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The Impact of Inherent Risk Factors Related to Fair Value Estimates on Inherent Risk Assessment: Evidence from the Canadian Context

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ABSTRACT

Auditing fair value measurements has faced significant challenges over the past two decades. Economic volatility, subjective assumptions, and complex financial assets contribute to estimation uncertainty, which increases the risk of management bias and misstatements. This uncertainty makes the audit process harder, especially when it comes to figuring out risks by gathering evidence. In 2018, ISA 540 was revised to address these issues by introducing 'inherent risk factors' related to accounting estimates that auditors must consider in their risk assessments. Additionally, the revision requires separate assessments of inherent and control risks. Our study aims to analyze the association statistically between estimation uncertainty and other factors on inherent risk assessments within the Canadian context. Furthermore, we investigate whether auditors comply with the requirements outlined in ISA 540 (2018) by examining the impact of control risks on inherent risk assessments. To conduct this research, we distributed a questionnaire to Canadian Chartered Professional Accountants (CPAs) auditors with experience and expertise in auditing fair value measurements. We asked them to describe a specific engagement experience involving auditing a particularly challenging fair value measurement (FVM). We show that estimation uncertainty and level 3 fair values positively and significantly impact inherent risk assessment. Additionally, our study finds that auditors tend to assess a higher inherent risk when control risk increases, which contradicts the standards requiring separate evaluations of inherent and control risks. We also find that the auditee's use of a valuation specialist does not affect the inherent risk assessment.

Keywords: Audit, Fair Value Measurements, Estimation Uncertainty, Risk Assessment, Inherent Risk.

INTRODUCTION

Auditors face significant challenges in auditing fair value measurements (Bell & Griffin, 2012; Bratten et al., 2013; Griffith et al., 2015; Cannon & Bedard, 2017). Academic literature (Bratten et al., 2013; Cannon & Bedard, 2017) prominently cites the importance of estimation uncertainty (EU) as the specific feature of FVM that makes them more challenging to audit (Bratten et al., 2013; Cannon & Bedard, 2017). The EU can result from factors such as model assumptions and management's selection of measurement models (Cannon & Bedard, 2017). Making accounting estimates involves selecting and applying a method using assumptions and data, which requires judgment by the management, especially when the item has an illiquid or no market (Batten et

al., 2013; Black et al., 2022). During economic instability and distressed markets, the uncertainty in model choices and inputs can magnify difficulties in creating fair value measurements (FVMs) (International Auditing and Assurance Standards Board (IAASB) 2008b; Public Company Accounting Oversight Board (PCAOB) 2011c; Bratten et al., 2013).

The high degree of estimation uncertainty is highly affected by complexity and subjectivity (Shatskov, 2024). Determining accounting estimates can sometimes be inherently complex. This complexity may arise when multiple sources of assumptions and data are needed or when the data used is difficult to identify, access, or understand (ISA 540, 2018). The task becomes even more complex if management uses a valuation specialist to assist in the valuation process. In fact, the information about the methods and the data these experts used may be absent or inaccessible. Subjectivity highlights the inherent limitations in the knowledge or data that are reasonably available regarding valuation attributes (ISA 540, 2018). Management typically relies on their judgment when determining the most appropriate data sources, developing assumptions based on the best available information, and selecting measurement methods.

The effects of uncertainty, complexity, subjectivity, and other factors of challenging FVMs, such as the use of valuation specialists, affect their susceptibility to misstatements. As these factors increase, the risk of material misstatement increases (Shatskov, 2024).

The use of complex accounting estimates and fair value measurements with high risks and uncertainty continues to grow in financial reporting. Thus, auditors need a more specific approach to identifying, assessing, and responding to a higher risk of material misstatement (International Auditing and Assurance Standards Board (IAASB), 2018).

