

# ESSAYS IN AUDITING

By  
Kyrre Kjellevold

Dissertation submitted to the  
Department of Accounting, Auditing and Law  
NHH Norwegian School of Economics

April 2020

## Table of Contents

<b>TABLE OF CONTENTS .....</b>	<b>1</b>
<b>ACKNOWLEDGMENT .....</b>	<b>3</b>
<b>INTRODUCTION .....</b>	<b>4</b>
<b>PAPER 1: MONITORING OF FAIR VALUE RELIABILITY BY THIRD-PARTY SPECIALISTS - A REVIEW AND INTEGRATION OF EMPIRICAL RESEARCH .....</b>	<b>7</b>
1. INTRODUCTION .....	8
2. BACKGROUND.....	10
2.1 Fair Value Measurements (FVMs) Defined.....	10
2.2 Reliability, Faithful Representation, and Value Relevance .....	10
2.3 Monitoring of FVMs by Third-Party Specialists .....	12
3. REVIEW OF THE LITERATURE.....	14
3.1 Literature Search .....	14
3.2 Archival Studies .....	15
3.2.1 Financial FVMs.....	15
3.2.2 Non-financial FVMs .....	18
3.2.3 Goodwill and other intangibles .....	20
3.3 Behavioral Studies .....	21
3.3.1 Qualitative methodologies. ....	21
3.3.2 Experiments .....	23
4. CONCLUDING COMMENTS.....	25
4.1 Summary and Discussion.....	25
4.2 Future Research Opportunities.....	26
ACKNOWLEDGEMENTS .....	29
REFERENCES.....	29
FIGURES AND TABLES.....	36
Figure 1 .....	36
Table 1: Summary of Reviewed Literature.....	37
Table 2: Research Questions.....	44
<b>PAPER 2: DELEGATING THE MONITORING OF FAIR VALUE MEASUREMENTS – A FIELD STUDY OF COMPANY SPECIALISTS AND AUDIT PARTNERS.....</b>	<b>46</b>
1. INTRODUCTION .....	47
2. BACKGROUND AND THEORY.....	52
2.1 Accounting Regulation Over FVMs .....	52
2.2 Financial Economics and Specialists’ Monitoring Role .....	53
2.2.1 Agency theory and delegated monitoring .....	53
2.2.2 Career concerns, conflicts-of-interests, and specialists’ incentives to report the truth.....	55
2.3 Prior Empirical Research on Specialist Use and FVMs .....	57
3. METHODS .....	59
3.1. Research Procedure.....	59
3.2. Coding Procedure.....	61
3.3. Participants .....	62
4. RESULTS .....	64
4.1. RQ1: Factors Limiting Specialists’ Effectiveness as Delegated Monitors.....	64
4.1.1. Reputation building, reappointment concerns, and conflicts-of-interests.....	64
4.1.2. Management’s influence tactics .....	66
4.1.3. Management’s strategic use of several specialists .....	68
4.2. RQ2: Factors Challenging Auditors’ Ability to Rely on the Delegated Monitoring of Specialists .....	70
4.2.1. Auditors’ are restricted access by specialists’ strategic actions.....	70
4.2.2. Auditors’ struggle to assess specialist’ objectivity .....	73
5. DISCUSSION AND SUGGESTIONS FOR FUTURE RESEARCH.....	74
6. CONCLUDING COMMENTS.....	78

ACKNOWLEDGEMENTS .....	80
REFERENCES.....	80
TABLES.....	89
Table 1: Participants' Demographics.....	89
Table 2: Representation of Emerging Themes Across Specialists .....	91
<b>PAPER 3: CAN APPRENTICESHIP NORMS EMPOWER AUDITORS TO TAKE SKEPTICAL ACTION?</b> .....	<b>93</b>
1. INTRODUCTION .....	94
2. BACKGROUND AND HYPOTHESIS DEVELOPMENT .....	95
3. METHODS .....	98
3.1 Participants.....	98
3.2 Procedure and Materials.....	99
3.2.1 Personal risk manipulation.....	100
3.2.2 Power manipulation .....	101
3.2.3 Dependent variable – felt responsibility .....	103
3.2.4 Dependent variable – skeptical action .....	103
4. RESULTS .....	104
4.1 Participants' Perceptions of Time Pressure (Table 1).....	104
4.2 Participants' Perceptions of Power and Responsibility (Table 2).....	104
4.3 Participants' Sample Selection (Table 3).....	106
5. DISCUSSION .....	107
5.1 Implications for Research and Practice.....	107
ACKNOWLEDGEMENT .....	109
REFERENCES.....	109
FIGURES AND TABLES.....	112
Figure 1 .....	112
Table 1: Participants Perception of Time Pressure .....	113
Table 2: Perceptions of Power and Responsibility .....	114
Table 3: Selection of Items from Top Shelves.....	116
APPENDIX A - POSSIBLE EXPLANATIONS FOR LACK OF RESULT .....	118
Participants Did Not View Representative Sample as a Quality Act .....	118
Participants No Longer Viewed a Representative Sample as a Quality Act When Faced with Time Pressure.....	118
Participants Did Not Internalize Their Obligation to Model Quality Behavior.....	118
Participants Were Constrained by a Lack of Perceived Autonomy .....	119
APPENDIX B - EXPERIMENT CONDUCTED 13TH OF AUGUST 2019 .....	121
Table 1.....	121

## **Acknowledgment**

I am forever grateful for the tireless effort of my supervisors William F. Messier Jr. and Aasmund Eilifsen. Without them, nothing of what you read here would have been remotely possible. Through hard work they changed my brain into something more patient and methodologically driven. I am a researcher today because of their work as much as my own.

I want to thank the Norwegian Institute of Public Accountants (DnR) for their generous research stipend. Their support both made my research and extended stay in the US possible. Furthermore, I want to thank all the professionals who participated in my field study and later experiment. They gave up valuable time to the pursuit of knowledge, and for that I am grateful.

While pursuing a PhD can be a long and perilous journey it was made a lot more enjoyable by a great number of colleagues at Norwegian School of Economics. A special thanks to my fellow PhD travelers at NHH, especially Saad Bin Anis, Joel Berge, David Ogudugu, Andreas Olden and Ibrahim Pelja. Together we stomach the downturn and rejoice in each other's good luck.

In the same vein, I want to thank the academic faculty at the University of Alabama from which I learned a great deal about the academic game. Especially, I want to thank Rick Hatfield for his hospitality, valuable feedback and great friendship. I also want to thank Emily Blum, Kris Hoang, Daniel Street, James Lawson and Julie Mercado for making my US experience quite memorable. Without them I would be lost in translation.

I dedicate this PhD to my parents who taught me to follow my curiosity and seek knowledge wherever it resides.

Bergen, 15<sup>th</sup> of April 2020

Kyrre Kjelleevold

## INTRODUCTION

The PhD thesis consists of three papers related to two areas of importance for the financial statement audit: (1) The use of valuation specialists by management in the preparation of fair value measurements (FVMs) for recognition and disclosure in financial statements, and auditors reliance on valuation specialists' work as audit evidence; and (2) The impact of the audit team structure on auditors' skeptical behavior. The two sole-authored papers are within the first area. Paper 1 reviews the academic literature on the effectiveness of third-party specialists in monitoring the reliability of FVMs. Paper 2 is a field study investigating specialists' effectiveness as delegated monitors of fair value reliability, and the factors that challenge auditors' reliance on their monitoring. Paper 3 is behavioral experiment co-authored with Emily Blum and Rick Hatfield that seeks to identify an intervention designed to increase audit quality enhancing actions despite high perceived personal risk to the individual auditor.

The following briefly introduces the three papers and their findings.

Paper 1 presents a review of archival and behavioral research on companies' use of engaged specialists in the preparation of FVMs. The review adopts a theoretical framework from agency theory and investigates specialists' effectiveness as monitors of FVMs reliability. Overall, the review finds that these specialists are associated with more reliable FVMs across both financial- and nonfinancial assets or liabilities, supporting the notion that specialists perform a valuable role in improving the reliability of FVMs and reducing investors' information risk. Furthermore, research suggests specialists' monitoring effectiveness interacts with corporate governance mechanisms such as independent board of directors, but financial statement audits seem to only marginally affect the reliability of FVMs above the contribution of specialists. Specialists' monitoring effectiveness may, however, be moderated by their economic incentives and by

experienced client pressure to inflate FVMs. The review further finds that future research will benefit from gaining a better understanding of specialists' economic incentives and how these influence specialists' monitoring effectiveness, as well as investigate how specialists' monitoring role interacts with relevant corporate governance mechanisms.

Paper 2 is a field study with semi-structured interviews of nineteen Norwegian specialists across four valuation areas: financial instrument, investment property, oil and gas, and shipping and eight audit partners from large international accounting firms. The study adopts a theoretical framework from agency theory and merges it with models developed in financial economics. Both theory and empirical research suggest that specialists engaged by management are delegated a monitoring role by auditors, creditors, and investors to enhance the reliability of FVMs. The study investigates factors potentially impacting specialists' effectiveness as monitors of the reliability of FVMs and how such factors challenge auditors' reliance on their monitoring. The findings suggest that specialists are not immune to management pressure and several management influence tactics are documented. Furthermore, as specialists strategically guard their private information (e.g., valuation models or non-client specific information) auditors are forced to rely on external, and potentially biased, information sources to evaluate the objectivity and reliability of the specialists. While auditors often request that clients to engage several specialists to alleviate concerns about specialists' conflicts-of-interest, management seems to anticipate this and strategically controls information flow between the specialists to create more persuasive evidence towards management's preferred values. Overall, the findings provide support for theoretical predictions from agency theory and financial economics and enhance our understanding of specialists' delegated monitoring effectiveness.

Paper 3 is an audit experiment investigating the impact of the audit apprenticeship model on experienced auditors' skeptical behavior. It is now well established in the audit literature that skeptical action often comes with risks to the auditor. We identify the audit apprenticeship model as a source of relative power, which we theorize will increase felt responsibility and thus lead to more skeptical action, even when auditors face high perceived personal risk. To test the proposition, experienced auditors completed an audit case where they must select a sample of inventory to count from the warehouse floor, and where some inventory items (those from high warehouse shelves) take more time to count than others. We find that auditors assigned a novice versus a peer for counting assistance recognize the power disparity and feel more responsibility when assigned a novice – including the responsibility to “model” quality behavior. However, we find no evidence that the increased felt responsibility led to higher quality actions, regardless of whether the individual auditor faced high or low risk created by time pressure. The paper includes an appendix discussing possible reasons for why felt responsibility did not lead to higher quality actions.

# **Paper 1: Monitoring of Fair Value Reliability by Third-Party Specialists - A Review and Integration of Empirical Research**

Kyrre Kjellevold  
NHH Norwegian School of Economics  
[Kyrre.Kjellevold@nhh.no](mailto:Kyrre.Kjellevold@nhh.no)

March 2020

## **Abstract**

This paper reviews the academic literature on the effectiveness of third-party specialists in monitoring the reliability of fair value measurements (FVMs). Management may lack the necessary valuation expertise for measuring fair values and has been shown to provide biased FVMs. The use of third-party specialists may compensate for these deficiencies. By integrating findings in the accounting, economics, and finance literature, this review provides novel insights into the monitoring role of third-party specialists and suggests directions for future research. Overall, the literature shows that third-party specialists are associated with more reliable FVMs across both financial- and nonfinancial assets or liabilities, supporting the notion that third-party specialists perform a valuable role in improving the reliability of FVMs and reducing investors' information risk. Furthermore, research suggests third-party specialists monitoring effectiveness interact with corporate governance mechanisms such as independent board of directors, but financial statement audits seem to only marginally affect the reliability of FVMs above the contribution of third-party specialists. Third-party specialists monitoring effectiveness may, however, be moderated by specialists' economic incentives and by experienced client pressure to inflate FVMs. Future research will benefit from gaining a better understanding of specialists' economic incentives and how these influence specialists' monitoring effectiveness, as well as investigate how specialists' monitoring role interacts with relevant corporate governance mechanisms.

**Key words:** Auditors, fair value measurements (FVMs), fair values, third-party specialists, valuation experts.

**Subject classification codes:** G10, G20, M41, M42



## 1. Introduction

This paper reviews research on the effectiveness of third-party specialists to monitor the reliability of fair values in the financial statements. Fair values involve complex measurements that are shown to be subject to management bias (e.g., Hanley, Jagolinzer & Nikolova, 2018). Third-party specialists may act as monitors of the reliability of fair values in the financial statements by assisting management in the preparation of fair value measurements (FVMs). Moreover, auditors rely on FVMs provided by third-party specialists as audit evidence, but regulators continue to observe deficiencies related to auditors' use of specialist's work (e.g., PCAOB, 2017). As management's use of third-party specialists grows (Barr-Pulliam, Mason, & Sanderson, 2019a; 2019b; Anantharaman, 2017), their effectiveness in monitoring the reliability of fair value estimates becomes a critical issue for financial market participants relying on financial information in decision making.<sup>1</sup>

The scope of the review is research on third-party specialists in the accounting, finance, and economics literature. In recent years, there has been an increase in accounting research related to FVMs prepared by specialists, with researchers utilizing new data sources and methodologies to uncover novel insights. Additionally, this review finds research streams on other financial intermediators in the economics and finance literature to have important implications for accounting research on third-party specialists. By integrating different streams of this literature and research methodologies, this review offers an interdisciplinary perspective and responds to calls for incorporating corporate governance factors influencing the reliability of fair values in accounting literature (Laux & Leuz, 2009; Messier, 2010; Bratten, Gaynor, McDaniel, Montague, & Sierra, 2013; Barr-Pulliam et al., 2019a).

---

<sup>1</sup> I will refer to third-party specialists as specialists if not otherwise necessary for the sake of clarity to refer to them as third-party specialists.

My review extends the work of Sellhorn & Stier (2019) and Landsman (2007). While Sellhorn & Stier (2019) cover research on third-party specialists' use and the FVMs of investment property in their review of research on the fair values of nonfinancial assets, this review differs in two major ways. First, the review includes studies on third-party specialist use for all asset classes (financial, non-financial and goodwill and other intangible assets) and incorporates important research findings published outside accounting journals.<sup>2</sup> Second, and similar to Landsman (2007), the review adopts a theoretical perspective from agency theory.<sup>3</sup> By reviewing the literature on third-party specialists and fair values from the perspective of agency theory, this review focuses on the importance of understanding specialists' and other parties' economic incentives when preparing FVMs and its implications for investors' information risk. Furthermore, by utilizing the agency theory framework this review highlights and connects the specialist literature to the research stream on other corporate monitors impacting fair value reliability, such as auditors and audit committees.

The remainder of the paper is organized as follows. The next section starts with a discussion of the concept of fair value, including how reliability relates to the relevance of FVMs; offers the theoretical background for the demand for monitors to reduce investors' information risk; and discusses third-party specialists' role as monitors. The following section reviews the academic literature on specialists monitoring role and fair value reliability, including how specialists' monitoring effectiveness interacts with other corporate governance mechanisms. The last section contains a summary and suggestions for future research.

---

<sup>2</sup> Nonfinancial FVMs are defined as the fair value of assets with a physical value, such as real estate, equipment, machineries or vehicles. Contrasting this is financial FVMs, where the fair value is based on a contractual claim, such as stocks, bonds, and derivatives. In addition, goodwill and other intangible assets are of non-physical nature, and can be indefinite (e.g., brand names) or definite (patent claim) in nature.

<sup>3</sup> Like Sellhorn & Stier (2018), Landsman (2007) cover research on third-party specialists' provision of investment property FVMs with a focus on explaining the value relevance and reliability of fair values in general.

## **2. Background**

### ***2.1 Fair Value Measurements (FVMs) Defined***

A FVM is an estimation of the actual or hypothetical price (fair value) “that would be received to sell an asset or liability in an orderly transaction between market participants at the measurement date” (IFRS, 2013). According to this definition, a fair value is an exit price, and not the value that the company would demand for a replacement asset. Fair values are hierarchically classified based on how the inputs in the measurement process are obtained. When all inputs are quoted prices of identical items traded in active markets, the fair value is classified as belonging to Level 1. If some of the inputs are obtained from quoted prices of comparable items, market prices of identical items traded in inactive markets or other market-related information, the fair value is classified as Level 2. Lastly, if some of the inputs are unobservable and firm-generated, the fair value is categorized at Level 3.

Level 3 fair values require the preparer to take the perspective of a hypothetical market participant when evaluating which assumptions to use in the particular FVM (Barker & Schulte, 2017). Assumptions about the use of the asset must be made, as well as choosing which model-to-market valuation method to use (King, 2009). As such, Level 3 fair values requires considerable professional judgment to prepare (Landsman, 2007).

### ***2.2 Reliability, Faithful Representation, and Value Relevance***

Both the Financial Accounting Standard Board (FASB) and the International Accounting Standard Board (IASB) have updated their conceptual frameworks and replaced the term reliability with faithful representation in the discussion of accounting measurement and recognition. The updated conceptual framework (IFRS, 2018) states that the decision usefulness of accounting information is based on whether it is relevant for financial statement users’ decisions and faithfully

represent the substance of the underlying economic phenomena. Furthermore, the framework states that enhancing qualities of accounting information is its comparability, verifiability, timeliness and understandability.<sup>4</sup> Financial statement users should aim to maximize these qualities when producing relevant and faithfully representative accounting information. However, the framework also states the potential need for tradeoffs between relevance and faithful representation (e.g., for highly uncertain accounting estimates). As reliability and faithful representation encompass many of the same concepts, this review will continue to use the term reliability.

The relevance of the accounting numbers for valuation purposes may increase with the reporting of fair values, since fair values may have stronger relationship to future cash flows than historical costs (Barth, 2007). Financial statement users seem to find relevance and reliability mutually dependent, with their perception of reliability impacting how relevant they find the accounting numbers (Kadous, Koonce & Thayer, 2012). Still, empirical accounting research has struggled to measure and empirically identify the two concepts separately (Hodder, Hopkins & Schipper, 2014). Studying the factors impacting the reliability of FVMs is made troublesome by the difficulty in separating management bias from other prior period errors or changes in the accounting estimate.<sup>5</sup> Additionally, while reliability may be a necessary condition for the value relevance of FVMs, investigating the two concepts jointly may obscure finding results (see e.g., Barth & Clinch, 1998).

---

<sup>4</sup> The conceptual framework understands verifiability to mean that “different knowledgeable and independent observers could reach consensus, although not necessarily complete agreement, that a particular depiction is a faithful representation” (IFRS 2018, paragraph 2.30).

<sup>5</sup> IAS 8 defines prior period errors as omissions from, and misstatements in, the entity’s financial statements for one or more prior periods arising from a failure to use, or misuse of, reliable information. A change in accounting estimate is, on the other hand, an adjustment of the carrying amount of an asset or liability, or related expense, resulting from reassessing the expected future benefits and obligations associated with that asset or liability (IFRS 2019).

### ***2.3 Monitoring of FVMs by Third-Party Specialists***

Overall, fair values have been found to be value relevant, but with lower relevance at Level 3 than at Level 1 and 2 (e.g., Eccher, Ramesh & Thiagarajan, 1996; Song, Thomas & Yi, 2010; Riedl & Serafeim, 2011). The market discount placed on fair values at Level 3 has been attributed to management discretion over these FVMs and the risk of measurement error (Song et al., 2010; Riedl & Serafeim, 2011; Goh, Li, Ng & Yong, 2015). This information risk illustrates the fundamental agency problem between owners/investors and managers of corporations (see e.g., Eisenhardt, 1989; Shapiro, 2005; Gordon & Trottier, 2018). When ownership and control are separated, self-interested managers with goals and risk preferences that diverge from owners, may act opportunistically and engage in behavior that conflicts with owners' interests (Jensen & Meckling, 1976; Holmström, 1979; Fama & Jensen, 1983; Watts & Zimmerman, 1983).

Management prepares the financial statements and may act opportunistically to distort the financial numbers, resulting in less reliable financial statements. This may especially be the case for the more subjective FVMs in level 2 and 3 (Landsman, 2007). Some level of monitoring, whether by auditors, third-party specialists, or through corporate governance, is therefore needed to reduce owners' information risk (Gjesdal, 1981; Gordon & Trottier, 2018). Auditors' ability to monitor and verify the reliability of Level 3 fair values has been questioned by accounting scholars (e.g., Christensen, Glover & Wood, 2012). Third-party specialists providing FVMs may act as monitors to reduce investors' information risk by limiting management discretion and the potential for measurement error (e.g., Viscusi, 1978; Dietrich, Harris & Muller III, 2000; Dranove & Jin, 2010). A third-party specialist can be considered an information intermediary contracted to estimate and/or certify FVMs (i.e., a contractual relationship between management and the specialist) (Dietrich et al., 2000; Dranove & Jin, 2010). Specialists may further add comfort to

auditors in the audit evidence gathering process.

The strength of specialists' monitoring role depends on their ability to remain objective and independent from management (Khalil & Lawarre, 1995; Walton, 2012). If specialists' objectivity is impaired, they risk supporting management biased FVMs and information risk remains unchanged or higher (Singh & Harianto, 1989; Walton, 2012). Reappointment concerns, career concerns, and the provision of other profitable services to the company, may create incentives to collude with management and weaken the specialist's role as a monitor (Telser, 1980; Antle, 1984; Scharfstein & Stein, 1990). At the same time, reputation and litigation cost, and adherence to professional standards, can serve to limit their willingness to satisfy management's preferences (Antle, 1984).<sup>6, 7</sup>

The use of third-party specialists to prepare FVMs is usually under the discretion of management (Cotter & Richardson, 2002; Sellhorn & Stier, 2019).<sup>8</sup> Moreover, Muller & Riedl (2002) find that management's use of specialists for investment property valuations is positively associated with higher monitoring costs related to the size of companies' operations or corporate insiders on the board (Muller & Riedl, 2002). This latter result could be a property sector specific finding, since newer studies find that stronger corporate governance is related to third-party specialist use (Stuart & Willis, in press). Stuart & Willis (in press) results indicate that stronger corporate governance mechanisms resulting from employing a Big 4 auditor or having audit

---

<sup>6</sup> Several professional bodies have established professional standards and voluntary certification arrangements for valuation professionals. The standards provide guidance on how specialists should deal with issues such as conflicts-of-interests. Initiatives have been taken to create more uniform professional valuation standards across asset and liability accounts (Barr-Pulliam et al., 2019b).

<sup>7</sup> Additionally, there is the risk that herding among the specialists may reduce the independence of their individual opinion and consequently affect monitoring effectiveness (e.g., Banerjee, 1992; Hong, Kubik & Solomon, 2000).

<sup>8</sup> While several accounting standards require firms to disclose whether their FVMs were prepared by third-party specialists or not (e.g., IAS 40 *Investment Property*), they do not require companies to engage them. Israeli (2015) finds that significantly more firms use third-party specialists for preparing FVMs of investment property when they chose to report the fair values in the financial statement, rather than when using the alternative option in IAS 40 to report historical information and disclose the fair values.

committee members with accounting expertise, are associated with more frequent engagement of specialists for valuing employee stock options at the pre-initial public offering (IPO) stage. Lastly, creditors may require specialist provided appraisal of asset values, especially when debtor's leverage is high (Brown, Izan & Loh, 1992; Lovell & French, 1995).

Figure 1 illustrates the relationships between investors, management, auditors and third-party specialists.

INSERT FIGURE 1 HERE

### **3. Review of the Literature**

#### ***3.1 Literature Search***

The scope of the review includes studies published or unpublished in accounting, economics and finance pertaining to the use of third-party specialists for the provision of FVMs.<sup>9</sup> First, I made multiple searches through accounting journals using advanced search in Google Scholar including terms like “appraiser”, “appraisal”, “specialist”, “company specialist”, “independent valuer”, “independent specialist”, “third-party specialist”, “third-party expert”, “management expert”, “management specialist” together with “fair value measurement”, “current value” or “fair value”. From the initial list of papers identified, the search continued with a thorough reading of this literature and forward searches in Google Scholar to the papers that cite them. The last step consisted of using databases of doctoral dissertations and the search engine on SSRN, to include academic work not published or cited. The literature search resulted in 15 accounting papers.

Second, I explored the academic literature in economics and finance for studies on third-party specialists and fair value measurement. I identified papers by using the same keywords and

---

<sup>9</sup> I use the Academic Journal Guide (2018) classification to identify journals as belonging to accounting, economics and finance literature.

procedures used for the search of the accounting literature. While there is an extensive literature on real estate appraisals in the real estate economics/finance literature, little research exists on third-party estimation of other financial or nonfinancial assets outside the accounting literature. This second literature search does not aim to be complete in referencing all studies but is rather focused on identifying themes relevant to the overall review.

Table 1 provides a summary overview of the research reviewed. The review below is divided into sections based on the type of methodology used with findings from each discipline (accounting, economics, and finance) presented together. The archival section is further divided into financial assets and obligations, nonfinancial assets, and goodwill and intangibles.

INSERT TABLE 1 HERE

### ***3.2 Archival Studies***

#### **3.2.1 Financial FVMs**

Few archival studies have been conducted on third-party estimation of financial FVMs.<sup>10</sup> This likely follows from lack of disclosures and issues with endogeneity, both negatively impacting researchers' ability to identify specialist use and how they affect FVM reliability.

Chung, Goh, Ng & Yong (2017) investigate factors driving companies' choice of voluntarily disclosure of more information about the FVM process than required by the accounting standards, including whether the fair values of the financial instruments were provided by third-party specialists. Their analysis suggests that the decision to disclose more information are associated with the hierarchical level of the fair values, where Level 3 FVMs on the balance sheet

---

<sup>10</sup> While not studying the impact on the reliability of fair values, Gaver & Paterson (2001) find that companies having both actuaries and auditors from Big 6 accounting firms reduce under-reserving in loss reserve estimates, but that this monitoring effect dissipates when the Big 6 auditor relies on non-Big 6 actuary. In the latter cases, there is no quality difference between Big 6 and non-Big 6 auditors. This suggests the type of specialist matter more for accounting quality than the type of auditor (Big N/Non-Big N).



of U.S. banks and insurance companies are more likely to be followed by additional voluntary disclosures. This suggest management wish to increase the credibility of their fair value reporting and reduce investors discounting of the information inherent in Level 3 fair values. Furthermore, the study finds that disclosure of third-party specialist use, both reduce investors perception of information risk and increases the value relevance of the fair values.

Anantharaman (2017) examines the issue of specialist's independence by investigating actuaries' input to defined pension plan obligations. Actuaries face more regulatory oversight than other valuation professionals, which *ceteris paribus* should make loss of independence less of an issue here. But the study's results indicate that companies with incentives to minimize their defined benefit plan obligations are able to obtain more aggressive discount rates from their actuaries when their engagement makes up relatively more of the actuary's client portfolio.<sup>11</sup> If the company is not able to obtain more favorable assumptions from the actuary, shopping for another actuary opinion providing more aggressive discount rates is likely to occur. These results persist after controlling for auditors' monitoring role. Further, the study documents that the client importance association is only significant when clients are audited by Big N (vs. non-Big N) accounting firms. This raises doubts on auditor's contribution to the reliability of the estimates above the specialists' input.

