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CRYPTOCURRENCIES IN ACCOUNTING AND AUDITING RESEARCH AND PRACTICE
DOCTORAL THESIS SUMMARY

Scientific Coordinators:
Prof. PhD Adriana Tiron-Tudor
Prof. PhD Francesca Manes Rossi

PhD. Candidate:
Ștefania Mierliță-Pantea

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1. Context and Importance of the Research

In recent years, the emergence of cryptocurrencies has become one of the most significant developments within the global digital economy. Their rapid expansion is reflected through the increased market capitalization, surpassing $3.9 trillion in October 2025, and through high institutional participation, like the Securities and Exchange Commission's (SEC) approval of listing and trading 11 cryptocurrency exchange-traded funds. These key aspects show the widespread adoption and underscore the impact they have on various stakeholders, like regulators and practitioners.

By combining decentralized technologies, cryptography, and peer-to-peer networks, cryptocurrencies have transformed financial transactions and investment practices, creating a new class of digital assets that challenge conventional accounting and auditing practices. Despite their growing adoption by companies and investors, accounting frameworks and auditing standards have struggled to keep pace with this innovation. Specifically, the International Accounting Standards Board's agenda decision to rely on IAS 2 "Inventories" or IAS 38 "Intangible Assets" in accounting for cryptocurrencies is considered a short-term solution, while the Financial Accounting Standards Board's (FASB) recent project on amending the intangibles standard (Topic 350) underscores regulatory pressures, leading to requests for a crypto-specific standard. The lack of globally accepted recognition and measurement rules, together with concerns about volatility, valuation, and cybersecurity, have created substantial gaps between practice and regulation.

The unique nature of cryptocurrencies lead to novel challenges for accounting professionals and auditors. They need to acquire experience and expertise beyond traditional financial reporting, like understanding the functioning of crypto wallets. This requires interdisciplinary collaboration between accounting or audit specialists and IT or blockchain experts.

This doctoral research responds to these challenges by investigating how cryptocurrencies are integrated into accounting and auditing research and practice, providing a multidisciplinary examination of cryptocurrencies, and exploring their treatment in academic literature, their regulatory development, and their implications for auditors. Through this lens, the thesis aims to enhance both theoretical understanding and practical approaches to one of the most dynamic phenomena in the financial landscape of the 21st century.

2. Research Purpose, Objectives, and Questions

The main purpose of the thesis is to examine the impact of cryptocurrencies on the accounting and auditing professions through three interrelated dimensions: academic knowledge, regulatory processes, and professional risks. Specifically, this thesis is structured around three main objectives. First, it analyzes the evolution and current state of research on cryptocurrency accounting and auditing, identifying themes, trends, and knowledge gaps. Second, it focuses on stakeholder participation and legitimacy in the standard-setting process for crypto assets, focusing on the latest FASB 2023 project on amending the existing intangible standard to econpass crypto assets. Thirs, the thesis investigates auditors' risk assessments, as well as behavioral factors when dealing with crypto-related engagements. To achieve these objectives, the thesis is guided by specific research questions within each of the three chapters, as follows.

Chapter I. Exploring the Uncharted Territories: A Structured Literature Review on Cryptocurrency Accounting and Auditing

RQ1: How is research inquiring into accounting and auditing cryptocurrencies developing? This question maps how academic literature and practitioner debates on cryptocurrency accounting and auditing has evolved.

RQ2: What is the focus and critique of the cryptocurrency accounting and auditing literature? This question identifies the key research themes, methods, and geographical focus areas.

RQ3: What is the future for accounting and auditing cryptocurrencies research? This question recognises gaps and provides directions for future research.

Chapter II. Stakeholder Engagement through Comment Letters: FASB's Crypto Asset Accounting and Disclosure

RQ1: Do respondents from various groups differ in their levels of comment letter submission to the FASB ED? This question focuses on the different types of stakeholders that engage in the comment letter process.

RQ2: What is the extent of agreement (disagreement) with the issues raised in the FASB ED? This question identifies whether respondents support or oppose the proposal.

RQ3: What arguments have respondents emphasized in their comment letters? This question investigates the concerns, recommendations, suggestions for improvement raised by the stakeholder groups.

RQ4: How responsive has the FASB been to stakeholder input in the standard-setting process? This question focuses on how FASB addresses and responds to stakeholders' feedback from comment letters.