Recurring audit inspection findings criticize the quality of the audit of accounting estimates, where the auditor failed to sufficiently evaluate significant assumptions and data that clients used in developing the estimates (PCAOB, 2017a). The PCAOB (2020) report pointed out that auditors usually fail to correctly include relevant evidence that contradicts management's assertions in financial statements. Instead of actively seeking contradictory evidence during the estimates audit, auditors focus on supporting their clients' positions (PCAOB, 2019; Griffith et al., 2015a; Glover et al., 2017; Austin et al., 2020). Consequently, they often lack professional skepticism (PCAOB, 2018).

Inherent risk represents a key input to calculating the risk of material misstatement. Thus, auditors should identify and appropriately assess inherent risk. In 2018, the ISA 540 was revised for the second time to address various challenges and assist auditors in assessing their risks. The updated standard redefines inherent risk and improves the methods for identifying and assessing the risk of misstatement. More comprehensive risk analysis requires auditors to consider 'inherent risk factors' in terms of four primary factors influencing the likelihood of misstatement in an account. These are complexity, subjectivity, change, and susceptibility to misstatement due to management bias or fraud. While these are the primary concerns, other factors, such as dependence on valuation specialists, can contribute to the overall risk. Properly assessing inherent risk will allow the auditor to perform further audit procedures more effectively and efficiently, improve overall audit quality, and keep pace with the changing market.

Furthermore, the revised standard requires auditors to ensure that their methodology allows for separate assessments of inherent risk and control risk and the assessment of inherent risk on a spectrum considering the likelihood and magnitude of a misstatement. This is an important idea in the scalability of the standard since where the risk under consideration falls on this spectrum will determine the nature of the further audit procedures that the auditor will demand. Essentially, the higher the risk placed on the spectrum, the stronger the audit evidence must be.

This study aims to test statistically the impact of estimation uncertainty, subjectivity (level 3 input), and other factors, such as the auditee's use of valuation specialists and their interrelationship, on the auditors' assessment of inherent risk after the new requirements of The revised ISA 540 (2018). Additionally, we examine whether auditors adhere to the requirements outlined in ISA 540 (2018) by investigating the influence of control risk on assessing inherent risk.

To address our research question, we conducted a survey using a questionnaire distributed to Canadian Chartered Professional Accountants (CPAs) auditors with experience and expertise in fair value auditing. We asked them to describe a specific engagement experience involving auditing a particularly challenging fair value measurement. We gathered information from 80 audit engagements of FVMs comprising Level 3 and Level 2 fair values, with financial instruments being the most prominent. Participants reported very high levels of EU in our sample.

The remainder of this paper follows: Section 2 summarizes the prior research relevant to our key topics and develops a specific hypothesis. Section 3 discusses research methodology, section 4 provides results, and section 5 presents conclusions and implications of our findings.

1. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Estimation uncertainty

Auditing fair value measurements is distinct from other audit categories due to the inherent uncertainty involved. Estimation uncertainty is the key factor complicating auditors' judgment (Christensen et al., 2012; Rowe, 2015; Cannon & Bedard, 2017; ISA 540 (2018); Szerwo et al., 2021).

ISA 540 (2018) (Revised) defines estimation uncertainty as "the susceptibility of an accounting estimate and related disclosures to an inherent lack of precision in its measurement." This uncertainty can lead to risks of material misstatements in the valuation (IAASB 2008a). Therefore, it is crucial for auditors to carefully consider how this uncertainty affects their risk assessments (Cannon & Bedard, 2017; ISA 540 (2018)). However, Bratten et al. (2013) noted that auditing standards and academic literature reinforce the importance of estimation uncertainty.

According to Bratten et al. (2013), estimation uncertainty in auditing FVMs arises from two key factors: measurement uncertainty and macroeconomic risks.

