBSA. These plans represent 93 million participants and \$5.7 trillion in assets (DOL, 2012).

The federal government annually provides billions of dollars in grants to non-federal entities including state and local governments, colleges, universities and other non-profit organizations. All non-federal entities that expend \$500,000 or more of federal awards in a year are required to obtain an annual audit performed in accordance with OMB Circular A-133, which incorporates the AICPA's generally accepted auditing standards (OMB, 2003). In the period April, 2003 through March, 2004 over 38,000 audits were filed with the Federal Audit Clearinghouse representing over \$880 billion of federal awards expended (PCIE, 2007).

Small businesses, those with fewer than 500 workers, account for half of the nation's private, nonfarm real gross domestic product, and half of all Americans who work in the private sector (SBA, 2010). Principal external users of private company financial statements include creditors and lenders (FASB, 2012). Lenders often require audited financial statements in the case of loans over certain dollar amounts (FERF, 2006). In 2010, small business borrowings were in excess of \$1 trillion dollars including \$652 billion in bank loans and \$460 billion worth of credit from finance companies (SBA, 2010).

Estimating the number of private company audits performed annually is somewhat challenging due to the lack of readily available data. However, statistics regarding the AICPA peer review program can provide some insight into the number of private company audits performed annually. There are over 28,000 accounting firms enrolled in the AICPA's peer review program (AICPA, 2012).

Table 1 provides a summary of the system reviews performed during the period 2009-2011 and the number and types of audits selected for review (AICPA, 2012). By combining the percentage of peer review coverage and the number of audits selected for peer review based on the risk and coverage requirements, the number of non-SEC audits performed annually is between 142,000 and 285,000. This estimate appears somewhat conservative in light of the 5.8 million employer entities reported by the SBA (2010).

Lenders who seek financial statement assurances in the case of loans below the audit requirement threshold often require the borrowing entity to provide reviewed financial statements (FERF, 2006). Data related to the number of review engagements performed annually is not readily available. Extrapolating an estimate of the number of review engagements from the peer review data is complicated by the fact that both systems and engagement peer reviews include the selection of review engagements. In the case of systems peer reviews the selection

process for review engagements is not specified (but the resulting number of review engagements selected is smaller than the number of audits). While in engagement reviews, the selection process is specific but typically results in only one review engagement selected per peer review. Table 1 reports 17,177 review engagements were selected in AICPA peer review program during the period 2009-2011.

	2009	2010	2011	Total
Number of audits selected:				
Selection per peer review standards criteria	5,111	4,719	5,464	15,294
Audits selected based on risk and coverage	4,812	4,436	5,017	14,265
Total audits selected	9,923	9,155	10,481	29,559
Review engagements selected	5,765	5,520	5,892	17,177

LITERATURE REVIEW

Since the audit risk model was formally incorporated into the auditing standards, an extensive body of related academic research has emerged. However, nearly all of the studies focus on the risks on the right side of the audit risk model; that is, the auditor's assessment of the risk of misstatement under varying client situations (IR, CR, fraud risk factors) and the auditor's response (DR). Allen et al. (2006) provide a comprehensive review of published academic papers spanning a period of some 30 years related to research on the right side of the audit risk model. Little, if any, research involves either the quantification of risks by auditors or the left side of the audit risk model, the level of audit risk required.

Initial research on the quantification of risk assessments centered on the implementation and application of the probability

terms introduced into financial reporting by Statement of Financial Accounting Standards No. 5, Accounting for Contingencies (FASB 1975). Jiambalvo and Wilner (1985) reported considerable disagreement across auditors in quantifying the uncertainty language in the FASB standard. However, Reimers (1992) found a high degree of agreement between auditors and managers on the quantification of the three uncertainty terms of the FASB standard as well as 27 common verbal expressions of uncertainty.

Amer et al. (1994) studied the degree of between-auditor variance in the numerical interpretation of 17 probability phrases used in accounting and auditing standards. They found significant between-auditor variance in interpretation of probability phrases and low levels of awareness of such variances. Other researchers found variation in the quantification of selected verbal probability expressions by auditors trained in and practicing under different national standards (Simon 2002, Douppnik and Richter 2003, and Teixeira and Silva 2009).