Hanley et al. (2018) utilizes the fact that several insurance companies report the fair value of identical financial securities providing an ideal setting to test for reporting and valuation choices. By measuring bias as deviations from the mode of the security valuation they find

---

<sup>11</sup> Anantharaman (2017) measures client importance as the "number of employee beneficiaries of each client firm's plans/total number of employee beneficiaries of all plan clients of that actuary in that period." She measures client importance at the national, office and individual actuary level, but only finds significant results for the latter two measures.

significant management bias when the insurer chooses to self-estimate the financial securities. Management upward bias was significant regardless of whether the insurer classified the security at Level 2 or Level 3. When the company on the other hand chooses to engage a specialist to prepare the FVMs, the fair values contained markedly less bias. Interestingly, companies in their sample show strategic behavior when engaging specialists. The authors document a tendency for insurers to not engage a specialist when choosing to classify the financial instrument at Level 3. In addition, the choice of management's self-estimation was positively associated with having stronger incentives to increase the value of the financial assets due to lower regulatory capital or carrying more assets at fair value for regulatory reporting purposes. Furthermore, choosing self-estimation was more likely for insurers that categorize most of their assets as "Available for Sale".

Firms valuing employee stock options before initial public offerings (IPOs) may have incentives to downward bias the fair value of the stock price used in the pricing of employee options to give executives and other employees so called "cheap stocks." However, Stuart & Willis (in press) find that specialist use is associated with significantly less downward bias as measured by later revaluations after the IPO.<sup>12</sup> Interestingly, they find the monitoring effectiveness of the specialists stronger with a more independent board-of-directors, indicating interactions effect where the corporate governance structures enhances the specialist monitoring effectiveness. However, their results reveal a possible substitution between the monitoring performed by accounting specialists on the audit committee and third-party specialists. In cases where companies engage specialists and have accounting specialists on the audit committee, the study finds specialists to have less association with the reduction in downward bias in the stock valuations.

There is little research outside of the accounting literature on third-party specialists'

---

<sup>12</sup> Their measure of reliability is the amount of later retrospective upward revaluations of grant date stock price.

valuation of financial assets or liabilities. However, financial specialists face professional standard and norms, as well as reputational costs, impacting their work (Barr-Pulliam et al., 2019a; Kjellevoid, 2020). This makes the financial specialist profession similar to other financial intermediators with comparable incentive structures, providing services like stock recommendations (analysts) to debt certifications (credit rating agencies). Current research suggests financial intermediators may not always act as objective third parties and may be influenced by their client's preferences and the desire to grow their business. Most studies have focused on analysts and credit rating agencies, with a substantial amount of evidence indicating that their recommendations may be biased (e.g., Lin & McNichols, 1998; Malmendier & Shanthikumar, 2007; Malmendier & Shanthikumar, 2014; Beatty, Gillette, Petacchi & Weber, 2019).

### **3.2.2 Non-financial FVMs**

The majority of archival studies on reliability of non-financial FVMs and third-party specialists take advantage of data from Australia or the U.K. Institutional and reporting requirement in these two countries require third-party appraisals of FVMs of investment property at regular intervals (Dietrich et al., 2000); thus, providing an opportunity to test hypotheses related to the reliability of FVMs after monitoring by specialists.

The earliest studies on third-party specialists and FVM reliability were conducted using Australian datasets. Barth & Clinch (1998) find no significant difference in value relevance between revaluation estimates prepared by third-party specialists and company directors. However, the authors did not test reliability separately, and equate value relevance with reliability in their statistical analysis. Another study using Australian data on revaluation estimates finds more mixed results (Cotter & Richardson, 2002). Exploiting ex-post adjustment of prior

revaluations as a measure for reliability, the authors find that the use of third-party specialists only had a significant effect on the later reversal amounts for plant and equipment assets. While this contrasts Barth & Clinch's (1998) lack of findings, the insignificance found by the first study could be the result of testing value relevance and reliability jointly (see section 2.2).

Research interest in third-party specialists monitoring effectiveness of FVMs increased in the early 2000s with the adoption of IAS 40 *Investment Property*. Dietrich et al. (2000) study the association between different corporate monitors and the reliability of fair values using UK property FVMs and realized selling price as a measure of reliability.<sup>13</sup> The authors' find managers in their sample using the discretion inherent in fair value estimates to undervalue properties before sales to report higher earnings. This bias is significantly reduced when firms engage a third-party specialist to prepare the FVMs. The overall accuracy of the FVMs also increased. Interestingly, third-party specialists seem to be more effective monitors than Big 6 auditors, as reliability was measured to be higher when the FVMs were prepared by third-party specialist and not audited by a Big 6 auditor, than when the FVMs were prepared by management and audited by a Big 6 auditor. But Big N auditors and third-party specialists could interact and enhance each other's monitoring, as Dietrich et al. (2000) find additional reduction of biases in the fair values when the firm engages both a third-party specialist and a Big 6 auditor.

Using a more recent property dataset from the UK, Muller & Riedl (2002) find that the market perceives less information risk as measured by bid-ask spread when the company engages a third-party specialist to prepare the investment property FVMs. The authors do not find similar auditor monitoring effects as Dietrich et al. (2000), and their results suggest there are no

---

<sup>13</sup> However, realized selling price could be a biased benchmark of the underlying economic value of the asset due to overbidding in the sales process.

differences in reliability between Big 6 and non-Big 6 auditors in combination with external appraisers. Additionally, their findings suggest companies' choice of engaging an appraiser and a Big 6 auditor are not significantly related. Lastly, Muller, Riedl & Sellhorn (2011) find a similar reduction in information asymmetry with third-party specialist use as Muller & Riedl (2002) when analyzing a European sample of property firms after the adoption of IAS 40.<sup>14</sup>

Lastly, general findings in the real estate literature indicate that tendencies of stickiness in third-party appraisals leads to smoothing in price formations and property indices (e.g. McAllister, Baum, Crosby, Gallimore & Gray, 2003). Real estate research suggests this could follow from lack of transaction information due to low trading volume in investment property markets and specialists' disincentives for searching out other information sources (McAllister et al., 2003). It could also be the result of specialists anchoring on their last appraisal (Diaz, 1997; Diaz and Wolverton, 1998). These issues could impair specialists' ability to monitor the reliability of investment property fair values. Furthermore, Crosby, Devaney, Lizieri & McAllister (2018) find evidence in the UK property market consistent with property funds being able to shop for valuations in line with their preferences during the financial crisis.

### **3.2.3 Goodwill and other intangibles**

Goodwill accounting has been subject to research suggesting that management may use the discretion inherent in the fair values estimated during the initial allocation decision or in the yearly impairment testing to bias the financial reporting. By utilizing the fact that goodwill is no longer amortized, management may inflate goodwill accounts and report untimely impairments (e.g., Li and

---

<sup>14</sup> Lourenço & Curto (2008) similarly find investment property FVMs value relevant in a multi-country European sample. However, most of the fair values in their sample are externally appraised and they do not provide separate tests for external versus internal appraised estimates. Additionally, Henderson's (2016) results indicate the use of external appraisers makes investment property FVMs more relevant for stewardship purposes, and the relevance increases when the firm engage a market-leading appraiser.

Sloan (2017)). However, evidence for management strategic reporting of goodwill accounts is mixed, with studies on different data samples finding no strategic bias (Jarva, 2009). The information search only uncovered two recent studies (Zhang & Zhang, 2017; Gietzmann & Wang, in press) investigating whether the use of third-party specialists impacts firm's reporting of goodwill or other intangible assets.

Zhang & Zhang (2017) finds a negative association between third-party specialist use and management opportunism in goodwill allocations in purchase price allocations (PPAs), but the third-party monitoring does not eliminate all opportunistic behavior and the authors conclude that specialist monitoring effectiveness is limited. In contrast, Gietzmann & Wang (in press) analyzing a large sample of American firms find a strong positive association between use of third-party specialists and larger goodwill impairment amounts. Overall, Gietzmann & Wang (in press) findings suggest that third-party specialists do alleviate concerns with management misusing the discretion inherent in goodwill reporting. The weaker association found by Zhang & Zhang (2017) suggests there are potential moderators of specialist monitoring effectiveness unrecognized by current research.

### ***3.3 Behavioral Studies***

#### **3.3.1 Qualitative methodologies.**

Qualitative methodology limits the potential for statistical inference but may reveal interactions, experiences and variables previously unknown to research, and serve as building blocks for theoretical advancements (Malsch & Salterio, 2016). The current qualitative accounting research on third-party specialists use and consequences for FVM reliability is scarce, with only three accounting studies relating directly to the topic of this review (Barr-Pulliam et al., 2019a; 2019b; Kjellefold, 2020).

Barr-Pulliam et al. (2019a) interviews and surveys financial specialists providing fair values of derivatives and other financial FVMs. The authors identify several factors which could impact FVM reliability when third-party specialists are used. The study documents concern in the valuation profession over fee and commoditization pressures which may negatively impact the reliability of fair values. Likewise, the interviewed and surveyed specialists voice concern that the current focus on a clear audit trail in the FVMs leads to less room for high quality valuation judgments. Their analysis concludes that these tendencies may be further exacerbated by management's lack of valuation knowledge, and what the specialists perceive are regulatory standards not in line with current practice.

Barr-Pulliam et al. (2019b) use a large-scale survey design to investigate the different demands specialists face from their professional- and organizational commitments.<sup>15</sup> The study finds that both organizational- and professional demands are perceived to be significantly higher among specialists employed by accounting or independent valuation firms than among specialists employed by private and public companies. This translates into lower perceived Organizational-Professional Conflict (OPC) for third-party specialists relative to employed specialists.<sup>16, 17</sup> Their results further reveal that lower OPC is significantly related to higher job satisfaction and less turnover intentions. Lastly, the study finds that specialist who value financial instruments perceive higher OPC and lower job satisfaction than other specialists.

---

<sup>15</sup> Barr-Pulliam et al. (2019b) defines organizational commitment as specialists' desire to fulfill their employer's demand, while professional commitment is defined as their desire to comply with the expectations of their profession. These commitments are understood to be part of specialists' organizational- and professional identities.

<sup>16</sup> Organizational-Professional Conflict (OPC) is defined as specialists' affective response to the alignment or misalignment of the differing professional- and organizational demands (Barr-Pulliam et al., 2019b).

<sup>17</sup> Most third-party specialists work for accounting- or independent valuation firms (Barr-Pulliam et al., 2019a).

Kjellevoll (2020) adopts an agency theory perspective (e.g., Jensen & Meckling, 1976; Gordon & Trottier, 2018) together with theoretical models from financial economics to investigate specialists' effectiveness as delegated monitors of fair value reliability and factors challenging auditors' reliance on their monitoring. His study provides evidence indicating that third-party specialists tend to experience management pressure to provide higher FVMs particularly for nonfinancial assets. The interviews further suggest management deploys an array of different strategies to achieve their strategic goals of higher fair values. Such behavior by management may have negative consequences for FVM reliability by affecting specialists' monitoring effectiveness. Furthermore, specialists strategically limit insight into their private information (e.g. valuation models and data) forcing auditors to rely on external, and potentially biased, information sources to evaluate the objectivity and reliability of the individual specialist. While auditors often request that clients engage several specialists to alleviate concerns about conflicts-of-interest, management seems to anticipate this and strategically controls information flow between the specialists to create more persuasive evidence. This management behavior may induce herding tendencies among the specialists and further reduce their individual monitoring effectiveness.

### **3.3.2 Experiments**

Valuation specialists conduct their work with large amounts of professional judgment, similar to other professionals such as auditors or lawyers. Like the latter two professions, experimental research finds valuation specialists suffering from cognitive biases such as anchoring (see e.g., Klamer, Bakker & Gruis (2017) for a review). With regards to specialists' preparation of FVMs, the literature search did not find any experimental research in accounting. However, one experimental accounting study investigates managers decisions when engaging specialists.

Salzsieder (2016) uses business school alumni to proxy for management and investigates



drivers of fair value opinion shopping among managers. He finds current disclosure requirements, where management is not required to disclose whether they have engaged one or several specialists, may lead to “opinion shopping” for preferred fair value estimates. Salzsieder then examines whether a requirement to disclose to the auditor and the corporate board all instances where multiple fair value opinions were obtained, deters fair value opinion shopping. He finds this depends on whether the beneficiary of the opinion shopping is shareholders or management. If the main beneficiary is management (e.g., receiving a higher bonus due to opinion shopping) then the disclosure requirement deters opinion shopping. If the main beneficiary is the shareholders (e.g., by maximizing shareholder wealth), the disclosure requirement does not serve to deter opinion shopping. The study does not investigate the specialist perspective and does not report whether management would be successful with their opinion shopping tactics. However, the experiment does pinpoint a potential channel for management influence which could reduce specialists’ monitoring effectiveness.

Using experiments, real estate researchers provide evidence of the detrimental consequences of client pressure across a wide range of valuation situations (e.g., Rushmore, 1993; Levy & Schuck, 1997). For example, Kinnard, Margarita, Lenk & Worzala (1997) find commercial appraisers willing to revise their valuation upwardly for large clients, but the magnitude of client’s requested change in the valuation had no effect on appraiser behavior. Client feedback on the valuation may change appraisers’ role perception from viewing their work as finding an objective market value to rather validate the value suggested by clients (Wolverton & Gallimore, 1999). Furthermore, commercial appraisers seem more willing to adjust later appraisals with new information when it signals that they were too conservative, than when the new information signals they overestimated the value (Hanz & Diaz, 2001).

## **4. Concluding Comments**

### ***4.1 Summary and Discussion***

The purpose of this paper is to review research on third-party specialists' effectiveness as monitors of the reliability of fair values used in financial reporting. Archival accounting research finds that management's use of third-party specialists is associated with less opportunistic reporting of the fair values for both nonfinancial and financial assets and obligations, and a corresponding reduction in investors' information risk. At the same time, research on real estate appraisers and actuaries supports the notion that specialists are susceptible to management pressure and economic incentives. Additionally, a field study among Norwegian specialists and audit partners documents that management may act strategically to upwardly bias fair values by adding pressure on their third-party specialists (Kjellefold, 2020). Management's opportunity to shop for fair value opinions may add additional threats to specialist independence (Salzsieder, 2016). Research further suggest the threat of management pressure impacting specialist monitoring effectiveness may be higher for specialists with stronger economic ties to their clients (e.g., Anantharaman, 2017).

Accounting researchers could benefit from looking to developments in economic theory and related literature when developing new research questions. Economic modeling suggests career concerns, reappointment concerns, and provision of other services to the client can bias the specialists' FVMs and reduce their monitoring effectiveness. Research on real estate appraisers confirms the importance of these incentives (e. g, Klammer et al., 2017). Barr-Pulliam et al. (2019a) findings of ongoing budget pressure and labor shortages in the valuation service industry could further increase specialists' economic incentives and make them more susceptible to client pressure. At the same time, a large body of research indicates that auditors struggle with

monitoring FVMs (see. e.g., Cannon and Bedard, 2017). This review finds little evidence indicating that auditors contribute to the reliability of FVMs above the input of third-party specialists.

Findings indicate that creditors (Demerjian, Donovan & Larson, 2016) and investors (Song et al., 2010) reduce their perception of information risk when the corporate monitoring of fair values are perceived to be stronger. This review finds that both theory and empirical evidence underline the importance of specialists' monitoring role for investors' perception of information risk, but we are only beginning to understand how specialists interact with other corporate governance mechanisms. Results revealing that the reliability of specialists' valuations increases in the presence of a strong and independent boards suggests an interaction effect (Stuart & Willis, in press). However, the causal channel through which board monitoring enhances the reliability of specialists' work is not known. Several explanations are possible. The audit committee may for example impact which specialist(s) management engage and thereby limit the potential for opinion shopping (Salzsieder, 2016), or monitor the nature of any conflicts-of-interests between the specialist and the company. The threat to causal inference caused by the endogenous nature of these questions, makes it hard to conclude based on current research.

#### ***4.2 Future Research Opportunities***

Table 2 organizes future research opportunities and research questions along three main topics: specialists' incentive structure and behavior, management's strategic actions with regards to specialist use, and how the reliability of third-party specialists' work interacts with other corporate governance mechanisms.

INSERT TABLE 2 HERE

First, current accounting research has only had a limited focus on third-party specialists' incentives and objectivity. In contrast to financial intermediators, such as financial analysts (see e.g., Malmendier & Shanthikumar, 2007; 2014), we are only beginning to understand the incentive structures of third-party specialists and how they vary across specialist type. Following the findings by Barr-Pulliam et al. (2019a; 2019b) and Kjellekvold (2020) it is likely that specialists providing FVMs of financial assets and obligations differ from other specialists. While specialists providing nonfinancial FVMs often work for smaller firms where the individual client may matter more for overall profitability, financial specialists frequently work for larger investment houses with substantial regulatory oversight (Barr-Pulliam et al. 2019a). This could make financial specialists less susceptible to direct client pressure. But as disclosure to the government and tight regulation have not been found to secure specialists' independence (Anantharaman, 2017), more research is needed to increase our understanding of the differential effects of reappointment concerns, certification arrangements, and legal liability on specialists' monitoring effectiveness. Furthermore, incentives related to certification arrangements and legal liability likely vary cross-country increasing the relevance of international research on these topics.

Second, researchers are only beginning to understand the potential for strategic action by management when engaging specialists. The prevalence of opinion shopping and strategic pressure tactics among managers is unknown, but current research suggest it could be considerable (e.g., Salzsieder, 2016; Kjellekvold, 2020). Kjellekvold (2020) finds that management may engage several specialists and through strategic actions bring their point estimates together to strengthen the evidence supporting the fair value estimate. Management may engage in such behavior to increase auditors or creditors trust in the fair value of the asset(s), but more research is needed to investigate factors driving such behavior and how trust interacts with creditor or auditor characteristics.

Furthermore, current accounting standards do not require companies to disclose the nature of their economic relationship with their third-party specialists and these relationships are left to the monitoring of the auditor or the board of directors. It remains an open question whether different disclosure rules would curb management's strategic behavior more than the financial statement audit or the monitoring strength of the corporate board or audit committee. In sum, the lack of research on the potentially "dark sides" of specialist use is surprising, since literature on real estate appraisers (see Klammer et al., 2017) suggests a real threat of management pressure impacting fair value reliability. Hence, improving our knowledge of management's strategic action would be helpful for both research and market participants.

Third, initial archival evidence from Stuart & Willis (in press) reveals interaction effects between third-party specialists and the composition of board and audit committees on specialists' monitoring effectiveness. But as management may forego specialist usage when they have incentives to self-estimate (Hanley et al., 2018), more knowledge is needed about how the strength of corporate board monitoring impacts the decision to engage specialists. Furthermore, this review finds that Big 4 auditors do not provide substantial monitoring above the contribution of third-party specialists. Researchers are also starting to unravel the effect that fair value expertise and experience have on auditors' monitoring (Barr-Pulliam, Mason, & Brown-Liburd, 2017; Ahn, Hoitash and Hoitash, in press). How auditors fair value expertise and experience impact their reliance on third-party specialists should be investigated further. Thus, research can benefit from better understanding of how specialists' monitoring effectiveness interact with other corporate governance mechanisms.

## Acknowledgements

This research was supported by funding from the Norwegian Institute of Public Accountants (DnR) and Norwegian School of Economics (NHH). I would like to thank the Co-Chairs of my dissertation Aasmund Eilifsen and Bill Messier for their helpful guidance.

## References

- Ahn, J., Hoitash, R., Hoitash, U. (in press). Auditor task-specific expertise: The case of fair value accounting. *The Accounting Review*. Retrieved from: <https://dx.doi.org/10.2139/ssrn.3192536>.
- Anantharaman, D. (2017). The role of specialists in financial reporting: Evidence from pension accounting. *Review of Accounting Studies*, 22(3), 1261-1306. <https://doi.org/10.1007/s11142-017-9404-4>.
- Antle, R. (1984). Auditor independence. *Journal of Accounting Research*, 22 (1) 1-20. <https://doi.org/10.2307/2490699>.
- Banerjee, A. V. (1992). A simple model of herd behavior. *The Quarterly Journal of Economics*, 107(3), 797-817. <https://doi.org/10.2307/2118364>.
- Barker, R., & Schulte, S. (2017). Representing the market perspective: Fair value measurement for non-financial assets. *Accounting, Organizations and Society*, 56, 55-67. <https://doi.org/10.1016/j.aos.2014.12.004>.
- Barr-Pulliam, D., Mason, S. A., & Brown-Liburd, H. L. (2017). *Does Accounting Firm-Level Fair Value Expertise Constrain Managers' Fair Value-Related Accounting Discretion?* Unpublished manuscript.
- Barr-Pulliam, D., Mason, S. A., & Sanderson, K. (2019a). *Three W's Related to the Valuation Profession: A Firm- and Practitioner-Level Perspective*. Unpublished manuscript.
- \_\_\_\_\_. (2019b). *A Profession at an Inflection Point: Implications of Organizational-Professional Conflict among Valuation Service Providers*. Unpublished manuscript.
- Barth, M. E., & Clinch, G. (1998). Revalued financial, tangible, and intangible assets: Associations with share prices and non-market-based value estimates. *Journal of Accounting Research*, 36, 199-233. <https://doi.org/10.2307/2491314>.
- Barth, M. E. (2007). Standard-setting measurement issues and the relevance of research. *Accounting and Business Research*, 37(sup1), 7-15. <https://doi.org/10.1080/00014788.2007.9730079>.
- Beatty, A., Gillette, J., Petacchi, R., & Weber, J. (2019). Do rating agencies benefit from providing higher ratings? Evidence from the consequences of municipal bond ratings

recalibration. *Journal of Accounting Research*, 57(2), 323-354. <https://doi.org/10.1111/1475-679X.12263>.

Bolton, P., Freixas, X., & Shapiro, J. (2012). The credit ratings game. *The Journal of Finance*, 67(1), 85-111. <https://doi.org/10.1111/j.1540-6261.2011.01708.x>.

Bratten, B., Gaynor, L. M., McDaniel, L., Montague, N. R., & Sierra, G. E. (2013). The audit of fair values and other estimates: The effects of underlying environmental, task, and auditor-specific factors. *Auditing: A Journal of Practice & Theory*, 32(sp1), 7-44. <https://doi.org/10.2308/ajpt-50316>.

Brown, P., Izan, H. Y., & Loh, A. L. (1992). Fixed asset revaluations and managerial incentives. *Abacus*, 28(1), 36-57. <https://doi.org/10.1111/j.1467-6281.1992.tb00268.x>.

Christensen, B. E., Glover, S. M., & Wood, D. A. (2012). Extreme estimation uncertainty in fair value estimates: Implications for audit assurance. *Auditing: A Journal of Practice & Theory*, 31(1), 127-146. <https://doi.org/10.2308/ajpt-10191>.

Chung, S. G., Goh, B. W., Ng, J., & Yong, K. O. (2017). Voluntary fair value disclosures beyond SFAS 157's three-level estimates. *Review of Accounting Studies*, 22(1), 430-468. <https://doi.org/10.1007/s11142-016-9384-9>.

Cotter, J., & Richardson, S. (2002). Reliability of asset revaluations: The impact of appraiser independence. *Review of Accounting Studies*, 7(4), 435-457. <https://doi.org/10.1023/A:1020763612369>.

Crosby, N., Devaney, S., Lizieri, C., & McAllister, P. (2018). Can institutional investors bias real estate portfolio appraisals? Evidence from the market downturn. *Journal of Business Ethics*, 147(3), 651-667. <https://doi.org/10.1007/s10551-015-2953-1>.

Demerjian, P. R., Donovan, J., & Larson, C. R. (2016). Fair value accounting and debt contracting: Evidence from adoption of SFAS 159. *Journal of Accounting Research*, 54(4), 1041-1076. <https://doi.org/10.1111/1475-679X.12126>.

Devenow, A., & Welch, I. (1996). Rational herding in financial economics. *European Economic Review*, 40(3-5), 603-615. [https://doi.org/10.1016/0014-2921\(95\)00073-9](https://doi.org/10.1016/0014-2921(95)00073-9).

Diaz, J. (1997). An investigation into the impact of previous expert value estimates on appraisal judgment. *Journal of Real Estate Research*, 13(1), 57-66. <https://doi.org/10.5555/rees.13.1.5h7232h4q2728341>.

Diaz, J., & Wolverton, M. L. (1998). A longitudinal examination of the appraisal smoothing hypothesis. *Real Estate Economics*, 26(2), 349-358. <https://doi.org/10.1111/1540-6229.00749>.

- Dietrich, J. R., Harris, M. S., & Muller III, K. A. (2000). The reliability of investment property fair value estimates. *Journal of Accounting and Economics*, 30(2), 125-158. [https://doi.org/10.1016/S0165-4101\(01\)00002-7](https://doi.org/10.1016/S0165-4101(01)00002-7).
- Dranove, D., & Jin, G. Z. (2010). Quality disclosure and certification: Theory and practice. *Journal of Economic Literature*, 48(4), 935-63. <https://doi.org/10.1257/jel.48.4.935>.
- Eccher, E. A., Ramesh, K., & Thiagarajan, S. R. (1996). Fair value disclosures by bank holding companies. *Journal of Accounting and Economics*, 22(1-3), 79-117. [https://doi.org/10.1016/S0165-4101\(96\)00438-7](https://doi.org/10.1016/S0165-4101(96)00438-7).
- Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of Management Review*, 14(1), 57-74. <http://dx.doi.org/10.2307/258191>.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law and Economics*, 26(2), 301-325. <https://doi.org/10.1086/467037>.
- Gaver, J. J., & Paterson, J. S. (2001). The association between external monitoring and earnings management in the property-casualty insurance industry. *Journal of Accounting Research*, 39(2), 269-282. <https://doi.org/10.1111/1475-679X.00012>.
- Gietzmann, M. B., & Wang, Y. (in press). Goodwill Valuations Certified by Independent Specialists: Bigger and Cleaner Impairments? *Journal of Business Finance & Accounting*. Advance online publication. <https://doi.org/10.1111/jbfa.12411>.
- Gjesdal, F. (1981). Accounting for stewardship. *Journal of Accounting Research*, 19(1), 208-231. <https://doi.org/10.2307/2490970>.
- Goh, B. W., Li, D., Ng, J., & Yong, K. O. (2015). Market pricing of banks' fair value assets reported under SFAS 157 since the 2008 financial crisis. *Journal of Accounting and Public Policy*, 34(2), 129-145. <https://doi.org/10.1016/j.jaccpubpol.2014.12.002>.
- Gordon, I. M., & Trottier, K. (2018). Agency theory: applications in Behavioral Accounting Research. In T. Libby, & L. Thorne (Eds.), *The Routledge Companion to Behavioral Accounting Research* (pp.101-110). New York: Routledge.
- Hanley, K. W., Jagolinzer, A. D., & Nikolova, S. (2018). Strategic estimation of asset fair values. *Journal of Accounting and Economics*, 66(1), 25-45. <https://doi.org/10.1016/j.jacceco.2018.01.004>.
- Hansz, J. A., & Diaz III, J. (2001). Valuation bias in commercial appraisal: a transaction price feedback experiment. *Real Estate Economics*, 29(4), 553-565. <https://doi.org/10.1111/1080-8620.00022>.
- Henderson, D. (2016). *Can Fair Values Be Used for Assessing Management's Stewardship?* Unpublished manuscript. Retrieved from: <https://ssrn.com/abstract=2779687>.