Measurement uncertainty

Measurement uncertainty stems from the inherent challenges in determining the value of an element, such as a financial instrument, or in estimating a discrete amount (Bratten et al., 2013). IFRS 13 establishes a hierarchy for fair value measurements based on the input data's reliability and verifiability. This hierarchy is categorized into three levels. Level 1 data consists of quoted prices in active markets and is regarded as the most reliable and verifiable. Level 2 includes data relating to observable prices for similar assets and liabilities in active markets. Level 3 data surround information that is not publicly observable, reflecting management's assumptions regarding the factors influencing the current value of the respective asset or liability. Bratten et al. (2013) and Black et al. (2022) emphasize the challenges of measuring fair values, particularly when market values are not available. This type of information often requires subjective judgments during estimation. For instance, level 2 valuations typically involve more subjective assumptions than level 1 valuations. The uncertainty inherent in input data significantly contributes to the overall measurement uncertainty.

Measurement uncertainty arises not only from input data but also from the assumptions used in the valuation models. Management often has the discretion to choose among various models, influenced by their preferences and objectives. This discretion can be used opportunistically, leading to biased and inaccurate fair value estimates (Hanley et al., 2018). Boone et al. (2023) suggest that accounting estimates can be a tool for managers, allowing them to manipulate figures upwards to avoid the negative implications of disappointing earnings. For instance, Bratten et al. (2013) illustrate that managers might opt for more subjective models when incentivized to minimize stock option expenses.

Conversely, it's important to note that managers can also unintentionally make valuation errors when attempting to establish fair values in inactive markets without intent to mislead (Black et al., 2022). Bratten et al. (2013) emphasize that a significant portion of measurement uncertainty arises from management's models. This added uncertainty introduces a high degree of subjectivity, complicating the audit process and prompting auditors to adopt a more conservative approach.

Macroeconomic Risks

Macroeconomic fluctuations can significantly affect the audit quality of fair value accounting estimates (IAASB, 2011). Bratten et al. (2013) highlight that model risk increases when valuation models are misconfigured during economic instability. For instance, the 2008 financial crisis posed significant challenges to fair value assessments, as observed prices may not accurately reflect fair value in difficult market conditions (IAASB (2008b); Hughes & Tett, 2008).

Estimation Uncertainty and inherent risk

Auditing involves recognizing and assessing the risks of significant misstatement. It is an ongoing and repetitive process of collecting, updating, and analyzing data throughout the audit. To this end, the IAASB adapted the risk assessment methods outlined in ISA 315 (revised) to address the specific challenges faced by accounting estimates in ISA 540 (2018) (revised).

Accounting estimates with high estimation uncertainty present challenges and risks for auditors (Christensen et al., 2012; Bratten et al., 2013; Griffith et al., 2015). The PCAOB (2020) states that estimation uncertainty is the main factor to evaluate in determining the risk of material misstatements. Add to that, Auditing standards, such as ISA 540 (2018, revised), state that estimation uncertainty complicates fair value audits and impacts the evaluation of inherent and control risks. Auditors should recognize these risks and include estimation uncertainty in their risk assessments. Recent amendments have improved the identification and evaluation of risks, enabling more effective responses. They also clarify that inherent risk refers to "the susceptibility of an assertion about that estimate to a material misstatement before considering any controls" (ISA 540; ISA 315). According to Lipshitz and Strauss (1997), decision theory posits that decision-makers encounter uncertainty and react by employing diverse strategies for adaptation. These methods aim to reduce uncertainty, improve understanding of its sources, and prevent occurrence. In auditing, Cannon and Bedard (2017) applied this theoretical framework, demonstrating that auditors assess a higher inherent risk when estimation uncertainty increases.

Given these insights, our hypothesis is :

H1: Auditors will assess higher inherent risk for FVMs as estimation uncertainty increases

Level 3 FVMs and inherent risk

Level 3 items involve increasing levels of subjectivity because they rely on less reliable inputs (Griffin, 2014). The lack of observable inputs in Level 3 fair value measurements results in significant measurement uncertainty, influencing the auditor's judgment (Bratten et al., 2013). Auditing Level 3 fair values typically requires evaluating the reasonableness of management's valuation model and the inputs used in that model (Griffith, Hammersley et al., 2015).

