Division of Labor Between Auditors and Valuation Specialists in Audits of Fair Values: Problems and Potential for Change under Amended PCAOB Standards

June 2019

Preliminary draft – please do not quote or cite without authors' permission.

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Acknowledgements: This paper is based on data collected as part of the first author's dissertation, which was completed at the University of Georgia under the direction of the second author. The authors thank Ashley Austin and Abraham Carr for their research assistance. The authors are grateful to the firms and professionals who participated in the interviews. We thank Tim Bauer and workshop participants at the University of Waterloo for helpful comments.

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Abstract:

The PCAOB recently amended its auditing standards on the use of valuation specialists on fair value audits. Using data from interviews with 42 audit and valuation partners and managers, we describe the division of labor and associated problems in audits of fair values under the original guidance, and we evaluate whether the amended guidance will lead to changes in practice that mitigate the problems. We find that while valuation specialists perform many of the most difficult and important elements of auditing fair values, auditors retain responsibility for making overall conclusions about fair values under the original standards. While the amended standards change certain requirements around communication with and review of specialists' work, the separation of key procedures from decision making will continue. Our analysis suggests that the amended standards are unlikely to meaningfully change practice. We expect little change because the amended standards will not increase specialists' responsibility for outcomes, they will not require auditors to acquire valuation knowledge, and they cannot reduce the inherent uncertainty surrounding audits of fair values. These issues underlie many of the problems in this area.

Key Words: Accounting estimates, Auditing, Fair value, Specialist

JEL Descriptors: M40, M41, M42

Division of Labor Between Auditors and Valuation Specialists in Audits of Fair Values: Problems and Potential for Change under Amended PCAOB Standards

1. Introduction

The use of auditor-employed valuation specialists[1] in audits of fair values has increased in frequency and significance (PCAOB 2018; Glover, Taylor, and Wu 2017), and the PCAOB recently amended several auditing standards related to the use of specialists to address this change (PCAOB 2018). Consistent with the original standards, the amended standards hold auditors responsible for making overall conclusions about fair values (PCAOB 2018). Under the original standards, valuation specialists are unsure of what is required of them when preparing or evaluating valuations (Whitehouse 2016). Researchers and standard setters do not have a systematic understanding of *how* auditors use valuation specialists in these audits (Cannon and Bedard 2017), and the amended standards do not go into detail about how specialists *should* be used in many key respects. Problems related to specialists' involvement suggest audit outcomes do not always improve as a result of specialists' involvement (PCAOB 2010a, 2018; Martin, Rich, and Wilks 2006; Griffith, Hammersley, and Kadous 2015), implying that there is potential for improvement in practice regarding the use of specialists.

This paper has two goals. First, we aim to describe the division of labor between auditors and specialists in audits of fair values under the original guidance and the associated problems auditors and specialists experience when working together. The division of labor between auditors and specialists necessitates that auditors compile both groups' work into a coherent

[1] The term "auditor-employed valuation specialists" refers to professionals with finance and valuation expertise who (1) are employed by the same firm as the auditors that they assist and (2) perform analyses used by auditors in their audits of fair values. Hereafter we refer to these professionals as valuation specialists or simply specialists. This excludes national-level pricing desks that obtain price quotes from third-party pricing services and forward that information to auditors without performing additional analysis (e.g., PCAOB 2014).

audit judgment. While the literature has begun to examine how this labor is divided (e.g., Griffith 2019; Boritz et al. 2018), it is not clear how auditors use specialists' work to form overall judgments or how the current division of labor might affect audit outcomes. The division of labor described in this paper can inform efforts by researchers, regulators, and audit firms to help auditors use valuation specialists more effectively.

Second, we use this descriptive evidence to inform expectations about the ways in which practice likely will or will not improve in response to the amended PCAOB auditing standards for using specialists. The PCAOB amended the original standards to address shortcomings identified by regulators themselves as well as by auditors, valuation specialists, and researchers (PCAOB 2015, 2018; Joe et al. 2015). We use the original and amended PCAOB guidance as normative theories (e.g., Malsch and Salterio 2016) to evaluate whether and how the problems that arose under the original standards might be mitigated after the amended standards take effect. The expectations developed in this paper can inform researchers, regulators, and audit firms as they implement the new standard and/or evaluate its effects on audit outcomes.

We interviewed 28 audit partners and managers who have worked extensively with valuation specialists on audits of Level 2 and 3 fair value estimates, as well as 14 valuation specialists to triangulate the auditors' accounts, regarding the division of labor that exists under the original PCAOB guidance. We asked auditors how they decide to involve specialists, how they use specialists to help with audit testing, how they make conclusions based on the work of specialists, and what problems they encounter when working with specialists.[2] We asked

[2] Griffith (2019) analyzed a subset of data from these interviews describing the process of using specialists in audits of fair values. The current study and Griffith (2019) take different approaches to achieve their different objectives. Using a constructivist approach (e.g., Power and Gendron 2015), Griffith (2019) focuses on the extent to which auditors trust in the expert system of valuation specialists versus defend their jurisdictional claim to audits of fair values, and the implications of these opposing theoretical propositions. In the current paper, we analyze the full

specialists to describe their involvement in the audit, their interactions with the audit team, the problems they encounter when working with auditors, and their view of their overall role within the audit. The original guidance for auditors using specialists did not apply to what are now the most common instances of specialist use (e.g., auditor-employed specialists, audits of fair values), so auditors' practices when using valuation specialists developed in the absence of adequate guidance (PCAOB 2018). Thus, gaining auditors' and specialists' perspectives provides insight into this area that cannot be gleaned from standards or inspection reports.

The amended auditing standards include several key changes. The original standards provide guidance to auditors regarding the decision to use a specialist and the evaluation of a specialist's work, as well as limited delineation of responsibilities between auditors (for testing data) and specialists (for evaluating methods and assumptions) (PCAOB 2003). In contrast to the original guidance, the amended guidance does not contemplate when auditors should use a specialist and does not assign responsibilities, instead noting that auditors should inform specialists about the extent of specialists' responsibilities for testing data, methods, and assumptions. Other key changes in the amended standards include making the guidance applicable to auditor-employed specialists, requiring more communication and coordination between auditors and specialists, requiring greater attention to inconsistencies between specialists' work and other audit evidence, and allowing auditors to vary the extent of their review of specialists' work based on risk and the significance of the specialist's work to the audit overall.

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interview data set from a positivist approach (e.g, Power and Gendron 2015) with an emphasis on problems reported by interviewees, which were not included in Griffith (2019). This paper focuses on understanding common practices and problems that exist under the original guidance for using specialists so that we can predict whether and how the amended guidance will meaningfully change practice. We also provide a detailed process description that is not included in Griffith (2019).

Our interviewees report that while specialists perform many of the most difficult and important elements of auditing fair values, auditors retain the final responsibility for making overall conclusions about fair values. These overall conclusions are among the most significant and risky conclusions on the audit (Christensen, Glover, and Wood 2012). Both auditors and specialists described situations in which the audit team and specialist held different views, which likely increases the difficulty for auditors when making the overall conclusion. The interviews reveal that in the name of "finalizing" the audit, auditors filter information between clients and specialists, edit specialists' work, delete information deemed unnecessary to include as evidence, and ignore or judge irrelevant some of the issues that specialists flag for auditors' attention. Specialists corroborate these behaviors with their descriptions of auditors liaising between them and clients and of deferring to auditors in the final stage of the audit. These findings imply that auditors may not be using valuation specialists as effectively or efficiently as they could be in the fair value setting. Under the amended standards, auditors retain responsibility for overall conclusions, so these "finalizing" behaviors are likely to continue.

Interviewees' descriptions of problems they experience when working together provide further insight into specialists' involvement. Both auditors and specialists identified problems arising from the division of labor between the two parties that include coordination difficulties, differences in perspectives, and uncertainty about their respective responsibilities. These problems can cause auditors to discount specialists' conclusions, fail to recognize the importance of issues raised by specialists, and fail to follow up on specialists' work when necessary. Specialists also cited low-quality valuation work prepared by clients or clients' third party valuation preparers ("company's specialists" as defined by the amended standards) and a lack of standards and guidance from audit firms and standards setters as problems they encounter when assisting on audits of fair values. These issues highlight the importance of auditor receptivity to specialists' input, as specialists may have unique insight into the quality of clients' valuations and into where auditors could suggest improvements in clients' processes.

Perhaps counterintuitively, we do not expect that practice will meaningfully change as a result of the adoption of the new standards for two primary underlying reasons. First, the new standards do not require auditors to obtain valuation knowledge that would allow auditors to better communicate with, take the perspective of, and understand the issues raised by specialists. Auditors' lack of valuation knowledge underlies many of the problems auditors and specialists report and we do not expect that changes to the audit process will improve these outcomes. Second, the uncertainty inherent in fair values underlies problems obtaining information from clients, determining the sufficiency of evidence, and reconciling multiple acceptable points of view. The amended standards cannot reduce this inherent uncertainty and they do not provide guidance about how to deal with its effects, so these problems will certainly persist.

This study makes two contributions of interest to research and practice. First, our descriptive evidence and our predictions of how practice might respond to the amended guidance for using specialists can inform practitioner, regulator, and researcher expectations about the effects of the new auditing standard. Our description of the division of labor and associated problems that exist under the original PCAOB guidance highlights areas that could benefit from additional or more specific guidance. Our analysis of the amended standards' likely impact identifies which types of problems will likely remain and why. Most importantly, we find that under the original guidance, auditors were able to change their specialists' work, and the amended guidance does not seem likely to curtail this behavior because it does not directly address this behavior or remove the conditions that allow it. Researchers can examine the consequences of auditors' practices for audit outcomes and explore solutions to the problems identified by auditors and specialists in light of the amended guidance. Researchers, audit firms, and standards setters might focus on the potentially problematic ways that auditors use valuation specialists and their work that are unlikely to be curtailed by the amended standards.

Second, this study informs future research in other settings where auditors rely on IT, tax, or other specialists and where guidance from auditing standards is sparse. Auditors who are unconstrained by standards appear at times to modify their specialists' work, though this behavior seems to vary by type of specialist (e.g., Jenkins et al. 2018; Bergquist and Olefsson 2016). To the extent that specialists provide valuable insights in their work, auditor modifications that remove or alter these insights could be detrimental to audit outcomes. The amended auditing standards provide guidance specific to valuation specialists, but variation in how auditors use different types of specialists (e.g., Hux 2017) might warrant guidance that is tailored to other types of specialists. Future research can explore the extent to which auditing standards need to and do constrain auditors in these other settings. These research directions may help elucidate the conditions that cause auditors to discount contradictory advice from trusted sources (e.g., Kadous, Leiby, and Peecher 2013).

The next section provides background on auditors' use of specialists. Section 3 explains the interview methodology. Sections 4 and 5 report interviewees' descriptions of the division of labor between auditors and specialists in audits of fair values and of the problems they encounter when working together. Section 6 considers how practice might change in response to the amended auditing standards. Section 7 concludes.

2. Background

Prior research on auditors' use of specialists

The literature on specialists in auditing originally focused on technical accounting specialists (e.g., Danos, Eichenseher, and Holt 1989; Salterio 1996; Salterio and Denham 1997) who have expertise in accounting and auditing, rather than in non-accounting areas such as valuation. Technical accounting specialists advise auditors on complex auditing and accounting matters, but they do not perform audit procedures for auditors. In contrast, valuation specialists perform audit procedures that auditors lack the valuation expertise to perform themselves.

Recent literature on specialists has shifted its focus to non-accounting specialists who perform some audit procedures. Hux (2017) reviews this literature and finds that different types of specialists are involved at different levels of the audit. Specifically, valuation and tax specialists assist auditors at the account or transaction level by performing audit procedures, while IT and forensic specialists more commonly assist at the entity or process level in designing procedures and evaluating higher level client processes and controls.

A subset of recent literature specifically focuses on valuation specialists. Barr-Pulliam, Mason, and Sanderson (2018a, 2018b) survey and interview valuation specialists who assist client management and/or audit teams to gain insight into valuation specialists' role in producing financial statements. Barr-Pulliam et al. (2018b) find that for valuation specialists employed by accounting firms, their primary role within the firm is to produce fair values for a variety of client uses, rather than to assist clients' audit teams in evaluating fair values. Further, valuation specialists are not organized into a profession to the same extent as auditors (Barr-Pulliam et al. 2018a), and they do not strive for control when their work overlaps with auditors (Griffith 2019). Kjellevold (2019) interviews auditors and client-engaged or client-employed valuation specialists in Norway to understand how these two parties interact. He reports that auditors and even auditors' specialists often struggle to understand the valuations prepared by their clients' specialists, which can lead them to overlook material misstatements. Cannon and Bedard (2017) and Glover, Taylor, and Wu (2017) provide insight into valuation specialists while examining the broader topic of challenges in auditing fair values. Cannon and Bedard (2017) find that auditors' use of valuation specialists is associated with higher risk estimates and whether the client used a company's specialist; further, valuation specialists are associated with a greater likelihood of proposing adjustments to clients' estimates. Glover et al. (2017) similarly find that valuation specialists are critical to proposing adjustments to estimates and encourage future researchers to examine why this is the case. One possibility is that valuation specialists are disproportionately involved when developing an independent estimate, rather than testing management's process for developing the estimate (Glover et al. 2017).