- Hodder, L., Hopkins, P., & Schipper, K. (2014). Fair value measurement in financial reporting. *Foundations and Trends in Accounting*, 8(3-4), 143-270. <http://dx.doi.org/10.1561/14000000030>.
- Holmström, B. (1979). Moral hazard and observability. *Bell Journal of Economics*, 10(1), 74-91. <https://doi.org/10.2307/3003320>.
- Hong, H., Kubik, J. D., & Solomon, A. (2000). Security analysts' career concerns and herding of earnings forecasts. *The Rand Journal of Economics*, 31(1), 121-144. <https://www.jstor.org/stable/2601032>.
- International Financial Reporting Standards. (2013). *IFRS 13 Fair Value Measurement*. Retrieved from <https://www.ifrs.org>.
- \_\_\_\_\_. (2018). *Conceptual Framework for Financial Reporting*. Retrieved from <https://www.ifrs.org>.
- \_\_\_\_\_. (2019). *IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors*. Retrieved from <https://www.ifrs.org>.
- Israeli, D. (2015). Recognition versus disclosure: evidence from fair value of investment property. *Review of Accounting Studies*, 20(4), 1457-1503. <https://doi.org/10.1007/s11142-015-9335-x>.
- Jarva, H. (2009). Do firms manage fair value estimates? An examination of SFAS 142 goodwill impairments. *Journal of Business Finance & Accounting*, 36(9-10), 1059-1086. <https://doi.org/10.1111/j.1468-5957.2009.02169.x>.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X).
- Kadous, K., Koonce, L., & Thayer, J. M. (2012). Do financial statement users judge relevance based on properties of reliability?. *The Accounting Review*, 87(4), 1335-1356. <https://doi.org/10.2308/accr-50157>.
- Khalil, F., & Lawarree, J. (1995). Collusive auditors. *The American Economic Review*, 85(2), 442-446. <https://www.jstor.org/stable/2117963>.
- King, A. M. (2009). Determining fair value: the very essence of valuation is the professional judgment of the appraiser, not just a set of rules. *Strategic Finance*, 90(7), 27-33. Retrieved from: <https://sfmagazine.com/wp-content/uploads/sfarchive/2009/01/Determining-Fair-Value.pdf>.

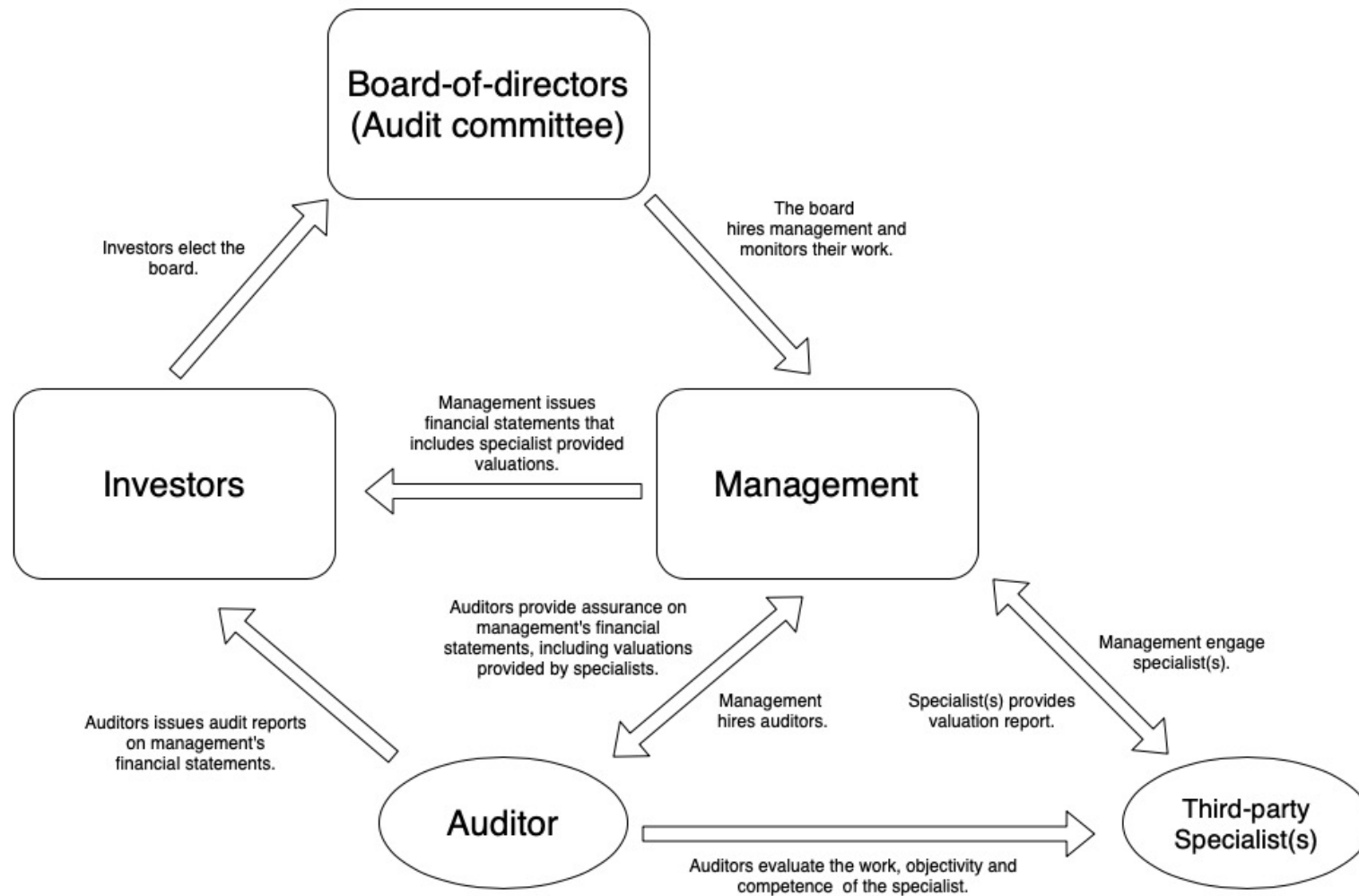
- Kinnard, W. N., Lenk, M. M., & Worzala, E. M. (1997). Client pressure in the commercial appraisal industry: how prevalent is it?. *Journal of Property Valuation and Investment*, 15(3), 233-244. <https://doi.org/10.1108/14635789710184952>.
- Kjellevold, K. (2020). *Delegating the Monitoring of Fair Value Measurements: A Field Study of Company Specialists and Audit Partners*. Unpublished manuscript.
- Klamer, P., Bakker, C., & Gruis, V. (2017). Research bias in judgement bias studies—a systematic review of valuation judgement literature. *Journal of Property Research*, 34(4), 285-304. <https://doi.org/10.1080/09599916.2017.1379552>.
- Kofman, F., & Lawarree, J. (1993). Collusion in hierarchical agency. *Econometrica: Journal of the Econometric Society*, 61 (3), 629-656. <https://doi.org/10.2307/2951721>.
- Landsman, W. R. (2007). Is fair value accounting information relevant and reliable? Evidence from capital market research. *Accounting and Business Research*, 37(sup1), 19-30. <https://doi.org/10.1080/00014788.2007.9730081>.
- Laux, C., & Leuz, C. (2009). The crisis of fair-value accounting: Making sense of the recent debate. *Accounting, Organizations and Society*, 34(6-7), 826-834. <https://doi.org/10.1016/j.aos.2009.04.003>.
- Lawrence, A., Siriviriyakul, S., & Sloan, R. G. (2015). Who's the fairest of them all? Evidence from closed-end funds. *The Accounting Review*, 91(1), 207-227. <https://doi.org/10.2308/accr-51152>.
- Levy, D., & Schuck, E. (1999). The influence of clients on valuations. *Journal of Property Investment & Finance*, 17(4), 380-400. <https://doi.org/10.1108/14635789910271773>.
- Li, K. K., & Sloan, R. G. (2017). Has goodwill accounting gone bad?. *Review of Accounting Studies*, 22(2), 964-1003. <https://doi.org/10.1007/s11142-017-9401-7>.
- Lin, H. W., & McNichols, M. F. (1998). Underwriting relationships, analysts' earnings forecasts and investment recommendations. *Journal of Accounting and Economics*, 25(1), 101-127. [https://doi.org/10.1016/S0165-4101\(98\)00016-0](https://doi.org/10.1016/S0165-4101(98)00016-0).
- Lovell, R., & French, N. (1995). Estimated realization price: what do the banks want and what can realistically be provided. *Journal of Property Finance*, 6(4), 7-16. <https://doi.org/10.1108/09588689510104042>.
- Lourenço, I., & Curto, J. D. (2008). *The value relevance of investment property fair values*. Unpublished manuscript. Retrieved from: <https://ssrn.com/abstract=1301683>.
- Malmendier, U., & Shanthikumar, D. (2007). Are small investors naive about incentives?. *Journal of Financial Economics*, 85(2), 457-489. <https://doi.org/10.1016/j.jfineco.2007.02.001>.

- Malmendier, U., & Shanthikumar, D. (2014). Do security analysts speak in two tongues?. *The Review of Financial Studies*, 27(5), 1287-1322. <https://doi.org/10.1093/rfs/hhu009>.
- Malsch, B., & Salterio, S. E. (2015). "Doing good field research": Assessing the quality of audit field research. *Auditing: A Journal of Practice & Theory*, 35(1), 1-22. <https://doi.org/10.2308/ajpt-51170>.
- McAllister, P., Baum, A., Crosby, N., Gallimore, P., & Gray, A. (2003). Appraiser behaviour and appraisal smoothing: some qualitative and quantitative evidence. *Journal of Property Research*, 20(3), 261-280. <https://doi.org/10.1080/0959991032000162347>.
- Messier, Jr, W. F. (2010). Opportunities for task-level research within the audit process. *International Journal of Auditing*, 14(3), 320-328. <https://doi.org/10.1111/j.1099-1123.2010.00420.x>.
- Muller III, K. A., & Riedl, E. J. (2002). External monitoring of property appraisal estimates and information asymmetry. *Journal of Accounting Research*, 40(3), 865-881. <https://doi.org/10.1111/1475-679X.00074>.
- Muller III, K. A., Riedl, E. J., & Sellhorn, T. (2011). Mandatory fair value accounting and information asymmetry: Evidence from the European real estate industry. *Management Science*, 57(6), 1138-1153. <https://doi.org/10.1287/mnsc.1110.1339>.
- Public Company Accounting Oversight Board (PCAOB). (2017). *Proposed Amendments to Auditing Standards for Auditor's Use of the Work of Specialists*. Washington, DC: PCAOB. Retrieved from: <https://pcaobus.org/Rulemaking/Pages/docket-044-auditors-use-work-specialists.aspx>.
- Riedl, E. J., & Serafeim, G. (2011). Information risk and fair values: An examination of equity betas. *Journal of Accounting Research*, 49(4), 1083-1122. <https://doi.org/10.1111/j.1475-679X.2011.00408.x>.
- Rushmore, S. (1993). Ethics in hotel appraising. *The Appraisal Journal*, 61(3), 357. <https://search.proquest.com/docview/199934257?accountid=37265>.
- Salzsieder, L. (2016). Fair value opinion shopping. *Behavioral Research in Accounting*, 28(1), 57-66. <https://doi.org/10.2308/bria-51238>.
- Scharfstein, D. S., & Stein, J. C. (1990). Herd behavior and investment. *American Economic Review*, 80(3), 465-479. <https://www.jstor.org/stable/2006678>.
- Sellhorn, T., & Stier, C. (2019). Fair value measurement for long-lived operating assets: Research evidence. *European Accounting Review*, 28(3), 573-603. <https://doi.org/10.1080/09638180.2018.1511816>.

- Shapiro, S. P. (2005). Agency theory. *Annual Review of Sociology*, 31, 263-284.  
<https://doi.org/10.1146/annurev.soc.31.041304.122159>.
- Singh, H., & Harianto, F. (1989). Management-board relationships, takeover risk, and the adoption of golden parachutes. *Academy of Management Journal*, 32(1), 7-24.  
<https://doi.org/10.2307/256417>.
- Song, C. J., Thomas, W. B., & Yi, H. (2010). Value relevance of FAS No. 157 fair value hierarchy information and the impact of corporate governance mechanisms. *The Accounting Review*, 85(4), 1375-1410. <https://doi.org/10.2308/accr.2010.85.4.1375>.
- Stuart, M. D., & Willis, R. H. (in press). Use of Independent Valuation Specialists in Valuing Employee Stock Options: Evidence from IPOs. *Review of Accounting Studies*. Retrieved from URL: <https://ssrn.com/abstract=3374632>.
- Telser, L. G. (1980). A theory of self-enforcing agreements. *Journal of Business*, 53 (1) 27-44.  
<https://www.jstor.org/stable/2352355>.
- Viscusi, W. K. (1978). Quality Certification. *The Bell Journal of Economics*, 9(1), 277-279.  
<https://www.jstor.org/stable/3003627>.
- Walton, N. (2012). Delegated Monitoring: When Can Boards Rely on Outside Experts?. *American Law and Economics Review*, 14(1), 271-301.  
<https://doi.org/10.1093/aler/ahr022>.
- Watts, R. L., & Zimmerman, J. L. (1983). Agency problems, auditing, and the theory of the firm: Some evidence. *The Journal of Law and Economics*, 26(3), 613-633.  
<https://www.jstor.org/stable/725039>.
- Wolverton, M., & Gallimore, P. (1999). Client Feedback and the Role of the Appraiser. *Journal of Real Estate Research*, 18(3), 415-431. <https://www.jstor.org/stable/24887200>.
- Zhang, I. X., & Zhang, Y. (2017). Accounting discretion and purchase price allocation after acquisitions. *Journal of Accounting, Auditing & Finance*, 32(2), 241-270.  
<https://doi.org/10.1177/0148558X15598693>.

## Figures and Tables

*Figure 1*



*Table 1: Summary of Reviewed Literature*

Author(s)	Research objective	Sample data	Findings
<b>Panel A: Archival research</b>			
Barth & Clinch (1998)	Investigates the reliability, value relevance and timeliness of asset revaluations made by Australian companies across asset classes.	Australian company data (1991-1995).  234 companies and 846 firm-year observations.	The study does not find a significant difference in the reliability of revaluations prepared by third-party specialists and company directors.  They argue that this follows from company directors' private information advantage.
Dietrich, Harris & Muller III (2000)	Investigates the reliability of investment property fair values in the UK market.	U.K. property company data (1988-1996).  76 companies and 451 firm-year observations.	Results indicate that third-party specialists are associated with more reliable fair values and less management opportunism in the financial reporting.  While the authors find evidence suggesting that Big 6 auditors increase the reliability of fair values, their results also suggest that third-party specialists are more effective monitors.  Reliability was measured to be higher when the FVMs was prepared by a third-party specialist and not audited by a Big 6 auditor, than when the FVMs was prepared by management and audited by a Big 6 auditor.
Cotter & Richardson (2002)	Investigates whether there are differences in the reliability of asset revaluations prepared by management vs. third-party specialists.	Australian company data (1981-1999).  225 firm-year observations.	Results suggest that revaluations of plant and equipment prepared by third-party specialists are less likely to be reversed in future periods. The authors do not find a similar association for other asset classes.  Results further indicate that companies were more likely to engage a specialist when

			<p>revaluating land and buildings than for other asset classes.</p> <p>In addition, companies in their sample with less independent boards were more likely to engage specialists to prepare revaluations.</p>
Muller III & Riedl (2002)	Investigates the relationship between information risk and external monitoring of fair value estimates in the investment property industry.	<p>U.K. property company data (1990-1999).</p> <p>64 companies and 255 firm-year observations.</p>	<p>Investors perceive information asymmetry to be lower when companies engage specialists to prepare their fair values.</p> <p>The authors find no difference in information risk between companies employing Big 6 or non-Big 6 auditors.</p> <p>The study finds some evidence indicating that both monitoring- and capital cost are associated with the use of third-party specialists.</p>
Muller III, Riedl & Sellhorn (2011)	Investigates the relationship between information risk and the adoption of fair value accounting for investment property.	<p>European property companies publicly traded and active as of 2006 (5-year firm-data observations pre- and post IFRS adoption).</p> <p>121 companies and 431 firm-year observations in the full sample.</p>	<p>The results indicate that the reliability of fair value measurements is significantly higher when companies engage specialists to prepare them.</p> <p>The authors further find that the use of third-party specialists was significantly lower among the companies who did not report fair values before it became mandatory with the implementation of IAS 40.</p>

Chung, Goh, Ng & Yong (2017)	Investigates the drivers of banks and insurance companies' voluntary disclosure policies when reporting fair value measurements, and how it impacts investors' perception of reliability.	U.S. banks- and insurance companies (2007-2011).  681 companies and 2,265 firm-year observations.	Results indicate that reporting of Level 3 fair values are associated with more disclosures about firm controls and processes in place to ensure the reliability of the fair values.  Investors' perception of information risk is lower when companies disclose that they use third-party specialists in preparing the fair values for financial reporting.  Disclosure of third-party specialist use is also associated with an increase in value relevance as measured by higher market pricing.
Zhang & Zhang (2017)	Investigates managers use of the discretion inherent in purchase price allocations (PPAs) when allocating the purchase price to intangible assets and goodwill. They further investigate how the use of third-party specialists are associated with these decisions.	U.S. business service company data (2001-2007) on 114 acquisitions. 137 firm-year observations.	Results indicate that management bias in the allocation to goodwill is lower, but not eliminated, when the company engage a specialist to prepare the purchase price allocations (PPAs).  The allocation of the purchase price to identifiable intangible assets and goodwill is significantly related to both managerial incentives and the underlying economic fundamentals.  The authors find that managerial incentives did not explain the allocation of purchase price to goodwill in the prior accounting standard (prior to SFAS 142) when goodwill was amortized.
Anantharaman (2017)	Investigates interactions between companies and their actuaries, and how it impacts companies' reporting of defined-benefit pension plans.	U.S. company data (2000-2008) and actuary information disclosed in Form 5500 s at the	Results suggest actuaries tend to provide higher discount rates to clients with stronger incentives to reduce their pension obligations, but only when the clients are more important to their



		<p>Department of Labor (DOL).</p> <p>3991-3329 firm-year observations depending on specific analysis.</p>	<p>business (making up a larger part of the client portfolio).</p> <p>If the important clients are not able to obtain lower discount rates from their current actuary, they tend to shop around for more agreeable actuaries in future periods. Results indicate that they are often able to obtain more favorable discount rates from the new actuary.</p> <p>The author does not find evidence indicating that monitoring by a Big 4 auditor change companies' behavior or impact the magnitude of the discount rates used.</p>
Hanley, Jagolinzer & Nikolova (2018)	Investigates insurance companies reporting of fair values of financial securities, with particular emphasis on management bias and the strategic choice of self-estimation vs. use of third-party specialists.	<p>US insurance companies (2012-2014).</p> <p>9,560 insurer-years.</p>	<p>Results indicate that insurers report higher fair values for the same financial security if they choose self-estimation instead of engaging specialists.</p> <p>Different insurers choose to classify the same financial security at different hierarchal levels (Level 2 or Level 3).</p> <p>Regardless of the choice of reporting the financial security at Level 2 or Level 3, the fair values are higher if the insurer choose to self-estimate.</p> <p>Insurers with stronger incentives to appear financially healthy tended to choose self-estimation and report higher fair values.</p>
Stuart & Willis (in press)	Investigates the effect of companies use of third-party specialists on pre-initial public	US company data on IPOs (2006-2016).	Results indicate less downward bias in the stock prices used in employee option grants when companies engage specialists.

	offering (IPO) employee stock option valuations.	575 IPO firms and 3,551 employee stock option grants.	<p>The authors find stronger association between third-party specialist use and reduction of downward bias when the company board consist of more independent directors.</p> <p>Companies are more likely to engage a third-party specialist when audited by a Big 4 auditor or when they have an accounting expert in the audit committee.</p>
Gietzmann & Wang (in press)	Investigates the effect of third-party specialist use on company's goodwill reporting.	<p>U.S. company data (2003-2015) - excluded financial firms.</p> <p>1576 firm-years.</p>	Companies' disclosing the use of third-party specialists record large impairments of goodwill which is less likely to be proceeded by additional follow-on impairments.
<b>Panel B: Experimental research</b>			
Salzsieder (2016)	Experimentally investigates opinion shopping for fair value estimates among managers, and the effect of requiring disclosures of this behavior to boards and/or auditors.	313 business school alumni participated with a mean age (business experience) of 42.64 (17.61) years.	<p>Results suggest managers are likely to engage in fair value opinion shopping for personal and shareholder benefits in the absence of mitigating controls.</p> <p>When management's shopping for fair value opinions that will benefit the shareholders (themselves) the most, disclosure to the board and/or auditor are not effective (are effective) as a deterrent.</p>
<b>Panel C: Qualitative research</b>			
Barr-Pulliam, Mason and Sanderson (2019a)	Investigates the perspective of specialists on interactions with managers and auditors, and current challenges faced by the valuation service industry.	121 valuation specialists surveyed from a global population, and an additional 22 semi-structured interviews.	<p>Results indicate specialists' face both fee pressure following commoditization of valuation services and challenges with recruiting qualified valuation personnel.</p> <p>While the specialists' remark that they may lack necessary accounting- and audit expertise, they</p>

			<p>also describe that managers and auditors lack valuation knowledge. According to them, differences in knowledge and expertise makes interactions with auditors and management difficult with potential negative impact on the quality of their work.</p> <p>Furthermore, the specialists state that pressures to create a clear audit trail of their valuations negatively impacts their autonomy and professional judgments.</p>
Barr-Pulliam, Mason & Sanderson (2019b)	Investigates the relationship between professional- and organizational commitment, organizational-professional conflict (OPC), and its association with work behaviors, among valuation service providers.	222 valuation specialists surveyed from a global population.	<p>The results reveal that OPC is highest when specialists report both low professionalism and low organizational commitment, lowest when specialists report both high professionalism and high organizational commitment, and intermediate in other conditions.</p> <p>They further find that specialists employed by public or private companies report significantly higher OPC relative to specialists working for accounting- and independent valuation firms. Lastly, specialists valuing financial instruments perceived higher OPC and lower job satisfaction than other specialists.</p> <p>Results also reveal that specialists reporting higher perceived OPC also reported significantly less job satisfaction and higher turnover intentions.</p>
Kjellevoid (2020)	Investigates specialists' effectiveness as delegated monitors of fair value reliability, and the factors that challenge	Semi-structured interviews with 8 Norwegian audit partners and 19	The study finds evidence of strategic behavior among companies engaging specialists to prepare fair value measurements.

	auditors' reliance on their monitoring.	Norwegian specialists.	<p>Specialists providing nonfinancial fair values report of extensive client pressure, for example managements' use of several independent specialists to induce anchoring or herding effects.</p> <p>Specialists' strategically guard their private information (e.g., valuation models or non-client specific information) forcing auditors to rely on external, and potentially biased, information sources to evaluate the objectivity and reliability of the specialist. This add to the difficulties auditors face when evaluating specialists' work and could in part explain findings that auditors only marginally contribute to fair value reliability above the valuations prepared by specialists.</p>
--	---	------------------------	--

**Table 2: Research Questions**

<b>Topic/Research Question</b>
<i>Topic 1: Third-party specialists' incentive structure and behavior.</i>
RQ <sub>1</sub> : How do third-party specialists respond to reappointment concerns and client pressure?
RQ <sub>2</sub> : How does the strength of a jurisdiction's liability regime impact third-party specialists' monitoring effectiveness?
RQ <sub>3</sub> : How do career concerns, reputational costs and herding impact third-party specialists' monitoring effectiveness?
RQ <sub>4</sub> : How do budget pressure and commoditization trends impact third-party specialists' FVMs?
<i>Topic 2: Management's strategic actions.</i>
RQ <sub>5</sub> : What factors explain management's choice of engaging one or more third-party specialists?
RQ <sub>6</sub> : What drives management's strategic behavior towards third-party specialists, and how do the specialists' respond?
RQ <sub>7</sub> : How would more corporate disclosures of companies use of third-party specialists, related to e.g., their economic relationship, affect management behavior?
<i>Topic 3: Third-party specialists' interactions with other corporate governance mechanisms.</i>
RQ <sub>8</sub> : How do creditors contractual incentives (e.g., size of their loan portfolio with the client) impact their trust in third-party specialists' work and provisions in debt contracts?
RQ <sub>9</sub> : How do the fair value expertise of auditors impact their interaction with third-party specialists, especially the evaluation of their work?
RQ <sub>10</sub> : How do the fair value expertise of the audit committee affect their interactions with, third-party specialists?



## **Paper 2: Delegating the Monitoring of Fair Value Measurements – A Field Study of Company Specialists and Audit Partners**

Kyrre Kjellevold  
NHH Norwegian School of Economics  
[Kyrre.Kjellevold@nhh.no](mailto:Kyrre.Kjellevold@nhh.no)

April 2020

### **Abstract**

Company specialists engaged by management may be delegated a monitoring role by auditors, creditors, or investors, and reduce information asymmetry present in fair value measurements (FVMs). Utilizing in-depth interviews with Norwegian company specialists and audit partners this study investigates factors potentially impacting company specialists' effectiveness as monitors of the reliability of FVMs and how such factors challenge auditors' reliance on their monitoring. The findings suggest that company specialists are not immune to management pressure and several influence tactics are documented. Furthermore, as company specialists strategically guard their private information (e.g., valuation models or non-client specific information) auditors are forced to rely on external, and potentially biased, information sources to evaluate the objectivity and reliability of the company specialists. While auditors often request that clients engage several specialists to alleviate concerns about conflicts-of-interest, management seems to anticipate this and strategically controls information flow between the specialists to create more persuasive evidence. The findings provide support for theoretical predictions from agency theory and financial economics and enhances our understanding of specialists' delegated monitoring effectiveness.