In this context, Griffin (2011) investigated how the interaction between subjectivity and imprecision in estimates influences auditor decisions. The study demonstrates that when estimates are highly subjective, imprecision has a more prominent effect on auditor judgments. Cannon and Bedard (2017) tested the impact of Level 3 fair values on inherent risk assessment and found that auditors assess a higher inherent risk when auditing Level 3 FVMs. So, our hypothesis:

H2: Auditors will assess higher inherent risk for Level 3 fair values.

Inherent risk and control risk

The primary objective of the external auditor is to identify and assess the risks of material misstatement in the financial statements, whether these are due to fraud or error (ISA, 315). To effectively address these risks, it is crucial to understand the entity and its environment, including its internal controls. This understanding helps in designing and implementing appropriate responses to the identified risks. Regulatory boards emphasize the importance of evaluating inherent and control risks to determine audit procedures' nature, timing, and extent (ISA 540, 2018).

Control risk refers to the possibility that a misstatement could occur in an account or class of transactions and that the internal control system will not prevent or detect it promptly. The ISA 540 (2018) mandates a sequential assessment of inherent risk followed by control risk.

However, research has demonstrated that the directives outlined in auditing standards are often not followed in practice. Control risk assessment is influenced, at least, by inherent risk. Dusenbury et al. (2000) describe this relationship as "downstream dependence," where control risk is modeled as a function of inherent risk. Add to that, Miller et al. (2012) surveyed auditors to examine their risk assessment methods and see if they comply with the standards' directives.

Their findings revealed that auditors often assume a specific level of effectiveness in the expected controls when evaluating inherent risks. This can lead to an increased risk of material misstatement in cases of internal control deficiencies. Additionally, Cannon and Bedard (2017) found that the control risk assessed by auditors has a positive and significant impact on evaluating inherent risk.

To clarify this dependence, we will refer to Kinney's (1989) models that illustrate the relationship between inherent and control risks. This involves classifying inherent risk into two categories: inherent risks that can be mitigated by controls (IRc) and inherent risks that likely cannot be mitigated by controls (IRnc). He proposes the following model:

RMM = IR*nc* + IR*c* * CR

Where RMM represents the risk of material misstatement; IRc denotes inherent risks that internal controls can correct or detect; IRnc refers to inherent risks that internal controls cannot correct or detect; and CR indicates control risk.

Based on this model, Kinney (1989) demonstrates that any information regarding controls will reduce the risk of material misstatement (RMM) after assessing inherent risk. This means that even if risks are assessed sequentially and auditors do not consider controls when evaluating inherent risk without controls (IRnc) and inherent risk with controls (IRc), they will eventually assess whether the controls can mitigate IRc.

As a result, the RMM will be at its highest level after evaluating both components of inherent risk. Existing controls will be considered to reduce the risk of material misstatement after assessing inherent risk (Kinney, 1989). The information gathered about these controls will assist in minimizing this risk. Hence our hypothesis:

H3: Auditors will assess higher inherent risk as control risk associated with FVM increases.

Use of valuation specialist

In addition to estimation uncertainty and subjectivity, complexity is the third factor associated with the inherent risk that auditors must consider when identifying and assessing the risks of material misstatement (Bratten et al., 2013). They argue that auditing fair value is an

unstructured task due to its complexity. This complexity arises from the auditor's responsibility to evaluate management's decisions, including the valuation models used and subjective assumptions. This complexity is higher when management relies on specific models and methods, often involving valuation specialists. Auditors must evaluate whether the selected models are suitable and assess the reasonableness of various assumptions, which can be subjective. Furthermore, there may be insufficient or inaccessible information regarding the methods employed by the valuation specialists engaged by the client. Therefore, we propose the following hypothesis:

H4: Auditors will assess higher inherent risk when the client uses a valuation specialist.