Our study extends the existing literature by addressing some important unanswered research questions. First, the literature finds that auditors seek outside assistance from non-accounting and technical accounting specialists to justify their decisions, to respond to heightened risk, to comply with regulator and firm requirements, and to provide expertise that auditors lack (Kadous 2000; Gold, Knechel, and Wallage 2012; Jenkins et al. 2018; Boritz et al. 2017; Griffith et al. 2015; Griffith 2019). It focuses to a lesser extent on what auditors ask specialists to do for them. Second, the literature identifies factors that affect auditors' decisions to use non-accounting and technical accounting specialists (Salterio 1996; Salterio and Koonce 1997; Ng and Shankar 2010; Boritz et al. 2017; Hux 2017). It does not consider factors that affect how auditors use the work of their non-accounting specialists. Thus, the literature does not examine the entire process of working with different types of non-accounting specialists on audits, from initiating their involvement to incorporating their work into the audit. Our study delineates the division of labor between auditors and valuation specialists in audits of fair values and identifies problems related to this division. Absent this understanding, it is difficult to predict whether and how amendments to the auditing standards will change practice in this area.

Auditing standards regarding the use of valuation specialists

The original guidance available to auditors using valuation specialists differentiated specialists on expertise and employment. [3, 4] Regarding technical accounting versus non-accounting expertise such as valuation, AS 1210, "Using the Work of a Specialist" (hereafter, AS 1210) covered the use of all types of non-accounting specialists (PCAOB 2003). Regarding auditor-employed specialists who work for the auditors' firm versus auditor-engaged specialists who work for a third party firm, AS 1210 covered auditor-engaged specialists and referred use of auditor-employed specialists to AS 1201, "Supervision of the Audit Engagement" (hereafter, AS 1201), which did not provide guidance specific to non-accounting specialists (PCAOB 2010b). Thus, auditors faced a dilemma—the more relevant auditing standard (AS 1210) to their common use of auditor-employed valuation specialists was not applicable.[5] However, AS 1210 was not tailored to using valuation specialists because they were uncommon when the standard was written in 1994.

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[3] This discussion focuses on U.S. auditing standards. The U.S. standards discussed are substantively the same as the analogous international auditing standards, with one important exception. The International Standard on Auditing (ISA) 620, "Using the Work of an Auditor's Expert", provides guidance to auditors using auditor-employed non-accounting specialists, while the analogous U.S. standard, AS 1210, explicitly excludes auditor-employed non-accounting specialists from the scope of the standard (International Federation of Accountants (IFAC) 2009; PCAOB 2003). We use the U.S. standards as a framework because all of the auditors and specialists interviewed practice in the U.S. and the majority of their clients follow U.S. accounting and auditing standards.

[4] U.S. auditing standards also consider a company's specialist, whether that specialist is employed directly by the company or employed by a third party and engaged by the company. Auditors' use of company's specialists is excluded from the scope of this paper.

[5] Of the 28 auditors interviewed, 22 reported using only auditor-employed valuation specialists, four reported using both auditor-employed and auditor-engaged valuation specialists, and two reported using only auditor-engaged valuation specialists.

AS 1210 provided limited guidance to auditors deciding if a valuation (or other type of) specialist was needed and how to evaluate the work of a specialist once it was completed. Appendix A summarizes the original guidance contained in AS 1210 and the amended guidance contained in AS 1201. The original guidance does not contemplate what valuation specialists actually do, how auditors interact with specialists, or how auditors incorporate specialists' work into the broader context of the audit to make their audit judgments. The difficulty in mapping the original guidance to the realities of audit practice created ambiguity about how auditors should apply the guidance when using auditor-employed valuation specialists. This lack of guidance also made it likely that auditors developed some practices not contemplated by auditing standards. To address the gaps in the existing literature on specialists and in the auditing standards, we examine the following research questions:

> **RQ1:** What is the division of labor between auditors and valuation specialists in each stage of the audit of a fair value?
>
> **RQ2:** What problems do auditors and specialists have when working together?

The amended guidance includes several key changes. First, AS 1201 includes a new appendix specifically addressing auditor-employed non-accounting specialists. Thus, the ambiguity about which standard—AS 1210 or AS 1201—to apply when using an auditor-employed valuation specialist is resolved. Second, the amended guidance requires two types of enhanced communication. Auditors must communicate to specialists their degree of responsibility for testing the client's data, methods, and assumptions; previously, auditors were held responsible for testing data used by specialists, and specialists were held responsible for testing methods and assumptions. Auditors also must communicate relevant client-specific information to specialists that could influence their work. The original guidance did not specifically contemplate interactions between auditors and specialists. Finally, the amended guidance adds specific considerations for auditors' review of specialists' work, such as checking for consistency with other audit information and checking for restrictions, disclaimers, and limitations. However, the amended guidance also allows auditors to vary the extent of their review based on the risk of material misstatement and the significance of the specialist's work to the auditor's conclusion. Given these changes, we also explore the following research question:

RQ3: Will the amended PCAOB guidance meaningfully change practice?

3. Method

We take a positivist approach to address our research questions. Such an approach aims to develop an objective description and understanding of current practice that can then be compared to the original and amended auditing standards to understand the degree to which behavior in practice aligns with normative behavior per the standards (Malsch and Salterio 2016). We use our data-based description to predict whether the amendments to auditing standards regulating specialist use will meaningfully change practice and mitigate problems in audits of fair values that involve specialists.

One author conducted semi-structured interviews with 28 auditors and 14 auditor-employed specialists with extensive experience working together on audits of fair values from each of the Big 4 firms and three national firms.[6] Semi-structured interviews are appropriate

[6] During the interviews, auditors and specialists discussed specialists' role in audits of fair values, interactions between auditors and specialists, and problems that can occur when specialists assist audit teams. Griffith (2019) analyzes the subset of the data describing specialists' role and interactions between auditors and specialists from an interpretive or constructivist perspective (e.g., Power and Gendron 2015; Malsch and Salterio 2016). Griffith (2019) examines the extent to which auditors trust in the expert system of valuation specialists versus defend their jurisdictional claim to audits of fair values, and the implications of these opposing theoretical propositions. The interpretive approach does not aim to develop an objective account of common tendencies in practice; rather, it aims to explore the theoretical implications of the interviewees' experiences by interpreting them through one or more theoretical lenses (Power and Gendron 2015). This paper analyzes the entire data set, with an emphasis on the problems data which are excluded from Griffith (2019), using a positivist approach to predict whether the

when extant theory and contextual knowledge are limited and when the goal of a study is to describe unknown practices or contexts, because they allow flexibility and depth in data collection (Lillis 1999; Miles and Huberman 1994). We first interviewed auditors because they originate the use of valuation specialists on audits. Interviewees must be knowledgeable about and involved in the entire context to be able to provide reliable and rich data about how auditors use specialists (Gibbins and Qu 2005; Miles and Huberman 1994). We then interviewed specialists to triangulate the auditors' accounts, which enhances the trustworthiness of the data (Malsch and Salterio 2016).

We identified interviewees by asking contacts at the seven firms to solicit audit and valuation partners and managers who had extensive experience working together auditing fair values, and who would be willing to discuss their experiences.[7] As shown in Table 1, participating auditors and specialists have extensive experience working together on a variety of types of fair values. As shown in Table 2, participating auditors and specialists represent several firms, cities, and areas of practice.

[Insert Tables 1 and 2 here]

For both the auditor and specialist interviews, we continued interviewing until saturation, when additional interviews provided no incremental information (Lincoln and Guba 1985; Morse 1995, 2000). The 28 interviews with auditors constitute a sample size consistent with contemporary interview studies in accounting (e.g., Clune, Hermanson, Tompkins, and Ye 2014; Griffith et al. 2015; Westermann, Bedard, and Earley 2015). Because the interviews with

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amendments to auditing standards regulating specialist use will meaningfully change practice, mitigate problems, and improve audit quality in audits of fair values that involve specialists.

[7] This purposive, non-random sample is typical and appropriate in qualitative studies (Miles and Huberman 1994).

specialists focused on their views on a subset of the issues described by auditors, saturation occurred after fewer interviews; we stopped after interviewing 14 specialists.

We developed the auditor interview script based on preliminary discussions with one audit manager, two audit partners, and two valuation specialists from three Big 4 firms.[8] These individuals indicated that auditors use specialists mainly in audits of Level 2 and 3 fair values and that auditors primarily use auditor-employed specialists.[9] We considered AS 1210, "Using the Work of a Specialist", in developing the interview script because these individuals indicated that they follow this standard at least somewhat for lack of more relevant guidance. From these discussions, we created a conceptual framework for specialists' involvement in auditing fair values from which we developed our interview script (Miles and Huberman 1994).

We developed the specialist interview script based on the auditors' accounts and on discussion of those accounts with a valuation specialist at a Big Four firm, which suggested that specialists have more insight into the later stages of the audit process than the earlier stages. Therefore, the specialist interview script focuses on specialists' interactions with auditors as specialists complete and deliver their work to auditors; specialists' experiences regarding differences among their own, auditors', and clients' views of fair values; specialists' views on problems in this area, and specialists' views of their role in the audit team. Specialists' responses to these questions provide data that may challenge or corroborate auditors' more detailed accounts that span the audit process.

[8] The interview scripts for auditors and specialists appear in Appendix B.

[9] Table 2, Panel B shows that most auditors use auditor-employed, rather than auditor-engaged, specialists. The two auditors who reported using only auditor-engaged specialists work for a national firm that is substantially smaller than the other firms in the sample. All of the specialists interviewed recounted their experiences as auditor-employed specialists. Thus, the interview data primarily describe the role of auditor-*employed* specialists in audits of fair values. The data do not suggest meaningful differences in auditors' practices regarding auditor-employed versus auditor-engaged specialists as they pertain to this study.

We conducted the auditor (specialist) interviews by phone in May and June 2012 (September and October 2015). The interviews lasted 25 to 81 (17 to 36) minutes, with an average of 46 (26) minutes. The interviewer first established rapport by briefly describing the study's purpose and its potential benefit to interviewees' firms and professions and encouraged candid responses by ensuring anonymity (Huber and Power 1985; Miles and Huberman 1994). Then, interviewees recalled their most recent experience working with a valuation specialist (audit team) on a Level 2 or 3 fair value to avoid biased recall of salient positive or negative experiences and minimize recall errors (Huber and Power 1985). Then the interviewer proceeded to ask the interview questions in order but allowed interviewees to elaborate as they wished to avoid influencing their responses (Huber and Power 1985; Lillis 1999). The interviews were recorded and professionally transcribed.[10] The interviewer reviewed all of the transcripts for accuracy and grouped the responses in each transcript into the topics covered by the script.

We developed a coding scheme for each topic in the auditor interview script by creating a "start list" of coding categories based on the guidance in AS 1210, and we expanded upon the start lists based on the interview content. Since the interviews focus on areas lacking guidance from auditing standards, the coding schemes must evolve during the coding process to fully capture details that emerge from the interviews (Miles and Huberman 1994). This coding approach also allows us to distinguish practices that auditors have developed in the absence of guidance from those suggested by AS 1210 that auditors attempt to apply despite the non-applicability of this standard to their use of auditor-employed valuation specialists. A coder who

[10] One auditor and three specialists declined to be recorded. The transcripts for these interviews are based on the interviewer's notes which she reviewed for accuracy with the interviewees prior to concluding the interviews.

was blind to the objectives of the study and one author then independently coded auditors' responses and met to reconcile differences.[11]

For the specialist interviews, the interviewer first reviewed the responses related to each topic described by both auditors and specialists for consistency between the two groups.[12] We then developed a start list for each topic specialists described based on the auditors' accounts and expanded the list based on interview content, and a coder and one author independently coded specialists' responses and met to reconcile differences.[13] All results reported are based on reconciled coding.

4. The division of labor throughout audits of fair values

In this section, we report auditors' descriptions of specialists' involvement throughout the audit process to address the first research question. The resulting process description considers the planning, fieldwork, and completion stages of the audit. We identify practices suggested by the original guidance in AS 1210 (hereafter AS 1210O) and practices that are likely to change, or not, in response to the amended guidance in AS 1201 (hereafter AS 1201A).

Planning stage: How do auditors decide to use a valuation specialist?