Chapter III. Investigating Risk Dimensions of Cryptocurrency Transactions in Audit

RQ1: Which are the highest crypto risks perceived by auditors? This question identifies and ranks crypto-related audit risks

RQ2: What impact does professional skepticism have on auditors' assessment of the risks associated with cryptocurrency holdings and transactions? This question evaluates relationships among risk assessment, professional skepticism, time pressures, experience and expertise.

3. Theoretical Framework

Building on the insights from the structured literature review (SLR), the research examines the phenomena of cryptocurrencies in the accounting and auditing areas, adopting two key theories: Legitimacy Theory, and Behavioral Accounting Theory (BAT). Specifically, Legitimacy Theory supported and guided the analysis from the second chapter, and BAT from the third one. These two lenses are used to interpret how standard setters (the FASB) and professionals (auditors) respond to the novel phenomena of cryptocurrencies. By combining these perspectives, the thesis addresses both institutional-level and individual-level adaptation to cryptocurrencies.

Legitimacy Theory provides a framework for understanding how standard setters such as the FASB seek to maintain societal approval by aligning their actions with socially constructed norms and expectations. It underpins the analysis of standard-setting from the second chapter, positing that accounting regulators maintain legitimacy by responding to stakeholder demands and ensuring transparency in their decision-making, demonstrating transparency, fairness, and responsiveness.

According to Richardson and Eberlein (2011), legitimacy comprises input, throughput, and output components, each reflecting how effectively standard setters engage with stakeholders, the fairness

of the decision-making process, and the appropriateness of the final standard. Applied to the FASB context, legitimacy theory allows the chapter to examine the engagement and diverse nature of stakeholders (input legitimacy), as well as the standard-setter responsiveness to stakeholders' input (throughput legitimacy) by tracking document changes. Prior research shows that broad stakeholder participation and standard-setter responsiveness are central mechanisms through which they manage legitimacy. As this amended standard has not yet been implemented, the current analysis focuses on input and throughput legitimacy.

Behavioral Accounting Theory (BAT) investigates the relationship between accounting and human behavior in organizational contexts (Pesämaa, 2017). Research stressed the need to examine the behavioral assumptions behind traditional accounting practices (Caplan, 1966). Behavioral accounting research encompasses various critical domains, including auditing. Specifically, BAT informs the third chapter on auditors' decision processes, focusing on how they assess crypto-related audit risks. It investigates how psychological (professional skepticism) and contextual factors (like time pressures) influence audit decisions (risk assessment), being particularly relevant in high-uncertainty contexts like crypto. Prior research suggests that auditors' judgments in uncertain environments are influenced by their level of skepticism, experience and expertise with the underlying subject, and in audit. Therefore, this theoretical framework aids in the development of the PLS-SEM model.

4. Methodology

To address its objectives, the thesis employs a mixed-methods research design, combining quantitative and qualitative approaches, with each chapter using a method appropriate for achieving its objectives.

The first chapter applies a Structured Literature Review (SLR), following the approach developed by Tranfield et al. (2003) and Massaro et al. (2016), to provide a systematic and replicable assessment of the literature on accounting and auditing cryptocurrencies. The literature review relies on the SLR protocol, following a transparent and replicable process that includes database searches, predefined inclusion and exclusion criteria, thematic coding, and cross-checking for consistency. Therefore, a comprehensive search strategy was established, followed by rigurous

procedures in the selection of articles indexed in Scopus and Web of Science, using a refined keyword string, resulting in 2,032 articles. These were filtered by language, then title, abstract, ketwords, removal of duplicates, and full-text eligibility checks, yielding a final sample of 84 publications. The resulting dataset allows for systematic evaluation of key research themes, and methodological patterns. The SLR methodology included citation assessments to contexutalize the relevance and influence of selected articles. Then, a structured framework guided the coding and analysis of the selected articles, covering year of publication, author type, research method, geographical location, research topic. The coding was performed manually, in Excel, ensuring reliability through consistent application of the predefined categories, while construct validity was enhanced by integrated both highly-cited and less-cited studies. This systematic and transparent procedure represents a robust foundation for mapping key themes and identify future avenues in the crypto accounting and auditing literature.