3. RESEARCH METHODOLOGY

Survey administration

We administered an experiential questionnaire to gather detailed descriptions from auditors about their experiences with a specific, highly complex FVM audit engagement. This questionnaire was distributed directly to a targeted group of senior-level CPA auditors in Canada, selected for their extensive experience in auditing complex and challenging FVMs. Of those who received the questionnaire, 40% completed it and returned it to our database for analysis. Participants included senior auditors from the Big 4 accounting firms and other prominent audit companies. We also contacted the Office of the Auditor General of Canada to administer the questionnaire to their CPA auditors. Senior managers and managers who have the deepest understanding of engagement details and FVM complexities made up 82% of our sample.

Questionnaire Design

The questionnaire was developed based on ISA 540 (2018), PCAOB inspection findings, and Cannon and Bedard's (2017) research. It asks participants to reflect on a recent audit engagement, focusing on one of the most complex and critical issues related to auditing a fair value measurement. We pre-tested our questionnaire with five Canadian CPA auditors, who provided their responses, comments, and suggestions for improvement.

Multivariate analysis

Our model aims to empirically test the factors affecting inherent risk assessment and forecast the impact of estimation uncertainty on inherent risk using ordinary least squares (OLS) linear regression. Table 1 outlines the variables incorporated in our model. The dependent variable is INHERENT_RISK, evaluated on a scale from 1 "low" to 5 "high." We assess EU using two variables: UNCERTAINTY, which is evaluated on a five-point scale from "less than materiality" to "greater than 5X materiality," and LEVEL3, an indicator set to 1 if the FVM is classified as Level 3 in the IFRS 13 fair value hierarchy, and zero otherwise. CONTROLRISK reflects the auditor's evaluation on a scale from 1=low to 5=high; SPECCLIENT is “equal to one if the client uses a valuation specialist and zero otherwise.

Similar to Cannon and Bedard (2017), we control the impact of the client size, measured by

SALES, based on five broad revenue categories. According to Cannon and Bedard (2017), a client's turnover does not significantly impact inherent risk assessment. While larger companies tend to be more complex, they also tend to be more stable, having better controls and more excellent management expertise. The model also includes controls for the most common FVM types: TYPE_FVM is set to one if the FVM is a financial instrument and zero otherwise. Cannon and Bedard (2017) found that the type of fair value does not significantly affect the assessment of inherent risk. However, Glover et al. (2017) indicate that complexity and uncertainty differ between fair value assessments of financial and non-financial assets. Non-financial instruments are typically more complex for three main reasons: data availability is limited, auditors are often less familiar with these types of estimates, and perceptions of accuracy can vary between regulators and users. For non-financial fair values, auditors must rely on data prepared by management, such as forecasts. In contrast, auditors can obtain independent data for many financial assets. Financial instruments are also more likely to be evaluated based on observable market comparisons than non-financial instruments (Glover et al., 2017).

Based on the theoretical review, our model is proposed as follows:

$$INHERENT\_RISK = \beta + \beta_1 UNCERTAINTY + \beta_2 LEVEL\ 3 + \beta_3 CONTROL\_RISK + \beta_4 SPEC\_CLIENT + \beta_5 TYP\_FVM + \beta_6 SALES \quad (1)$$

All the variables are defined in table 2.

4. RESULTS

Descriptive statistics

Environmental and Task Characteristics of Challenging FVMs

Participants explained their reasons for selecting a specific FVMs example by choosing from a list of factors contributing to this estimation's complexity. The most frequently mentioned factors were "the wide range of inputs and assumptions used by the management board" (66.7%), "estimation uncertainty related to FVM" (53.6%), and "significant uncertainty about the future occurrence or outcomes of events related to the assumptions" (50%). These findings align with the deficiencies noted in PCAOB inspections. Cannon and Bedard (2017) and Griffith et al. (2015) also showed that these issues are a significant source of complexity.