Specialist involvement in auditing fair values begins when audit teams decide whether and how to use specialists. AS 1210O suggests that auditors consider features of the account, the audit team, and the specialist when deciding whether to use a specialist. AS 1201A does not provide guidance about how to determine whether a specialist is needed. This suggests that the

[11] The independent coder had three years of auditing experience and was unaware of the purpose of the study. Initial inter-rater agreement across the coding schemes was 88.2 percent (ranging from 85.9 to 93.1 percent) and Cohen's kappa ranged from 0.83 to 0.91 (all $p < 0.01$). For all coding, we resolved all differences through discussion until we reached agreement.
[12] Throughout the discussion of results, we note and explain any divergence.
[13] The independent coder had four years of auditing experience and was unaware of the purpose of the study. Initial inter-rater agreement across the coding schemes was 86.3 percent (ranging from 83.3 to 89.7 percent) and Cohen's kappa ranged from 0.77 to 0.85 (all $p < 0.01$).

procedures documented here will not change with the implementation of the amended guidance. Interviewees consider the factors from AS 1210O and other factors when deciding whether to use a specialist as shown in Table 3 and described below.[14]

[Insert Table 3 here]

All auditors considered account-specific characteristics such as the materiality of the account, the account-specific risk, the complexity of the model used to generate a fair value, and the level of inputs within the fair value hierarchy (i.e., Level 1, 2, or 3), consistent with AS 1210O.[15] Auditors also focused on the subjectivity of fair values. As one auditor (P14) put it, he uses a specialist ". . . where there's judgment required and grey areas, because fair value is an art more than a formal science."

All auditors also considered client-specific characteristics, a consideration not suggested by AS 1210O. One auditor (P9) stated that he is more likely to use a specialist when clients "don't have the expertise" to develop reliable fair values. Related to preparer expertise, clients' use of third party valuation preparers also influences the audit team's decision of whether and how extensively they will use a specialist. Four auditors were more likely to use a specialist when the client did *not* use a third party, but 11 auditors noted that when a fair value is complex enough that the client needs a third party's assistance, the audit team needs a specialist. Other characteristics include the client's sophistication and history of inaccuracy or bias in estimating fair values. Auditors are more likely to involve specialists when they expect clients to have trouble with fair values, whether due to an anticipated lack of expertise or a history of problems with estimation.

[14] Here and throughout the paper, we attribute quotations to interviewees using the participant identifiers shown in Table 1 to provide information about the speaker while protecting anonymity.
[15] Only auditors provided responses relevant to the discussion of RQ1.

Nineteen auditors (67.9 percent) considered characteristics of the potential specialists available and of the audit team. AS 1210O directs auditors to consider a specialist's qualifications and the audit team's abilities. Auditors' knowledge of a particular client's plans or intentions, auditors' technical accounting and auditing experience and expertise, and auditors' valuation experience or a finance background all increase their ability to audit fair values—but most auditors indicated that their audit teams rarely possess the necessary combination of skills and experience to forego using a specialist. Relevant specialist characteristics discussed by auditors include expertise in a specific industry or area, prior experience with the client or audit team, and availability. One auditor (P7) explained the depth of specialists' expertise relative to auditors' expertise with fair values:

> I think I'm pretty good at dealing with these things from doing it a number of years but they can always help me learn something or make sure I'm not missing something, because that's all they do, twelve months a year—look at valuations. . . that's what they do twelve months of the year and I do that among a thousand other things for my audit clients.

Auditors use specialists because specialists have a much broader perspective on the variety, frequency, and nuances of different valuation approaches. Specialists are trained to view fair values in a market context, which includes considering the client's method and assumptions in light of industry norms and economic conditions.

Fourteen auditors (50.0 percent) also used audit firm guidelines and decision aids to decide whether to use a specialist. AS 1210O does not contemplate these guidelines and aids. Auditors from five of the six larger firms represented described guidelines such as materiality thresholds and certain accounts or types of fair values that require the use of a specialist. Auditors from one firm listed four bright-line criteria used at their firm. Auditors at this firm must use specialists if: a 50 percent reduction in the carrying value of "hard-to-value" financial instruments (i.e., Level 2 and 3 fair values and other complex estimates) would reduce the client’s pre-tax income by more than materiality; the client makes a market in hard-to-value financial instruments; the client holds a portfolio of alternative investments comprised of 20 percent or more hard-to-value financial instruments; or the client sponsors a defined benefit plan whose plan assets contain 20 percent or more hard-to-value financial instruments. Thus, to some extent audit firms standardize the decision to use a specialist.

Eleven auditors (39.3 percent) obtained specialists’ input when deciding whether to use a specialist, which is not contemplated by AS 1210O. An auditor (M3) explained his specialist’s involvement in planning the audit of a client’s portfolio of Level 2 and 3 alternative investments:

> We [auditors] establish what the roles are. We look at what our audit team’s base procedures are, then at planning the valuation specialist will kick in with whatever he’s hearing in the marketplace that he thinks is applicable to our client and the investment funds that they have.

Specialists understand the newest valuation approaches that clients might use, as well as typical versus atypical approaches for a given asset. Specialists also know which fair values are likely to have observable inputs and therefore are more straightforward to audit. Thus, specialists’ input at this point helps audit teams understand the extent and difficulty of the work required to audit the fair value, which influences the decision to use a specialist.

Fieldwork stage: How do auditors use valuation specialists during audit testing?

The next stage of valuation specialist involvement spans audit testing. AS 1210O requires auditors to understand the specialists’ work, test the data provided to specialists, and evaluate whether specialists’ results support clients’ financial statement assertions, while the actual evaluation of methods and assumptions falls to specialists. Beyond these details, AS 1210O does not identify the specific responsibilities of specialists and auditors. AS 1201A requires auditors to establish and document an understanding with the specialist of the objectives, nature, and extent of their responsibility for their work. AS 1201A also requires that auditors inform specialists of client and environment matters that could affect specialists' work, but the amended guidance still does not identify specific responsibilities of specialists and auditors. Rather, it requires auditors to determine the extent to which auditors versus specialists are responsible for testing data, methods, and assumptions. Interviewees described how these responsibilities have been allocated to specialists and audit teams under the original guidance for procedures and conclusions related to fair values in absence of official guidance about certain procedures.

Procedures performed by valuation specialists versus audit teams

Table 4, Panel A summarizes auditors' descriptions of the division of responsibility across specialists and audit teams for evidence-gathering procedures. Responsibility for these procedures aligns with the extent of valuation expertise required to perform them.[16] Specialists primarily evaluate assumptions underlying fair values (70.3% specialists' responsibility), but they appear to focus on the subset of assumptions underlying fair values that require greater knowledge of valuation and market conditions (e.g., discount rate, industry benchmarks and market comparables, and industry-wide conditions). Specialists also primarily evaluate the valuation method used by the client or third party (92.6 percent specialist's responsibility), evaluate the expertise of the client or third party who prepared the valuation (61.1 percent), check the mathematical accuracy of the valuation model used (62.5 percent), and evaluate the

[16] We asked auditors to describe the work they received from valuation specialists; we did not explicitly ask for a complete listing of all procedures performed to audit a fair value, nor did we explicitly ask which procedures and conclusions are the responsibilities of auditors. However, when describing the work received from specialists auditors typically included explanations of the procedures and conclusions that are auditors' responsibilities in addition to those that are specialists' responsibilities. Similarly, specialists spontaneously described procedures that they perform versus that the audit team performs, despite not being asked explicitly to list all procedures performed over fair values.

client's classifications of fair values as Level 1, 2, or 3 (50.0 percent). Specialists take part in two of the most critical and difficult steps in auditing these types of estimates—evaluating the valuation method and evaluating some of the key assumptions (Griffith et al. 2015).

[Insert Table 4 here]

Of the procedures identified above as primarily specialists' responsibilities, AS 1210O outlines only two—evaluating method and (all) assumptions—as specialists' responsibilities (PCAOB 2003, ¶12), presumably because these procedures require more valuation expertise. AS 1201A leaves it to auditors to decide who is responsible for which procedures. Specialists understand the details of various valuation models better than auditors and they have a "better understanding of when certain models are appropriate and when they're not" (auditor M6), which helps them recognize when clients use unusual methods. Similarly, auditors rely on specialists to evaluate assumptions that require specialized knowledge about valuation and market conditions. However, specialists do not evaluate all of the assumptions, because some assumptions require client-specific knowledge that auditors have but specialists lack. The division of responsibility for particular assumptions has developed in practice without specific guidance from standards because AS 1210O assigns responsibility for *all assumptions* to specialists (PCAOB 2003). Because AS 1201A does not assign specific responsibilities to auditors or specialists, this division of responsibility is unlikely to change.

Specialists commonly evaluate many different model assumptions. For income-approach models (e.g., discounted cash flow models), these inputs include discount rates, risk premiums, and other inputs (97.7 percent specialist's responsibility). For market-approach models (e.g., real estate valuations) and fair values based on Level 2 "observable inputs," specialists evaluate inputs including benchmarks and market comparables (90.7 percent specialist's responsibility).

Specialists also evaluate assumptions based on industry-level data and projections such as expected growth in a client's industry in different regions (100.0 percent specialist's responsibility). Evaluating these assumptions often requires extensive valuation and market knowledge. These assumptions can significantly impact the fair value.

Audit teams primarily evaluate assumptions about clients' projected financial information such as forecasted revenues, expenses, cash flows, EBITDA, and changes in margins (65.3 percent audit team's responsibility). Evaluating these assumptions often requires client-specific knowledge and information (Griffith et al. 2015). These are also key assumptions that can significantly impact the fair value. An auditor (M5) explained that audit teams, rather than specialists, typically evaluate these assumptions because ". . . the audit team probably understand[s] what's going on from the company's standpoint more than the fair value specialist." A specialist (P1) concurred that, "Ultimately the audit team knows the client and industry better. For example, the auditor understands the sources of the client's projected financial information, the controls, et cetera." Despite audit teams' advantage over specialists in client-specific knowledge, interviewees still identified specialists as responsible for evaluating assumptions about clients' financial projections one-third of the time (32.7 percent specialist versus 65.3 percent audit team).

Audit teams also primarily plan the audit approach (58.8 percent auditor's responsibility), test objective data that goes into the valuation (85.7 percent), and test controls over the process of generating the fair value (80.0 percent). While AS 1210O requires auditors to test data used by specialists, AS 1201A does not specify the roles of auditors versus specialists for any of these procedures. However, auditors perform these procedures every time they audit an account balance (even non-fair values), so they have expertise in these areas relative to specialists.

Though auditors take responsibility for planning the audit approach, they involve specialists when the planning requires more valuation knowledge. As an auditor (P9) explained planning the approach to an insurance client's Level 2 and 3 investments:

> We get the specialists involved during planning, so the specialists help us evaluate changes to the portfolio, how we should be bifurcating the portfolio between different classes of securities. They help us make initial decisions on just inherent risk relative to those classifications.

This illustrates the importance of thoroughly understanding clients' fair values from a risk perspective in planning an effective audit approach and the potential negative consequences of making planning decisions without this understanding. Yet, audit teams generally retain the responsibility for planning the audit approach despite their lack of expertise that warrants a specialist's involvement.

Table 4, Panel B details additional functions performed by valuation specialists that are not evidence-gathering procedures but are still important in this process. AS 1210O does not address these functions, and AS 1201A only considers them with respect to auditors' review of specialists' work. Eighteen auditors (64.3 percent) described specialists' use of caveats—explicit follow-up items for audit teams to consider before concluding on the fair value—as one of these functions. Caveats in specialists' work direct auditors' attention to items that specialists believe require additional work or are otherwise important for audit teams to note. Auditors described three types of caveats: recommended changes to the client's process (noted by 11 of the 18 auditors who discussed caveats), inputs to the valuation that the specialist did not test because it was agreed in planning that the auditor would do so (noted by 12 of the 18 auditors), and reservations about specific inputs based on the results of the specialist's testing of those inputs (noted by 5 of the 18 auditors). For example, a specialist might recommend that a client who did not perform a look-back analysis of the historical accuracy of their estimates should institute such a review to improve their process. Or, a specialist might note that s/he did not verify the accuracy of prior year revenues included in a discounted cash flow model and expects the audit team to perform this procedure. Finally, a specialist might point out that the client's growth rate remains steady at three percent per year for five years, then jumps up to 20 percent, or that while the client's weighted average cost of capital of nine percent falls just outside the specialist's acceptable range of ten to 12 percent, the discount rate based on this input still appears reasonable.

An auditor (M12) explained that the specialist included caveats in the documentation related to a real estate valuation:

> One, to identify that the valuation expert did not do anything with it. And two, to identify to the auditor that they need to do something with it. Those are very explicitly pointed out to the auditor; it's very clear.

Despite one auditor's (P12) assertion that caveats are "really the key" to understanding what is left for audit teams to do after specialists finish their testing, others conveyed that specialists include caveats not to help audit teams but to minimize their own responsibility. Thus, the extent to which caveats help audit teams is unclear. AS 1201A requires auditors to identify "restrictions, disclaimers, or limitations" (PCAOB 2018, ¶C7) in specialists' work, though it does not explain how auditors should dispose of them. Therefore, auditors will likely attend more to caveats in the future to demonstrate compliance with the standard, but the standard leaves open the extent to which auditors must pursue the issues raised in specialists' caveats.