**Key words:** Fair value measurements, fair value reliability, auditors, company specialists, management pressure, non-financial assets

**JEL Classification:** G10, M41, M42

**Data Availability:** The data used in this study is confidential by agreement with the participants.

**Data Availability:** The data used in this study is confidential by agreement with the participants.

## 1. Introduction

Financial statement accounts that include complex estimates based on fair value measurements (FVMs) are difficult to measure by management and, in turn, difficult to audit (Christensen, Glover, & Wood, 2012; Griffith, Hammersley, & Kadous, 2015; Cannon & Bedard, 2017; PCAOB, 2017a; Griffith, 2019). As a result, it is not surprising that both management, creditors, and auditors delegate responsibility to specialists for valuing and monitoring FVMs (Hux, 2017; PCAOB, 2017b; Hanley, Jagolinzer, & Nikolova, 2018; Sellhorn & Stier, 2019). While the impact on audit quality of auditors' reliance on specialists has received significant research attention (see Hux (2017) for a review), relatively few studies have investigated interactions between company specialists and management (e.g., Barr-Pulliam, Mason, & Sanderson, 2019a; 2019b).<sup>18</sup> The present study investigates specialists' effectiveness as delegated monitors of fair value reliability, and the factors that challenge auditors' reliance on their monitoring.<sup>19</sup>

Prior archival research indicates that management may use the discretion inherent in complex FVMs to manage earnings (e.g., Dietrich, Harris, & Muller III, 2001; Dechow, Myers, & Shakespeare, 2010; Hanley et al., 2018). Specialists can act as delegated monitors and provide management with less opportunity to manipulate FVMs (Dietrich et al., 2001; Hanley et al. 2017;

---

<sup>18</sup> The PCAOB (AS 1210) refers to such individuals as *specialists* while IAASB international auditing standards (ISA 500) refer to such individuals or firms as *experts*. I use the term "*specialist*" to refer to such individuals or firms throughout the paper. A company specialist is defined as "an individual or organization possessing expertise in a field other than accounting and auditing, whose work in that field is used by the entity to assist the entity in preparing financial statements" (ISA 500.5(d)). Company specialists can be either "employed" or "engaged" by management. Hereafter I refer to them just as "specialists" unless a distinction is needed. Auditor employed or engaged specialist will always be referred to as "auditor specialist".

<sup>19</sup> The term "delegated" is borrowed from Demski & Sappington (1987) who model the delegation of authority for planning and other decisions from management to an expert, and where the delegation occurs because the communication of private information between management and the expert is prohibitively costly. In our setting, management delegates the role of producing fair value estimates, or inputs to management's own process, to specialists. See figure 3 in PCAOB (2017a, 11) for an illustration of these agency relationships.



Stuart & Willis, in press). This is more likely to be the case if the specialists are engaged, rather than employed, by the management/company (Muller III & Riedl, 2002).<sup>20</sup> The possibility for fair value opinion shopping among specialists by management (Salzsieder, 2016) and conflicts-of-interest between specialists and the users of the financial statements (e.g., Anantharaman, 2017), may expose specialists to pressure to conform to management's preferences (Kunda, 1990). Studies find mixed results on auditors' marginal contribution to the reliability of fair values above the work performed by company specialists (Muller III & Riedl, 2002; Anantharaman, 2017). Additionally, auditors face challenges evaluating fair value assumptions, specialists' models, and the work of their own auditor specialists (e.g., Griffith et al., 2015; Cannon & Bedard, 2017; Glover, Taylor & Wu, 2017; PCAOB, 2017a; Griffith, 2018; 2019). Finally, a financial reporting environment with increasing complexity of business transactions and promulgation of standards that require complex estimates and judgments (Barth, 2007) suggests that companies and auditors use of specialists will persist or likely increase into the future. Thus, a better understanding of how specialist use affects the reliability of FVMs is important (Messier, 2010; Pyzoha, Taylor, & Wu, in press).

Agency theory suggests that due to the absence of direct management control, engaged specialists may be more effective in providing reliable FVMs than employed specialists, and therefore reduce agency costs (e.g., Dietrich et al., 2001; Dranove & Jin, 2010). However, the effectiveness of an engaged specialist hinges on his or her ability to remain objective in the presence of conflicts-of-interests and incentives to collude with management (e.g., Walton, 2012; Khalil & Lawarre, 1995). Theoretical developments in financial economics further explain that

---

<sup>20</sup> Studies on fair values of investment property suggest that the FVMs are more reliable when provided by company engaged (third-party) specialists compared to company employed specialists (Dietrich et al., 2000; Muller III & Riedl, 2002; Muller III, Riedl, & Sellhorn, 2011; Müller, Riedl, & Sellhorn, 2015).

specialists monitoring effectiveness may be reduced by career concerns (e.g., Banerjee 1992; Hong, Kubik & Solomon, 2000), which could induce herding tendencies among engaged specialists.<sup>21</sup> In addition, economic modeling suggests that while specialists' need to ensure that the market perceives their signal of asset or liability fair values as trustworthy, they may act strategically to extract higher payoffs on their reputation and their client relationships if the recipients of the valuation reports cannot properly evaluate the truthfulness of the information (e.g., Ottaviani & Sørensen, 2006; Bolton, Freixas & Shapiro, 2012). This may lead them to not share their private information with management, auditors, and other users of the valuation reports.

This study applies insight from agency theory and financial economics to the interviews of nineteen highly experienced Norwegian valuation specialists.<sup>22</sup> The specialist interviews were guided by initial interviews with eight audit partners on the use of specialists' FVMs. The analysis of the specialist and partner interviews document several factors (e.g., incentives, behaviors) suggested by theory that may limit specialists' role as effective delegated monitors of the reliability of FVMs. These findings have implications for auditors' ability to rely on specialist monitoring in two distinct ways.

First, a specialist's ability to act as a delegated monitor and contribute to fair value reliability can be challenged by management's strategic actions. For example, the subjective nature of the assumptions and parameters used in Level 3 FVMs exposes specialists to the susceptibility of management's influence attempts. I identify several management's tactics, including anchoring

---

<sup>21</sup> Career concerns are understood as an individual's anxieties or apprehensions about their future career that may influence their incentives to put effort or make decisions on the job (Holmström, 1999). Herding behavior happens when individuals are influenced by others to act and behave similarly, although their private information suggests they should behave differently (Banerjee, 1992). A common example is a security analyst who disregards her private information about future earnings to align her earnings estimate with that of her competitors.

<sup>22</sup> The interviewed specialists were sampled across four areas of expertise: financial instruments, investment property, oil and gas, and shipping. See section 3.3.

the specialist at a specific estimate, extensive negotiations with the specialists, distorted communication of the uncertainty of fair value assumptions, engaging other specialists to provide persuasive evidence towards management's preferred value, and inducing herding among the engaged specialists. In sum, responses from the specialists suggest that being an objective and effective monitor when management exerts pressure to provide specific fair values is challenging, especially for specialists engaged to provide FVMs of non-financial assets.<sup>23</sup>

Second, prior audit research documents auditors' difficulties in gaining access and evaluating specialists' work (e.g., Griffith et al., 2015; Cannon & Bedard 2017; Glover et al., 2017). This study corroborates prior research and provides insight into why specialists protect their private information and consequences for the audit process from the perspective of the specialists themselves. By protecting their private information, specialists can assert control on how receivers of the valuation report evaluate its truthfulness, and strategically build their reputation and extract higher payoffs from their existing and future clients. While auditors commonly delegate monitoring of FVMs to company specialists, they are required to evaluate the specialists' objectivity and the reliability of their work. However, without gaining access to specialists' private information auditors are forced to focus on external information related to the reliability and objectivity of the specialist's work which may only be noisy proxies of the underlying valuations. Both the specialist and audit partner interviews provide evidence of this reality. Specialists may take advantage of their position to control the information flow to auditors and strategically influence auditors' perceptions, such as their perceived reputation in repeated interactions with auditors across engagements. These findings raise doubts about auditors' ability to increase the reliability of fair values above the contribution of specialists under current accounting regulation.

---

<sup>23</sup> Non-financial assets are assets with a value based on its tangible characteristics and properties, such as investment property, machinery, vessels, oil and gas reserves, and land.

The present research makes a number of important contributions. First, this is the first study to merge insights and perspectives from agency theory and financial economics to the study of specialist behavior. This unique perspective highlights several factors which potentially limit specialists' effectiveness as delegated monitors of the reliability of FVMs. These factors have mostly remained unnoticed by archival research due to limited disclosures.<sup>24</sup> The understanding gained by adopting these theoretical perspectives in the analysis of the study's unique data, provides complementary insight and triangulate findings on specialist use and FVMs reliability (e.g., Dietrich et al., 2001; Muller III & Riedl, 2002; Anantharaman, 2017; Hanley et al., 2018; Barr-Pulliam et al., 2019a; 2019b; Gietzmann & Wang, in press; Stuart & Willis, in press).<sup>25</sup>

Second, while a large body of research investigates the causes and potential remedies of the documented deficiencies in the audit of FVMs (e.g., Griffith et al. 2015; Cannon and Bedard 2017; Glover et al., 2017; Joe, Vandervelde, & Wu, 2017a; Joe, Wu, & Zimmerman, 2017b; Glover, Taylor, Wu, & Trotman, 2019; Griffith 2018; 2019), this study provides new evidence from the specialist perspective on auditors' challenges when relying on specialist' delegated monitoring and how these challenges differ across four types of specialists. As such, the current research responds to calls for research on factors impacting the reliability of FVMs (Laux & Leuz, 2009; Messier, 2010; Bratten, Gaynor, McDaniel, Montague, & Sierra, 2013; Barr-Pulliam et al., 2019a).

The remainder of the paper is organized as follows: Section 2 provides the background,

---

<sup>24</sup> One notable exception is Anantharaman (2017). She finds actuaries responding to their business interest and providing more aggressive assumptions to their largest clients.

<sup>25</sup> This contrasts the theoretical perspective of institutional theory (e.g., Griffith et al. (2015)). Institutional theory takes a macro-view on behavior, explaining firm practices with industrial norms and traditions (e.g., Scott, 2005). A key tenet of institutional theory is the idea that organizations aim to maintain legitimacy with their surroundings, rather than economic efficiency, which is the focus of agency theory (Scott, 2005). See Eisenhardt (1988) for a comparison of the two theoretical lenses commonly used to study organizational behavior and compensation schemes.

theoretical perspective, and research questions. Section 3 discusses the interview methodology, while Section 4 presents the analysis of the interviews. Section 5 discusses the findings and makes suggestions for future research, while Section 6 offers concluding comments.

## **2. Background and Theory**

### ***2.1 Accounting Regulation Over FVMs***

International Financial Reporting Standards (IFRS) mandates that changes in fair values after the measurement date are recorded in the profit and loss of the income statement for both financial- and nonfinancial assets.<sup>26</sup> However, management's choice to engage or employ specialists to provide FVMs is optional under current accounting standards. IFRS 13 *Fair Value Measurements* instructs companies to use the best available information in the FVMs, which may include the engagement of specialists if the company's own internal valuation processes are lacking data or technical skills (IASB, 2011). Specifically, for FVMs of investment properties, the current accounting standard suggest the use of engaged specialists and require companies to disclose whether such specialists were used to prepare FVMs (IAS 40 *Investment Property*).

Furthermore, the use of specialists may be demanded by creditors; for example, when the fair value of an asset is used as collateral for the loan (Demerjian, Donovan & Larson, 2016), or advised by auditors (Barker & Schulte, 2017; Stuart & Willis, in press). Thus, both auditors and creditors may delegate the monitoring of the reliability of FVMs to company specialists. Auditors may use valuation reports or other inputs prepared by company specialists as audit evidence for

---

<sup>26</sup> IFRS and US GAAP both define a fair value as “the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date” (IASB 2011; FASB 2011). The two accounting regimes differ on the recognition and measurement of nonfinancial assets. While both IFRS and US GAAP measure fair values of nonfinancial assets when estimating recoverable amounts in impairment testing, only IFRS recognize changes in investment property (optional) or biological asset (mandatory) through profit and loss in the income statement (see IAS 40 *Investment Property* and IAS 41 *Agriculture*). Both IFRS- and US GAAP users are presented with different options when it comes to recognition of financial instruments, but equity instruments are in most cases measured at fair values through profit and loss in the income statement if the financial instruments are held for trading/available for sale.

assertions in relation to FVMs. In such cases, the auditor evaluates the specialist's competence and objectivity, together with the assumptions and methodology used in the fair value report (IAASB, 2009; 2018; PCAOB, 2018).

The use of company specialists and auditor specialists by the audit team has received much attention as a result of apparent audit deficiencies in the U.S. (e.g., PCAOB, 2014a; 2014b; 2014c; 2014d; 2017a; Griffith et al., 2015; Cannon & Bedard, 2017; Joe et al., 2017a; Griffith, 2018; 2019). For example, regulators have found that auditors do not properly evaluate the assumptions used in company specialist assisted FVMs and specialists' objectivity (PCAOB, 2017a). However, recent research suggests there exist some disagreement between audit firms and the PCAOB on the proper use of company specialists in audits of FVMs (Glover et al., 2019).

This paper investigates company specialists' role in the preparation of FVMs and its effects on the reliability of management's recognized or disclosed fair values and the audit of those FVMs. The study adopts an agency theory perspective and findings from financial economics to develop the research questions and explain the findings.

## ***2.2 Financial Economics and Specialists' Monitoring Role***

### **2.2.1 Agency theory and delegated monitoring**

The fundamental agency problem between owners/investors and managers of corporations has been extensively studied and this agency theory perspective has been used widely in the accounting, finance, and management literature (see Eisenhardt, 1989; Shapiro, 2005; Lambert 2001; Gordon & Trottier, 2018). When ownership and control are separated, self-interested managers with goals and risk preferences that diverge from owners' goals, may act opportunistically and engage in behavior that conflicts with owners' interests (Jensen & Meckling, 1976; Holmström, 1979; Fama & Jensen, 1983; Watts & Zimmerman, 1983). Some level of

monitoring, whether by auditors, creditors, or through corporate governance, is therefore needed to reduce owners' information risk (Gordon & Trottier, 2018).

Research indicates that FVMs have relevance for valuation purposes (e.g., Landsman, 2007; Song, Thomas, & Yi, 2010) but that subjective fair values (e.g., Level 3) are the least value relevant (e.g., Riedl & Serafeim, 2011; Goh, Li, Ng, & Yong, 2015).<sup>27</sup> Subjectivity in the choice of assumptions and models used in the FVMs may increase the risk of management opportunism or measurement error (Landsman, 2007; Hodder, Hopkins, & Schipper, 2014). Less reliable FVMs may also add to investors' information risk. Auditors serve as monitors to mitigate information risk by adding credibility to management prepared financial statements. Auditors' ability to monitor and verify the accuracy of Level 3 fair values has been questioned by accounting scholars (e.g., Christensen et al., 2012; Griffith et al., 2015). Thus, auditors reduce, but do not eliminate, information risk for investors, particularly for Level 3 fair values (Muller III & Riedl, 2002; Landsman, 2007; Song et al., 2010).

Specialists providing FVMs may be delegated the role as monitors to reduce investors' or creditors' information risk by limiting management discretion and the potential for measurement error (e.g., Viscusi, 1978; Demski & Sappington, 1987; Dietrich et al., 2001; Dranove & Jin, 2010; Demerjian et al., 2016). Specialists may also provide assurance to auditors in the audit evidential process. Like auditors, the strength of the specialists' monitoring role depends on their ability to remain objective and independent from management (e.g., Khalil & Lawarre, 1995; Walton, 2012). If specialists' objectivity is impaired, they risk supporting management biased FVMs and add to information risk (e.g., Lambert, 2001; Walton, 2012). Specialists' objectivity and independence may differ depending on whether they are employed or engaged by the company.

---

<sup>27</sup> However, some attribute this finding to limitations in the research designs used in prior literature (Lawrence, Siriviriyakul, & Sloan, 2016).

While an employed specialist would be considered an employee of the company with a regular employment contract (i.e., an employer-employee agency relationship, see Walton (2012)), an engaged specialist can be considered an information intermediary contracted to estimate and/or certify FVMs (i.e., a contractual relationship between management and the specialist) (Dietrich et al., 2001; Muller III & Riedl, 2002).

### **2.2.2 Career concerns, conflicts-of-interests, and specialists' incentives to report the truth**

Since engaged specialists are contracted to estimate fair values (Dietrich et al., 2001), their role is similar to other financial intermediators engaged by management or others to reduce information asymmetry (e.g., credit rating agencies or security analysts). Economic modeling in financial economics has revealed the complex incentives that may impact financial intermediators in financial markets, and by extension, engaged specialists.

Conflicts-of-interests and career concerns have been found to accurately predict the bias found in security analysts stock reports, including overoptimistic buy recommendations (e.g., Michaely & Womack, 1999; Lim, 2001; Jackson, 2005).<sup>28</sup> Economic modeling further suggests that career concerns may lead to herding among security analysts' recommendations (Banerjee, 1992; Hong et al., 2000), especially if there is information sharing among the analysts (Devenow & Welch, 1996). In addition, economic modeling and empirical research on credit rating agencies, suggest that they inflate ratings in line with their incentives to secure future business from clients (e.g., Bolton et al., 2012; Beatty, Gillette, Petacchi, & Weber, 2019). Rating inflation may be higher when there are several rating agencies because this facilitates opinion shopping, or when there is an economic boom where more investors who take the ratings at face value (Bolton et al.,

---

<sup>28</sup> See Mehran & Stulz (2007) for a review of the conflict-of-interest literature in financial economics.



2012).<sup>29</sup>

Modeling in financial economics further explains that financial intermediators, such as specialists or security analysts, may not want to share their private information (e.g., valuation models) if their payoffs are determined by receiver's perception of their reputation, and the reputation is based on their report and the outcome of their expert prediction (Ottaviani & Sørensen, 2006).<sup>30</sup> Their model further suggests that specialists or analysts may disregard private information they possess about the true probability of an outcome, if the receiver of the reports have strong priors toward certain earnings- or valuation numbers. If specialist- or analyst reports impact the later realized transaction value, this may create additional incentives to bias the reports in line with the specialist's business interest (e.g., Mariano, 2012).

In sum, both theoretical and empirical research on security analysts and credit rating agencies suggest engaged specialists face monetary incentives created by conflicts-of-interests and implicit incentives following career concerns. Similarities in monitoring role and incentive structure, suggest that these findings could also explain specialist behavior. Both conflicts-of-interests and career concerns may reduce specialists' delegated monitoring effectiveness by affecting their chosen level of effort and truthfulness. Furthermore, reputational costs may not stop specialist from reporting biased estimates and instead motivate them to limit revelation of their private information about the state of the world (e.g., valuation models and non-client specific information).

---

<sup>29</sup> In a period with an economic boom, credit rating agencies would have less risk of hurting their reputation since default levels are lower (Bolton et al., 2012).

<sup>30</sup> Ottaviani & Sørensen (2006) assume costless transmission of information, which may not hold in the strict sense in specialist interactions due to moral constraints or liability concerns. However, it may be a reasonable approximation as the subjective nature of the FVMs may reduce moral constraints (e.g., Gino & Moore, 2013) and the interviewed specialists report liability concerns to be small due to the subjective nature of their work and the effective use of disclaimers. I cannot rule out that liability concerns would be different in other legal jurisdictions than Norway.

### ***2.3 Prior Empirical Research on Specialist Use and FVMs***

Research evidence indicates that the use of engaged specialists may reduce estimation errors either due to management's lack of valuation knowledge or management's intentionally biased estimates (Dietrich et al., 2001; Muller III & Riedl, 2002; Hanley et al., 2018; Gietzmann & Wang, in press; Stuart & Willis, in press).<sup>31</sup> Archival research supports the beneficial monitoring role of engaged company specialists, indicating that companies jointly consider the effect on their cost of capital and monitoring costs, such as fees to appraisers, when deciding to engage an external appraiser for investment properties (Muller III & Riedl, 2002). Recent research evidence suggests that the engagement of specialists reduces information asymmetry and management bias inherent in Level 3 FVMs (Hanley et al., 2018; Gietzmann & Wang, in press). Research is mixed on whether auditors contribute to the reliability of FVMs above the work of engaged specialists (e.g., Dietrich et al., 2001; Muller III and Riedl, 2002). Issues related to transparency of specialists' valuation models and difficulties in verifying assumptions used in FVMs, have been found to reduce auditors' ability to monitor specialists' work (e.g., Glover et al., 2017; Cannon & Bedard, 2017) and may explain why the archival literature find that auditors only marginally contribute to the reliability of specialist assisted FVMs (e.g., Muller III & Riedl, 2002; Anantharaman, 2017).

A few studies have investigated company managers' influence on engaged specialists' work. In an experimental study, Salzsieder (2016) finds that "opinion shopping" for preferred fair value estimates takes place when management is not required to disclose whether one or several specialists were engaged. He then examines whether a requirement to disclose to the auditor and

---

<sup>31</sup> In contrast to the findings of increased fair value reliability when management engages specialists, a recent study of the U.K. property market indicates that fund managers may be able to influence and bias their real estate portfolio. However, the econometric technique applied limits inferences to correlations between management incentives, appraiser use and valuation outcomes (Crosby, Devaney, Lizieri, & McAllister, 2018). See Kjellevold (2020) for a review of fair value reliability and specialist monitoring.

the corporate board all instances where multiple fair value opinions were obtained, deters fair value opinion shopping. The outcome depends on whether the beneficiary of the opinion shopping is the shareholders or management. If the main beneficiary is management (e.g., receiving a higher bonus due to opinion shopping), then the disclosure requirement deters opinion shopping. If the main beneficiaries are the shareholders (e.g., by increasing shareholder wealth), the disclosure requirement does not serve to deter opinion shopping.

Anantharaman (2017) finds that companies may be able to use their financial power to influence engaged actuaries to provide more aggressive assumptions in pension estimates with a potentially material impact on the balance sheet and equity. Stuart & Willis (in press) find that the ability of financial specialists to value employee stock options to mitigate management estimation bias is stronger when the company board is more independent. Other recent studies point to factors that may weaken the monitoring role of specialists, including experience of budget pressure from clients, challenges with recruiting qualified personnel, and communication problems with the clients or the client's auditors (Barr-Pulliam et al., 2019a; 2019b).

In sum, research indicates that in certain circumstances specialists can act as delegated monitors and increase the reliability of FVMs but points also to situations where this may not be the case. A better understanding of the reliability of specialist provided FVMs is clearly important for market participants, particularly since auditors have been found to delegate monitoring extensively, and sometimes inappropriately, to specialists (Griffith et al., 2015; PCAOB, 2017a; Cannon & Bedard, 2017; Joe et al., 2017a; Griffith, 2019). I therefore propose following two research questions:

**RQ<sub>1</sub>:** Which factors potentially limit specialists' effectiveness as delegated monitors of the reliability of FVMs?

**RQ<sub>2</sub>:** How do these factors challenge auditors' ability to rely on the delegated monitoring of specialists?

### **3. Methods**

#### ***3.1. Research Procedure***

To address the research questions, I conducted semi-structured interviews with nineteen specialists from twelve specialist firms and eight audit partners from five international accounting firms. The objectives of the audit partner interviews at the first stage of the research were (1) to gain knowledge of the auditors' use of specialists assisted FVMs in the audit evidential process and (2) to develop the specialist interview script.

The interview method is well suited for answering broad and open-ended research question, and for capturing the complexities of expert practice (Lillis, 1999; Power & Gendron, 2015). Semi-structured interviews allow for elaborated responses that are rich in detail, but at the same time provide a structure to the interviews that enhances comparability across cases (Lillis, 1999). The method requires adhering to an interview script, but with the freedom to follow interesting paths as they develop during the interviews (Kenno, McCracken, & Salterio, 2017). All participants were informed before the interview took place of the nature of the study and its objectives, and this information was repeated at the start of the interviews together with a confidentiality agreement and the assurance that participants and firms would remain anonymous.<sup>32</sup>

Most specialists were recruited by contacting the individual specialist companies in specific fields to participate in the research study and asking for participants with extensive

---

<sup>32</sup> This study was pre-approved by the Norwegian Centre for Research Data, and all participants (both audit partners and specialists) had to sign a consent form which laid out the objectives of the study, that they agreed to participate, and how the data would be handled and reported.

experience in providing FVMs to public and/or private companies. Some specialists were contacted directly by the author after being identified by interviewed audit partners and others from a search of specialist company's websites. Each interview ended with questions to the specialists about other relevant professionals to include in the research project (Yin, 2013).

The specialist and audit partner interviews were conducted in-person or using Skype between April 2017 and February 2018. I personally conducted the interviews and all, but two interviews were audiotaped with the permission of the participant.<sup>33</sup> The specialist interviews lasted 35 to 105 (Mean = 71) minutes, while the partner interviews lasted 50 to 152 minutes (Mean = 85). The specialists' interview transcripts were transcribed by a professional transcript bureau and verified for consistency with the audiotape by a research assistant unaware of the research goals of the study. The audit partner interviews were transcribed by the author and verified for consistency with audio tape by a research assistant.

The interview scripts for the specialists and audit partners were developed to answer the research questions. The initial script for the specialists was refined after reviewing the preliminary results of the audit partner responses in the first stage of the interview process. I further revised the interview script based on the then proposed amendments to the PCAOB standards (PCAOB, 2017a; 2017b). I also solicited feedback on the interview scripts from a current Big 4 technical partner in valuation, a former national firm assurance leader, and from several academic colleagues. This feedback was incorporated into the final interview scripts. The audit partner interviews indicated that their interactions with specialists differed based on the particular type of fair value to be audited. Furthermore, the audit partner interviews identified important differences

---

<sup>33</sup> Technical difficulties were experienced when trying to record one specialist interview and one audit partner declined to be audiotaped. These transcripts are therefore based on my interview notes, and the interviewees' comments on completeness and representativeness of my notes. All comments were incorporated into the final transcript.

between the different types of specialist (e.g., regarding their professional standards, institutional environment etc.). Thus, the final interview script for specialists included questions that were not applicable to all specialists used by management.<sup>34</sup> After completion of the first three interviews with the specialists, the script was slightly modified to better target the research questions.

Questions about the specialists' and partners' opinions were kept to a minimum to avoid normative responses biasing the interview.<sup>35</sup> I took advantage of the semi-structured interview method by asking the questions in order, but interesting leads from the interviewee were followed up (Malsch & Salterio, 2016; Kenno et al., 2017). Following the recommendation of Malsch & Salterio (2016), I continued interviewing until no new themes were discovered with regards to the research questions (Miles, Huberman, & Saldaña, 2013).<sup>36</sup>

### ***3.2. Coding Procedure***

An initial coding protocol for the interviews was developed based on the research questions and interview scripts. These codes, and those added later to the coding protocol, were descriptive in nature. They were meant to capture the content of the underlying passage of text with a descriptive label (Miles et al., 2013). Additional codes were added based on the content of the initial interviews. The expanded protocol was then utilized for the rest of the interviews. After I coded all the interviews, a second coder who was blind to the objectives of the study was given the coding protocol and coded the responses.<sup>37</sup> This approach follows guidance from Yin (2013)

---

<sup>34</sup> A separate interview script was developed for the in-house (employed) oil reserve specialists who prepare evidence of the company's proven and unproven oil reserves. Since they only provide services to their employer, those parts of the interview script developed specifically for engaged specialists were not applicable.

<sup>35</sup> Normative responses can lead to bias when participants' personal views or emotions affect responses to unrelated questions (Kenno et al., 2017).

<sup>36</sup> Themes were identified across specialist type, but the number of participants in each specialist type makes generalization limited. However, when themes are not representative of the particular specialist type, these findings are elaborated and discussed in the analyses.