Jiambalvo and Waller (1984) identified differences between the test of details risk estimates by auditors using a decomposition approach and those employing the algorithmic risk model of SAS No. 39. Vandervelde et al. (2009) found the mathematically expressed risk model reflected in the auditing standards is less descriptive of auditor judgments than a revised-weight model. Fukukawa and Mock (2011) found that auditors' risk assessments of misstatement were influenced by their risk approach (belief or probability based) and how the assertion was framed (positive or negative form).

Other research concluded that the risk assessment documentation requirements prescribed in professional standards impacted auditors who assess risk in qualitative terms compared to those who make quantitative risk assessments (Piercy 2011). Gray et al. (2011) utilized a focus group methodology to identify perceptions and misperceptions by financial statement preparers, users, and auditors regarding the auditor's report. Among their key points was that although users understand that auditors do not

provide absolute assurance on the financial statements, the level of assurance was a “fuzzy” concept to all the participants, including auditors.

We believe our study contributes to the literature due to four characteristics or limitations within the existing research. First, application of the risk model requires the predetermination of the planned level of audit risk (the left side of the equation). However, this aspect of the audit risk model has not been addressed in the literature. Second, extant research used subjects from the Big 4 (and their predecessors) audit firms and the application of the risk model in SEC-type audit situations. As noted above, GAAS-based audits of non-SEC entities are a major component of the economy in terms of both the number of audits and entities affected. Third, there has been limited study of how auditors quantify the qualitative risk terms used in the auditing standards. Fourth, review engagements represent a significant component of the assurance services provided by CPA firms; yet this aspect of practice has not been addressed in the research related to risk assessment.

RESEARCH QUESTIONS

This exploratory study seeks to ascertain CPAs’ quantification of the required level of assurance stated in the AICPA’s professional standards as well as their assessment of the level of assurance being achieved in practice. In addition, the study seeks to determine whether accountants with different attestation experience similarly quantify the level of assurance prescribed in the professional standards for review engagements. A discussion of the specific research questions follows.

Research Question #1

Prior research related to the audit risk model focused on practicing auditors (typically employed in the Big 4 type firms) in SEC client-type situations. Any licensed CPA is permitted to perform an audit of a non-SEC-registrant; however, not all licensed

CPAs perform audits. Many CPAs are not in public practice but are employed in non-CPA entities. CPAs in public practice, on the other hand, have varied assurance service experiences. Some perform both audits and review engagements; some limit their assurance services to review engagements; and some provide no assurance services. While all CPAs may not practice as auditors, their licensing qualifications and continuing education provide an understanding of how the assurance level (experiences) impacts risk assessments (Allen et al. 2006). Accordingly, CPAs' quantifications of the required level of assurance in an audit may be influenced by their experience in public practice and/or their performance of assurance engagements.

The professional standards do not quantify the levels of risk or assurance. However, audit risk has been expressed at a level of five percent in the examples within the professional standards (AICPA 1973, 1981, 2006e) and other non-authoritative practice aids (AICPA 2008, Beasley and Carcello 2011). As risk is the complement of assurance, this would suggest that CPAs may anchor on the belief that the audit should provide a 95 percent level of assurance.

Question 1-a: Do CPAs, regardless of assurance experience, similarly quantify the required level of audit assurance expressed in the professional standards?

Question 1-b: Is the required quantified level of assurance expressed by CPAs consistent with the 95 percent level commonly illustrated in the auditing standards and non-authoritative materials?

Research Question #2

The audit risk assessment/response model is central to the performance of an audit engagement. The concept, though less structured, is now incorporated in the professional standards for review engagements. An audit is intended to provide high assurance, whereas a review is intended to provide limited

assurance. Accordingly, the evidence gathering and performance requirements for an audit are significantly greater than those required for a review engagement. The review's limited assurance is a qualitative expression lower than the high, but not absolute, assurance provided in an audit. The limited level of assurance intended in a review engagement has never been quantitatively addressed or illustrated in the standards. Accordingly, CPAs have no quantitative reference for review risk in a review engagement requirement compared to their experience with the requirements for audits. Consistent with the exploratory nature of this study, it is interesting to discover how CPAs compare the required assurance levels for these disparate services.

Question 2-a: At what level of assurance do CPAs quantify the limited level of assurance required in the review standards?