Table 1: Challenges in auditing FVMs

Challenges in auditing FVMs	Frequency (%)
Estimation uncertainty	53,6
The number of significant inputs and complex assumptions associated with the process	66,7
Management bias	27,9

The use of valuation specialists by the auditor or the auditee	29
A high degree of uncertainty associated with the future occurrence or outcome of events underlying the assumptions used	50
Auditee characteristics and regulatory and legal influences	19,4
Changes in accounting standards and financial reporting	16,1
Complexity of valuation models	41

Descriptive statistics of model variables

As detailed in Table 2, nearly 87% of the items in our sample are financial instruments. The mean *INHERENT_RISK* assessed by auditors for these fair-value audit engagements is 3.942 on a 5-point scale, while the average *CONTROL_RISK* is 3.45. Additionally, the average *UNCERTAINTY* score is 2.72 on a scale of 1 to 5, 76.4% either meet or exceed the materiality threshold, with 11.8% significantly exceeding it by more than five times.

These findings suggest that our sample consists of uncertain estimates, leading auditors to assess both high inherent and control risks. Furthermore, approximately 31.4% of the FVMs are classified as Level 3 according to the IFRS 13 classification. Our results also show that clients engage a valuation specialist in 74.2% of the audit engagements.

Table 2: Variables of the model and descriptive statistics

Variable name	**Measurement**	**Literature**	**Percentage (%) or (Mean)**	
INHERENT_RISK	inherent risk associated with FVM (scale from 1=low to 5=high)	Cannon and Bedard (2017); ISA 540 (2018)	(3,942)	
UNCERTAINTY	=1 if less than materiality	Cannon and Bedard (2017)	11,8	(2.72)
	=2 if approximately equal to materiality		32,4	
	=3 if 2-3Xmateriality		38,2	
	=4 if 4-5X materiality		5,9	
	=5 if greater than 5X materiality		11,8	

LEVEL 3	= 1 if Level 3 in the IFRS 13 hierarchy, and 0 otherwise	Cannon and Bedard (2017)	31.4
CONTROL_RISK	Control risk associated with FVM (scale from 1=low to 5=high)	Cannon and Bedard (2017)	3.45
SPEC-CLT	=1 if valuation specialist consulted by the client: Client employee=27.1% Third party= 47.1%	Cannon and Bedard (2017)	74.3
TYP_FVM	Financial instrument	Cannon and Bedard (2017)	76,9
	Non-financial instrument		11,5
SALES	=1 if < $ 25 million	Cannon and Bedard (2017)	23,2
	=2 if $25 million - $200 million		36,2
	=3 if $200 million - $1 billion		18,8
	=4 if $1 billion - $5 billion		11,6
	=5 if > $ 5 billion		10,1

Controls surrounding the FVMs process

Table 3 shows that nearly 42% of participants reported using at least some controls related to the FVM process to adjust the nature, timing, or extent of substantive audit procedures. Some participants provided specific examples of these controls, such as reviewing valuation inputs and assumptions, reports from external valuation specialists, and the evaluation process.

Respondents highlighted several reasons for not relying on these controls. They noted that the controls were often not precise or robust enough to detect errors. The auditors described some internal controls as weak and criticized specific designs for their shortcomings. They also emphasized the subjectivity of inputs and assumptions and the inherently high risk involved in the process. Additionally, some respondents pointed out the absence of controls in the FVM process.