<sup>37</sup> The independent coder was a research assistant, enrolled as a student in his first year of the master program in accounting and auditing, and he had previous internship experience at a Big 4 firm. Although not part of the study,

and Malsch & Salterio (2016) and aims to reduce the risk of confirmation bias in the findings. I then used NVivo 11 to calculate the consistency between the two sets of coded segments of the interview responses. The agreement between myself and the independent coder was high, as captured by a summary Cohen's kappa of 0.73 for the specialist interviews and 0.69 for the audit partner interviews. Differences were reconciled by the author and the independent coder through discussions (see Miles et al., 2013; Kenno et al., 2017).

After coding the data, the concept and categories were analyzed and grouped together using NVivo 11. Themes in the responses were identified and I use representative interview quotes in the paper to illustrate the identified themes. These quotes were translated from Norwegian to English by the author.<sup>38</sup>

### **3.3. Participants**

Given the nature of the research questions, it is important to interview highly knowledgeable and experienced specialists and audit partners. Table 1 contains demographic data on the participating Norwegian specialists and audit partners. The average age of the participating specialist was 44 years, with an average of 15 years of experience with FVMs. The average age of the participating audit partners was 48 years, with an average of 23 years of experience with financial statement audits.

The type of specialist to be interviewed was chosen after analyzing the audit partner interviews. Four common areas of specialist use were identified and included in the final sample: (1) Financial specialists preparing FVMs of financial instruments, or stock option plans, to be

---

and not aware of the research questions and objectives, the coder also checked the transcriptions for consistency with the recordings.

<sup>38</sup> The participants responsible for the quotes were sent an email where I asked for negative confirmation whether their quote was representative of the theme or not. The quotes were in the English translation. This should reduce the risk that their wording were misrepresented. I received feedback from three participants, and all suggestions were included in the final text and analysis.

recognized in the profit and loss of the income statement, in other comprehensive income or disclosed, according to IFRS 9 *Financial Instruments* or IFRS 2 *Shared-based Payments*, (2) Investment property specialists preparing FVMs for recognition in profit or loss of the income statement, or disclosure, according to IAS 40 *Investment Property*, (3) Oil reserve engineers preparing oil reserve estimates to be used as input in estimating the recoverable amounts of oil installations according to IAS 36 *Impairment Testing*, and (4) Ship valuation specialists preparing FVMs to be used in estimating the recoverable amounts of vessel values in impairment testing according to IAS 36 *Impairment Testing*.

The derivative specialists (n = 3) worked for two major Scandinavian banks with international affiliation and the participating stock option specialist worked for a company providing stock option plans and accounting solutions to Fortune 500 clients.<sup>39</sup> The investment property specialists (n = 7) were selected from five providers of investment property valuations that together cover all the demand for FVMs of investment property for Norwegian listed companies and a major part of the demand in the private market. Three oil reserve specialists were employed by one large international oil company, one was employed by a medium sized oil company, and one worked for an international consultancy firm providing oil reserve estimation and verification services to the global market (n = 5). The participating ship valuation specialists (n = 3) worked for three Norwegian ship brokerage firms (one small and two medium size) providing brokerage and valuation services to Norwegian and international clients.

#### INSERT TABLE 1

Of the eight participating audit partners, three had regional or national management responsibilities, while two were both engagement partners and transaction/valuation service

---

<sup>39</sup> The derivative and stock option specialists will collectively be referred to as financial specialists.



partners. One partner was primarily a technical partner, whereas two were both technical and engagement partners. Seven of the eight audit partners worked in a Big 4 accounting firm.

## 4. Results

The results from analyzing the interview data are separated into two sections based on the study's research questions. The analysis is further divided into the topics covered by the interview instrument and the themes identified during the coding process.<sup>40</sup> Following the analysis is a discussion of the findings from the perspective of agency theory and financial economics.

INSERT TABLE 2 HERE

### 4.1. *RQ1: Factors Limiting Specialists' Effectiveness as Delegated Monitors*

This section addresses the first research question that relates to how factors of the specialists' environment influence their delegated monitoring of fair value reliability.

#### 4.1.1. Reputation building, reappointment concerns, and conflicts-of-interests

As predicted by the financial economic theory, all specialists (n=19) participating in the study provided responses that indicated the importance of being both perceived as objective, as well as being objective in the actual estimation task. Some specialists equated their integrity with objectivity (n=5 of 19):

My integrity is central to our business. If I start doing a lot of strange things, I will suffer for it quickly by losing my client relations because what I sell in the end is a name— either the company's or my own. (S4)

Guarding their reputation is an important task for the specialists, and a competitive advantage distinguishing them from other specialists and firms (n=7 of 19). Losing their reputation as reputable would mean diminishing the market signal of their valuation reports and destroy their value:

---

<sup>40</sup> Quotes from the audit partners are used to bring in the partners' perspective when it provides nuance and further understanding of the described theme in the specialists' answers.

To enjoy a general trust in the market is very important for us. That the banks trust us, and that our customers trust us and are confident that we conduct our work with integrity. (S10)

However, while having a reputation as a professional and trustworthy specialist was seen as crucial, being perceived as conservative in valuations could be detrimental to future reappointments.

The way this industry works, I would argue that no one would like to go to the valuation specialist that consistently provides FVMs on the low side. You could say that there is an embedded threat that if you provide lower values than your competitors, you will get fewer clients. (S8)

Financial, investment property, and ship valuation specialists commonly provide a host of other services to their clients, including brokerage and trade related services (i.e., buying and selling assets). The responses indicate that a separate part of the firm provides these services, and that the specialists felt this separation of the valuation unit from brokerage unit and other services was enough to guarantee against undue pressure on their objectivity.<sup>41</sup>

The specialists acknowledged the inherent conflict-of-interest of providing multiple services to the same client, and several specialists pointed out that such incentives also exists in auditor-client relationships.<sup>42</sup> One ship valuation specialist (S16) elaborated that the increasing amount of privileged client related information gained through brokerage services would increase the reliability of FVMs:

There are many ways a client can influence a valuation if there is a relationship between the specialist and the client. But this relation can both be positive and negative. By doing other business for the client the specialist will get more in-depth knowledge about the client's ships and this knowledge can be leveraged to get a genuine and correct valuation, which a specialist with no other relationship to the client might find difficult to do. (S16)

---

<sup>41</sup> While banks are highly regulated with strict internal controls supervised by public regulatory agencies, this is not the case for investment property and ship valuation service firms. All investment property specialists stated their independence from the transaction/brokerage units. Furthermore, Barr-Pulliam et al. (2019a) find valuations of financial securities to be dominated by a few international firms and Big 4 accounting firms.

<sup>42</sup> See Antle (1984) for a discussion of conflicts-of-interests and auditor monitoring.

There are currently no regulations limiting the length of tenure for specialist firms engaged by management. This fact was elaborated upon by one specialist:

They engage you, and they engage you again and again. The whole thing becomes a shared bond of trust which potentially can turn into a kind of trap, you know. One day we might deliver a valuation report and the client can follow up asking “What’s this?” and you might find it hard to respond properly. (S9)

Such effects can compound over time as described by another specialist:

The work we do related to the valuation of a property becomes less over time, but we do try to take a step back every once in a while, to really think and check whether everything that should be reflected in the valuation is actually done so. But the work following the first valuation is never like the first time, and therefore I think it would be healthy for companies to change their specialists from time to time. Some companies do that - others don’t. (S7)

Among the sample of employed specialists ( $n = 4$ ), all underlined the need for objectivity from management in the estimation process.<sup>43</sup> Although, their answers also underscored that they did not feel outside parties trusted them to be objective. Answers from one employed oil reserve specialist suggests that problems with objectivity are probably more present in the fair value estimates where their reserve estimates are used as important inputs:

I do think our reserve estimates are good and objective. The objectivity might be more disputable when it relates to the economic conditions of the projects. In these situations, politics becomes a factor, and you also have the presence of different psychological mechanisms. It is easier for an oil reserve specialist to state that “The permeability is extremely low” than there is for a platform engineer to state that “The project might require 26 months instead of 18.” The engineers in the latter case are afraid of self-fulfilling prophecies with relation to costs and profits. However, with oil reserve estimates mother earth is controlling everything anyway. (S12)

#### **4.1.2. Management’s influence tactics**

Almost half of the specialists had experienced pressure from clients to provide FVMs in line with management’s preferences ( $n=9$  of 19). The specialists providing non-financial FVMs,

---

<sup>43</sup> To ensure more objective oil reserve estimates, both auditors of the two oil companies participating in the study required the companies to engage engineering firms to externally verify the accuracy of the reserve estimates produced by in-house oil reserve engineers. In this way, auditors required oil companies to delegate monitoring to external parties on behalf of investors and creditors.

mostly Level 3 fair values, reported experiencing the most client pressure. Their responses suggest that the more specialized or unique the asset is, the more channels available for management to influence the FVMs. Answers imply that the wide range of possible assumptions and parameter values in the fair value modeling make it hard to resist influence from client management. Conversely, valuations based on market transactions (Level 1 FVMs), or market transactions of similar assets (Level 2 FVMs), were reported to be more transparent and to be less susceptible to management influence. The financial instrument specialists (n = 4 of 4) felt their use of standardized option pricing models with market inputs left little or no room for client influence attempts and/or debates.<sup>44</sup> To exemplify:

We do get reactions (e.g., angry clients) from time to time. But even though we get reactions, we mainly take notice that the client disagrees with our results, but we do not do anything with it. (*SI*)

Across the different types of specialists, most indicated that client pressure related to an increase in the fair value of the assets (n = 9 of 19).<sup>45</sup> The majority indicated that direct inquiries for specific fair values was uncommon and rarely experienced among their clients. When such demands occurred, it would be related to financially distressed clients with debt covenants tied to the specific assets. None of the specialists interviewed kept record of whether the client later disclosed the valuation report to the auditor, which suggest that the evidence from the interviews cannot rule out that fair value opinion shopping happens in more subtle ways.

---

<sup>44</sup> These findings align with previous discussions in the literature that the more subjective FVMs have higher risk of containing management bias (e.g., Hanley et al., 2018).

<sup>45</sup> However, not all FVMs are used for financial reporting. Some specialists suggested that valuation for tax (and not financial reporting) purposes involve clients pressuring for lower values. In the related field of actuarial valuations there may be incentives to reduce the value of the employee benefit obligations, creating a pressure for actuarial specialists to use more aggressive discount rates (Anantharaman, 2017). Tax and actuarial accounting implications are not investigated any further in this study.

The influence tactics used by management may, in general, not be very subtle in their form. Especially illuminating were the responses among investment property specialists. They elaborated that the subjective nature of the fair values and the demand for higher values by the clients, created constant pressure during the valuation process. For specialists who use discounted cash flow (DCF) models (mostly investment property), the most commonly occurring management tactic noted in the interviews was trying to increase the FVMs by influencing the assumptions:

Clients focus on individual assumptions in the fair value and try to change our views from assumption to assumption. Typically, they might say: Here you have used a too low market rent in the cash flow estimates because so and so. And they might have a strong argument for their view. ... If we had changed our assumptions the way they want, then we would in many cases deliver a significantly higher fair value. The problem is that the set of assumptions they often want us to use is as a whole wrong. Individually they might be ok but taken together they bias the fair value estimate. (S7)

In contrast, the employed oil reserve specialists did not report experiencing pressure from management. However, the engaged oil reserve specialist, reported that there are often tensions between their opinions and the opinions of management:

We don't experience a negative pressure, in the form of "Listen to us", or that we think our opinions will have negative consequences for future business, but more of them trying to have a sort of influencing attitude towards us and that they want to communicate their views on what the correct estimate is ... Where things are more uncertain, or you intuitively would make other conclusions, our clients may have a strong need to explain their views to us. They do have the opportunity to influence our decisions. (S15)

S15 further explained that these influence attempts usually come at the start-off sessions each year when they receive the data and input from the client.

#### **4.1.3. Management's strategic use of several specialists**

Interestingly, for valuations of investment property and ships, and for estimation of oil reserves, the specialists reported there would be pressure on management from both creditors and auditors to engage more than one specialist. This was reported to be an industry norm in the investment property and shipping industries of Norway. For investment property or ships it would

mean two or more specialist firms being contracted to prepare FVMs, while the employed oil reserve specialists commonly experience their company engaging an external firm to verify their reserve estimates.<sup>46</sup> A majority of these types of specialists would be aware of the client engaging several specialists (n = 11 of 15) and some openly stated that this knowledge could impacts their valuation (n = 5 of 15).

The interviews indicate that management are interested in reducing the distance between different fair value opinions to provide more persuasive evidence for specific fair values. Specialists S7 and S18 elaborated that clients may strategically try to anchor the FVMs they provide in specific cases by pitting specialists against one another:

They might say “we need you for a second opinion” and it is wrong to say that it doesn’t affect us when we get to know a value upfront. If the client choses to communicate a number from another valuation specialist, then we would assume this is in line with the value that the client expects, and we keep this value in the back of our heads. However, we do our valuation independent of this information. But of course, we do think about the information and try to reason why they think the value is so, and then do our own quick evaluation to check whether we agree to the number or not. It is always nice when we don’t deviate much from other’s valuations, but we do not let ourselves be governed be this information, and we do not use such information as key in our analysis and evaluations. (S7)

S18 provides further insight into what might be happening when the management engages more than one specialist:

I think the work of other specialists might impact the valuation in a somewhat indirect way. If you know that two or three other shipbrokers from well-known and respected companies have valued the ship to 20 million, and you had thought to give it a value of 18 ... Valuation is not an exact science, and you may think: “Perhaps I should use 19 instead - I might in fact be wrong”. When these situations occur, your actions may be the result of thinking you might have done something wrong in your valuation or that you just don’t want to deviate too much from the other values. (S18)

---

<sup>46</sup> The use of external parties for verifying the accuracy of the oil reserve estimates is voluntary based on current international accounting standards. Some oil companies engage engineering firms to verify their internally generated reserve estimates. One oil reserve specialist stated that his company had adopted this practice after pressure from their external auditor. See footnote 26.

According to S5, management may be interested in bringing very positive valuations down, and very negative ones up, to balance the evidence in favor of their preferred estimate and create more assurance for the auditor about the reliability of the fair value.

Some specialists (n = 4 of 19) indicated that if their own valuation is close to that of the client's other engaged specialist(s), they experience a reduction in their uncertainty surrounding the valuation and, as a result, an increase in their level of satisfaction with their fair value estimate. Furthermore, one specialist (S5) went on to describe how management's use of several specialists, and the information received about their work, sometimes makes him second guess the assumptions he relied on when preparing the FVMs. According to S5 you tend to let yourself be influenced by management and the other specialists due to the subjective nature of the assumptions used in the valuation.

#### ***4.2. RQ<sub>2</sub>: Factors Challenging Auditors' Ability to Rely on the Delegated Monitoring of Specialists***

This section addresses the second research question that relates to factors challenging auditors' ability to rely on the delegated monitoring of company specialists.

##### **4.2.1. Auditors' are restricted access by specialists' strategic actions**

For auditors to effectively be able to rely on the delegated monitoring of specialists they need to have an understanding of the specialist's work and assess whether the specialist has remained objective and free from management's influence. For the auditors this involved trying to go beyond the valuation reports to the specialist(s) behind the conclusions and his or her evidence. Several audit partners (n=5 of 8) found it necessary to ask specialists to explain their valuation procedures so they could document the necessary understanding of their work.

You often need an explanation of what the specialist has done for the client. It is not always easy to read a valuation report and understand which words mean what. Therefore, we need to talk to them. Not necessarily to follow up on anything we have uncovered in the audit, but to understand what they have done. (P5)

With specialist use receiving increasing attention from audit regulators (e.g., PCAOB), the audit partners stated they could no longer completely delegate all their monitoring to company specialists. Two large accounting firms had changed their internal audit methodologies to demand that auditors followed up the work with the specialist.

It is crucial to understand what the specialist has actually done. Is this a valuation where they have gone to the sources, or used external sources, done quality work around the assumptions and information, and so on? Or have they just been given all the information by the client and taken it for granted, and then put it into their models? In the latter case it's just a mathematical calculation they have done and not a valuation. (P2)

However, most specialists in my study were reluctant to share the underlying data and models with the auditors as predicted by financial economic theory and found in prior research (e.g. Griffith et al., 2015; Cannon & Bedard, 2017). Theory explains that this behavior follows from specialists wanting to protect their private information advantage and extract rent on their reputation (Ottaviani & Sørensen, 2006). The specialists indicated that this protective behavior is indeed strategic.

Auditors “steal”, and they have their own advisory teams internally in their firms. They would of course get access to our model if they can write a long enough disclaimer, and a waiver if things would go wrong with their handling of our models. (S4)

It is very hard as an auditor to verify our valuation without having access to the excel-file containing the model. In theory you then have to make your own model and try out the inputs and the assumptions you have access to there and see if you come up with a similar answer. (S8)

Without access to models and data auditors are forced to “audit what they can”, as documented by other research (e.g. Griffith et al. 2015; 2019). The specialists generally confirmed prior findings



that auditors focused on the individual assumption, asking for justifications and not evaluating the “big picture”.

Auditors focus to a large extent on evaluating single parameters or assumptions, to understand if they are correct, rather than evaluating the final value. This is not how we do property valuations, where we have a broader focus on the whole picture. Of course, we have to base our valuations on the inputs, but we also do a total assessment on what should be the final value in the end. Auditors may not be equally concerned with this aspect of the valuation and they may not have so many opinions on the final value. They are instead focusing on verifying the input...They get stuck in the details, some small detail. (S8)

Say, I tell them that we have valued the property with a specific rent level, together with a specific cost level and a discount factor, and this is what we think is a good estimate overall. They have no competence or foundation for challenging this valuation in any way. They are good at checking that we have used the actual cash flow numbers, but all the rest is assumptions and they stop evaluating after examining that we have justifications for our assumptions. Here it stops. They do not verify our justifications, because they do not possess the competence to do so. (S7)

When auditors in some cases are given access to enough specialist material that the audit team can properly challenge the assumptions, specialists indicated that their superior technical understanding and market knowledge often meant that this auditor evaluation was not a very demanding one.<sup>47</sup> While none of the engaged specialists had experienced being part of negotiations between management and the auditor, two of the employed specialists working for in-house engineering departments of oil companies said this happened “semi-regularly”:

These rules are open for interpretations, and in one case, we interpreted them to mean that a big oil field was in phase two. Most would perhaps interpret the standard to mean that this oil field could not be disclosed as an oil reserve. At that time, the oil field was in the final stage of the investment decision. We thought it very likely that the investment would go through, and in light of this, we then interpreted the Oslo Stock Exchange regulations to allow this oil field to be disclosed as an oil reserve. Our auditor disagreed heavily initially but came around at the end. (S14)

---

<sup>47</sup> Prior research (e.g., Glover et al., 2017; Griffith 2018; 2019; Boritz, Kochetova, Robinson, & Wong, in press) document that auditors extensively rely on their own auditor specialists when auditing complex estimates, but that the effectiveness of their use is moderated by factors such as budget pressure and communication problems. These studies indicate that it is primarily after specialists have gained access to models and assumptions that auditor specialists are involved in the audit process. However, this study’s primary focus is on factors seen from the specialists’ perspective and does not discuss this issue further.

This suggest that employed specialists play another role other than as monitors of management in the governance framework of the companies that hire them. The employed oil reserve specialists saw themselves more as employees of the company than active monitors and described their role as guides for the auditors through their systems and internal controls with regards to oil reserve estimations. Discussions with the auditors would mainly be about disclosure requirements and internal controls, and not the actual estimation.

#### **4.2.2. Auditors' struggle to assess specialist' objectivity**

The audit partner interviews revealed that professional reputation and credentials are integral components in the objectivity assessment of the specialists, as well as for the assessment of their competence and capability. This mirrors the incentives revealed by the specialists and their reputational concerns.

At the core is inherent risk. It will be lower since you know the specific specialist. You will also simultaneously be more aware of his professional competence for preparing the work.  
(P4)

One partner further acknowledged that they sometimes might be unduly influenced by the specialists' credentials.

We are probably, sometimes, blinded by a nice title and an expertise we don't have ourselves. (P1)

All audit partners indicate that they considered it a fact that specialists often had incentives to conform to management's preferences to preserve their business relationship with the client. However, several partners (n=4 of 8) explained the difficulty of establishing a lack of objectivity in work prepared by specialists further compounding the challenges created by lack of access to models and underlying data.

It is difficult, because it is not like the specialist will tell us that they have experienced a great amount of pressure from the client. They mainly just tell us that they did such and such, and that the client asked them to do this and this. It is not easy to get the specialist to tell us whether the client has been aggressive or not. (P2)

None of the participating audit partners had experienced discovering fair value opinion shopping by clients, but one audit partner (P2) reasoned that it would be very difficult to discover such management actions:

We cannot check the inbox of the CFO to learn the extent of valuations ordered. We do not have the right to do so. That is one of the limitations of financial statement audits. (P2)

Interestingly, the audit partners indicated that they would generally reduce their assessment of the risk of management bias in the FVMs if the client engaged more than one specialist. In their words, delegating the monitoring to more than one specialist would repair the lack of monitoring effectiveness in one of them. Some partners would state this as a demand to the client.

If you have two or three valuations performed on the same ship, and if the one you suspect to be biased is in the middle, then it is ok. However, if the suspected valuation is above the two others, then you get your suspicion partly confirmed. One could say none of the specialists are 100 percent objective, but on average they can be. (P4)

However, observing a divergence among several engaged specialists would have the opposite effect.

It is unpleasant if the deviation is of a certain size. That signals the need for a third conclusive specialist. If the specialist opinions are closer to each other, we have more trust in the estimate. (P1)

## **5. Discussion and Suggestions for Future Research**

Agency theory and prior archival research suggest that specialists may act as delegated monitors for investors, creditors, and auditors, and thereby increase the reliability of recognized or disclosed fair values (e.g., Dietrich et al. 2001; Hanley et al., 2018). The specialists' function as delegated monitors is inherently linked to their role as professional actors in the marketplace for valuation services, and whether they remain objective and independent in their professional

judgments. However, as specialists' delegated monitoring is neither mandated by law or other regulation, the specialists face no specific regulatory regime to enforce their adherence to professional valuation agencies' code-of-conducts and ensure their objectivity. The financial economics literature further explains that while specialists' need to ensure that the market perceives their signal of asset or liability's fair values as trustworthy, they may act strategically to extract higher payoffs on their reputation and their client relationships if the recipients of the valuation reports cannot properly evaluate the truthfulness of the information. This study has sought to explore how these incentives may impact specialists' delegated monitoring, and how they may challenge auditor's reliance on specialists when evaluating the reliability of FVMs.

The threats to specialists' objectivity created by conflicts-of-interest stemming from reappointment concerns and sales of other services, are acknowledged by most specialists. However, several specialists argue that sales of other services benefit the valuations, as the specialist and his or her firm gain value relevant information about the client and their assets. This argument is similar to knowledge spillover benefits to the audit from non-audit services (e.g., Lim & Tan, 2008). Since specialist tenure is unregulated, companies may exploit their longstanding business relationships with their engaged specialists. The interviews suggest that management is inclined to take advantages of such relationship, and several pressure tactics are documented (such as inducing anchoring bias; e.g., Jacowitz & Kahneman, 1995). The subjective nature of level 3 FVMs makes these valuations most susceptible to management influence, and the specialists explain how uncertainty about the range of assumptions makes it inherently difficult to withstand management's influence attempts. The factors shaping and restricting management's strategic actions towards their specialists are promising areas for future research.

Understanding management's incentives and specialists' conflicts of interest, both auditors and creditors often require companies to delegate monitoring to more than one specialist with the aim of increase the reliability of the combined fair value estimate. While more valuation reports may reduce error or bias in the fair value estimate (e.g., Clemen, 1989), it crucially hinges on the assumptions of conditional independence between the specialists' estimates. The interviews suggest management may act strategically and provide information about other specialists' valuations to induce herding among them (e.g., Banerjee, 1992; Hong et al., 2000). Herding effects could reduce the effectiveness of the individual specialist's delegated monitoring. Future research on how the use of multiple specialists' reports and their dispersion of fair value estimates impact auditor and specialist behavior would add to our understanding of when herding effects may lead to less reliable FVMs.

Auditors are met with restricted access when seeking further understanding of specialists' valuation models and data. The specialist interviews corroborate prior research (e.g., Griffith et al., 2015; Cannon & Bedard, 2017) and suggest that this specialist behavior is in part strategic as the financial economics literature predicts. By restricting access to their data and models they can assert control over recipient's evaluation of their competence and truthfulness, and thereby generate higher payoffs to themselves. This behavior would be more likely in the cases of level 3 fair values, where the uniqueness of the assets and the subjectivity involved in the assumptions, makes it hard for receivers of the valuation reports to use other information to assess their truthfulness.

The interviews provide evidence of specialists limiting access to their models and data, as investment property specialists were most likely not to share private information with auditors. In these situations, auditors are forced to rely on external (and potentially noisy) information to

evaluate specialists' objectivity and the reliability of their FVMs. These are factors to a large degree in the control of specialists and their clients. Information such as the format of their valuation reports (Joe et al., 2017a), brand names, or their professional degrees. The strengths of these external signals of objectivity and reliability could be further enhanced by specialist's tenure length, with auditors building relationships of trust on the perceived reputation of the specialist and correspondingly delegate more monitoring to specialists they often encounter. This may be one of the explanations behind the audit deficiencies documented by the PCAOB (2014a; b; c; d; 2017a), but additional research is needed to further our understanding in this area. In addition, the effect of more transparency from the specialists to the auditor should be investigated. However, theory and the interviews suggest more transparency is unlikely to come from self-regulation among specialists themselves.

The small sample of employed specialists interviewed makes inferences of the difference between engaged and employed specialists difficult. The interviews do, however, suggest that employed specialists do not perceive themselves as monitors, but more as internal advisors to management. As they are not competing in the marketplace for professional services, the reputational incentives of employed specialists are different and are more inherently linked to their employer. However, the interviews do suggest that employed specialists at least sporadically play an integral part in negotiations between management and auditors. The strategic nature of such negotiation behavior is a promising area for future research. Furthermore, auditors are aware of the differences in objectivity to be expected between employed and engaged specialists, as they require firms with extensive in-house expertise among oil reserve engineers to engage external firms to monitor the reliability of their employed specialists. This may also follow from the Big 4 lacking the necessary engineering expertise to properly evaluate the reasonableness of oil reserve

estimates. Such demands from auditors may constitute an explicit delegation of their monitoring role. More research is needed to understand how engaged specialists monitor the behavior of employed specialists, and if these interactions are limited to the oil industry or customary within other industries where employed specialists commonly occur.