Question 2-b: How great is the difference between CPAs' quantification of the high, but not absolute, required level of assurance expressed in the auditing standards compared to the required limited assurance expressed in the review standards?

Research Question #3

Professional standards define the required performance for the accounting or audit practitioner. Experience, however, has shown that the actual level of performance by practitioners may not meet professional standards. Over the years, the profession has employed various forms of practice monitoring to encourage compliance with professional standards.

Some forty years ago the AICPA introduced a purely voluntary program of peer review. Currently, the AICPA's Peer Review Program is the leading method of practice monitoring for the non-SEC accounting and auditing component of public accounting firms. This once voluntary program is now part of the licensing requirement for CPA firms in 48 jurisdictions (AICPA 2012). Firms enrolled in the AICPA program receive a peer

review once every three years. Historically, approximately 11 percent of reviewed firms receive a peer review report indicating one or more significant deficiencies regarding compliance with professional standards. The most commonly cited deficiencies are in the area of engagement performance (AICPA 2012).

Professional standards have not quantified the levels of assurance required in audit and review engagements; however, practitioners have their own interpretation of what they perceive as the required levels of assurance. On the other hand, practitioners may hold a different opinion as to the levels of assurance that are being actually achieved in practice. To the extent that there is a difference between required and achieved levels of assurance it could have implications to regulators and users of the financial statements.

Question 3-a: What level of assurance do CPAs believe is being achieved when auditors issue their reports?

Question 3-b: Is there a difference between the level of assurance CPAs believe is required to be achieved in audits and their belief as to the level of assurance actually being achieved?

Question 3-c: What level of assurance do CPAs believe is being achieved when accountants issue their review report?

Question 3-d: Is there a difference between the level of assurance CPAs believe is required to be achieved in review engagements and their belief as to the level of assurance actually being achieved?

METHOD

Subjects

Data for this study were collected from licensed CPAs in a mid-western state attending one of six state CPA society sponsored continuing professional education classes covering a variety of

accounting and auditing topics. In each class, a portion of the attendees voluntarily participated after one of the authors briefly explained the nature of the study.

Task

The research instrument included a direct quotation from the professional standards describing the level of audit risk and assurance that the auditor is required to plan and perform the audit to achieve. With only the passage from the standards as a reference point, the participants were asked to quantify the level of assurance that the auditor should have when expressing an opinion in an audit engagement. The instrument included an illustrative continuum quantifying the level of assurance (ranging from zero percent for no assurance to 100 percent for absolute assurance). This was followed by a second question which asked participants to quantify the level of assurance that auditors achieve when expressing an opinion in an audit engagement.

The research instrument included a second similarly designed section that related to the level of assurance required in a review engagement. Again, participants were instructed to separately quantify the levels of assurance accountants required and achieved when providing limited assurance expressed in a review engagement.

Data Analysis

The primary methods of data analysis were parametric tests. Analysis of variance (ANOVA) was used to identify response difference across CPA groups. Research suggests that auditor experience can impact the risk assessment process. To test for a possible “experience” effect, the ANOVA analysis was replicated with the subjects’ reported time as CPAs used as a covariate. No significant difference was noted in the covariate analysis. The study’s results and discussion are based on the ANOVA analysis.

In cases of a statistically significant difference across CPA groups, post hoc multiple two group comparisons were performed

using a Bonferroni correction approach to identify between group differences. T-tests were used to test for response differences between CPA groups. Effect size was computed and evaluated using the methodology described in Cohen (1992). For ANOVA purposes Cohen's *f* values of .10, .25, and .40 were considered indicative of respectively small, medium, and large effect sizes. Cohen's *d* was used to assess the effect size for t-test purposes using values of .20, .50, and .80 as indicative of respectively small, medium, and large effect sizes.

RESULTS

Respondents

Two hundred and thirty five research instruments were distributed, and 147 usable responses were returned resulting in a response rate of 63 percent. Not all attendees in the classes were in public practice. The state's licensing requirement stipulates that all CPAs, regardless of the nature of their employment, must obtain a minimum number of continuing education hours covering accounting and auditing topics. Historically, CPAs employed in the Big 4 and other national CPA firms do not attend the state society sponsored continuing education classes. Accordingly, the participants in the study do not include any CPAs employed by a Big 4 or national public accounting firm. No significant response differences were noted across the respondents from the six sites (ANOVA with *p*-values ranging from .928 to .987). Accordingly, the six respondent groups were pooled for analysis purposes. To address the potential impact of attestation experience, the respondents were divided into four groups according to whether or not they were in public practice and, if in public practice, their experience in performing review and/or audit engagements. Table 2 provides a demographic profile of the participants.