Table 3: The use of the controls surrounding the FVMs process

	Frequency	**Pourcentage (%)**
Yes	29	42,6
No	39	**57,4**

Results of regression analysis

Table 4 presents the results of our model, which investigates the factors associated with inherent risk assessments for FVMs. The adjusted R^2 for the model is 0.5, indicating that the test variables significantly contribute to its explanatory power ($F = 7.434$, $p < 0.001$). The coefficients for *UNCERTAINTY* are positive and statistically significant ($p = 0.099$), supporting Hypothesis 1 (H1). The coefficient magnitudes suggest that starting from a mean of 2.72, *INHERENTRISK* increases by 0.149 units for each unit increase in *UNCERTAINTY.* This finding aligns with the results of Rowe (2019), Cannon, and Bedard (2017), who show that as estimation uncertainty rises, the inherent risk also increases for the possibility of significant anomalies. Furthermore, this result is consistent with ISA 540 (2018), which advises auditors to consider estimation uncertainty in their risk assessments. However, the respondents assess the *INHERENT RISK* as low to moderate (3 or less on a 5-point scale) when estimation uncertainty is high. This assessment can be attributed to the auditors' lack of professional skepticism, as highlighted by the PCAOB (2020). This finding is consistent with Cannon and Bedard (2017), who describe this result as troubling primarily due to auditors' insufficient critical thinking. Furthermore, the coefficients for *LEVEL 3* are positive and significant, supporting Hypothesis 2 (H2). This finding corroborates with Cannon and Bedard (2017), which shows that Level 3 positively and significantly affects inherent risk. The unobservability of Level 3 data creates high measurement uncertainty (Bratten et al., 2013).

Add to that, model results indicate that *CONTROLRISK* is positively and significantly associated with increased inherent risk assessments ($p=0.000$), supporting Hypothesis 3 (H3).
This aligns with Cannon and Bedard (2017) who showed a positive relationship between control risk and inherent risk. In practice, inherent risk is modified based on the extent of assessed control risk and,
Therefore, shows high interdependence with the other kinds of risk as outlined by Dusenbury et al. (2000). However, such findings conflict with ISA 540 (2018) requirements, which prescribe the need to evaluate separately two risks of material misstatement. The standard provides an inherent risk assessment before the controls are examined. In practice, we assert that this requirement is not consistently met.
On the other hand, the coefficient for *SPECCLIENT* is positive but not significant ($p=0.199$), which means Hypothesis 4 (H4) is not supported. Our results align with those of Cannon and Bedard (2017), who found that the client's use of a valuation specialist does not significantly affect the assessment of inherent risk. This aligns with Brink et al. (2016), who conclude that evaluations provided by an expert engaged by the client are perceived as more objective and less subject to risks. Auditors stipulate that estimates from independent experts as more relevant than those developed by management, impacting their assessment of inherent risk.

Regarding the control variables, the *TYPFVM* has no significant impact on inherent risk ($p=0.476$). Additionally, the *SALES* has a negative but non-significant impact on the assessment of inherent risk during the fair value audit engagement ($p=0.743$). This result is inconsistent with the finding of Cannon and Bedard (2017) who found that inherent risk and client size are significantly and negatively related. Larger companies, however, are often more complex and sometimes more stable because their controls and quality of management are generally better. However, they also show that the type of fair value does not significantly affect the assessment of inherent risk, which is consistent with our results.

Table 4: Results of the model

Test variables	**Coefficient**	**p-value**	**Hypothesis**
UNCERTAINTY	0,163*	0,080	H1 confirmed
LEVEL 3	0. 749***	0,001	H2 confirmed
CONTROL_RISK	0,349***	0,000	H3 confirmed
SPEC_CLIENT	0,181	0,456	H4 rejected
Control variables			
TYPFV	0,141	0,482	
CA	0,039	0,636	
Constant	1.564	0,002	
ANOVA test	7,434	**0,000**	
R^2	0.5		

Notes: *, **, and *** represent significance levels of 0.10 [or 10%], 0.05 [or 5%], and 0.01 [or 1%], respectively. Values in the cells are model coefficients, with t-statistics in parentheses. All variables are defined in Table 2.