## **6. Concluding Comments**

This study responds to regulators and researchers call for better understanding of factors impacting the effectiveness of company specialists' delegated monitoring of FVMs, and how these factors challenge auditors' use of specialists' FVMs as audit evidence (e.g., Messier, 2010; Bratten et al., 2013; McDonough & Shakespeare, 2015; PCAOB, 2017a; 2018; Barr-Pulliam et al., 2019a). The study adopts theoretical perspectives from agency theory and the financial economics literature on financial intermediators, to identify and investigate incentives and strategic concerns impacting specialist- and auditor behavior.

The findings suggest that specialists' conflict-of-interest, management's attempts to unduly influence the FVMs, and the risk of specialists' herding, all serve to limit specialists' delegated monitoring effectiveness. Furthermore, the financial economics literature predicts that specialists would limit auditor's insight into their private information (e.g., valuation models and non-client specific data) to strategically extract higher payoffs on their reputation and their client relationships. This would especially be case for Level 3 fair values where less outside information can be used to assess the truthfulness of the valuation reports. The interviews find evidence of such strategic specialist behavior, with potential detrimental effect on audit quality.

The study's analyses highlight the continued relevance of agency theory in understanding accounting related interactions, but also the usefulness of theoretical developments in financial economics in explaining and furthering our knowledge of specialist behavior. As specialist use

continues to grow, specialists' incentives and behavior should be of concern to market participants, regulators, and researchers. Following the discussion above, several avenues for future research exist that would contribute to accounting research. First, the drivers and moderators of management's behavior towards their specialists need to be better understood before research can conclude on valid interventions to improve the reliability of specialists' work. Second, while specialists report extensive client pressure, experimental research may be needed to assert how such influence attempts may change specialist behavior and affect fair value reliability. Third, how auditors use specialists' reputation as input in their assessment of the objectivity and reliability of their work should be explored further. In addition, prior research has not investigated whether auditors update their assessment of the individual specialist through look-back analysis as fair values are realized through client transactions. Such realization close to the measurement date could potentially provide useful information on the specialist's ability and bias (Tetlock & Gardner, 2016).<sup>48</sup> Future research on both of these questions would offer useful guidance to regulators and standard setters.

The current research has caveats limiting causal and statistical inference common to qualitative studies (see Power & Gendron, 2015). Furthermore, the sample is collected in Norway and I cannot rule out that national differences (e.g., trust in specialists) can limit theoretical inferences to other institutional settings. Nevertheless, in-depth interviews with experienced professionals provide the opportunity to explore behavior and detect new interactions that may further our understanding and serve as building blocks to theoretical advances in this exciting area.

---

<sup>48</sup> Additional interest should follow from look-back analysis having been given a more prominent role in the amended International Standard of Auditing (ISA) 540 *Auditing Accounting Estimates and Related Disclosures* (IAASB, 2018).



## Acknowledgements

This research was supported by funding from the Norwegian Institute of Public Accountants (DnR) and NHH Norwegian School of Economics. I would like to thank the Co-Chairs of my dissertation Aasmund Eilifsen and Bill Messier for their helpful guidance. I also thank Frøystein Gjesdal, Anna Gold, Rick Hatfield, Kris Hoang, Emily Blum, Daniel Street, Christopher McCoy, Michael John Majerczyk, and the workshop participants at University of Alabama and the attendees at the 2018 AAA Accounting, Behavior and Organization Section Conference and the 2019 AAA Auditing Section Midyear Meeting, for their valuable feedback. In addition, I gratefully appreciate the participation of the 27 professionals who agreed to be interviewed as a part of this study and their respective firms for making them available to the research project. I also acknowledge the research assistance of Magnus Johannesen.

## References

- Anantharaman, D. (2017). The role of specialists in financial reporting: Evidence from pension accounting. *Review of Accounting Studies*, 22(3), 1261-1306. <https://doi.org/10.1007/s11142-017-9404-4>.
- Antle, R. (1984). Auditor independence. *Journal of Accounting Research*, 22(1), 1-20. <https://doi.org/10.2307/2490699>.
- Banerjee, A. V. (1992). A simple model of herd behavior. *The Quarterly Journal of Economics*, 107(3), 797-817. <https://doi.org/10.2307/2118364>
- Barr-Pulliam, D., Mason, S. A., & Sanderson, K. (2019a). *Three W's Related to the Valuation Profession: A Firm- and Practitioner-Level Perspective*. Unpublished manuscript.
- \_\_\_\_\_. (2019b). *A Profession at an Inflection Point: Implications of Organizational-Professional Conflict among Valuation Service Providers*. Unpublished manuscript.
- Barker, R., & Schulte, S. (2017). Representing the market perspective: Fair value measurement for non-financial assets. *Accounting, Organizations and Society*, 56, 55-67. <https://doi.org/10.1016/j.aos.2014.12.004>.
- Barth, M. E. (2007). Standard-setting measurement issues and the relevance of research. *Accounting and Business Research*, 37(sup1), 7-15. <https://doi.org/10.1080/00014788.2007.9730079>.
- Beatty, A., Gillette, J., Petacchi, R., & Weber, J. (2019). Do rating agencies benefit from providing higher ratings? Evidence from the consequences of municipal bond ratings recalibration. *Journal of Accounting Research*, 57(2), 323-354. <https://doi.org/10.1111/1475-679X.12263>.
- Bolton, P., Freixas, X., & Shapiro, J. (2012). The credit ratings game. *The Journal of Finance*, 67(1), 85-111. <https://doi.org/10.1111/j.1540-6261.2011.01708.x>

Boritz, J. E., Kochetova, N., Robinson, L. A., & Wong, C. (in press). Auditors' and specialists' views about the use of specialists during an audit. *Behavioral Research in Accounting*. Available at SSRN: <https://ssrn.com/abstract=2534506>

Bratten, B., Gaynor, L. M., McDaniel, L., Montague, N. R., & Sierra, G. E. (2013). The audit of fair values and other estimates: The effects of underlying environmental, task, and auditor-specific factors. *Auditing: A Journal of Practice & Theory*, 32(sp1), 7-44. <https://doi.org/10.2308/ajpt-50316>

Cannon, N. H., & Bedard, J. C. (2017). Auditing challenging fair value measurements: Evidence from the field. *The Accounting Review*, 92(4), 81-114. <https://doi.org/10.2308/accr-51569>.

Christensen, B. E., Glover, S. M., & Wood, D. A. (2012). Extreme estimation uncertainty in fair value estimates: Implications for audit assurance. *Auditing: A Journal of Practice & Theory*, 31(1), 127-146. <https://doi.org/10.2308/ajpt-10191>.

Clemen, R. T. (1989). Combining forecasts: A review and annotated bibliography. *International Journal of Forecasting*, 5(4), 559-583. [https://doi.org/10.1016/0169-2070\(89\)90012-5](https://doi.org/10.1016/0169-2070(89)90012-5)

Crosby, N., Devaney, S., Lizieri, C., & McAllister, P. (2018). Can institutional investors bias real estate portfolio appraisals? Evidence from the market downturn. *Journal of Business Ethics*, 147(3), 651-667. <https://doi.org/10.1007/s10551-015-2953-1>

Dechow, P. M., Myers, L. A., & Shakespeare, C. (2010). Fair value accounting and gains from asset securitizations: A convenient earnings management tool with compensation side-benefits. *Journal of Accounting and Economics*, 49(1-2), 2-25. <https://doi.org/10.1016/j.jacceco.2009.09.006>.

Demerjian, P. R., Donovan, J., & Larson, C. R. (2016). Fair value accounting and debt contracting: Evidence from adoption of SFAS 159. *Journal of Accounting Research*, 54(4), 1041-1076. <https://doi.org/10.1111/1475-679X.12126>.

Demski, J. S., & Sappington, D. E. (1987). Delegated expertise. *Journal of Accounting Research*, 68-89. <https://www.jstor.org/stable/2491259>

Devenow, A., & Welch, I. (1996). Rational herding in financial economics. *European Economic Review*, 40(3-5), 603-615. [https://doi.org/10.1016/0014-2921\(95\)00073-9](https://doi.org/10.1016/0014-2921(95)00073-9)

Dietrich, J. R., Harris, M. S., & Muller III, K. A. (2001). The reliability of investment property fair value estimates. *Journal of Accounting and Economics*, 30(2), 125-158. [https://doi.org/10.1016/S0165-4101\(01\)00002-7](https://doi.org/10.1016/S0165-4101(01)00002-7).

Dranove, D., & Jin, G. Z. (2010). Quality disclosure and certification: Theory and practice. *Journal of Economic Literature*, 48(4), 935-963.

Eisenhardt, K. M. (1988). Agency- and institutional-theory explanations: The case of retail sales compensation. *Academy of Management journal*, 31(3), 488-511. <https://doi.org/10.5465/256457>

Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of Management Review*, 14(1), 57-74. <http://dx.doi.org/10.2307/258191>.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law and Economics*, 26(2), 301-325. <https://doi.org/10.1086/467037>.

Financial Accounting Standards Board (FASB). (2011). *Fair Value Measurement, Accounting Standards Codification 820*. Norwalk, CT: FASB.

Gietzmann, M. B., & Wang, Y. (in press). Goodwill Valuations Certified by Independent Specialists: Bigger and Cleaner Impairments? *Journal of Business Finance & Accounting*. Advance online publication. <https://doi.org/10.1111/jbfa.12411>

Glover, S. M., Taylor, M. H., & Wu, Y. J. (2017). Current practices and challenges in auditing fair value measurements and complex estimates: Implications for auditing standards and the academy. *Auditing: A Journal of Practice & Theory*, 36(1), 63-84. <https://doi.org/10.2308/ajpt-51514>.

Glover, S. M., Taylor, M. H., Wu, Y. J., & Trotman, K. T. (2019). Mind the gap: Why do experts have differences of opinion regarding the sufficiency of audit evidence supporting complex fair value measurements? *Contemporary Accounting Research*, 36(3), 1417-1460. <https://doi.org/10.1111/1911-3846.12480>.

Goh, B. W., Li, D., Ng, J., & Yong, K. O. (2015). Market pricing of banks' fair value assets reported under SFAS 157 since the 2008 financial crisis. *Journal of Accounting and Public Policy*, 34(2), 129-145. <https://doi.org/10.1016/j.jaccpubpol.2014.12.002>.

Gordon, I. M., & Trottier, K. (2018). Agency theory: applications in Behavioral Accounting Research. In T. Libby, & L. Thorne (Eds.), *The Routledge Companion to Behavioral Accounting Research* (pp.101-110). New York: Routledge.

Griffith, E., Hammersley, J. S., & Kadous, K. (2015). Audits of complex estimates as verification of management numbers: How institutional pressures shape practice. *Contemporary Accounting Research*, 32(3), 833-863. <https://doi.org/10.1111/1911-3846.12104>.

Griffith, E. (2018). When do auditors use specialists' work to improve problem representations of and judgments about complex estimates?. *The Accounting Review*, 93(4), 177-202.

Griffith, E. (2019). Auditors, Specialists, and Professional Jurisdiction in Audits of Fair Values. *Contemporary Accounting Research* (In Press). <https://doi.org/10.1111/1911-3846.12506>.

- Hanley, K. W., Jagolinzer, A. D., and Nikolova, S. (2018). Strategic estimation of asset fair values. *Journal of Accounting and Economics*, 66(1), 25-45.  
<https://doi.org/10.1016/j.jacceco.2018.01.004>.
- Hodder, L., Hopkins, P., & Schipper, K. (2014). Fair value measurement in financial reporting. *Foundations and Trends in Accounting*, 8(3-4), 143-270.  
<http://dx.doi.org/10.1561/14000000030>
- Holmström, B. (1979). Moral hazard and observability. *The Bell Journal of Economics*, 10(1), 74-91. <https://doi.org/10.2307/3003320>.
- \_\_\_\_\_. (1982). Moral hazard in teams. *The Bell Journal of Economics*, 13(2), 324-340.  
<https://doi.org/10.2307/3003457>.
- \_\_\_\_\_. (1999). Managerial incentive problems: A dynamic perspective. *The Review of Economic Studies*, 66(1), 169-182. <https://doi.org/10.1111/1467-937X.00083>.
- Hong, H., Kubik, J. D., & Solomon, A. (2000). Security analysts' career concerns and herding of earnings forecasts. *The Rand Journal of Economics*, 31(1), 121-144.  
<https://www.jstor.org/stable/2601032>.
- Hux, C. T. (2017). Use of specialists on audit engagements: A research synthesis and directions for future research. *Journal of Accounting Literature*, 39, 23-51.  
<https://doi.org/10.1016/j.acclit.2017.07.001>.
- International Accounting Standard Board (IASB). (2016). *International Financial Reporting Standard (IFRS) 13 Fair Value Measurement*. London: International Accounting Standards Committee Foundation. Downloaded from: <https://www.ifrs.org/issued-standards/list-of-standards/ifrs-13-fair-value-measurement/>
- \_\_\_\_\_. (2018). *International Accounting Standard (IAS) 40 Investment Property*. London: International Accounting Standards Committee Foundation. Downloaded from: <https://www.ifrs.org/issued-standards/list-of-standards/ias-40-investment-property/>
- \_\_\_\_\_. (2018). *International Accounting Standard (IAS) 41 Agriculture*. London: International Accounting Standards Committee Foundation. Downloaded from: <https://www.ifrs.org/issued-standards/list-of-standards/ias-41-agriculture/>
- \_\_\_\_\_. (2018). *International Accounting Standard (IAS) 36 Impairment of Assets*. London: International Accounting Standards Committee Foundation. Downloaded from: <https://www.ifrs.org/issued-standards/list-of-standards/ias-36-impairment-of-assets/>
- \_\_\_\_\_. (2018). *International Financial Reporting Standard (IFRS) 2 Share-based Pay*. London: International Accounting Standards Committee Foundation. Downloaded from: <https://www.ifrs.org/issued-standards/list-of-standards/ifrs-2-share-based-payment/>

\_\_\_\_\_. (2018). *International Financial Reporting Standard (IFRS) 9 Financial Instruments*. London: International Accounting Standards Committee Foundation. Downloaded from: <https://www.ifrs.org/issued-standards/list-of-standards/ifrs-9-financial-instruments/>

International Auditing and Assurance Standards Board (IAASB). (2009). *International Standards of Auditing (ISA) 500 Audit Evidence*. New York: IAASB.

\_\_\_\_\_. (2018). *International Standards of Auditing (ISA) 540 (Revised) Auditing Accounting Estimates and Related Disclosures*. New York: IAASB.

Jackson, A. R. (2005). Trade generation, reputation, and sell-side analysts. *The Journal of Finance*, 60(2), 673-717. <https://doi.org/10.1111/j.1540-6261.2005.00743.x>

Jacowitz, K. E., & Kahneman, D. (1995). Measures of anchoring in estimation tasks. *Personality and Social Psychology Bulletin*, 21(11), 1161-1166. <https://doi.org/10.1177%2F01461672952111004>

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X).

Joe, J. R., Vandervelde, S. D., & Wu, Y. J. (2017a). Use of high quantification evidence in fair value audits: Do auditors stay in their comfort zone?. *The Accounting Review*, 92(5), 89-116. <https://doi.org/10.2308/accr-51662>.

Joe, J. R., Wu, Y. J., & Zimmerman, A. (2017b). Overcoming Communication Challenges: Can Taking the Specialist's Perspective Improve Auditors' Critical Evaluation and Integration of the Specialist's Work? Working paper. Available at SSRN: <https://ssrn.com/abstract=2957840>.

Kenno, S. A., McCracken, S. A., & Salterio, S. E. (2017). Financial reporting interview-based research: A field research primer with an illustrative example. *Behavioral Research in Accounting*, 29(1), 77-102. <https://doi.org/10.2308/bria-51648>.

Khalil, F., & Lawarree, J. (1995). Collusive auditors. *The American Economic Review*, 85(2), 442-446. <https://www.jstor.org/stable/2117963>.

Kjellefold, K. (2020). *Monitoring of Fair Value Reliability by Third-Party Specialists: A Review and Integration of Empirical Research*. Unpublished manuscript. Available at SSRN: <https://ssrn.com/abstract=3496001>

Kofman, F., & Lawarree, J. (1993). Collusion in hierarchical agency. *Econometrica: Journal of the Econometric Society*, 61 (3), 629-656. <https://doi.org/10.2307/2951721>.

Kunda Z. (1990). The case for motivated reasoning. *Psychological Bulletin*, 108(3), 480-498. <https://doi.org/10.1037/0033-2909.108.3.480>.

- Lambert, R. A. (2001). Contracting theory and accounting. *Journal of accounting and economics*, 32(1-3), 3-87. [https://doi.org/10.1016/S0165-4101\(01\)00037-4](https://doi.org/10.1016/S0165-4101(01)00037-4)
- Landsman, W. R. (2007). Is fair value accounting information relevant and reliable? Evidence from capital market research. *Accounting and Business Research*, 37(sup1), 19-30. <https://doi.org/10.1080/00014788.2007.9730081>.
- Laux, C., & Leuz, C. (2009). The crisis of fair-value accounting: Making sense of the recent debate. *Accounting, Organizations and Society*, 34(6-7), 826-834. <https://doi.org/10.1016/j.aos.2009.04.003>.
- Lawrence, A., Siriviriyakul, S., & Sloan, R. G. (2016). Who's the fairest of them all? Evidence from closed-end funds. *The Accounting Review*, 91(1), 207-227. <https://doi.org/10.2308/accr-51152>
- Lillis, A. M. (1999). A framework for the analysis of interview data from multiple field research sites. *Accounting & Finance*, 39(1), 79-105. <https://doi.org/10.1111/1467-629X.00018>.
- Lim, C. Y., & Tan, H. T. (2008). Non-audit service fees and audit quality: The impact of auditor specialization. *Journal of Accounting Research*, 46(1), 199-246. <https://doi.org/10.1111/j.1475-679X.2007.00266.x>
- Lim, T. (2001). Rationality and analysts' forecast bias. *The Journal of Finance*, 56(1), 369-385. <https://doi.org/10.1111/0022-1082.00329>
- Malsch, B., & Salterio, S. E. (2016). "Doing good field research": Assessing the quality of audit field research. *Auditing: A Journal of Practice & Theory*, 35(1), 1-22. <https://doi.org/10.2308/ajpt-51170>.
- Mariano, B. (2012). Market power and reputational concerns in the ratings industry. *Journal of Banking & Finance*, 36(6), 1616-1626. <https://doi.org/10.1016/j.jbankfin.2012.01.012>.
- McDonough, R. P., & Shakespeare, C. M. (2015). Fair value measurement capabilities, disclosure, and the perceived reliability of fair value estimates: A discussion of Bhat and Ryan (2015). *Accounting, Organizations and Society* 46: 96-99. <https://doi.org/10.1016/j.aos.2015.05.003>.
- Mehran, H., & Stulz, R. M. (2007). The economics of conflicts of interest in financial institutions. *Journal of Financial Economics*, 85(2), 267-296. <https://doi.org/10.1016/j.jfineco.2006.11.001>
- Messier Jr., W. F. (2010). Opportunities for task-level research within the audit process. *International Journal of Auditing*, 14(3), 320-328. <https://doi.org/10.1111/j.1099-1123.2010.00420.x>.



- Michaely, R., & Womack, K. L. (1999). Conflict of interest and the credibility of underwriter analyst recommendations. *The Review of Financial Studies*, 12(4), 653-686.  
<https://doi.org/10.1093/rfs/12.4.653>
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2013). *Qualitative Data Analysis: An Expanded Sourcebook*. (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Moore, C., & Gino, F. (2013). Ethically adrift: How others pull our moral compass from true north, and how we can fix it. *Research in Organizational Behavior*, 33, 53-77.  
<https://doi.org/10.1016/j.riob.2013.08.001>
- Muller III, K. A., & Riedl, E. J. (2002). External monitoring of property appraisal estimates and information asymmetry. *Journal of Accounting Research*, 40(3), 865-881.  
<https://doi.org/10.1111/1475-679X.00074>.
- Muller III, K. A., Riedl, E. J., & Sellhorn, T. (2011). Mandatory fair value accounting and information asymmetry: Evidence from the European real estate industry. *Management Science*, 57(6), 1138-1153. <https://doi.org/10.1287/mnsc.1110.1339>.
- Müller, M. A., Riedl, E. J., & Sellhorn, T. (2015). Recognition versus disclosure of fair values. *The Accounting Review*, 90(6), 2411-2447. <https://doi.org/10.2308/accr-51044>.
- Ottaviani, M., & Sørensen, P. N. (2006). Reputational cheap talk. *The Rand Journal of Economics*, 37(1), 155-175. <https://doi.org/10.1111/j.1756-2171.2006.tb00010.x>
- Power, M. K., & Gendron, Y. (2015). Qualitative research in auditing: A methodological roadmap. *Auditing: A Journal of Practice & Theory*, 34(2), 147-165.  
<https://doi.org/10.2308/ajpt-10423>.
- Public Company Accounting Oversight Board (PCAOB). (2014a). *Report on 2013 Inspection of Deloitte & Touche LLP*. Washington, DC: PCAOB.
- \_\_\_\_\_. (2014b). *Report on 2013 Inspection of PricewaterhouseCoopers LLP*. Washington, DC: PCAOB.
- \_\_\_\_\_. (2014c). *Report on 2013 Inspection of KPMG LLP*. Washington, DC: PCAOB.
- \_\_\_\_\_. (2014d). *Report on 2013 Inspection of Ernst & Young LLP*. Washington, DC: PCAOB.
- \_\_\_\_\_. (2017a). *Proposed Amendments to Auditing Standards for Auditor's Use of the Work of Specialists*. Washington, DC: PCAOB.
- \_\_\_\_\_. (2017b). *Proposed Auditing Standard – Auditing Accounting Estimates, Including Fair Value Measurements and Proposed Amendments to PCAOB Auditing Standards*. Washington, DC: PCAOB.
- \_\_\_\_\_. (2018). *Amendments to Auditing Standards for Auditor's Use of the Work of Specialists*. Washington, DC: PCAOB.

- Pyzoha, J., Taylor, M. H., & Wu, Y. J. (in press). Can Auditors Pursue Firm-Level Goals Nonconsciously on Audits of Complex Estimates? An Examination of the Joint Effects of Tone at the Top and Management's Specialist. *The Accounting Review*. Retrieved from: <https://doi.org/10.2308/tar-2016-0223>
- Riedl, E. J., & Serafeim, G. (2011). Information risk and fair values: An examination of equity betas. *Journal of Accounting Research*, 49(4), 1083-1122. <https://doi.org/10.1111/j.1475-679X.2011.00408.x>.
- Salzsieder, L. (2016). Fair value opinion shopping. *Behavioral Research in Accounting*, 28(1), 57-66. <https://doi.org/10.2308/bria-51238>.
- Scott, W. R. 2005. Institutional theory: Contributing to a theoretical research program. In K. G. Smith, & M. A. Hitt (Eds.), *Great minds in management: The process of theory development*, (pp. 460–84). New York: Oxford University Press.
- Sellhorn, T., & Stier, C. (2019). Fair value measurement for long-lived operating assets: Research evidence. *European Accounting Review*, 28(3), 573-603. <https://doi.org/10.1080/09638180.2018.1511816>.
- Scharfstein, D. S., & Stein, J. C. (1990). Herd behavior and investment. *American Economic Review*, 80(3), 465-479. <https://www.jstor.org/stable/2006678>.
- Shapiro, S. P. (2005). Agency theory. *Annual Review of Sociology*, 31, 263-284. <https://doi.org/10.1146/annurev.soc.31.041304.122159>.
- Song, C. J., Thomas, W. B., & Yi, H. (2010). Value relevance of FAS No. 157 fair value hierarchy information and the impact of corporate governance mechanisms. *The Accounting Review*, 85(4), 1375-1410. <https://doi.org/10.2308/accr.2010.85.4.1375>.
- Stuart, M. D., & Willis, R. H. (in press). Use of Independent Valuation Specialists in Valuing Employee Stock Options: Evidence from IPOs. *Review of Accounting Studies*. Retrieved from URL: <https://ssrn.com/abstract=3374632>.
- Telser, L. G. (1980). A theory of self-enforcing agreements. *Journal of Business*, 53(1), 27-44. <https://www.jstor.org/stable/2352355>.
- Tetlock, P. E., & Gardner, D. (2016). *Superforecasting: The art and science of prediction*. New York: Random House.
- Viscusi, W. K. (1978). A Note on "Lemons" Markets with Quality Certification. *The Bell Journal of Economics*, 9(1), 277-279. <https://www.jstor.org/stable/3003627>
- Walton, N. (2012). Delegated Monitoring: When Can Boards Rely on Outside Experts?. *American Law and Economics Review*, 14(1), 271-301. <https://doi.org/10.1093/aler/ahr022>.



Watts, R. L., & Zimmerman, J. L. (1983). Agency problems, auditing, and the theory of the firm: Some evidence. *The Journal of Law and Economics*, 26(3), 613-633.  
<https://www.jstor.org/stable/725039>.

Yin, R. K. (2013). *Case Study Research and Applications: Design and Methods*. (4th ed.). Thousand Oaks, CA: Sage Publications.

## Tables

*Table 1: Participants' Demographics*

### Panel A: Audit Partners

Partner No.	Firm Type	Age	Gender	Years of experience	Type of Partner	Major Industry Expertise
P1	Non-Big 4	54	M	30	Engagement and Tech.	Public sector/Non-profit
P2	Big 4	46	M	23	Engagement and Tech.	Construction and Real Estate
P3	Big 4	49	M	23	Engagement	Shipping, Offshore and Real Estate
P4	Big 4	52	M	27	Technical	Oil Service
P5	Big 4	46	M	21	Engagement/Valuation	Offshore and Oil Service
P6	Big 4	45	M	20	Engagement/Valuation	Seafood and Oil Service
P7	Big 4	48	M	22	Engagement	Financial Services
P8	Big 4	47	M	19	Engagement	Technology and Real Estate

### Panel B: Specialists

Specialist No.	Type of Specialist	Age	Gender	Years of experience	Engaged /Employed	Highest education
S1	Derivatives	48	M	15	Engaged	Msc in Business and MBA
S2	Derivatives	40	M	13	Engaged	Msc in Business and Finance
S3	Derivatives	44	M	16	Engaged	Msc in Business and MBA
S4	Investment property	38	M	10	Engaged	Msc in Management
S5	Investment property	40	M	10	Engaged	Msc in Business
S6	Investment property	34	M	5	Engaged	Civil engineer
S7	Investment property	31	M	6	Engaged	Msc in Business
S8	Investment property	29	M	1	Engaged	Msc in Business
S9	Investment property	47	M	12,5	Engaged	Msc in Business

S10	Investment property	33	M	6	Engaged	MBA
S11	Oil reserves	56	F	33	Employed	Geologist/Geophysicist
S12	Oil reserves	50	M	26	Employed	Civil engineer
S13	Oil reserves	57	M	27	Employed	Civil engineer
S14	Oil reserves	47	M	15	Employed	Civil engineer/PhD
S15	Oil reserves	52	M	28	Engaged	Civil engineer and MBA
S16	Ship valuation	61	M	35	Engaged	Msc in Business
S17	Ship valuation	59	M	20	Engaged	Msc in Business and MBA
S18	Ship valuation	34	M	4	Engaged	Msc in Business and MBA
S19	Stock option valuation	38	M	11	Engaged	Msc in Business

**Table 2: Representation of Emerging Themes Across Specialists**

*Theme – Auditors focus on individual assumptions and external information with regards to specialist competence and objectivity*

<b><u>Specialists</u></b>	<b><u>Number of participants in agreement</u></b>
Derivatives and stock options	0
Investment property	5
Oil and gas reserves	3
Ship valuation	0

*Theme – Specialists limits insight into their models and data*

<b><u>Specialists</u></b>	<b><u>Number of participants in agreement</u></b>
Derivatives and stock options	1
Investment property	7
Oil and gas reserves	0*
Ship valuation	0**

*Theme – Specialists treats their reputation as an invaluable asset*

<b><u>Specialists</u></b>	<b><u>Number of participants in agreement</u></b>
Derivatives and stock options	2
Investment property	7
Oil and gas reserves	4
Ship valuation	3

*Theme – Specialists experience client pressure for specific values*

<b><u>Specialists</u></b>	<b><u>Number of participants in agreement</u></b>
Derivatives and stock options	2
Investment property	7
Oil and gas reserves	2
Ship valuation	3

*Theme – Management may engage more than one specialist and share information between them*

<b><u>Specialists</u></b>	<b><u>Number of participants in agreement</u></b>
Derivatives and stock options	0
Investment property	7
Oil and gas reserves	2
Ship valuation	3

\* The oil reserve engineers are all, but one, employed by their respective oil company, and are required by Norwegian law to share all information asked for by their auditor.