TABLE 2: Participants Demographic Profile		
	<u>N</u>	<u>%</u>
Number of Participants	147	100%
Form of Practice:		
Not in public practice	49	33%
In public practice:		
Performs no audits or reviews	25	17%
Performs reviews only	32	22%
Performs both audits and reviews	41	28%
How long a CPA:		
0 – 5 years	15	10%
6 – 10 years	12	8%
11 – 15 years	27	18%
16 – 20 years	27	18%
21 – 25 years	15	10%
26 – 30 years	17	12%
Over 30 years	20	14%
Not reported	14	10%

Question 1-a: Required audit assurance

CPAs similarly quantified the high, but not absolute, level of assurance required in an audit with a mean level of 87.8 percent (SD 7.2). CPAs in public practice, but who do not perform audits or reviews expressed the lowest level of assurance (87.0 percent); on the other hand, CPAs who performed both audit and review engagements expressed the highest level of assurance (88.5 percent). Attestation experience did not affect the CPAs' quantification of the required level of assurance as no significant difference was noted across the four respondent groups (Table 3, Panel A).

TABLE 3: Reported Assurance Levels, Mean, (SD)							
Panel A: Reported Level of Assurance Required in an Audit							
	All Responses N = 147	Not in Public Practice N = 49	In Public Practice			ANOVA	
			Performs No Audits or Reviews N = 25	Performs Reviews But No Audits N = 32	Performs Both Audits & Reviews N = 41	F-stat (df)	P-value (f-value)
Assurance %	87.8 (7.2)	88.0 (6.5)	87.0 (9.9)	87.3 (6.8)	88.5 (6.5)	.276 (3,143)	.843 (.078)
Panel B: Difference Between .95 Level of Assurance Illustrated in Auditing Literature and Reported Level of Assurance Required in an Audit							
	All Responses N = 147	Not in Public Practice N = 49	In Public Practice			ANOVA	
			Performs No Audits or Reviews N = 25	Performs Reviews But No Audits N = 32	Performs Both Audits & Reviews N = 41	F-stat (df)	P-value (f-value)
Assurance %	-7.2 (7.2)	-7.0 (6.5)	-8.0 (9.9)	-7.7 (6.8)	-6.5 (6.5)	.276 (1,143)	.843 (.078)
Panel C: Reported Level of Assurance Required in a Review							
	All Responses N = 147	Not in Public Practice N = 49	In Public Practice			ANOVA	
			Performs No Audits or Reviews N = 25	Performs Reviews But No Audits N = 32	Performs Both Audits & Reviews N = 41	F-stat (df)	P-value (f-value)
Assurance %	67.3 (16.8)	66.7 (16.5)	73.8 (15.1)	67.9 (18.7)	63.6 (15.8)	2.004 (3,143)	.116 (.204)
Panel D: Difference Between Reported Levels of Assurance Required in an Audit Compared to a Review							
	All Responses N = 147	Not in Public Practice N = 49	In Public Practice			ANOVA	
			Performs No Audits or Reviews N = 25	Performs Reviews But No Audits N = 32	Performs Both Audits & Reviews N = 41	F-stat (df)	P-value (f-value)
Assurance %	20.5 (16.1)	21.3 (15.2)	13.2 (14.4)	19.4 (17.3)	24.9 (16.1)	2.931 (3,143)	.036 (.248)

The respondents were not only relatively similar in their quantifications of the qualitatively expressed level of assurance stipulated in the professional standards but also consistent in their quantifications. Across the four groups there was no significant

variation among the groups' quantifications (Levene Statistic 2.453, $p = .066$).