Conclusions made by valuation specialists versus audit teams

Table 5 shows that specialists conclude on the various pieces of the fair value that they tested, while auditors conclude on the fair value as a whole. Specifically, specialists conclude on components of financial statement balances (e.g., a particular investment from an entire portfolio that constitutes one balance sheet line item) (75.0 percent), on individual assumptions they tested (88.2 percent), and on the method (66.7 percent specialist's responsibility), but not on the balances that appear in the financial statements (0.0 percent).[17] Both AS 1210O and AS 1201A hold auditors responsible for overall audit conclusions and hold specialists responsible for conclusions on the specific items they test. Thus, these practices are unlikely to change.

[Insert Table 5 here]

Auditors and specialists both described the nature of specialists' conclusions about inputs and assumptions and the resulting level of reliance that audit teams can (or should) place on specialists' conclusions. An auditor (P8) explained that specialists document in their work:

> . . . What their conclusions are on each input. The valuation guys don't do a conclusion on the overall, "yes, goodwill's not impaired" or whatever. They will conclude on specific inputs that they were asked to look at.

Other auditors gave examples of specialists concluding that "these five companies seem to do something similar to what this business is" (P4), that any discount rate within a wide range is reasonable (M4), or that a market comparable used by the client is commonly used by other companies in the same industry (P8). These conclusions do not explicitly state whether the item being evaluated is reasonable, so audit teams must consider the implications of these conclusions when they make their final fair value conclusions. For example, even if the specialist concludes that the client's discount rate falls into a reasonable range, the audit team must consider whether a discount rate at the low end of the range indicates potential client bias and whether they must perform further procedures before they can make a final conclusion about the account balance.

[17] Table 4, Panel A details the specific assumptions evaluated by specialists.

Auditors identified audit teams as primarily responsible for concluding whether account balances containing fair values are materially misstated. An auditor (P8) described a situation where the specialist's input differed from a client's, but the specialist did not elaborate about the impact of the difference on the estimate:

> They [specialists] might say on a market multiple or even a WACC, that the company used ten percent. Well, based on our recalculation we came up with 12 percent. And they'll just leave it at that. Just looking at that you don't know if that would cause a problem.

Audit teams, rather than specialists, conclude whether account balances are materially misstated because they have a better understanding of materiality and how "to put together all the pieces to get to the whole" (auditor P7). In addition, an auditor (M8) explained that specialists "don't reach full valuation conclusions because there are certain things that the audit team has done," so specialists do not want to conclude on matters outside the scope of their work on the audit. Specialists also strongly conveyed that auditors, not specialists, are ultimately responsible with statements such as, "We just give them the info they need and we don't make any judgment calls" (specialist M4) and, "Basically, we'll give the audit team the numbers and they tell us if it's going to be an issue" (specialist P6).

Interactions and influence between specialists and audit teams

Interviewees also described how auditors and specialists interact and influence each other's work as summarized in Tables 6 and 7. AS 1210O does not contemplate the interactions between auditors and specialists. AS 1201A directs auditors to inform specialists about matters that could affect their work and to implement measures to ensure proper coordination between auditors and specialists. Twenty-seven auditors (96.4 percent) described filtering information from clients and third parties to specialists in an effort to increase specialists' efficiency;

corroborating this, 11 specialists (78.6 percent) described auditors acting as a liaison between themselves and the client. One auditor (P2) explained, “We don’t necessarily load them up with a whole bunch of detail on what we’ve looked at,” while another (P7) recalled that he only sent the client’s valuation report to the specialist “after I went through a few drafts.” Regarding requests of the client from the specialist, one auditor (M5) stated, “I would filter it as much as I can and make sure the questions are appropriate to go to the client.” Appropriate questions include those that auditors cannot answer themselves or those that do not dwell on issues viewed as immaterial by auditors, because auditors strive to minimize the time clients must spend answering questions. Though efficiency concerns motivate audit teams to act as intermediaries between specialists and clients or third parties, this requires audit teams to judge which information is important enough to share with specialists and which of specialists’ questions should be relayed to clients or third parties.

[Insert Tables 6 and 7 here]

Twenty-four auditors (85.7 percent) and 11 specialists (78.6 percent) described extensive interaction between the two groups at certain points throughout the audit for audit teams to engage in specialists’ process and to coordinate responsibilities between the two groups. Auditors strive for “constant, early, and often communication with the valuation experts” (M6) to ensure that the audit team’s and specialist’s work proceeds smoothly and to avoid “surprises” such as issues identified by the specialist that require additional work by the audit team to resolve. An auditor (M4) explained his perspective on the value of frequent interaction and communication with specialists: “I think it’s a best practice to keep a pretty close rein on my specialists so that they focus on what’s important and don’t spend time in the weeds, per se.” Auditors described interactions between audit teams and specialists as the main mechanism by which each party understands its respective responsibilities and by which auditors monitor the progress of specialists' work. However, twelve specialists (85.7 percent) stated that their interaction with the audit team is dictated by relatively strict adherence to clearly defined processes and responsibilities, which were established early in the audit. This may be why nine specialists (64.3 percent) also described limited interaction with auditors at other times, particularly toward the end of the audit.

Finally, nine auditors (32.1 percent) and four specialists (28.6 percent) reported that specialists share information with and educate auditors, five specialists (35.7 percent) reported working to explicitly respond to the audit team's input or review of their work, and four auditors (14.3 percent) reported that auditors give specialists little discretion over the procedures they will perform to fulfill their responsibilities.

Completion stage: How do auditors use valuation specialists' work?

In the final stage of auditing fair values, audit teams use specialists' work to make their final conclusions and complete their documentation. Specialists summarize their work in a conclusion memo (hereafter, specialist's memo) that auditors include in the audit file as documentation of specialists' work. AS 1210O requires auditors to review specialists' work for understanding and to ensure that sufficient audit evidence has been obtained. AS 1201A requires auditors to determine the extent of review based on the significance of the specialist's work to the auditor's conclusion and the risk of material misstatement. Under AS 1201A, auditors must determine whether specialists provided sufficient appropriate evidence and must seek additional evidence when specialists' findings are inconsistent with the financial statement assertions, contain limitations, or are inconsistent with the auditor's understanding and other evidence. Auditors explained how they review specialists' work and described the additional procedures they perform to use specialists' work under the original guidance. Key to this part of the process is resolving disagreements, and specialists explained how disagreements between the specialist and client or between the specialist and audit team are resolved.

Audit teams' review of specialists' work

Table 8, Panel A summarizes the major areas of focus for auditors as they review specialists' work. Audit teams review specialists' work to obtain an understanding of what specialists did (16 auditors, or 57.1 percent), to evaluate the sufficiency of the work performed and documented (14 auditors, or 50.0 percent), to evaluate the consistency of specialists' work with other audit information (11 auditors, or 39.3 percent), and to ensure that the respective responsibilities of specialists and audit teams have been fulfilled (11 auditors, or 39.3 percent). AS 1210O suggests only the first two of these review activities auditors identified, while AS1201A requires the latter three activities auditors identified. An auditor (P8) described reviewing specialists' work for understanding as "just making sure that it makes sense." Another auditor (M6) noted that his review includes:

> . . . Talking to [specialists], making sure that they give me a good understanding of the procedures they're doing and why they're relevant and appropriate. . . Obviously you rely on the expertise of the valuation specialist to a certain extent.

These descriptions reflect the vagueness of the audit team's task in reviewing the specialist's work to understand how the specialist arrived at the conclusions documented. While auditors must understand specialists' work to make good judgments about fair values, auditors were not specific about how they obtain this understanding despite its requirement by AS 1210O. Auditors tend to lack valuation knowledge (Martin et al. 2006; Griffith et al. 2015), which likely contributes to the vague, high-level style of review described.

[Insert Table 8 here]

Auditors expressed relatively more certainty when describing how audit teams review the sufficiency of specialists' work as audit evidence (required by AS 1210O) and the consistency of specialists' work with the rest of the audit (not contemplated by AS 1210O). Auditors review for sufficiency by ensuring specialists' documentation is adequate for possible PCAOB inspection. One auditor (M5) described reviewing for consistency as "mak[ing] sure that there's nothing in that memo that contradicts other statements that we're making in the [audit] file." This reveals auditors' reference point for their review as the audit team's view, against which they compare the specialist's view for consistency. This approach also suggests the possible existence of disagreements between the audit team and the specialist, consistent with specialists' identification of such disagreements (discussed in conjunction with Table 9 below). A large part of auditors' review consists of straightforward ticking and tying among the specialist's memo, other audit work papers, and the trial balance. However, reconciling judgment-based inconsistencies such as when the specialist and the audit team disagree on the client's future growth prospects is "probably one of the most time consuming parts of interacting with a specialist" (auditor M4). The responsibility is "more on the audit team to make the scoping decisions" as to whether an issue might be material (auditor P8).

Eleven auditors (39.3 percent) reported ensuring the fulfillment of respective responsibilities on both sides, which is not suggested by AS 1210O, but is required by AS 1201A. Audit teams, rather than specialists, do this because "it's still audit's responsibility to make sure what's in the file is comprehensive" (auditor P8). This review typically entails going back to the planned division of responsibility. Some auditors also referred to checklists that their firms require for fair values to document the fulfillment of all responsibilities, because neither side wants to take responsibility for procedures that they were not assigned. An auditor (M10) explained how his audit team ensures that all responsibilities have been met:

> . . .We go through and say okay, this is what we've outlined in our planning memo for what the audit team is going to do and what the valuation team is going to do. Based on that, we actually go back through and say okay, based on the memo that we got from the valuation group, did they actually do what we told them to do in our planning procedures? Did they document that? Did they actually do what we told them to do? And same with the audit team: we've said that we're going to do this, have we documented in our audit files that we have actually done this?

In contrast with the above items detailing auditors' focus during their review of specialists' work, 10 auditors (35.7 percent) reported relying upon specialists' work without extensive review, a practice that seems inconsistent with AS 1210O's review requirements but may be allowed under AS 1201A's provision that auditors can determine the extent of review based on risk. Reasons for this ranged from insufficient audit team expertise to the wide ranges surrounding many estimates that render audit teams' reviews too imprecise to be helpful.

Additional procedures performed by audit teams

Table 8, Panel B presents additional procedures performed by audit teams when using specialists' work to make conclusions. Twenty-six auditors (92.9 percent) discussed resolving differences between specialists' findings and clients' assertions, which AS 1210O requires. Differences often arise because the specialist used a different approach or assumption than the client. The resolution process usually involves going back to the client for further explanation, as an auditor (M4) explained:

> Sometimes we have to go push on the client or the third party to provide us more information that would help us understand the judgments that they made. . . I'm always involved, or the audit representative's typically involved in those conversations to facilitate that, to make sure that the focus and the scope is appropriate. . . I've seen a lot of times where the specialist may spend hours trying to do their own independent research and/or get comfortable with the number but after going back to the client, a lot of times the client can provide that extra data to get us over the hump.

Iteration with the client often uncovers information the specialist lacked that caused the difference. Audit teams must determine if the difference between the specialist and client arose because the client used an unreasonable method, assumption, or input in developing the fair value, or whether the two parties simply used different approaches that are both acceptable.

Auditors also consider materiality when resolving differences. An auditor (M3) noted:

> I'm the kind of a manager that will challenge my specialist and say, thanks for pointing that out, but at the end of the day if I can live with it as a manager signing an opinion and the partner can live with it, and it's not material to what we're trying to do, we're not going to add that in there. It's not a value add to our engagement.

Auditors also believe that specialists often keep working when it is not necessary or efficient to do so because they are unaccustomed to the idea that a fair value in the audit context will not be a precise number calculated down to the penny. Thus, auditors use materiality to resolve differences in a manner consistent with their concerns for efficiency.

Twenty-four auditors (85.7 percent) noted that audit teams edit and finalize specialists' memos, a practice not contemplated by AS 1210O or AS 1201A. Auditors clarify the language and explanations contained in specialists' memos, delete extraneous information, and add references to other audit work to satisfy limitations in specialists' memos (e.g., referencing the audit team's work on revenue projections if the memo noted that specialists did not evaluate them). An auditor (M1) explained:

> We would look at the memo and edit it. We would ensure that the conclusions and their documentation are exactly the same as what our conclusions are, because there should be no differences between their conclusions and our conclusions.

Another auditor (M5) explained that auditors do this because, "The specialist doesn't have the perspective of the file as a whole that we would have, so we want to make sure that those work papers fit into the rest of the work papers." For similar reasons, audit teams delete extraneous information in specialists' memos when that information contradicts what the audit team has documented in other audit work papers or when auditors believe specialists' memos include "something that alludes to an internal control problem or some sort of hidden comment in there that, from an audit standpoint, wouldn't be acceptable" (auditor M11). An auditor (M9) explained deleting information related to the specialist's testing of the weighted average cost of capital because it was not "consistent with what we're [the audit team] saying in general about the knowledge of the business and the way the business is working." The inspection process fosters auditors' emphasis on documentation (Glover, Taylor, and Wu 2018), which seems to motivate audit teams' changes to specialists' memos. As shown in Table 9, 13 specialists (92.9 percent) leave decisions about resolving disagreements to the audit team, which creates an opportunity for audit teams to make these changes.