CONCLUSION

Fair value measurement challenges, including uncertainty and complexity, heighten the risk of material misstatement (Shatskov, 2024). As more complex accounting estimates grow, auditors must focus on assessing inherent risk accurately, which is crucial for determining material misstatement risk (IAASB, 2018). The revised ISA 540 standard redefines inherent risk and improves assessment methods, emphasizing complexity, subjectivity, change, and vulnerability to bias or fraud. It requires separate assessments of inherent and control risk, identifying inherent risk on a spectrum based on the likelihood and magnitude of misstatements impacting audit procedures. Cannon and Bedard (2017) indicate that estimation uncertainty and Level 3 inputs significantly affect inherent risk assessments, while client use of valuation specialists has no impact. Our study intends to statistically examine the influences of estimation uncertainty, subjectivity, and other factors on auditors' assessments of inherent risk after the new requirements of ISA 540 (2018) and the impact of control risk. Our empirical research has produced significant findings related to audit risk assessment for challenging FVMs. These

insights are valuable for researchers, practitioners, and regulatory boards. First, we found that the most significant factors contributing to the complexity of auditing these estimates include the large number of variables, data, and assumptions used by management; the estimation uncertainty associated with fair value measurements; and the high degree of unpredictability related to future events that underpin these assumptions. This finding aligns with the results of Cannon and Bedard (2017), Glover et al. (2017), and Griffith et al. (2015). Regulatory bodies should consider these challenges to improve the quality of auditing FVMs. Second, our results showed that estimation uncertainty positively affects the assessment of inherent risk. However, the coefficient for this variable indicates that when uncertainty exceeds the materiality, respondents assess inherent risk within a low to moderate range (3 or less on a 5-point scale). This suggests a lack of professional skepticism among auditors (Cannon & Bedard, 2017; PCAOB, 2020). Future research is needed to study why some auditors might assess risk as less than high in an engagement with challenging FVMs and high EU. Therefore, we encourage auditors and standard setters to enhance critical thinking and emphasize the importance of estimation uncertainty, which should be more thoroughly considered in the risk assessment process. Third, we found that control risk positively and significantly affects inherent risk assessment. At the practical level, auditors often do not assess these two risks separately, which goes against the requirements outlined in ISA 540 (2018). This finding is consistent with the findings of Cannon and Bedard (2017), Miller et al. (2012), and Dusenbury et al. (2000). The standard mandates that auditors must first assess inherent risk and control risk separately, focusing on processes that are likely to result in material misstatements, followed by evaluating the controls designed to prevent such misstatements. Our results imply that standards must clarify this requirement by employing more elaborate procedures to motivate auditors to adhere to it. We also propose that audit regulatory boards survey auditors to obtain their views on the causes of non-compliance with this requirement. Also, our findings indicate that Level 3 significantly and positively impacts inherent risk assessment. This result highlights the increased complexity associated with Level 3, leading to a higher inherent risk assessment. Conversely, the client's use of a valuation specialist does not significantly affect the inherent risk assessment. This perception stems from the belief that valuations conducted by specialists hired by the audited company are more objective and pose less risk. As a result, auditors may regard the estimates provided by these experts as more relevant, which does not influence their evaluation of inherent risk (Brink et al., 2016; Cannon & Bedard, 2017). We also found that fair value—both financial and non-financial—along with the size of the audited company does not influence inherent risk (Cannon & Bedard, 2017). In summary, numerous factors positively impact assessing inherent risk in auditing fair value: Level 3 (subjectivity), control risk, and estimation uncertainty. Among them, the most contributing factor to inherent risk is Level 3 since it is subjective, followed by control risk and estimation uncertainty. Auditors must consider all these factors to assess inherent risk effectively.

Our results provide a complete picture of current auditing practices in risk assessment after the new requirements of ISA 540 (2018). We also provide timely insights about specific areas where regulatory boards could clarify standards to improve auditors' performance concerning audits of complex FVMs and the causes of the non-application of some requirements in ISA 540 (2018).

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