Question 1-b: Required assurance consistent with illustrated .95 example

As a group the CPAs quantified the required level of assurance significantly lower than the 95 percent level illustrated in the audit literature with the mean difference of -7.2 percent ($t(146)=-12.147$, $p<.001$, Cohen's $d=1.002$). In addition, each CPA group reported assurance level assessments significantly lower than 95 percent (t-test, p -values $<.001$, Cohen's d -values between .813 and 1.135) and no significant difference was noted across the four groups (Table 3, Panel B). As reported in Table 4, Panel A the vast majority of CPAs reported the required level of assurance as less than 95 percent.

Question 2-a: Required review assurance

The concept of limited assurance required in the performance of review engagements was introduced over thirty years ago in SSARS No. 1 (AICPA 1978) but has received relatively little discussion or illustration in the literature. The term audit risk has been discussed in the standards for some forty years, but the concept of review risk was only recently introduced in SSARS No. 19. Table 3, Panel C reports the CPAs' quantifications of the assurance level required in review engagements. No significant difference existed among the four groups in their quantification of the limited assurance required in review engagements.

Question 2-b: Difference between audit assurance and review assurance

As a group, the CPAs quantified the limited assurance required in review engagements significantly lower than their assessment of the assurance level required in an audit ($t(146)=15.440$, $p<.001$, Cohen's $d=1.273$). Likewise, each CPA

TABLE 4: Reported Assurance Levels Descriptive Statistics By CPA Group										
Panel A: Audit Assurance Levels Required and Achieved										
Rep'd Level of Audit Assurance	All Responses N = 147		In Public Practice							
			Not in Public Practice N = 49		Performs No Audits or Reviews N = 25		Performs Reviews But No Audits N = 32		Performs Both Audits & Reviews N = 41	
	Req'd	Ach'd	Req'd	Ach'd	Req'd	Ach'd	Req'd	Ach'd	Req'd	Ach'd
Range	63.0-99.0	38.0-99.0	70.0-99.0	50.0-99.0	63.7-99.0	38.0-99.0	70.0-98.0	63.0-95.0	70.0-98.0	60.0-98.0
Mean	87.8	80.9	88.0	79.3	87.0	81.2	87.3	80.6	88.5	83.0
Median	90.0	80.0	90.0	77.5	90.0	85.0	90.0	81.3	90.0	82.5
Mode	90.0	75.0	90.0	75.0	90.0	75.0/90.0	90.0	75.0	90.0	90.0
SD	7.2	11.7	6.5	12.0	9.9	15.3	6.8	9.8	6.5	10.1
Panel B: Review Assurance Levels Required and Achieved										
Rep'd Level of Review Assurance	All Responses N = 147		In Public Practice							
			Not in Public Practice N = 49		Performs No Audits or Reviews N = 25		Performs Reviews But No Audits N = 32		Performs Both Audits & Reviews N = 41	
	Req'd	Ach'd	Req'd	Ach'd	Req'd	Ach'd	Req'd	Ach'd	Req'd	Ach'd
Range	10.0-98.0	20.0-98.0	30.0-98.0	20.0-98.0	35.0-90.0	38.0-90.0	25.0-90.0	20.0-95.0	10.0-93.0	23.0-90.0
Mean	67.3	60.7	66.7	55.6	73.8	69.9	67.9	60.9	63.6	61.0
Median	70.0	60.0	72.5	55.0	80.0	72.5	70.0	60.0	65.0	60.0
Mode	75.0	50.0	75.0	50.0	80.0	75.0	80.0	50.0	60.0	60.0
SD	16.7	18.6	16.5	20.4	15.1	14.0	18.7	19.1	15.8	16.8

group's assessment of the required review engagement assurance was significantly lower than the reported required assurance for audit engagements (t- tests, p-values<.001, Cohen's d values .9164 to 1.5440). Also significantly greater variation exists in the quantification of the required assurance in review engagements compared to that reported required in audit engagements (F(146,146)=5.4456, p=.0001). This pattern of greater variation in assessments of required assurance in review engagements was repeated within each CPA group (F values ranging from 2.3375 to 7.6536 and all p-values <.001).

A significant difference was also noted across the groups in the difference between their assessments of the assurance required

in audit and review engagements (Table 3, Panel D). As a post hoc analysis, multiple two-group comparisons were performed using a Bonferroni correction approach. The only significant difference noted was between CPAs in public practice who perform no audits or reviews and CPAs in public practice who perform both audit and review engagements ($t(64)=-2.979$, $p=.004$, Cohen's $d=.8143$). Public practicing CPAs without audit or review experiences reported the smallest difference in assurance assessments, whereas CPAs with audit and review experience reported the largest difference between the required assurance in an audit and a review engagement.