\*\* Answers from the ship valuation specialists indicate that they do not use valuation models when estimating the fair value of a ship.



### **Paper 3: Can Apprenticeship Norms Empower Auditors to Take Skeptical Action?**

Emily Blum

Culverhouse School of Accountancy  
The University of Alabama

Richard C. Hatfield

Culverhouse School of Accountancy  
The University of Alabama

Kyrre Kjellevold

NHH Norwegian School of Economics

October 2019

#### **Abstract**

It is now well established in the audit literature that skeptical action often comes with risks to the actor. We identify the audit apprenticeship model as a source of relative power, which we theorize will increase felt responsibility and thus lead to more skeptical action, even when auditors face high perceived personal risk. To test this theory, experienced auditors complete an audit case where they must select a sample of inventory to count from the warehouse floor, and where some inventory items (those from high shelves) take more time to count than others. We find that auditors assigned a novice versus a peer for assistance recognize the power disparity and feel more responsibility – including the responsibility to model quality behavior. However, we find no evidence that this increased felt responsibility led to higher quality actions when auditors are faced with time pressure.

**Key words:** Auditors, fair value measurements (FVMs), fair values, third-party specialists, valuation experts.

**Subject classification codes:** M40, M42

## 1. Introduction

Auditors often face salient personal risks when deciding whether or not to take actions that benefit audit quality. These risks include social intimidation (Bennett and Hatfield 2013), supervisor displeasure (Nelson and Proell 2018), poor evaluations (Brazel et al. 2016), and constrained future career prospects (Agoglia et al. 2015). While interventions can seek to reduce these risks, it seems implausible that firms could remove these risks altogether. Thus, we seek to identify an intervention designed to increase audit quality enhancing actions *despite* high perceived risks.

Drawing on the workplace courage literature and theories of structural power, we identify the audit apprenticeship model as a source of relative power driven not only by authority and control over scheduling, work tasks, and performance evaluations, but also through differences in knowledge and experience. We propose that auditors will recognize knowledge and experience disparities, and that they will feel a responsibility to not only teach the junior auditor, but also to model quality behavior for that auditor.

We conduct a study in which we manipulate time pressure as a salient personal risk, and also manipulate power in the form of a knowledge and experience disparity. Ninety-eight newly promoted senior associates from a Big 4 firm in Norway completed a case in which they were asked to select a haphazard sample of inventory to count from the warehouse floor. Some inventory items were described as more costly (in terms of time) to count than other items. We analyzed how many of these more costly items the auditors selected for testing.

We find that when accompanied by a novice, participants felt a responsibility to teach their colleague, and also to model high quality behavior for their colleague. However, this higher felt responsibility did not influence auditor actions to select a representative sample. When faced with

time pressure, both auditors accompanied by a peer and by a novice selected equally non-representative samples.

Our findings have important implications for research and practice. Previous research has focused on the apprenticeship model as a source of judgment-influencing accountability in a single direction – subordinates are accountable to their supervisor (Bonner 2008). We contribute to the accountability literature by demonstrating how accountability can operate from the bottom-up – supervisors are accountable to their subordinates as well. We also present a troubling finding of how time pressure can result in poor quality audit samples and discuss how this could have far-reaching implications for audit quality within the firm.

## **2. Background and Hypothesis Development**

Recent research has shown that auditors frequently face salient personal, social, and professional risks when considering skeptical action. Auditors face social intimidation when working with highly experienced clients (Bennett and Hatfield 2013), they risk incurring supervisor displeasure for raising concerns (Nelson and Proell 2018), and they risk limiting their future opportunities with a particular supervisor if they go over budget (Agoglia et al. 2015). Their supervisor's response to their actions can be uncertain as supervisors view the action differently based on the outcome of that action (Brazel et al. 2016). And personal factors, such as an individual's perceived personal reputation, can influence auditor perceptions of these risks (Blum et al. 2019). Given the pervasiveness of these risks, it is unlikely that interventions designed to reduce perceived risk will be wholly effective.

As these personal risks can't reduce risk altogether, we focus on identifying a way to encourage auditors to take action *despite* high perceived risks in the moment. Recent research on workplace courage suggests that individuals' perceived relative power advantage is one factor that



influences courageous action (Schilpzand et al. 2015). Power is here understood as being *relative* to others who may act in the situation. This definition of power used by Schilpzand et al. (2015) is consistent with a broad stream of research in psychology and organizational behavior: power is “asymmetric control over valued resources” (Tost 2015; Tost and Johnson 2019; Galinsky et al. 2008; French and Raven 1959).

Especially when the social structures that give rise to power are salient, power can activate feelings of responsibility (Sassenberg et al. 2012; Sassenberg et al. 2014; Scholl et al. 2018; Tost 2015; Tost and Johnson 2019). Specifically, Tost and Johnson (2019) find that structural power in teams activates certain benevolent power norms, and also leads to heightened awareness of the dependency of those at lower levels.

Benevolent power norms are social expectations that those with power will use it for the benefit of lower-power group members (Tost and Johnson 2019). Organizations often have their own cultures and their own social expectations of leadership – which often include benevolent norms such as a team focus and an emphasis on collaboration (Tost and Johnson 2019). Recent research in accounting has emphasized the value of benevolent leadership on voice behavior (Nelson et al. 2016; Gissel and Johnstone 2016), and has discussed an overall trend to be more accommodating to subordinate needs (Westermann et al. 2015).

We propose that among audit teams one key resource, and thus a key source of power with relevant social norms for that power’s use, is knowledge and experience. Audit firms use an apprenticeship model where both technical and professional development occur over time through on-the-job learning (Westermann et al. 2015; Wedemeyer 2010). Auditors enter the profession with a university education that teaches them the rudimentary language of accounting – however, to become fluent in that language and to develop as auditors and professionals, they must learn on

the job through supervised experience with increasingly complex work (Westermann et al. 2015). Thus, more senior members of the team take on the role of a “master,” who demonstrates appropriate performance of a task and provides guidance until the student has demonstrated competency in a particular area. The role of master starts very early in an auditor’s career, as they begin to supervise and develop the work of those at the lowest levels, while also continuing to be supervised and developed themselves.

Tost and Johnson (2019) find that structural power and the benevolent power norms it activates lead to felt responsibility towards the subordinate, and decisions to sacrifice for the benefit of the subordinate. If structural power in an audit setting activates benevolent power norms that include apprenticeship norms, and apprenticeship norms include a belief that the “master” must demonstrate appropriate behavior, the sense of responsibility towards the subordinate could extend to a sense of responsibility to model quality audit behavior. Which leads to our first hypothesis:

*H<sub>1</sub>: Auditors working with a novice (versus a peer) will feel greater responsibility to model quality audit behavior.*

Such extra felt responsibility is unlikely to have any effect on auditor actions if the auditor already intends to act in a high-quality manner. To create an environment with salient pressures to reduce quality action, we introduce time pressure. The effect of time pressure on auditor judgment has been widely studied (for discussions, see Pietsch and Messier 2017; Bonner 2008). Time pressure has been found to influence both audit effectiveness (negatively) and audit efficiency (positively) (McDaniel 1990). Importantly, time pressure (in the form of a present or absent budget) has been found to decrease the extent and depth of testing, although it does not affect the breadth of testing (Asare et al. 2000). Thus, we expect, in our sample selection setting, that time

pressure will result in a lower-quality sample when certain items take more time to count than others, as auditors will, in such cases, choose a less-than-representative sample.

*H<sub>2</sub>: Auditors will exhibit lower quality audit actions when faced with time pressure.*

However, studies have also identified ways in which time pressure can be overcome. Coram et al. (2004), for example, find that while auditors will choose to truncate a testing sample when faced with time pressure, this effect is moderated by risk of material misstatement. If, as hypothesized in H1, auditors feel greater responsibility to model high quality audit behavior, it follows that they'd also perceive greater risks of not modeling high quality audit behavior – namely, that the novice may develop poor quality habits which may carry over to future engagements. Thus, we expect the effect of time pressure to be lessened when auditors are working with a novice (versus a peer).

*H<sub>3</sub>: Auditors working with a novice (versus a peer) will exhibit higher quality audit actions despite time pressure.*

### **3. Methods**

#### ***3.1 Participants***

Participants were recruited from a firm training session for newly promoted senior associates at a large Big 4 firm in Norway. Our 98 participants have, on average, 2.3 years of experience auditing, and have performed on average 7.9 inventory counts (with 95% percent of participants having performed at least one inventory count). Participants were 50% percent female.

### ***3.2 Procedure and Materials***

The case materials were delivered online via a Qualtrics survey.<sup>49</sup> Participants were instructed to bring their laptops to the training and completed the case in the training rooms during a time set aside for this task. The entire study took on average 13.6 minutes to complete.

In the case, participants assume the role of an experienced audit associate who is assigned on a hypothetical audit client – Greylock International. They read background information about the client and their assignment. The background information describes Greylock as a hand tools manufacturer that has received clean audit opinions by their firm for the last five years. After receiving background information, participants read about their assignments for the day, which includes our personal risk manipulation (described in more detail below). Next, they learn about the other auditor assigned to the Greylock count and choose from a list of statements the information that they would provide to the other auditor in preparation for the count (again, described below).

The materials next describe the count itself. The warehouse is described as clean and orderly. Participants are informed that “the warehouse manager has commented about the significant number of selections that require the use of a forklift to take down the boxes to count properly.” The materials explicitly state that “approximately 40% of inventory is kept on high shelves that require a forklift for access, and your sample is representative. Each box from the high shelves takes about three times as long to count as one from the lower shelves.”

Next, participants are asked to choose a sample of boxes to count from the warehouse floor for them and their colleague to count. They are informed that they will complete this task three

---

<sup>49</sup> Materials were reviewed and approved by the Institutional Review Boards of the relevant schools. During the development process, we sought feedback on these materials from a former Big 4 National Assurance Leader, and from two Big 4 senior associates. They found our case to be realistic and appropriate for our target subject group.

times, in three sections of the warehouse. Participants select 6 boxes from a graphic that contains 45 total boxes (the count screen can be seen in Figure 1). On the same screen where they make their selection, they are also reminded of the other auditor's reliance (or lack of reliance) on them for guidance and are given a text box where they can provide information about their decisions to the other auditor. After they make their initial selection, they view a "count in process" screen. This screen is dynamic – a forklift moves across the screen for each box they selected from the top shelves.<sup>50</sup> They are then informed that they identified no variances in their count, and that they and their colleague will move on to the next section of the warehouse. This sequence repeats 2 additional times.

INSERT FIGURE 1 HERE

Finally, participants answer a series of questions designed to measure the effectiveness of our manipulations on both the manipulated variables (power, time pressure) and downstream consequences of the power manipulation (responsibility, apprenticeship norms). They then provide demographic information and complete the case.

### **3.2.1 Personal risk manipulation**

We introduce personal risk to the participant through a manipulation of time pressure. We chose time pressure as it has been found to have strong effects in the audit literature (Pietsch and Messier 2017) and thus provides us with a strong test for our proposed intervention to overcome. Local experienced auditors who reviewed our materials deemed the time pressure manipulation to be realistic and effective at creating a sense of time pressure. The manipulation reads as follows:

---

<sup>50</sup> For each box participants select from the top shelves (labeled "forklift required"), a forklift drives across the screen for precisely 7 seconds, thus making this screen last for 7 seconds if the participant selects 1 box from top shelves, 14 seconds if the participant selects two boxes from the top shelves, etc. If participants choose no boxes from those top shelves, they spend only 4 seconds on the "count in process" screen. This is designed to increase the salience of time costs.

**High Time Pressure:** *“This is one of two inventory counts that you have been assigned to today. The second count is for another one of your clients but with a different manager. The Greylock count is expected to take half of the day. Once you complete this count, you must travel to your second assigned count location and complete that count. The client on this second count would like you to begin your work as early as possible. You’ll also need to write up your memos and complete your documentation for both counts. While your schedule today is very tight, your managers agree that it is reasonable as the time estimates for the counts were based on prior years.”*

**Low Time Pressure:** *“This is the only inventory count that you have been assigned to today. This count is expected to take half of the day. Once you complete this count, you can return to your office and write up your memo and complete your documentation of the count. Your schedule today is very comfortable, and your manager thinks it is reasonable as the time estimate for the count was based on prior years.”*

### 3.2.2 Power manipulation

We manipulate power through a description of the other auditor assigned to assist with the count. Recall that power is defined as an asymmetric control over valued resources – in this case, knowledge and experience. The manipulation reads as follows:<sup>51</sup>

**Novice (High Relative Power):** *“Your manager has assigned a **newly hired staff associate** (not from the Greylock team) to help you out with the count. He just started work at your firm this month. The new hire is **unfamiliar** with audit procedures for*

---

<sup>51</sup> In the high time pressure conditions, these paragraphs also include the sentence that “When the two of you are done with the Greylock count, you will continue to your second count while [your peer]/[the new hire] continues to his other assignment.”

*inventory counts and has **little experience** with the manufacturing environment – **he will rely on you** for instruction and explanation.”*

***Peer (Low Relative Power):** “Your manager has assigned **one of your peers** (not from the Greylock team) to help you out with the Greylock count. He started work at your firm the same time as you did. Your peer is **very familiar** with audit procedures for inventory counts and has **a lot of experience** with the manufacturing environment – **he will not need to rely on you** for instruction or explanation.”*

This language is immediately followed by our manipulation reinforcement task – we emphasize both asymmetric control over knowledge/experience as well as the participant’s responsibility to look out for the other auditor by asking them to choose from a list which information they would provide to their colleague to prepare them for the count. The list includes three items of logistic information (for example, “The count will take place at Greylock’s warehouse – directions can be found at this link. Please plan to arrive by 7:00. I expect we will finish up around 12:00.”) and three items of teaching information (for example, “Auditors typically perform two types of counts – sheet-to-floor counts (where we take a sample from the inventory listing and test the accuracy of the client’s listing) and floor-to-sheet counts (where we take a sample from the warehouse floor to test both the completeness and accuracy of the client’s listing).”). Participants read all items and drag them to one of two boxes: “include” or “do not include”.<sup>52</sup>

---

<sup>52</sup> This design choice was included to reinforce the knowledge and experience difference created by our manipulation.

### **3.2.3 Dependent variable – felt responsibility**

We ask a series of questions to capture perceived relative knowledge and experience (i.e., perceived power over those valued resources), benevolent power norms, and apprenticeship norms – both teaching and modeling behavior. The full text of these questions is shown in Table 2 with the associated results.

### **3.2.4 Dependent variable – skeptical action**

Our dependent variable is the count of items that participants choose from the top shelves. The International Standard on Auditing for Audit Sampling application guidance states that when selecting a non-statistical sample “Because the purpose of sampling is to provide a reasonable basis for the auditor to draw conclusions about the population from which the sample is selected, it is important that the auditor selects a representative sample, so that bias is avoided, by choosing sample items which have characteristics typical of the population.” ([ISA 530, A12](#)) A representative sample would have on average 7.2/18 total selections from the two top shelves, or 40% of the sample. However, in practice, this sort of audit action is difficult (if not impossible) to review, as there is usually no indicator in the workpapers of where a box was located within the warehouse or whether it took more or less time to count. Thus, the auditor selecting the sample faces little personal risk (punishment from higher-ups) in reducing the number of costly selections. In contrast, they face a clear personal risk (increased time cost) for selecting such boxes.

Importantly, we remind auditors of this obligation in the manipulation reinforcement task, as one of the items states “Auditors typically select a statistical sample from the inventory listing, but we can't do that when selecting items from the warehouse floor. Therefore, it is important to remember to be skeptical and choose bins of different sizes, from different locations, etc.”



## 4. Results

### *4.1 Participants' Perceptions of Time Pressure (Table 1)*

Participants rated their perceptions of time pressure on four dimensions using a seven-point scale (1 = strongly disagree to 7 = strongly agree). These questions and their results are reported in **Table 1**. Participants in the high time pressure condition reported that their schedule was less comfortable ( $M = 2.54$  vs  $4.2$ ,  $F = 27.04$ ,  $p < .001$ ), and that their schedule afforded them less time to get everything done ( $M = 2.35$  vs  $3.9$ ,  $F = 29.54$ ,  $p < .001$ ). They reported moderately more concern about the impact of going over time on their performance ratings ( $M = 4.08$  vs  $3.46$ ,  $F = 3.29$ ,  $p = 0.073$ ), and more worry that going over time on the count would cause problems for them ( $M = 4.21$  vs  $3.16$ ,  $F = 9.10$ ,  $p = 0.003$ ). The power manipulation had a moderately significant effect on participant's perceptions of how comfortable their schedule was ( $M = 3.7$  vs  $3.06$ ,  $F = 3.66$ ,  $p = 0.059$ ), and had no significant effect on any of the other time pressure measures. This suggests that we successfully manipulated time pressure, and that the presence of an apprentice did not inadvertently affect perceptions of time pressure or its personal consequences.

### *4.2 Participants' Perceptions of Power and Responsibility (Table 2)*

Participants rated their perceptions of power and responsibility in a series of questions designed to measure power, benevolent norms, perceived responsibility to teach, perceived responsibility to model quality behavior, and perceived responsibility to act in ways that facilitate audit quality, all on seven-point scales (1 = strongly disagree to 7 = strongly agree). These questions and their results are reported in **Table 2**. Participants in the apprentice condition reported being more experienced and knowledgeable than their colleague ( $M = 5.00$  vs  $3.65$ ,  $F = 21.15$ ,  $p < .001$ ;  $M = 4.66$  vs  $3.75$ ,  $F = 10.463$ ,  $p = 0.002$ ), which suggests that we effectively manipulated perceptions of asymmetric control over valued resources. We also see evidence of this in our

manipulation reinforcement task: participants were more likely to provide general information about auditing inventory to their apprentice than their peer ( $M = 2.50$  vs.  $1.10$ ,  $t = 7.27$ ,  $p < .001$ ), suggesting that they recognized the disparity in their knowledge and experience and felt a responsibility to address it.

This felt responsibility is also evidenced in questions about behavioral norms. The participants in the apprentice condition reported feeling greater responsibility to look out for the other auditor ( $M = 5.74$  vs.  $4.50$ ,  $F = 16.21$ ,  $p < .001$ ) and a duty to help the other auditor ( $M = 5.76$  vs.  $4.79$ ,  $F = 13.17$ ,  $p < .001$ ). These results suggest that the difference in resources activated benevolent power norms (e.g., Tost and Johnson 2019). Additionally, participants reported feeling a greater responsibility to teach and guide the other auditor during the process ( $M = 5.60$  vs.  $3.40$ ,  $F = 47.95$ ,  $p < .001$ ;  $M = 5.60$  vs.  $3.75$ ,  $F = 36.59$ ,  $p < .001$ ). This suggests that apprenticeship norms are also activated.

As discussed earlier, an apprenticeship involves not only teaching but modeling quality behavior, as the apprentice learns from observing the master. Participants reported having more responsibility to “model high quality performance for the other auditor” ( $M = 5.54$  vs.  $4.85$ ,  $F = 6.21$ ,  $p = 0.027$ ). They also reported having more responsibility to “demonstrate high quality judgment for the other auditor” ( $M = 5.60$  vs.  $4.83$ ,  $F = 6.21$ ,  $p = 0.014$ ). This provides evidence consistent with H1, which states that auditors working with an apprentice will feel greater responsibility to model quality audit behavior.

When asked explicitly about their “responsibility to make the floor-to-sheet sample representative” and their “duty to exercise appropriate professional skepticism,” participants did not differ across condition (Omnibus  $F = 1.14$ ,  $p = 0.338$ , and Omnibus  $F = 0.34$ ,  $p = 0.799$ , respectively). This is expected, as all participants do have the same responsibilities and duties.

### ***4.3 Participants' Sample Selection (Table 3)***

We next analyze participant's sample selection decisions. Recall that participants select their sample over three rounds, representing three sections of the warehouse. Our analysis focuses on the full sample, however, we first ran a repeated-measures ANOVA on the by-section counts as can be seen in **Table 3 panel C**. Participants did select less boxes in later sections of the warehouse, which suggests that all participants felt the real time cost built in to the experiment through the count-in-process screens.

We expected that, under low time pressure, participants would choose a representative sample (which would be 7.2, or 7 boxes from the top shelves). The mean testing selections for those facing low time pressure were 7.39 boxes in the apprentice condition, and 6.88 boxes in the peer condition (neither being statistically different from 7,  $p = 0.379$  and  $0.770$ , respectively). We also expected that working with an apprentice would insulate the auditor from the effects of time pressure, resulting in an interaction between time pressure and the colleague present. However, there was no significant interaction between time pressure and whether an apprentice was present ( $p = 0.729$ ). Both the apprentice and peer conditions counted less than 7 boxes ( $M = 5.88$  and  $5.67$ ,  $p = 0.026$  and  $0.003$ , respectively), and the two conditions are not statistically different from each other ( $t = 0.34$ ,  $p = 0.739$ ). Thus, we do not find evidence consistent with our third hypothesis.

Interestingly, the number of items selected from the top shelves was not correlated with either a felt responsibility to select a representative sample or with a duty to exercise appropriate professional skepticism ( $r = -0.062$ ,  $p = 0.546$ , and  $r = -0.079$ ,  $p = 0.439$ , respectively), two measures that were also not influenced by our experimental manipulations. The means for both the representative sample ( $M = 5.31$ ) and for audit quality ( $M = 5.75$ ) are both significantly above the midpoint of 4 ( $p < .001$  for both variables), which suggests that participants did feel a

responsibility to select a representative sample even in situations where they ultimately did not do so. This, coupled with the knowledge that participants select a representative sample absent time pressure, suggests that participants recognize that selecting a representative sample is the right thing to do. However, when faced with time pressure, they do not do the right thing, even when they're responsible for modeling quality behavior for a novice auditor.

## **5. Discussion**

We sought to identify and test a potential intervention to increase skeptical judgment in the face of personal costs. Drawing from the courage literature, we identified audit apprenticeship norms as a possible intervening factor. While we found evidence that the disparate knowledge and experience did lead to feelings of responsibility to teach and model quality behavior, we found no evidence that they led to higher quality actions in the face of time pressure. We considered a number of explanations for why this may be the case in **Appendix A**.

### ***5.1 Implications for Research and Practice***

This study has several important implications for the study of auditor judgment and decision making and its applications to practice.

Recent work on tacit knowledge has demonstrated a direct link between a supervisor's knowledge and the knowledge and career success of the subordinate (Bol et al. 2018). The susceptibility of auditors to time pressure on this inventory task, even in the presence of a novice, is concerning – this has the potential to influence not only the current audit but also future engagements where the novice auditor is responsible for selecting their own samples. This finding in an inventory sample selection setting is particularly concerning, as such decisions are near-impossible to review.

Previous research has studied the effect of the apprenticeship model on auditor judgment and decision making solely from an upward accountability perspective. Our study extends this work by demonstrating that auditors feel a sense of accountability to those at lower levels as well as higher levels. This sense of accountability can be leveraged by firms in a way that benefits all parties – higher level auditors should be encouraged to discuss their in-process judgments with those at lower levels as doing so adds an additional stakeholder benefitting from that auditors' quality judgment. However, recent changes in the audit environment such as flexible work arrangements<sup>53</sup> and off-shoring (see Downey 2018) might also limit the beneficial impact of the apprenticeship model. To the extent that teams are working in different locations, it is unlikely that auditors will feel a responsibility to *model* high quality behavior to the same degree that they do when discussing matters in person.

The contribution to the study of accountability is, of course, limited to felt responsibility – we found no effect of apprenticeship norms on auditor actions directly. Future research could investigate whether apprenticeship norms influence actions when auditors face more subtle risks, such as social risks or less direct personal risks.

---

<sup>53</sup> For example, PwC promotes flexibility initiatives including formal telecommuting arrangements (<https://www.pwc.com/us/en/about-us/diversity/pwc-work-life-balance.html>).

## Acknowledgement

This research was supported by funding from the Norwegian Institute of Public Accountants (DnR) and Norwegian School of Economics (NHH). We would like to thank Kasper Vagle, and the workshop participants at Norwegian School of Economics, for their valuable feedback. In addition, we gratefully appreciate the participation of the professionals who agreed to take part in this study. We also acknowledge the research assistance of Saad Bin Anis.

## References

- Agoglia, C. P., R. C. Hatfield, & T. A. Lambert. (2015). Audit team time reporting: An agency theory perspective. *Accounting, Organizations and Society*, 44, 1-14.  
<https://doi.org/10.1016/j.aos.2015.03.005>
- Asare, S. K., G. M. Trompeter, & A. M. Wright. (2000). The effect of accountability and time budgets on auditors' testing strategies. *Contemporary Accounting Research*, 17 (4), 539-560.  
<https://doi.org/10.1506/F1EG-9EJG-DJ0B-JD32>
- Bennett, G. B., & R. C. Hatfield. (2013). The effect of the social mismatch between staff auditors and client management on the collection of audit evidence. *The Accounting Review*. 88 (1), 31-50. <https://doi.org/10.2308/accr-50286>
- Blum, E. S., R. C. Hatfield, & R. W. Houston. (2019). The Effect of Staff Auditor Reputation on Audit Quality Enhancing Actions. Unpublished manuscript.
- Bol, J. C., C. Estep, F. Moers, & M. E. Peecher. (2018). The role of tacit knowledge in auditor expertise and human capital development. *Journal of Accounting Research*, 56 (4), 1205-1252.  
<https://doi.org/10.1111/1475-679X.12220>
- Bonner, S. E. (2008). Judgment and decision making in accounting: Upper Saddle River, N.J. : Pearson/Prentice Hall, c2008.
- Brazel, J. F., S. B. Jackson, T. J. Schaefer, & B. W. Stewart. (2016). The outcome effect and professional skepticism. *The Accounting Review*, 91 (6), 1577-1599.  
<https://doi.org/10.2308/accr-51448>
- Coram, P., J. Ng, & D. R. Woodliff. (2004). The effect of risk of misstatement on the propensity to commit reduced audit quality acts under time budget pressure. *Auditing: A Journal of Practice & Theory*, 23 (2), 159-167. <https://doi.org/10.2308/aud.2004.23.2.159>
- Downey, D. H. (2018). An exploration of offshoring in audit practice and the potential consequences of associated work “redesign” on auditor performance. *Auditing: A Journal of Practice & Theory*, 37 (2), 197-223. <https://doi.org/10.2308/ajpt-51771>
- French, J. R., & B. H. Raven. (1959). The bases of social power. In *Studies in social power*, edited by D. Cartwright. Ann Arbor: University of Michigan Press, 150-167.