Twenty-one auditors (75.0 percent) described how audit teams identify and address limitations and follow-up items in specialists' work. While AS 1210O and AS 1201A require auditors to resolve differences between specialists' work and clients' assertions, neither contemplate auditors' resolution of issues within specialists' work that do not contradict client assertions. Two approaches emerged; they are not mutually exclusive. First, audit teams scan specialists' memos for explicit caveats "to make sure that there's nothing in there that [specialists] absolutely said they wouldn't or couldn't do" (M11). Second, audit teams search for limitations or problems "buried" within specialists' memos. An auditor (P4) explained:

> Sometimes maybe there's something embedded in the memo, this particular factor or assumption appears out of range. And even though maybe they concluded overall it was okay, you still want to know some of those things. So I always encourage our folks, don't just get those things and stick them in the workpapers. Make sure you read them and know what's in them.

Other examples of potential issues embedded in specialists' memos mentioned by interviewees include instances where an item falls within the range deemed reasonable by the specialist but that range exceeds audit materiality, or evaluations of the client's method of estimating a fair value that suggest possible control deficiencies.

Once audit teams identify these items, they must decide how to address them. To do this audit teams first decide if items warrant follow-up. Regarding follow-up items involving contradictory evidence, one auditor (P8) considers whether the audit team is "still okay with the ultimate conclusion" despite the contradictory evidence. Regarding "something just left kind of wide open for passing to the audit team," this auditor considers "whether or not they [auditors] care" about the follow-up item. Another auditor (P8) decides how to address these items by considering, "Does it blow something up?" When deciding how to address these items, audit teams consider materiality, inputs into the fair value examined by audit teams but not specialists, and other client- or audit-specific information to which specialists lack access. Regarding explicit caveats identified by specialists, an auditor (P1) said, "Sometimes we might dispose of them by saying it's not material or we didn't feel that we needed to test it, or we're satisfied with the work done to date and just be done." Overall, "the auditor has to make a judgment. . . is it reasonable?" (auditor M1). Thus, specialists' caveats do not always lead audit teams to perform additional procedures. When auditors do follow up on caveats, potential procedures include supporting revenue projections with client board minutes, budgets, and corporate strategy; performing sensitivity analyses on discount rates; or talking to the client or third party. In short, auditors try to determine whether an item could potentially cause a material misstatement.

The remaining additional procedures performed by audit teams relate to documenting overall conclusions (16 auditors, or 57.1 percent) and deciding whether to communicate specialists' recommendations to clients (13 auditors, or 46.4 percent). AS 1210O and AS 1201A do not provide guidance on either procedure. Audit teams consider all of the evidence obtained throughout an audit, such as analytical procedures and tests of data performed by audit teams, in tandem with the evidence supplied by specialists before documenting the final conclusion. Audit teams also consider potential management bias that would not be evident to specialists with limited insight into the audit (e.g., a specialist helping with one or a selection of fair values cannot notice whether *all* of a client's fair values are "consistently biased at the low end or the high end of [the] range" (auditor M4)). Audit teams also decide whether to communicate any recommendations made by specialists for client process improvements. Audit teams make final conclusions and communicate recommendations because specialists see only one part of the whole audit and consequently lack the perspective to make these judgments.

Resolution of disagreements or differences in views from specialists' perspectives

Consistent with auditors' descriptions of addressing differences between specialists and clients and addressing certain items in specialists' work, specialists identified instances in which they disagreed with or held different views than clients (12 specialists, or 85.7 percent) or with the audit team (seven specialists, or 50.0 percent) as shown in Table 9. While thirteen specialists (92.9 percent) said they ultimately leave such decisions to the audit team, nine specialists (64.3 percent) described working with the audit team to reach mutual agreement and six specialists (42.9 percent) noted that they resolve differences with clients on their own. Thus, while specialists are involved in the resolution process, both auditors' and specialists' descriptions indicate that auditors make the final call when resolving differences.

[Insert Table 9 here]

5. Problems encountered by auditors and specialists when working together

In this section, we report interviewees' descriptions of problems related to their joint work in auditing fair values to address the second research question. Interestingly, the greatest divergence in views occurred in interviewees' accounts of problems. In general, interviewees discussed problems that arise from two distinct features of the audit environment: the division of labor between auditors and valuation specialists, and the uncertainty in fair values and in the associated regulatory requirements. Problems arising from the division of labor between auditors and specialists are likely to occur on audits of fair values when specialists are involved and in other, non-fair value settings where auditors rely on other types of specialists. Problems arising from the inherent uncertainty in fair values are likely to occur on audits of fair values and other complex estimates even if specialists are not involved, but can be exacerbated by the interaction between auditors and specialists. In addition, specialists, but not auditors, identified problems arising from a lack of valuation guidance and explicit concerns about PCAOB inspections; these also relate to the division of labor but appear to constitute a part of the labor into which auditors lack insight. Table 10 shows the frequencies of each type of problem according to auditors and to specialists, and we describe the problems below.

[Insert Table 10 here]

Problems arising from the division of labor between auditors and specialists

Five types of problems related to the division of labor emerged from the interviews. Twenty-two auditors (78.6 percent) and 10 specialists (71.4 percent) reported coordination problems between audit teams and specialists in which auditors failed to send and receive specialists' work in a timely manner, coordinate who is doing what between the two parties, and inform specialists about clients' background and current issues. An auditor (P11) explained the challenge in coordination:

> Now you've got four cooks in the kitchen. You've got the client, you've got the audit team, you've got the audit team's internal support [i.e., specialist], you've got a third party valuation expert. You've got four parties involved trying to wrestle an issue down. So it's just inherently inefficient.

One specialist (P2) explained:

> [A] big issue I see is when they [the audit team] didn't realize that they needed this estimate for the audits. . . where they said, "Whoops, I didn't even know that had to be valued in the first place." And then we end up with a very compressed timeline and that's very stressful for everyone.

Another specialist (P3) said that such time crunches are problematic because they can "limit the amount of work that we can do and sometimes that causes a concern. You never want to be limited on doing an appropriate number of procedures." Time pressure contributes to coordination issues as specialists work on many audit engagements at year-end, and short reporting windows intensify the pressure. Auditors struggle to address this issue because the PCAOB prefers the work related to higher-risk fair values to be done at year-end rather than at interim. Coordination problems can result in specialists lacking access to critical information.

Seventeen auditors (60.7 percent) and eight specialists (57.1 percent) identified problems pertaining to differences in the perspectives of specialists and audit teams, which develop through each group's educational and work experiences. Different backgrounds make it difficult for audit teams and specialists to communicate their concerns to one another because, as one auditor (M3) said, "They're just not going to speak the same language." When the two sides do not understand whether or why the issues identified by the other side represent critical audit concerns, inappropriate judgments and inefficiencies may result if specialists and auditors focus on the wrong areas from a risk-based perspective. For example, specialists struggle to understand how audit teams use materiality, causing specialists to spend too much time on immaterial issues in the valuation. Conversely, audit teams may inappropriately convince specialists that issues identified in specialists' work are not material. Specialists focused primarily on auditors' lack of valuation knowledge as the cause of these problems. For example, a specialist (P6) noted:

> . . .There are some auditors out there who. . . think they can handle parts of their review, but then in concurring review it comes back that, "No, you should have engaged a valuation specialist in this process." We get called in at the tail end, when they're trying to issue and have to review because the auditor either didn't know what they needed us to do, or in most cases I would say the auditors know what they need to do but just think they can do it themselves or within their audit team.

Differences in perspectives also cause difficulty communicating and resolving issues with clients, inefficiencies due to "over-auditing" (auditor P2), and over-documenting.

Nine auditors (32.1 percent) and three specialists (21.4 percent) reported problems caused by uncertainty about the respective responsibilities of audit teams and specialists whereby audit teams and specialists avoid procedures that each party believes are the other party's responsibility or are outside of their own areas of expertise. Avoidance can cause issues to slip through the cracks until the last minute, when audit teams have less capacity to address them. Reluctance to take ownership occurs on both sides, though audit teams are ultimately responsible for the entire audit. An auditor (M1) explained that, "It's easy to think, 'I've involved a specialist so they have resolved all of these issues,' but the truth is that's why the auditor is responsible." Recall that specialists hesitate to make judgment-based conclusions and prefer to base their conclusions solely on data obtained through research or independent sources without considering relevant information from the client (such as plans for future operations). Thus, inappropriate judgments can occur if audit teams assume they do not need to follow up on specialists' work, or if audit teams and specialists fail to address issues that they each believe exceed the scope of their responsibility.

In addition to these problems identified by both auditors and specialists, specialists identified two additional problems arising from the division of labor. First, six specialists (42.9 percent), but no auditors, cited lacking guidance from firms and regulators as a problem they face when helping with audits of fair values, because there is very little standardization in valuation practice across specialists or clients' third party preparers. One specialist (P3) expressed his belief that standardization is inevitable:

> We are trying to prepare the industry for this significant mind-set change, that the work product that we deliver as part of an audit, it's an auditable work product. The assumptions that we make have to be well documented and well supported, and that not only do we have to use our own good professional judgment in coming to these conclusions but we also have to be prepared to support them with evidence as opposed to just good thought.

Another specialist (P1) noted that a "big problem is that clients hire bad third parties," and "this is why the valuation industry needs industry standards." Second, five specialists (35.7 percent), but no auditors, cited concerns about not knowing what would meet the expectations of the PCAOB or other inspectors in the valuation context. Valuation specialists noted the challenge in performing and documenting valuation procedures in a manner that satisfies both valuation industry norms, which are more accepting of unique approaches and judgmental justifications (Barr-Pulliam et al. 2018b), and PCAOB inspectors. Auditors did not mention either of these problems, suggesting specialists have unique insight into client capabilities and the difficulty in documenting valuation work.

Problems arising from the inherent uncertainty in fair values

Three types of problems related to the inherent uncertainty in fair values emerged from the interviews. Nineteen auditors (67.9 percent) and seven specialists (50.0 percent) identified problems in getting information from clients and clients' third party valuation preparers (i.e., company’s specialists). These problems typically occur when clients and/or third parties do not share all of the information they used to generate fair values. Various circumstances impede information flow. Some clients lack the expertise to get complete or up-to-date information to audit teams and specialists. One auditor noted (M11) that some third parties do not readily share proprietary models or respond to audit team and specialist requests because they “have the smallest stake out of all the parties involved.” One specialist (P6) explained that these issues are exacerbated when clients do not use:

> . . .Qualified appraisers [i.e., third parties], ones that we don’t need to coach through the process because they aren’t familiar with the accounting standard or they don’t have experience in a complex technique that they need to employ or things like that.

More specialists than auditors were concerned with the quality of clients’ third party preparers. Problems with information flow can reduce the feasibility of developing independent estimates to evaluate some fair values, which may reduce the quality of audit judgments (Griffith et al. 2015) and the likelihood that auditors propose and require adjustments to fair values (Cannon and Bedard 2017).

Eleven auditors (39.3 percent) and one specialist (7.1 percent) described problems related to their uncertainty about what constitutes sufficient evidence from specialists. The increasing complexity of fair values and related disclosures, combined with increasing PCAOB and firm requirements in response to changing markets, contribute to this uncertainty. Compounding these factors, auditors do not get frequent enough exposure to all types of fair values to master the increasing requirements. An auditor (P1) described the inherent difficulty in evaluating the sufficiency of evidence:

> When your [audited] estimates [from the prior year] differ from your actual it makes you step back and say, “Okay, what do we need to potentially do different to get a better estimate? Or is there a way to get a better estimate? Or are we in this arena where this

> market changes so rapidly, and the company's need for cash or to liquidate these items changes so rapidly, that we just have to assume every year that we would expect some difference between estimate and actual and a revised estimate, or actually there would be a different financial estimate upon liquidating those assets?" So that's always a point that sort of makes you pause and go, "Okay, are we doing enough?"

Auditors who lack mastery of the complex, evolving regulatory and firm requirements are more likely to make inappropriate judgments. This lack of mastery is why auditors use specialists, yet auditors seem to lack confidence that specialists will provide sufficient evidence. Uncertainty about sufficient evidence also causes auditors to over-allocate time to documenting work.

Finally, nine auditors (32.1 percent) and two specialists (14.3 percent) discussed problems caused by the acceptability of multiple points of view in valuation. An auditor (P1) explained how this affects interactions between clients and audit teams:

> Generally you have sort of a four-way communication that goes on. You've got the client, their specialist, the audit team, and our internal specialist. And there can be some fairly aggressive and robust conversation around the point of view as it relates to methodology that we as a firm might think is appropriate, versus a methodology that a third party might think is appropriate. . . You get two very knowledgeable groups of people that have very strong views about why their point of view and their method is the better method, and generally I've had to play, on a number of occasions, sort of mediator, if you will.