Questions 3-a and 3-b: Achieved audit assurance

Table 4-Panel A reports the summary statistics for the CPA's quantifications of the required and achieved levels of assurance in audit engagements. No significant difference was noted across the four CPA groups in their assessments as to the actual level of assurance being achieved in audit engagements ($F(3,143) = .724$, $p=.539$). However, both as a group and within each group, the CPAs reported that the level of assurance actually being achieved in audit engagements is significantly lower than the level believed required by professional standards (Table 3).

As a group the CPAs reported the level of assurance being achieved in audit engagements is significantly lower than the level of assurance they had reported being required by the standards ($t(143)=-8.903$, $p<.001$, Cohen's $d=.713$). In addition, within each CPA group the reported the level of assurance being achieved in audit engagements was significantly lower than the group's assessment of the assurance required by professional standards (Table 5, Panel A).

Questions 3-c and 3-d: Achieved review assurance

Table 4-Panel B reports the summary statistics for the CPA's quantifications of the required and achieved levels of assurance in review engagements. A significant difference was

noted across the four CPA groups in their assessments as to the actual level of assurance being achieved in review engagements

TABLE 5: Differences Between Achieved and Required Levels of Assurance By CPA Group Mean (SD)

Panel A: Extent Audit Assurance Level Required by Standards Exceeds Assurance Level Being Achieved

All Responses N = 147			Not in Public Practice N = 49			In Public Practice								
						Performs No Audits or Review N = 25			Performs Reviews But No Audits N = 32			Performs Both Audits and Reviews N = 41		
Assurance Difference	t-stat (df)	p- value d- value	Assurance Difference	t-stat (df)	p- value d- value	Assurance Difference	t-stat (df)	p- value d- value	Assurance Difference	t-stat (df)	p- value d- value	Assurance Difference	t-stat (df)	p- value d- value
6.9 (9.4)	8.903 (146)	<.001 .71	8.7 (10.5)	5.791 (48)	<.001 .89	5.8 (9.9)	2.918 (24)	.008 .45	6.7 (8.2)	4.657 (31)	<.001 .80	5.5 (8.4)	4.190 (40)	<.001 1 .65

Panel B: Extent Review Assurance Level Required by Standards Exceeds Assurance Level Being Achieved

All Responses N = 147			Not in Public Practice N = 49			In Public Practice								
						Performs No Audits or Review N = 25			Performs Reviews But No Audits N = 32			Performs Both Audits and Reviews N = 41		
Assurance Difference	t-stat (df)	p- value d- value	Assurance Difference	t-stat (df)	p- value d- value	Assurance Difference	t-stat (df)	p- value d- value	Assurance Difference	t-stat (df)	p- value d- value	Assurance Difference	t-stat (df)	p- value d- value
6.6 (12.4)	6.48 1 (146)	<.001 1 .37	11.08 (11.8)	6.58 2 (48)	<.001 1 .60	4.0 (13.7)	1.44 6 (24)	.161 .27	7.0 (10.1)	3.91 7 (31)	<.001 1 .37	2.6 (12.5)	1.34 1 (40)	.188 .16

($F(3,143) = 3.403$, $p = .019$, $f = .268$). As a post hoc analysis, multiple two-group comparisons were performed using a Bonferroni correction approach. The only significant difference noted was between CPAs not in public practice and CPAs in public practice who perform no audits or reviews ($t(72) = -3.135$, $p = .002$, Cohen's $d = .816$).

Both as a group and within each group, the CPAs reported the level of assurance actually being achieved in review engagements at significantly lower levels than what they believed is required by the standards. As a group the CPAs reported the level of assurance being achieved in review engagements

significantly lower than the level of assurance they reported as being required by the standards (Table 5, Panel B). In addition, two CPA groups (those not in public practice and CPAs who perform reviews but not audits) reported the level of assurance being achieved in review engagements at a significantly lower level than the groups' assessment of the assurance required by professional standards.