- Galinsky, A. D., J. C. Magee, D. H. Gruenfeld, J. A. Whitson, & K. A. Liljenquist. (2008). Power reduces the press of the situation: Implications for creativity, conformity, and dissonance. *Journal of Personality and Social Psychology*, 95 (6), 1450-1466. <https://psycnet.apa.org/doi/10.1037/a0012633>
- Gissel, J. L., & K. M. Johnstone. (2016). Information sharing during auditors' fraud brainstorming: Effects of psychological safety and auditor knowledge. *Auditing: A Journal of Practice & Theory*, 36 (2), 87-110. <https://doi.org/10.2308/ajpt-51519>
- McDaniel, L. S. (1990). The effects of time pressure and audit program structure on audit performance. *Journal of Accounting Research*, 28 (2), 267-285. <https://www.jstor.org/stable/2491150>
- Nelson, M. W., & C. A. Proell. (2018). Is silence golden? Audit team leader reactions to subordinates who speak up “in the moment” and at performance appraisal. *The Accounting Review*, 93 (6), 281-300. <https://doi.org/10.2308/accr-52011>
- Nelson, M. W., C. A. Proell, & A. E. Randel. (2016). Team-oriented leadership and auditors' willingness to raise audit issues. *The Accounting Review*, 91 (6), 1781-1805. <https://doi.org/10.2308/accr-51399>
- Pietsch, C. P. R., & W. F. Messier, Jr. (2017). The effects of time pressure on belief revision in accounting: A review of relevant literature within a pressure-arousal-effort-performance framework. *Behavioral Research in Accounting*, 29 (2), 51-71. <https://doi.org/10.2308/bria-51756>
- Sassenberg, K., N. Ellemers, & D. Scheepers. (2012). The attraction of social power: The influence of construing power as opportunity versus responsibility. *Journal of Experimental Social Psychology*, 48 (2), 550-555. <https://doi.org/10.1016/j.jesp.2011.11.008>
- Sassenberg, K., N. Ellemers, D. Scheepers, & A. Scholl. (2014). “Power corrupts” revisited: the role of construal of power as opportunity or responsibility. In *Power, Politics, and Paranoia: Why People are Suspicious of their Leaders*, edited by J.-W. v. Prooijen and P. A. M. v. Lange. Cambridge: Cambridge University Press, 73-88.
- Schilpzand, P., D. R. Hekman, & T. R. Mitchell. (2015). An Inductively Generated Typology and Process Model of Workplace Courage. *Organization Science*, 26 (1), 52-77. <https://doi.org/10.1287/orsc.2014.0928>
- Scholl, A., F. de Wit, N. Ellemers, A. K. Fetterman, K. Sassenberg, & D. Scheepers. (2018). The Burden of Power: Construing Power as Responsibility (Rather Than as Opportunity) Alters Threat-Challenge Responses. *Personality and Social Psychology Bulletin*, 44 (7), 1024-1038. <https://doi.org/10.1177%2F0146167218757452>
- Tost, L. P. (2015). When, why, and how do powerholders “feel the power”? Examining the links between structural and psychological power and reviving the connection between power and

responsibility. *Research in Organizational Behavior*, 35, 29-56.  
<https://doi.org/10.1016/j.riob.2015.10.004>

Tost, L. P., & H. H. Johnson. (2019). The prosocial side of power: How structural power over subordinates can promote social responsibility. *Organizational Behavior and Human Decision Processes* 152, 25-46. <https://doi.org/10.1016/j.obhdp.2019.04.004>

Wedemeyer, P. D. (2010). A discussion of auditor judgment as the critical component in audit quality – A practitioner's perspective. *International Journal of Disclosure and Governance*, 7 (4), 320-333. <https://doi.org/10.1057/jdg.2010.19>

Westermann, K. D., J. C. Bedard, & C. E. Earley. (2015). Learning the 'craft' of auditing: A dynamic view of auditors' on-the-job learning. *Contemporary Accounting Research*, 32 (3), 864-896. <https://doi.org/10.1111/1911-3846.12107>



## Figures and Tables

*Figure 1*

The figure below shows the dependent variable screen for the peer condition. Participants view this screen 3 times for 3 sections of the warehouse. The second and third screen do not include the first paragraph shown below.

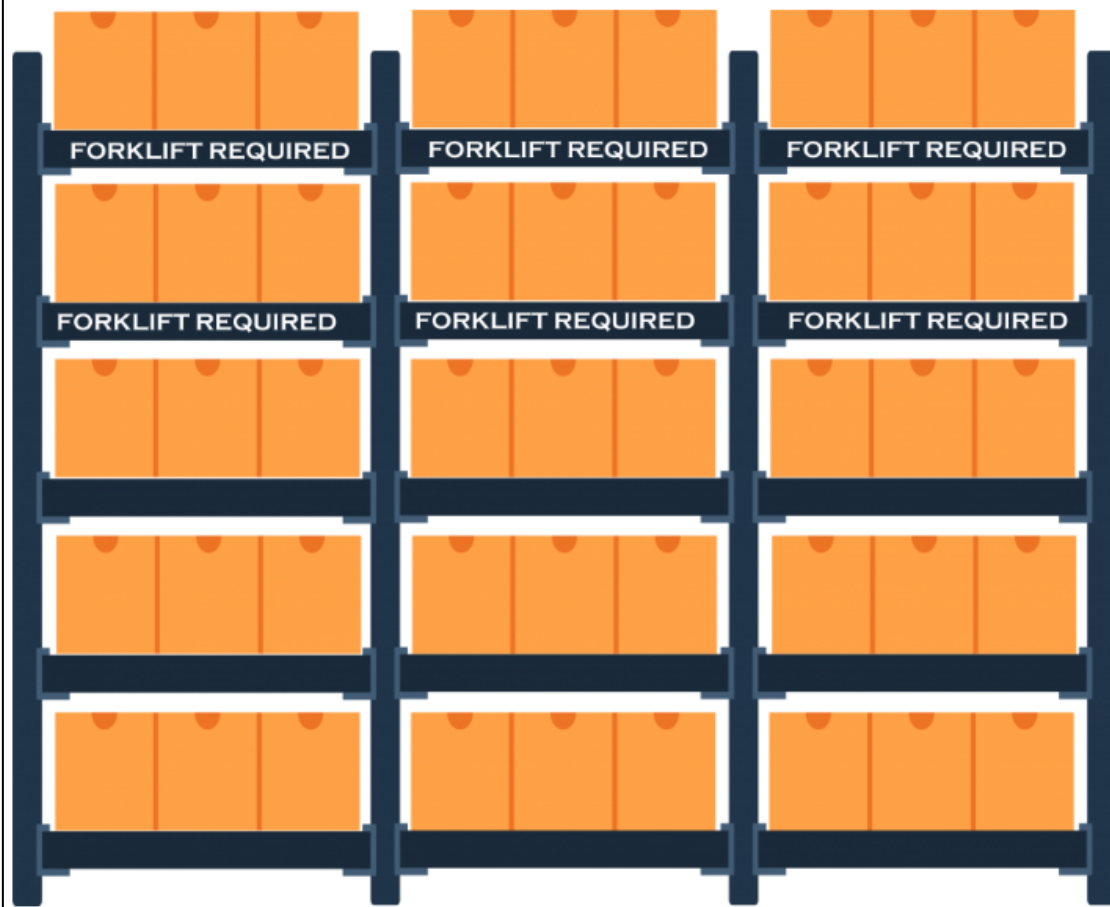
In the new hire condition, the word peer is replaced by “assigned staff” below, and instead of “your peer is not relying on you” the sentence states “your assigned staff is relying on you.”

In addition to the random sample you selected from the inventory listing, you are also required to make a selection of items from the warehouse floor, count them, and agree those quantities to the inventory listing. This test is designed to evaluate both the completeness and accuracy of the inventory listing.

You and your peer are in Section 1 of the warehouse. Please choose **6 boxes** from the image below for you and your peer to count. You will perform this task for three warehouse sections, for a total sample of 18 boxes.

Remember, **your peer is not relying on you** for instruction or explanation. If you would like to communicate to your peer any information about your decisions, you may do so here.

Section 1 of 3: Select 6 boxes for you and your peer to count



**Table 1: Participants Perception of Time Pressure**

Dimensions of Time Pressure	Conditions			
	means (standard deviation)			
	Novice/ No pressure	Novice/ High pressure	Peer/ No pressure	Peer/ High pressure
	n=26	n=24	n=24	n=24
	A	B	C	D
(1) "My schedule on the day of the Greylock count was comfortable."	4.46 (1.96)	2.88 (1.33)	3.92 (1.41)	2.21 (1.44)
(2) "My schedule gave me enough time to get everything done."	4.12 (1.71)	2.50 (0.98)	3.67 (1.61)	2.21 (1.14)
(3) "I felt that my performance ratings would suffer if the count went too far past the planned end time."	3.54 (1.79)	3.92 (1.61)	3.38 (1.50)	4.25 (1.89)
(4) "I worried that going over time on the count would cause problems for me."	3.19 (1.79)	3.75 (1.51)	3.13 (1.65)	4.67 (1.90)
Analysis of Variance on Dimensions of Time Pressure				
F-stat (p-value)				
	<u>Novice/Peer</u>	<u>Time Pressure</u>	<u>Interaction</u>	
(1)	3.656 (0.059)	27.040 (0.000)	0.037 (0.848)	
(2)	1.714 (0.194)	29.536 (0.000)	0.077 (0.782)	
(3)	0.06 (0.806)	3.291 (0.073)	0.517 (0.474)	
(4)	1.490 (0.225)	9.101 (0.003)	1.999 (0.161)	

**Table 2: Perceptions of Power and Responsibility**

**Panel A: Power and Benevolent Power Norms**

	Novice/ No pressure N=26	Novice/ High pressure N=24	Peer/ No pressure N=24	Peer/ High pressure N=24
<b><u>Power</u></b>				
(1) «I was more experienced than the other auditor from my firm assigned to the count.»	4.96 (1.73)	5.04 (1.30)	3.50 (1.22)	3.79 (1.50)
(2) «I was more knowledgeable than the other auditor from my firm assigned to the count.»	4.77 (1.58)	4.54 (1.29)	3.58 (1.32)	3.92 (1.32)
(3) «I knew more about auditing inventory than the other auditor from my firm assigned to the count.»	4.65 (1.72)	4.88 (1.42)	3.33 (1.34)	3.58 (1.50)
(4) «I knew more about audit procedures than the other auditor from my firm assigned to the count.»	4.73 (1.66)	4.83 (1.46)	3.25 (1.33)	3.88 (1.62)
<b><u>Benevolent Power Norms</u></b>				
(5) «I felt a responsibility to look out for the other auditor assigned to the count.»	5.62 (1.47)	5.67 (1.17)	4.38 (1.35)	4.63 (1.58)
(6) «I felt it was my duty to help the other auditor assigned to the count.»	5.62 (1.39)	5.92 (1.06)	4.75 (1.15)	4.83 (1.633)

**Analysis of Variance on Dimensions of Power and Responsibility**

F-stat (p-value)

	Novice/Peer	Time Pressure	Interaction
(1)	21.153(0.000)	0.398 (0.530)	0.129 (0.721)
(2)	10.463 (0.002)	0.036 (0.851)	1.004 (0.319)
(3)	18.364 (0.000)	0.597 (0.442)	0.002 (0.962)
(4)	15.581 (0.000)	1.386 (0.242)	0.715 (0.400)
(5)	16.211 (0.000)	0.283 (0.596)	0.123 (0.727)
(6)	13.170 (0.000)	0.513 (0.476)	0.165 (0.686)

### Panel B: Apprenticeship Norms

	Novice/ No pressure N=26	Novice/ High pressure N=24	Peer/ No pressure N=24	Peer/ High pressure N=24
<b><u>Apprenticeship Norms</u></b>				
<i>Felt Responsibility to Teach</i>				
(7) «I had a responsibility to teach the other auditor about inventory counts.»	5.58 (1.45)	5.63 (1.01)	3.46 (1.89)	3.33 (1.81)
(8) «I had a responsibility to guide the other auditor through the count process.»	5.50 (1.33)	5.71 (1.12)	3.67 (1.55)	3.83 (1.95)
<i>Felt Responsibility to Model Quality Behavior</i>				
(9) «I had a responsibility to model high quality performance for the other auditor.»	5.50 (1.48)	5.58 (1.18)	4.75 (1.62)	4.96 (1.73)
(10) «I had a responsibility to demonstrate high quality judgment for the other auditor.»	5.50 (1.45)	5.71 (1.16)	4.63 (1.72)	5.04 (1.73)

#### Analysis of Variance on Dimensions of Power and Responsibility

F-stat (p-value)

	Novice/Peer	Time Pressure	Interaction
(7)	47.951 (0.000)	0.015 (0.904)	0.074 (0.786)
(8)	36.590 (0.000)	0.374 (0.542)	0.005 (0.946)
(9)	5.038 (0.027)	0.227 (0.635)	0.042 (0.839)
(10)	6.211 (0.014)	1.021 (0.315)	0.113 (0.737)

### Panel C: Felt Responsibility to Conduct a Quality Audit

	Novice/ No pressure N=26	Novice/ High pressure N=24	Peer/ No pressure N=24	Peer/ High pressure N=24
(11) «I felt it was my responsibility to make the floor-to-sheet sample representative.»	5.42 (1.17)	5.38 (1.25)	4.88 (1.65)	5.54 (1.32)
(12) «I felt it was my duty to exercise appropriate professional skepticism.»	5.85 (1.22)	5.83 (1.05)	5.54 (1.35)	5.75 (1.15)

#### Analysis of Variance on Dimensions of Power and Responsibility

F-stat (p-value)

	Novice/Peer	Time Pressure	Interaction
(11)	0.485 (0.488)	1.275 (0.262)	1.702 (0.195)
(12)	0.640 (0.426)	0.163 (0.688)	0.208 (0.649)

**Table 3: Selection of Items from Top Shelves**

**Panel A: Mean Total Items Selected from High Shelves by Experimental Condition**

			Novice	Peer	Combined
High Pressure	Time		5.88	5.67	5.77
		M			
		<i>Sd</i>	2.31	1.97	2.13
			n = 24	n = 24	n = 48
Low Pressure	Time		7.38	6.88	7.14
		M			
		<i>Sd</i>	2.19	2.07	2.13
			n = 26	n = 24	n = 50
Combined		M	6.66	6.27	
		<i>Sd</i>	2.35	2.09	
			n = 50	n = 48	

**Panel B: Mean Total Items Selected from High Shelves Per Section by Experimental Condition**

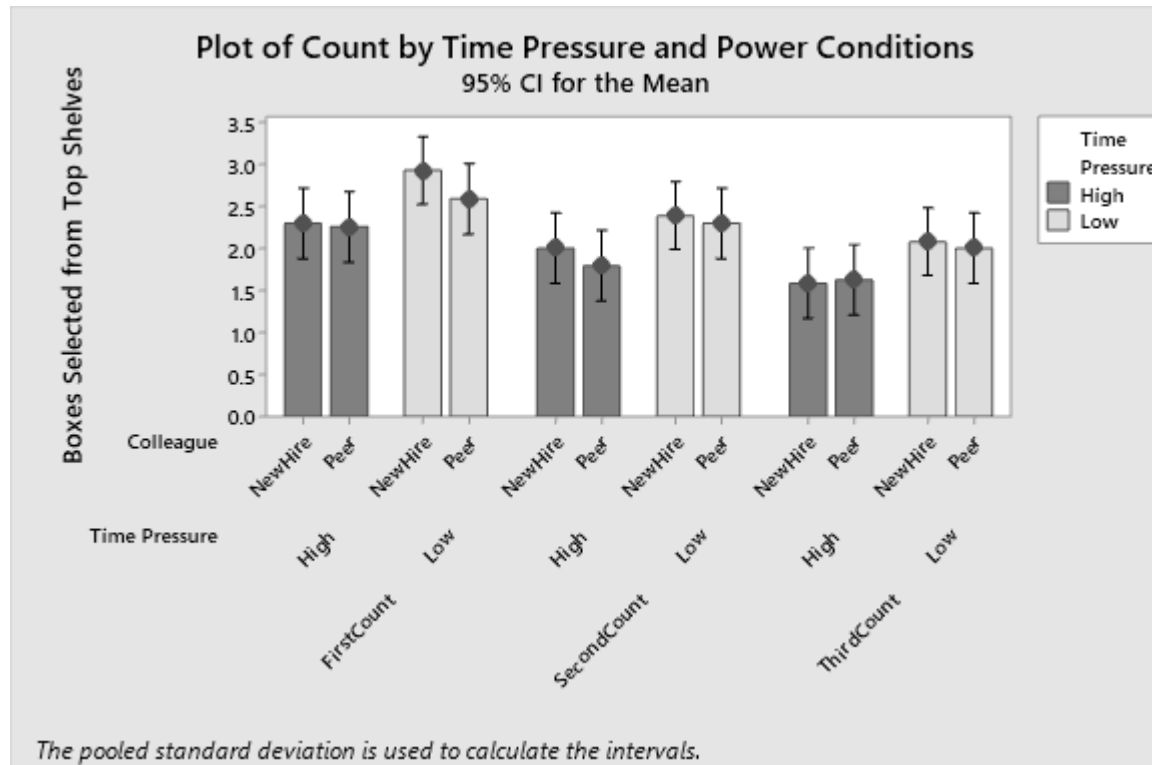
			Novice/ High Pressure	Novice/ Low Pressure	Peer/ High Pressure	Peer/ Low Pressure
Section 1	M		2.29	2.92	2.25	2.58
	<i>Sd</i>		1.20	1.23	0.61	0.78
			n = 24	n = 26	n = 24	n = 24
Section 2	M		2.00	2.38	1.79	2.29
	<i>Sd</i>		0.98	0.90	1.02	1.20
			n = 24	n = 26	n = 24	n = 24
Section 3	M		1.58	2.08	1.63	2.00
	<i>Sd</i>		1.06	1.20	0.92	1.14
			n = 24	n = 26	n = 24	n = 24

**Table 3 (Continued)**

**Panel C: Repeated-Measures Mixed ANOVA on Section High Count**

Source	df	SS	F	Sig.
Between Subjects Effects				
<i>Novice</i>	1	1.05	0.69	0.409
<i>Time Pressure</i>	1	15.06	9.86	0.002
<i>Power*Time Pressure</i>	1	0.19	0.12	0.729
Between-Subjects Error	94	143.58		
Within Subjects Effects				
<i>Section</i>	2	23.51	13.83	<.001
<i>Section*Novice</i>	2	0.4	0.24	0.799
<i>Section*TimePressure</i>	2	0.03	0.02	0.979
<i>Section*Novice*Time Pressure</i>	2	0.53	0.31	0.729
Within-Subjects Error	188	159.93		

**Panel D: Graphical Display of Results by Section**



## **Appendix A - Possible Explanations for Lack of Result**

### ***Participants Did Not View Representative Sample as a Quality Act***

A simple explanation is that the participants did not view selecting more items from the top shelves as a quality act. However, this is likely not the case for a number of reasons. First, our study was designed to include a reminder of the importance of a representative sample by including a statement to that effect on the list of possible statements to include in a message to the other auditor assigned to the count. Also, participants chose a representative sample absent time pressure, which suggests that they recognized that this was a quality action. The few participants who wrote instructions to their colleague on the count screens emphasized the importance of a representative sample. And lastly, participants reported that they felt a responsibility to select a representative sample.

### ***Participants No Longer Viewed a Representative Sample as a Quality Act When Faced with Time Pressure***

It is possible that participants no longer viewed the representative sample as a quality act, as time pressure can change how auditors interpret various cues (Pietsch and Messier Jr 2017). However, if this was the case, we would expect participants to report lower felt responsibility for selecting a representative sample in the PEQ, despite similar levels of their duty for audit quality. As there was no difference in that felt responsibility between the high and low time pressure condition, we conclude that this was likely not the case.

### ***Participants Did Not Internalize Their Obligation to Model Quality Behavior***

It is possible that the description of their colleague as a novice or peer did not result in sufficient pressure to model quality behavior. We conducted an initial data collection (prior to that reported in this paper) and found similar results to those reported here. We concluded in that case

that this was the most likely cause of our lack of results and chose to modify the instrument to increase the salience of the participant's colleagues' presence at the moment of the decision. While in the first sample it was not clearly indicated that the peer or new hire was standing next to the participant at the time of their sample selection, this was explicitly stated in our second sample (as reported in this paper). In contrast to Figure 1, which represents the dependent variable screen for the reported study, our dependent variable screen in the first study had no reference to the other person assigned to the count on this screen.

A comparison of the two samples is shown in Appendix A, Table 1. We see a main effect of sample, but no interactions between sample and the other auditor assigned to the count. Overall, participants in the second sample selected more representative samples than those in the original sample – an effect that could be due to the increased accountability from the revised DV, but we cannot rule out other differences between the two samples (which came from two different firms).

Inspecting a graph of the data, there appears to be an insignificant but present effect of new hire in the second sample, especially in the first round of sampling ( $t = 1.18$   $p = 0.246$   $DF = 42$ ). Specifically, it looks like those in the new hire condition facing low time pressure may have selected a targeted sample, choosing a more-than-representative sample from the top shelves in response to the client's comments. Importantly, this effect is present in the low time pressure condition only, suggesting that even if we further increased the salience of the power differential, it is unlikely to affect the high-risk conditions.

### ***Participants Were Constrained by a Lack of Perceived Autonomy***

Our case purposefully does not discuss possible avenues for addressing the time constraint faced by auditors in the high time pressure condition. We made this design choice to allow the auditors to consider the alternatives that would be available to them at their own firm.



(Alternatives, which would all likely involve first calling the manager or partner, include delaying the subsequent count, calling in additional help for the second count, or calling in additional help for the first count which would allow the auditor to arrive on time for the second count.) However, it is possible that participants felt they didn't have a choice in the matter. Schilpzand et al. (2015) identify perceived autonomy as a moderating variable in the relationship between felt responsibility and courageous action, an effect that is similar to that of perceived and actual behavioral control on the path from intention to behavior in Ajzen (1991)'s more general Theory of Planned Behavior. If participants felt they did not have the ability to choose to delay the count, they may have selected a lower quality sample despite higher felt responsibility to take action.

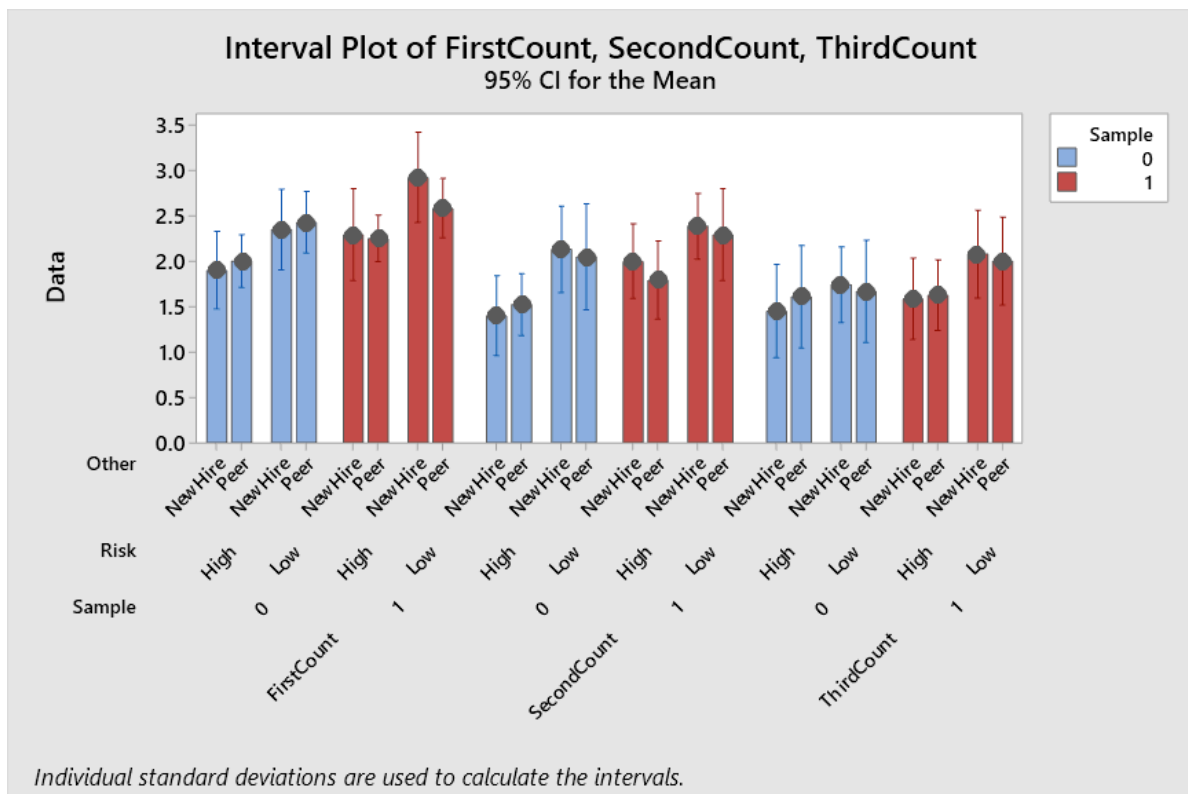
## Appendix B - Experiment conducted 13th of August 2019

*Table 1*

87 participants from a Big 4 Accounting Firm.

### Between-Subject Anova Results of Combined Sample

Source	df	SS	F	sig
Novice	1	0.488	0.094	0.759
Time Pressure	1	77.626	15.007	0.000
Sample	1	36.427	7.042	0.009
Novice * Time Pressure	1	1.643	0.318	0.574
Sample * Time Pressure	1	0.163	0.031	0.859
Sample * Novice	1	3.012	0.582	0.446
Sample * Novice * Time -Pressure	1	0.068	0.013	0.909
Error	177	915.580		



No significant difference was found on the post-experimental measures between the two samples.

The participants used 58 second longer completing this experiment than the main experiment reported in the paper ( $p = 0.039$ ).