One specialist (P2) explained that:

> Ultimately, valuation is a matter of judgement. And that's one thing that I think a lot of audit teams and, frankly, the PCAOB, are not really very comfortable with. You can still get to a reasonable answer, but you need to make sure that you're considering all the information that's relevant and you also need to accept that there isn't just one true answer.

Audit teams and their specialists must approach valuation from a point of view that is not only appropriate in terms of accounting and auditing standards, but also defensible to clients, third parties, and regulators. Clients may exploit the array of acceptable approaches to convince auditors to accept a less appropriate point of view than that held by the audit team or specialist.

The potentially contentious interactions among audit teams, specialists, clients, and third parties can damage client relationships and make it harder for auditors to obtain information.

6. Potential changes in response to amended guidance

In this section, we consider whether and how we expect practice to change in response to the new guidance to address the third research question. We summarize the seven key areas in which the amended guidance differs from the original guidance and evaluate the new requirements against current practices. Perhaps counterintuitively, we conclude that the practices and problems we previously described will not meaningfully change. We also consider three areas in which the amended standard does not change that we view as “missed opportunities” for improving practice, based on our interviewees’ descriptions of problems and on prior research.

First, the amended guidance no longer provides guidance about when to involve a valuation specialist. We do not expect any changes in the processes described previously to determine when to use a specialist. Auditors report following the more specific requirements of AS 1210O when deciding to use a specialist, and in some cases audit firm methodologies require the use of a specialist. The amended guidance does not preclude such considerations so we expect them to continue in a similar form. Recall that less than half of the auditor interviewees report including their specialists in the planning process. Thus, to the extent that coordination problems between auditors and specialists stem from specialists’ exclusion from the planning process, we do not expect coordination to improve in response this change in the guidance.

Second, AS 1201A allows auditors to assign audit procedures to auditors and specialists as they believe appropriate, rather than dictating that specialists test methods and assumptions and auditors test everything else. Since current practices developed under guidance that was more specific about who does what than the amended guidance, auditors are unlikely to change who is assigned to which procedures under the amended standards. Further, the standard retains auditors' ultimate responsibility for conclusions. Given that the division of labor for key procedures will likely remain divided between auditors and specialists, we expect specialists will continue to conclude on the components and inputs they examine, and auditors will continue to "own" the final conclusion. Because auditors are still responsible for the overall conclusion, they will continue to make and document final conclusions, even if their conclusions contradict specialists' concerns. In addition, the division of audit procedures limits each side's view into the other side's perspective, so problems related to the different perspectives of auditors and specialists will likely continue.

Third, AS 1201A requires auditors to communicate clearly to specialists the steps that they are responsible for. While this requirement has the potential to reduce confusion about who is responsible for what, the amended guidance does not address problems with timeliness of communication, a major contributor to coordination problems. Auditors and specialists already report extensive interaction, so it is also possible that auditors will view their current practices as in compliance with the new requirements. Thus we do not expect significant change regarding auditor-specialist interactions or reduction of coordination problems. Problems related to uncertainty about respective responsibilities might improve, however.

Fourth, AS 1201A requires auditors to inform specialists about matters that could affect their work. Understanding everything that specialists might consider relevant to their work is difficult for auditors because they lack the well-developed valuation knowledge specialists possess (Martin et al. 2006; Griffith et al. 2015). Thus, problems arising from differences in perspectives between auditors and specialists are unlikely to improve. The new requirement to share relevant client information with specialists also is unlikely to reduce the filtering of information from clients to specialists, which is not precluded by the amended standards, because audit teams must still judge which information is relevant to specialists. AS 1201A does not suggest how auditors should determine what information about clients' background and current issues might be relevant. Again, because auditors and specialists already report extensive interaction, auditors will likely not perceive a need to change in order to comply with the new requirements in the absence of more specific guidelines for when and how to do so. To the extent that specialists and auditors have different perspectives due to their different access to information about the client, problems related to differences in perspectives will likely continue.

Fifth, the amended guidance allows auditors to tailor the extent of their review of specialists' work based on the riskiness of the fair value and the significance of specialists' work to the overall conclusion. Auditors' descriptions of their review suggest they already do this. The amended auditing standard thus seems to change to follow practice, rather than to lead it. A less-detailed review by auditors, even if it is justified because of lower risk or significance of the work, is unlikely to mitigate problems arising from different perspectives between auditors and specialists.

Sixth, AS 1201A requires auditors to review specialists' work for limitations and inconsistencies with other parts of the audit. We do not expect auditors to meaningfully change how they review specialists' work or use it to make overall audit judgments because auditors often report that current practice already incorporates these newly required steps. Thus, it is not clear that the reviewing process or outcome will change as a result of the change in the standards. For example, auditors already report identifying and addressing limitations and other follow-up items, disposing of specialists' caveats, and editing and finalizing specialists' work to ensure consistency with other audit work. Moreover, because the standard now explicitly requires these “finalizing” behaviors, auditors might feel more justified in changing their specialists’ work, whether those changes are appropriate or not, and problems related to the different perspectives of auditors and specialists such as auditors discounting specialists’ concerns are unlikely to be mitigated.

Finally, we turn to areas in which the standards do not change. The amended guidance continues not to provide specific guidance for valuation specialists to follow when helping with audits of fair values. Thus, thus the variability in the type and quality of work performed by specialists is likely to continue, and specialists’ concerns about how to conduct work that can survive a PCAOB inspection will not be alleviated. Additionally, the amended guidance does not require auditors to attain any valuation knowledge, so problems stemming from or exacerbated by auditors’ lack of knowledge will likely continue. These problems include auditors’ over-confidence in their ability to audit a fair value without using a valuation specialist and auditors’ failure to realize the need to engage a valuation specialist (Griffith et al. 2015), as well as ineffective communication of concerns between auditors and specialists, ineffective auditor judgments about specialists’ conclusions, and ineffective judgments about the interplay of specialists’ findings with auditors’ work. Last, the amended guidance cannot reduce the uncertainty inherent in fair values, and it does not provide specific guidance to either auditors or specialists for dealing with it. As a result, one of the most significant sources of risk related to the audit of fair values will continue unabated, and we expect all of the problems identified related to the uncertainty inherent in fair values to continue.

7. Conclusion

Auditors frequently use valuation specialists when auditing fair values and other complex estimates (PCAOB 2018; Glover et al. 2017), yet researchers and standard setters know little about how auditors use these specialists (Cannon and Bedard 2017). We examined how auditors use valuation specialists and common problems in this setting by interviewing 42 very experienced auditors and valuation specialists. The interviews provide a basis for understanding audit practice in this area and understanding whether practice is likely to change in light of the amended standards. This description should be useful to researchers, practitioners, and standards setters who hope to maximize the benefits of specialists' involvement in fair value audits. For example, standards setters can consider current and expected future practices as they develop interpretations and practice alerts on the new standards or as they provide feedback to auditors through inspections. Researchers can design and study decision aids and other interventions for improving auditors' use of specialists bearing current and expected future practices in mind.

Our interviews and analysis of the original and amended standards lead us to conclude that practice will not meaningfully change. While the amended standards provide new guidance requiring additional communication and coordination between auditors and specialists that will likely make some improvements, the standards leave two root causes of problems with audits of fair values unaddressed. First, many problems related to the interpretation and use of valuation specialists' work can be attributed to auditors' lack of valuation expertise (e.g., Griffith et al. 2015) and this will not change under the new guidance. Second, the new standards cannot reduce the inherent uncertainty in the fair environment that underlies many problems, and the new standards do not provide guidance about how to deal with this uncertainty. Thus, we expect the problems related to these root causes to continue unabated.

It is important to consider this study in light of the limitations imposed by tradeoffs in research design choices. We interviewed a relatively small, non-random sample of audit and valuation partners and managers. The smaller sample size allowed for longer interviews suited to our goal of understanding the entire cycle of specialists' involvement in auditing fair values and the associated problems. These participants are not representative of all auditors and specialists across all levels at their firms. However, to the extent that they described what they believe are important aspects of specialists' involvement in auditing fair values and important problems that occur when using specialists, the insights gained from this study will be useful to researchers, standard setters, and practitioners interested in understanding and improving audits of fair values when specialists are involved.

Appendix A
Amendments Relating to the Auditor's Use of the Work of Specialists

*Panel A: Summary of standards affected by amendments**

PCAOB Standard	Title	Paragraphs Amended
AS 1105	Audit Evidence	.08, .10, Appendix A (added)
AS 1201	Supervision of the Audit Engagement	.03, Appendix C (added)
AS 1210	Using the Work of a Specialist	Retitled and amended in its entirety
AS 2101	Audit Planning	.06
AS 2110	Identifying and Assessing Risks of Material Misstatement	.28A (added)
AS 2505	Inquiry of a Client's Lawyer Concerning Litigation, Claims, and Assessments	.08

*The above chart appears in Appendix 1 of PCAOB Release No. 2018-006 (PCAOB 2018, p. A1-1). The substantive changes that pertain to the auditor's use of auditor-employed specialists appear in Appendix C of AS 1201 (PCAOB 2018, p. A1-7).

*Panel B: Comparison of Original and Amended Guidance for Using Auditor-Employed Valuation Specialists**

Stage of Audit	<u>**Original Guidance (*de facto* Guidance for Using Auditor-Employed Specialists):**</u> **AS 1210: Using the Work of a Specialist (see PCAOB 2003)**	<u>**Amended Guidance:**</u> **AS 1201 Appendix C: Supervision of the Work of Auditor-Employed Specialists (see PCAOB 2018, p. A1-7 – A1-10 for Appendix C)**
Scope and applicability	The standard applies when auditors use the work of a specialist who is engaged or employed by management (company's specialist), or who is engaged by the auditor (auditor-engaged specialist) (PCAOB 2003). Management may engage a specialist employed by the auditor's firm, but this is	The standard applies when auditors use the work of a specialist who is employed by the auditor's firm (auditor-employed specialist) (PCAOB 2018).

	still classified as a company's specialist. AS 1201 officially applies when auditors use the work of a specialist employed by the auditor's firm (auditor-employed specialist) (PCAOB 2003).	
Deciding to use a specialist	Use a specialist when the audit team lacks the "special skill or knowledge" to evaluate "complex or subjective matters" (PCAOB 2003, ¶6-7). Consider specialists' professional qualifications to decide whether they have the expertise necessary to serve in the capacity of specialist (PCAOB 2003). Consider the relationship of the specialist to the client to ensure that the specialist has sufficient objectivity to perform their role (PCAOB 2003). In summary, auditors should consider the expertise of the audit team, the inherent account characteristics, and the specialist's expertise and objectivity pertinent to the given situation.	Amended guidance does not state how to determine whether a specialist is needed.[18] Amended guidance does not state how to evaluate a specialist's qualifications and objectivity.[19] In summary, auditors should consider the same factors for involving a specialist that they consider for staffing an audit engagement team.
Using a specialist during audit testing	"The appropriateness and reasonableness of methods and assumptions used and their application are the responsibility of the specialist," but specific tasks or procedures to be performed by the specialist are not	Auditors must establish and document an understanding with the specialist regarding several elements of specialists' role in the audit. These include specialists' responsibilities, objectives and

[18] AS 2101, "Audit Planning," notes that the auditor should determine during planning whether individuals with specialized skill or knowledge will be needed to assess risks, plan or perform audit procedures, or evaluate results (PCAOB 2010c).
[19] Because auditor-employed specialists are considered members of the audit engagement team, AS 2101, the general auditing standard on planning, applies, which requires consideration of independence and any specialized skill or knowledge required (PCAOB 2010c).

	indicated (PCAOB 2003, ¶12). In summary, auditors are required to understand the methods and assumptions used by specialists, test the data provided to specialists, and evaluate whether specialists' results support clients' financial statement assertions (PCAOB 2003).	the nature of their work (e.g., testing management's process for developing an estimate, developing an independent estimate). This also includes the extent of specialists' responsibility for testing data, evaluating methods and assumptions used, and providing a report of their work and conclusions to the audit team (PCAOB 2018). Specific tasks or procedures to be performed by the specialist are not indicated. Auditors should inform specialists about matters that could affect specialists' work. These matters include information about the client, including its environment, its process for developing the accounting estimate, whether specialists were used, requirements of the relevant financial reporting framework, possible accounting and auditing issues, and the need to apply professional skepticism (PCAOB 2018). Auditors should implement measures to ensure proper coordination between auditors and specialists (PCAOB 2018). These measures include ensuring compliance with AS 2501, "Auditing Accounting Estimates," if the auditor-employed specialist develops an independent estimate or tests management's process, and with AS 1105, "Using the Work of a Company's Specialist," if the client uses a company's specialist.