A significant difference was also noted across the four CPA groups in their assessments as to the actual level of assurance being achieved in review engagements compared to the level they reported as required by the standards ($F(3,143)=4.190$, $p=.007$, Cohen's $f=.297$). As a post hoc analysis, multiple two-group comparisons were performed using a Bonferroni correction approach. The only significant difference noted was between CPAs not in public practice and CPAs in public practice who perform both audits and reviews ($t(88)=-3.296$, $p=.001$, Cohen's $d=.696$).

DISCUSSION

The results of our study suggest that CPAs quantify the required level of audit assurance at a significantly lower level (87.5 percent) than the 95 percent illustrated in professional standards and practice aids. As a group CPAs reflected a high level of consistency as there was relatively little variation in their assessments, and no difference was noted among the CPAs based on their experience with assurance services. Although the 95 percent level of audit assurance is not mandated in the auditing standards, the results imply that CPAs perceive the level of required audit assurance to be significantly lower than the limited quantitative measure reflected in the standards.

CPAs' quantification of the qualitatively defined high, but not absolute assurance, reflected in the standards was nearly a full seven percentage points lower than the 95 per cent level suggested in professional standards. This suggests the possibility that when auditors are planning substantive audit procedures in response to

their assessment of client situational risk factors they may be assuming a higher level of detection risk as their planned overall assurance level may be lower than professional standards setters intend. Users of audited financial statements "...should always be able to assume at least a minimum level of assurance [as required by the standards]" (Brumfield, et.al., 1983, 61).

Furthermore, CPAs believe that the achieved level of assurance in audit engagements is significantly lower (seven percentage points) than their perception of that required by the auditing standards. This result held across the CPA groups and was not affected by assurance service experience. Perhaps their assessment that achieved audit assurance is below that required by the standards contributes to the significant deficiencies identified in the AICPA Peer Review Program. This result also could help explain the audit failures noted throughout the decade of 2000-2010 and the resulting increase in litigation costs to the profession.

The greater variability in the assessments about the required level of review assurance suggests this is a still evolving assurance service. While the accountant provides limited assurance when reviewing financial statements, professional standards do not provide clear guidance either qualitatively or quantitatively as to the level of assurance the accountant should obtain. This finding indicates that CPAs perceive an approximately 20 percentage point difference between assurance required in an audit ($M=87.8$) and required assurance in a review ($M=67.3$).

This finding is consistent with professional standards, as the intent of a review engagement is to provide a lower level of assurance than an audit. This perception holds across CPA groups with one exception – CPAs in public practice who perform no audits or reviews and those who perform both audits and reviews. Ironically, those CPAs who perform no audits or reviews perceive a higher level of required review assurance ($M=73.8$) than CPAs who perform both services ($M=63.6$).

CPAs perceive the achieved level of review assurance ($M=60.1$) to be below the required level of review assurance

($M=67.3$). This result is consistent with CPA perceptions regarding required and achieved audit assurance. Therefore, this result supports significant deficiencies noted in the AICPA Peer Review Program. This study produces early research on required and achieved review assurance after institution of professional review standards reflecting a review risk model.

This study contains limitations. First, CPAs participating in the study reside in one mid-western state and did not perform audits of SEC registrants. Results could differ if a larger and broader demographic sample were obtained. In addition, all results were self-reported by participants; results could vary if participants analyzed specific engagements in which they are involved. Future research could focus on broader CPA groups.

CONCLUSION

We examine the degree of assurance that CPAs perceive is required and achieved in audit and review engagements. We find that CPAs, regardless of experience with assurance services, believe that the level of required assurance in audits is lower than that illustrated in professional standards and practice aids. Moreover, CPAs perceive the level of assurance actually achieved in audit engagements is lower than the level they believe is required. CPAs reported similar results concerning the assurance level being achieved in review engagements compared to the level they believed is required by the standards.

These results have implications for those involved in the profession's standard setting and self-regulation as well as the users of the financial statements. Standard setters must close the gap between practitioner's perceptions of the required level of assurance in audit engagements and the assurance level illustrated in the standards. The profession's self-regulation efforts must be more directed at identifying instances where achieved assurance levels are below that required by the standards and developing educational and remedial actions to raise the level of performance. Users may be placing more reliance on audited or reviewed

financial statements in making capital allocation decisions than is warranted, as the CPAs perceive the assurance levels being achieved are lower than those implied by the standard setters.

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