		In summary, the guidance suggests that auditors will determine responsibility for testing data, evaluating methods, and evaluating significant assumptions. Further, the guidance requires enhanced communication and coordination with specialists.
Using the work of a specialist to make audit conclusions	When reviewing specialists' work, auditors must understand the objectives and scope of the work, the methods or assumptions used by specialists, and whether specialists' findings support the related financial statement assertions (PCAOB 2003). Auditors do not have to perform any additional procedures if their review indicates that specialists' work supports the related financial statement assertions, but if a material difference exists between specialists' findings and the assertions, auditors must investigate the difference by "applying any additional procedures that might be appropriate" (PCAOB 2003, ¶13). No example procedures are specified. If this fails to resolve the issue, then auditors "should obtain the opinion of another specialist" unless they believe the issue cannot be resolved (PCAOB 2003, ¶13). In summary, the auditor must review the specialist's work for overall understanding and to ensure sufficient appropriate evidence has been obtained. Additional procedures are only required when specialists' findings are inconsistent with the relevant financial statement assertions.	Auditors determine the extent of review based on the significance of the specialist's work to the auditor's conclusion, the risk of material misstatement, and the knowledge, skill, and ability of the specialist (PCAOB 2018). When reviewing specialists' work, auditors should evaluate whether the specialist's work provides sufficient appropriate evidence (PCAOB 2018). This includes considering whether the specialist's work is consistent with the initial understanding between auditor and specialist (PCAOB 2018) and whether the conclusions are consistent with the work performed by the specialist, other audit evidence, and the auditor's understanding of the client and its environment (PCAOB 2018). If the specialist's work or conclusions contradict the financial statement assertions, or if the specialist's work does not provide sufficient appropriate audit evidence, auditors should perform additional procedures or request that the specialist do so (PCAOB 2018). Additional procedures are warranted when: the specialist's work was not performed in accordance with the auditor's

		instructions; the specialist's report contains restrictions, disclaimers, or limitations; the specialist's findings or conclusions are inconsistent with the underlying work, other audit evidence, or the auditor's understanding of the client and its environment; the specialist lacks a reasonable basis for the data or assumptions used; or the specialist used inappropriate methods (PCAOB 2018). In summary, the auditor must review the specialist's work to ensure sufficient appropriate evidence has been obtained. Additional procedures are required when specialists' findings are inconsistent with the relevant financial statement assertions or with the auditor's understanding and evidence from other parts of the audit, or when the specialist's report includes limitations, restrictions, or disclaimers.

*We summarize the original guidance from AS 1210, "Using the Work of a Specialist" (PCAOB 2003), because preliminary discussions with auditors indicated that they currently apply this standard, rather than AS 1201, "Supervision of the Audit Engagement" (PCAOB 2010c), when using auditor-employed specialists. Although AS 1210 refers auditors using auditor-employed specialists to AS 1201, we do not include guidance from AS 1201 under Original Guidance because it equates auditor-employed specialists with other audit team members and provides no incremental guidance about using these specialists. Auditors reported using the guidance in AS 1210 in absence of other specific guidance, making it the *de facto* original guidance about the use of auditor-employed specialists. However, the amended AS 1201 (PCAOB 2018) provides specific guidance for the use of auditor-employed specialists. Therefore, we summarize the amended guidance in AS 1201 above because we expect auditors will apply this guidance in the future.

Appendix B
Questions Included in Interview Scripts

Auditor Questions

1. Think about the **most recent time** you worked with a valuation specialist on a Level 2 or Level 3 fair value estimate. Describe the account/estimate.
    a. Type of account
    b. Level 2 or 3
    c. Risk level
    d. Client industry
    e. How client developed estimate, i.e., in-house or third party

2. Now, describe your experience working with the valuation specialist. I'm interested in learning about the entire process: how each step was done, when and in what order they were done, what information and documents were exchanged between the audit team and the specialist, and what level auditors were involved.
    a. Decide to use specialist or not and extent to which they will be used
        i. How/why
        ii. Information flow between auditor and specialist
        iii. Documents
        iv. When
        v. Who
    b. Auditor/specialist interaction
        i. How/why
        ii. Information flow between auditor and specialist
        iii. Documents
        iv. When
        v. Who
    c. Work received from specialist
        i. How/why
        ii. Information flow between auditor and specialist
        iii. Documents
        iv. When
        v. Who
    d. Evaluating the work of specialist
        i. How/why
        ii. Information flow between auditor and specialist
        iii. Documents
        iv. When
        v. Who
    e. Using work of specialist to make conclusions
        i. How/why
        ii. Information flow between auditor and specialist
        iii. Documents

        iv. When
        v. Who
    f. What happens when there are differences?
        i. Why happened
        ii. How resolved
    g. Specialist's recommendations
        i. Why followed (or not)

3. Did you notice your audit team having trouble anywhere throughout this process?
    a. Where did they seem to have trouble and what sort of problems were they having?
        i. Cause
        ii. Who
    b. What are some other common problems you've noticed on other engagements where you've used a valuation specialist for Level 2 or 3 fair values?
        i. Cause
        ii. Who

4. In the past year, how many different client engagements have you worked on?

5. How many of those engagements involved valuation specialist for issues related to Level 2 or 3 fair values?

6. How many of the valuation specialists were in-house vs. from an external firm?

7. For those that were in-house, were they at local, regional, or national office level?

8. Demographic information:
    a. Position and title (including special groups, etc.)
    b. Years of experience
    c. Primary client industry
    d. Firm
    e. Office location
    f. Date of interview
    g. Duration of interview

9. Final thoughts – any last impressions that we didn't cover?

Valuation Specialist Questions

1. Describe the deliverables that you provide to the audit team when you assist in an audit of a Level 2 or Level 3 fair value.
    a. What happens after you give them your work?
    b. How do they evaluate it?
    c. When is the last time you interact with the audit team and/or "see" your work?

2. Are there ever differences between your point of view and the auditor's? What happens if there are?
    a. How frequent is this?
    b. Why do differences in views arise?
    c. To what extent are you aware of the audit team's view as you begin your work, and throughout the process?
    d. If you and the audit team ultimately can't agree, what happens (i.e., who has the final say)?

3. What interaction do you have with the audit team to determine the final outcome of the audit (i.e., whether a financial statement balance is materially misstated)?

4. Did you notice yourself or anyone on the team (on either side) having trouble anywhere throughout the process?

5. So, overall, how would you describe your role in the audit process?

6. Background:
    a. Firm
    b. Office location
    c. Education
    d. Title
    e. Work experience
    f. Industry specialization
    g. In the past year, how many audit engagements have you worked on? What percentage of your total time (i.e., billable hours) was this?
    h. Date of interview
    i. Duration of interview

7. Final thoughts – any last impressions that we didn't cover?

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TABLE 1
Individual interview participant details

Panel A: Audit partners

ID	Rank[a]	Years of experience	Primary industry(ies)	Type of estimate discussed	% of engagements in past year that involved valuation specialist	Big 4 firm?
P1	Partner	20	Private companies	Auction rate securities	13%	Yes
P2	Partner	30	Non-profit; Higher education	Alternative investments	10	Yes
P3	Partner	25	Financial services	Portfolio securities	39	Yes
P4	Partner*	32	Financial services	Private equity investments	75	Yes
P5	Partner*	35	Insurance	Portfolio securities	100	Yes
P6	Partner	20	Non-profit; Health care	Alternative investments	60	Yes
P7	Partner	18	Financial services	Goodwill	100	Yes
P8	Partner	22	Real estate	Goodwill; Land impairment	80	Yes
P9	Partner	22	Insurance	Alternative investments	100	Yes
P10	Managing director*	17	Benefit plans; Consumer goods	Alternative investments	25	No
P11	Partner	12	Technology	Customer lists	67	No
P12	Partner*	30	Non-profit; Consumer goods	Goodwill; Franchise rights	25	No
P13	Partner*	19	Real estate	Real estate; Impairment	71	Yes
P14	Partner	15	Consumer goods; Manufacturing	Goodwill	40	Yes
P15	Partner*	27	Insurance; Financial services	Real estate	80	No

[a] Participants whose ranks are marked with an asterisk also have technical consultation responsibilities at the local, regional, or national level.

Panel B: Audit managers

ID	Rank[b]	Years of experience	Primary industry(ies)	Type of estimate discussed	% of engagements in past year that involved valuation specialist	Big 4 firm?
M1	Manager	5	Consumer goods	Trademark; Goodwill	60%	Yes
M2	Senior manager	13	Insurance	Alternative investments	17	Yes
M3	Manager	7	Non-profit; Manufacturing	Alternative investments	40	Yes
M4	Senior manager	12	Real estate	Real estate investments	60	Yes
M5	Senior manager	12	Technology	Goodwill	83	Yes
M6	Manager	7	Consumer goods	Goodwill; Land impairment	100	Yes
M7	Senior manager	10	Consumer goods; Manufacturing	Goodwill	80	No
M8	Senior manager*	9	Consumer goods	Trademark; Customer lists	80	No
M9	Manager	6	Technology; Manufacturing	Goodwill	42	No
M10	Manager	9	Benefit plans	Trademark	24	No
M11	Manager	7	Non-profit; Technology	Contingent liabilities	90	No
M12	Senior manager*	14	Consumer goods; Manufacturing	Real estate	50	Yes
M13	Senior manager	9	Financial services; Consumer goods; Manufacturing; Technology	Real estate; Allowance for loan losses	83	No

[b] Participants whose ranks are marked with an asterisk also have technical consultation responsibilities at the local, regional, or national level.

Panel C: Valuation partners/directors[c]

ID	Rank[d,]	Years of experience	Primary industry(ies)	% of time in past year spent assisting audit teams[e]	CPA?	Audit experience (years)	Level of involvement with audit team	Big 4 firm?
P1	Partner*	17	Life sciences and biomedical technology; consumer and industrial goods	35%	Yes	0.25	Regional	Yes
P2	Director*	8	Private equity	**	No	2	National	Yes
P3	Director*	30	Business combinations	38	Yes	2	National	Yes
P4	Partner*	29	Business combinations	**	Yes	0	National	Yes
P5	Director*	20	Banking and finance	**	Yes	1	Regional	No
P6	Director*	9	Consumer and industrial goods	50	No	0	National	No
P7	Director	10	Banking and finance	50	No	0	Local, regional	No
P8	Director	20	Business combinations	28	No	0	Local	Yes
P9	Director	14	Business combinations	30	No	0	Regional	Yes

[c] Director is a rank equivalent to partner in certain firms' valuation practices.
[d] Participants whose ranks are marked with an asterisk also have technical consultation responsibilities at the local, regional, or national level.
[e] Three participants, denoted with **, do not currently serve clients because of their regional or national leadership roles. Thus, they cannot provide meaningful responses about their percentage of time assisting audit teams in the past year.

Panel D: Valuation managers

ID	Rank[f]	Years of experience	Primary industry(ies)	% of time in past year spent assisting audit teams	CPA?	Audit experience (years)	Level of involvement with audit team	Big 4 firm?
M1	Manager*	6	Energy	28%	No	0	National	Yes
M2	Manager	8	Telecommunications; healthcare	50	No	0	Regional	No
M3	Senior manager	8	Life sciences and biomedical technology	35	No	0	Regional	Yes
M4	Manager	7	Business combinations; consumer and industrial goods	50	No	0	Regional	Yes
M5	Manager	7	Banking and finance	29	Yes	1.5	Regional	Yes

[f] Participants whose ranks are marked with an asterisk also have technical consultation responsibilities at the local, regional, or national level.

TABLE 2
Interview participant demographics[a]

Panel A: Auditor interviewee characteristics

	Partner	**Manager**	**Combined**
Number	15	13	28
Number with technical consultation responsibilities	6	2	8
Average experience (years)	22.9	9.2	16.6
Range of experience (years)	12 – 35	5 – 14	5 – 35
Number of firms represented	6	6	6
Number of cities represented	3	2	4
Number of industries represented[b]	11	7	12
Number discussing Level 2 fair value estimates	7	3	10
Number discussing Level 3 fair value estimates[c]	15	13	28
Average percentage of engagements in past year that involved a valuation specialist	59%	62%	61%
Range of percentage of engagements in past year that involved a valuation specialist	10 – 100%	17 – 100%	10 – 100%

[a] Additional details by participant (years of experience, type of estimate discussed, etc.) appear in Table 1.
[b] Based on interviewees' primary client industries. The 12 unique industries identified by interviewees include: benefit plans, consumer products, financial services, health care, higher education, insurance, manufacturing, non-profit organizations, private entities, real estate, technology, and valuation services.
[c] Some interviewees discussed experiences in which both Level 2 and Level 3 fair values were present. Thus, the total of Level 2 and 3 combined is greater than the number of interviewees.

Panel B: Valuation specialist interviewee characteristics

	Partner/Director	Manager	Combined
Number	9	5	14
Number with technical consultation responsibilities	6	1	7
Average valuation experience (years)	17.4	7.0	13.7
Range of valuation experience (years)	9 – 30	6 – 8	6 – 30
Number with accounting degree (bachelor's or master's)	4	2	6
Average audit experience (years)	0.6	0.3	0.5
Range of audit experience (years)	0 – 2	0 – 1.5	0 – 2
Number of firms represented	5	3	5
Number of cities represented	5	4	6
Number of industries represented[d]	4	7	8
Number discussing Level 2 fair value estimates	5	1	6
Number discussing Level 3 fair value estimates[e]	9	5	14
Average percentage of time in past year spent assisting audit teams	38%	38%	38%
Range of percentage of time in past year spent assisting audit teams	28 – 50%	28 – 50%	28 – 50%

[d] Based on interviewees' primary industry focus. The eight unique industries identified by interviewees include: life sciences and biomedical technology, consumer and industrial goods, private equity, business combinations, banking and finance, energy, healthcare, and telecommunications. Some interviewees identified more than one industry focus.

[e] Some interviewees discussed experiences in which both Level 2 and Level 3 fair values were present. Thus, the total of Level 2 and 3 combined is greater than the number of interviewees.

Panel C: Audit firm characteristics[f]

	Firm Type	
	Big 4 (n = 18)	**National** (n = 10)
Use only auditor-employed valuation specialists	18	4
Use only auditor-engaged valuation specialists	0	2
Use both auditor-employed and auditor-engaged valuation specialists	0	4
	18	10

[f] Only auditors provided these data.

TABLE 3
Auditor descriptions of factors in the decision to use a specialist

Factor	Number of auditors	Percentage of auditors	Number of unique items	Percentage of total unique items
Account or estimate characteristics[a]	28	100.0%	124	43.5%
Client characteristics	28	100.0	63	22.1
Specialist characteristics[a]	19	67.9	35	12.3
Audit team characteristics[a]	19	67.9	24	8.4
Firm policy and decision aids	14	50.0	19	6.7
Specialist input	11	39.3	15	5.3
Budget concerns	4	14.3	4	1.4
Other	1	3.6	1	0.0
			285	100.0

[a] This item is suggested by original guidance on using specialists. For comparison of original and amended guidance, see the Appendix. The standard originally applied by auditors to auditor-employed valuation specialists is AS 1210 (PCAOB 2003).

TABLE 4
Auditor descriptions of procedures performed by audit team vs. specialist

Panel A: Evidence-gathering procedures

	Responsible Party:[a]			Number of	% of auditors	Number of	% of total
Description	**Specialist**	**Audit team**	**Shared**	**auditors**		**unique items**	**unique items**
Evaluate assumptions:[b, c]	70.3%	27.3%	2.3%	28	100.0%	189	62.0%
Client's financial projections	*32.7*	*65.3*	*2.0*	*19*	*67.9*	*49*	*25.9*
Discount rate and related items	*97.7*	*2.3*	*0.0*	*18*	*64.3*	*44*	*23.3*
Benchmarks/market comparables	*90.7*	*9.3*	*0.0*	*18*	*64.3*	*43*	*22.8*
Industry-wide assumptions	*100.0*	*0.0*	*0.0*	*4*	*14.3*	*7*	*3.7*
General understanding of why client or third party chose assumptions	*80.0*	*20.0*	*0.0*	*3*	*10.7*	*5*	*2.6*
Assumptions about accounting treatments	*100.0*	*0.0*	*0.0*	*2*	*7.1*	*2*	*1.1*
Unspecified assumptions	*76.9*	*17.9*	*5.1*	*23*	*82.1*	*39*	*20.6*
Evaluate method[b, c]	92.6	1.9	5.6	24	85.7	54	17.7
Evaluate client or third party expertise	61.1	22.2	11.1	12	42.9	18	5.9
Plan audit approach	0.0	58.8	41.2	11	39.3	17	5.6
Check mathematical accuracy of model	62.5	25.0	12.5	8	28.6	8	2.6
Test objective data[c]	14.3	85.7	0.0	5	17.9	7	2.3
Test controls	20.0	80.0	0.0	4	14.3	5	1.6
Evaluate client's Level 1, 2, or 3 classifications	50.0	25.0	25.0	3	10.7	4	1.3
Other	33.0	33.0	0.0	2	7.1	3	1.0
						305	100.0

[a] Frequencies are based on the responsible party identified for each unique item. Interviewees did not always identify the responsible party(ies) for each evidence-gathering procedure they discussed, so the sum across these three columns may be less than 100 percent.
[b] This item is suggested by original guidance on using specialists. For comparison of original and amended guidance, see the Appendix. The standard currently applied by auditors to auditor-employed valuation specialists is AS 1210 (PCAOB 2003).
[c] This item is suggested by amended guidance on using specialists. For comparison of original and amended guidance, see the Appendix. The amended standard that will apply to auditor-employed valuation specialists is AS 1201 (PCAOB 2018).

Panel B: Other functions performed by specialists[d]

Description	Number of auditors	% of auditors	Number of unique items	% of total unique items
Document caveats for audit team	18	64.3%	32	72.7%
Review audit team's work related to fair value	3	10.7	6	13.6
Other	3	10.7	6	13.6
			44	100.0

[d] All of the items described in Panel B are performed exclusively by valuation specialists.

TABLE 5

Auditor descriptions of conclusions made by audit team vs. specialist

Description	Responsible Party:[a] Specialist	Audit team	Shared	Number of auditors	% of auditors	Number of unique items	% of total unique items
Fair value of a component of a financial statement balance is reasonable	75.0%	15.6%	6.3%	20	71.4%	32	45.1%
Individual inputs or assumptions are within acceptable or reasonable range[b, c]	88.2	11.8	0.0	13	46.4	17	23.9
Account balances in financial statements are/are not materially misstated[b, c]	0.0	90.0	0.0	9	32.1	10	14.1
Method is acceptable or reasonable[b, c]	66.7	0.0	33.3	5	17.9	6	8.5
Presence and amount of impairment, and whether temporary or permanent	66.7	33.3	0.0	3	10.7	3	4.2
Client's Level 1, 2, and 3 classifications are reasonable	0.0	50.0	0.0	2	7.1	2	2.8
Specialist's work agrees with audit team's conclusions[c]	100.0	0.0	0.0	1	3.6	1	1.4
						71	100.0

[a] Frequencies are based on the responsible party identified for each unique item. Interviewees did not always identify the responsible party(ies) for each conclusion they discussed, so the sum across these three columns may be less than 100 percent.

[b] This item is suggested by original guidance on using specialists. For comparison of original and amended guidance, see the Appendix. The standard originally applied by auditors to auditor-employed valuation specialists is AS 1210 (PCAOB 2003).

[c] This item is suggested by amended guidance on using specialists. For comparison of original and amended guidance, see the Appendix. The amended standard that will apply to auditor-employed valuation specialists is AS 1201 (PCAOB 2018).

TABLE 6
Auditor descriptions of interactions and influence between audit team and specialist

Description	Number of auditors	% of auditors	Number of unique items	% of total unique items
Information filtering among client, audit team, and specialist	27	96.4%	110	59.1%
Extensive interaction between audit team and specialist	24	85.7	58	31.2
Knowledge sharing by specialist	9	32.1	12	6.5
Limited discretion over procedures allowed to specialist	4	14.3	6	3.2
			186	100.0

TABLE 7
Specialist descriptions of interactions with audit team

Description	Number of specialists	% of specialists	Number of unique items	% of unique items
Use auditor as liaison to access client and client's third party[a]	11	78.6%	16	18.8%
Educate and share knowledge with audit team	4	28.6	4	4.7
Adhere to clearly defined process and responsibilities[a]	12	85.7	24	28.2
Interact very extensively with audit team	11	78.6	20[b]	23.5
Interact very little with audit team	9	64.3	11[c]	12.9
Respond to audit team's input into specialist's work	5	35.7	9	10.6
Other	1	7.1	1	1.2
			85	100.0

[a] This item is suggested by amended guidance on using specialists. For comparison of original and amended guidance, see the Appendix. The amended standard that will apply to auditor-employed specialists is AS 1201 (PCAOB 2018).
[b] Of these, 14 were identified as occurring early in the audit process, and 11 as occurring late in the audit process. Some items pertained to both the early and late stage, so the sum is greater than the number of items reported.
[c] Of these, six were identified as occurring early in the audit process, and nine as occurring late in the audit process. Some items pertained to both the early and late stage, so the sum is greater than the number of items reported.

TABLE 8
Auditor descriptions of using the work of specialists to make audit conclusions

Panel A: Focus of audit team's review of specialist's work

Description	Number of auditors	% of auditors	Number of unique items	% of total unique items
General understanding of specialist's work[a]	16	57.1%	24	22.4%
Sufficiency of specialist's work and documentation[a, b]	14	50.0	23	21.5
Consistency with other audit evidence and external data[b]	11	39.3	21	19.6
Respective responsibilities of audit team and specialist fulfilled[b]	11	39.3	15	14.0
Reliance without extensive review	10	35.7	19	17.8
Other	5	17.9	5	4.7
			107	100.0

[a] This item is suggested by original guidance on using specialists. For comparison of original and amended guidance, see the Appendix. The standard originally applied by auditors to auditor-employed valuation specialists is AS 1210 (PCAOB 2003).
[b] This item is suggested by amended guidance on using specialists. For comparison of original and amended guidance, see the Appendix. The amended standard that will apply to auditor-employed valuation specialists is AS 1201 (PCAOB 2018).

Panel B: Additional procedures performed by audit team

Description	Number of auditors	% of auditors	Number of unique items	% of total unique items
Address differences between specialist and client[a, b]	26	92.9%	76	32.5%
Edit and finalize specialist's documentation	24	85.7	49	20.9
Identify and address limitations and follow-up items[b]	21	75.0	62	26.5
Document overall conclusion	16	57.1	27	11.5
Decide whether specialist's recommendations will be communicated to client	13	46.4	18	7.7
Other	2	7.1	2	0.9
			234	100.0

TABLE 9
Specialist descriptions of occurrence and resolution of disagreements or differences in views

Panel A: Parties in disagreement or with different views

Description	Number of specialists	% of specialists
Specialist vs. client or client's third party	12	85.7%
Specialist vs. audit team	7	50.0

Panel B: Process for resolving disagreement or difference in views

Process for resolving disagreement	Number of specialists	% of specialists	Number of unique items	% of unique items
Specialist and audit team work together interactively until mutual agreement is reached	9	64.3%	27[a]	42.9%
Specialist handles the issue on his/her own	6	42.9	6[b]	9.5
Specialist leaves the decision to the audit team	13	92.9	27[c]	42.9
Audit team defers to specialist	2	14.3	2[d]	3.2
Other	1	7.1	1[e]	1.6
			63	100.0

[a] Of these, 11 were identified as disagreements with the client or client's third party, nine with the audit team, and seven were unspecified.
[b] Of these, six were identified as disagreements with the client or client's third party.
[c] Of these, 17 were identified as disagreements with the client or client's third party, three with the audit team, and seven were unspecified.
[d] Of these, one was identified as a disagreement with the audit team, and one was unspecified.
[e] The parties in disagreement were not specified.

TABLE 10
Auditor and specialist descriptions of problems encountered when working together

Problem	Underlying feature in auditing environment	Number of auditors (specialists)	% of auditors (specialists)	Number of unique items from auditors (specialists)	% of total unique items from auditors (specialists)
Coordination between specialist and auditor[a]	Division of labor between auditors and specialists	22 (10)	78.6% (71.4)	35 (25)	24.1% (29.4)
Information flow and coordination with client and client's third party[a]	Inherent uncertainty in fair values	19 (7)	67.9 (50.0)	33 (13)	22.8 (15.3)
Differences in perspective between specialist and auditor	Division of labor between auditors and specialists	17 (8)	60.7 (57.1)	37 (20)	25.5 (23.5)
Uncertainty regarding what constitutes sufficient evidence from specialist	Inherent uncertainty in fair values	11 (1)	39.3 (7.1)	16 (1)	11.0 (1.2)
Uncertainty regarding respective responsibilities of specialist and auditor[a]	Division of labor between auditors and specialists	9 (3)	32.1 (21.4)	13 (4)	9.0 (4.7)
Acceptability of multiple points of view	Inherent uncertainty in fair values	9 (2)	32.1 (14.3)	10 (4)	6.9 (4.7)
Lack of valuation guidance from firms, regulators, and valuation industry	Division of labor between auditors and specialists	0 (6)	0.0 (42.9)	0 (12)	0.0 (14.1)
Concerns about PCAOB inspections and related risks	Division of labor between auditors and specialists	0 (5)	0.0 (35.7)	0 (5)	0.0 (5.9)
Other	-	1 (1)	3.6 (7.1)	1 (1)	0.7 (1.2)
				145 (85)	100.0 (100.0)

[a] The amended guidance for using specialists contemplate this problem. For comparison of original and amended guidance, see the Appendix. The amended standard that will apply to auditor-employed valuation specialists is AS 1201 (PCAOB 2018).