The second chapter employs deductive content analysis to evaluate stakeholder participation and standard-setter responsiveness. The analysed data consists of 83 comment letters, the ED, as well as the final ASU 2023-08. To address RQ1, respondents were classified into stakeholder groups based on the categories established by FASB, refined through a meeting with FASB members to ensure alignment. These categories were then allocated to three braoder groups: accounting professionals, users, society. RQ2-RQ4 were examined through human-based content analysis in Nvivo, coding the responses according to the level of agreement, and thematic category for the suggestions (clarification, scope, measurement, presentation, disclosure). For RQ4, FASB's responsiveness was evaluated by tracking changes from the ED to ASU 2023-08, and comparing them with stakeholders' suggestions for improvement. This qualitative approach enables a robust examination of inout and throughput legitimacy in the crypto asset standard-setting process.

The third chapter applies an empirical research design, based on a survey, aiming to examine how auditors assess crypto-related audit risks and how professional skepticism, time pressures, experience and expertise influence these judgments. Data was collected through a structured questionnaire distributed online to auditors through proposive and snowball sampling techniques. The survey included five sections on: demographic and professional background (including experience and expertise), perceptions on how crypto impact inherent risk and audit fees, evaluation of 17 crypto-related risk scenarios (for both likelihod of occurrence and impact),

professional skepticism (using the Hurtt Professional Skepticism Scale), and time budget pressure (based on the scale by Otley and Pierce, 1996). The final sample consists of 150 auditors from multiple countries. First, in order to identify and rank the most risky scenarios, as assessed by respondents, we first calculated the average likelihood and the average impact for each scenario. Then, the risk assessment is calculated by multiplying these averages. As several scenarios were rated as '6 = unable to determine' more frequently than others, a score of uncertainty was calculated. It is based on the sum between the number of times respondents selected option 6 for each risk scenario, for both likelihood and impact. Second, the data was analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS to test the hypotheses and to evaluate the influence of psychological and contextual factors on auditors' assessment of crypto-related audit risks.

The triangulation of these methods ensures a comprehensive understanding of the topic, bridging theoretical insights, regulatory developments, and practical risk assessments.

5. Main Findings

Chapter I – The State of Academic Research on Cryptocurrencies

The findings for RQ1 reveal a growing body of research on cryptocurrency accounting and auditing. By examining academic literature over the past decade, author backgrounds, methodologies, geographical focus, and research themes, the first chapter of the thesis highlights key patterns in the field. The thematic analysis provided key insights into how the literature in this area evolved, setting the foundation for the following research question.

For RQ2, it was observed that the focus and critique of the cryptocurrency accounting and auditing literature revolved around several emerging themes: regulation, classification, measurement, disclosure, auditing, illegal activities, One major debate revolved around the regulatory framework for cryptocurrencies. The literature presents three approaches: applying existing standards, amending them to include crypto-related aspects, or issuing a specific standard to address the distinct nature of these novel assets. Second, debates around classification support the application of IAS 2 "Inventories" for cryptocurrencies that are held for resale in the ordinary course of a business, while IAS 38 "Intangible Assets" applies in all other circumstances. In terms of

measurement, fair value is widely considered the most relevant approach, considering the volatile nature of crypto, a position consistent with recent amendment in U.S. GAAP. Disclosure is another key theme. Specifically, the literature calls for additional crypto-specific disclosure requirements, as the disclosures required by current standards are cosidered insufficient. Furthermore, another recurring theme identified by the literature review is the use of cryptocurrencies as a potential tool for illegal activities such as money laundering, tax evasion, among others. This is possible due to the unique characteristics of cryptocurrencies, such as their decentralization and pseudo-anonimity. In order to prevent or mitigate the use of crypto in illigal activities, auditors need to consider the purpose of crypto transactions performed by the audited client, specifically whether the transactions are related to the overall business strategy or whether they are related to the reason of maintaining anonymity. Lastly, the analysis also revealed hightened audit risks, that could may arise from a lack of prior experience and expertise among auditors and clients. Therefore, it is necessary for auditors to increase their level of competence in the area, through training and education, or by hiring experts to be part of the audit teams.

Finally, RQ3 underscored the need for future research in this area. As cryptocurrencies challenge the boundaries of existing accounting and auditing, new methods, tools, and regulation need to be developed. The rapidly evolving regulatory landscape demands further investigation, particularly to understand how these emerging rules impact practice.

Overall, the findings indicate that the academic literature recognizes cryptocurrencies as both a challenge and an opportunity for the accounting and auditing profession but lacks consistent approaches. The chapter emphasizes the urgent need for frameworks capable of addressing the unique nature of crypto assets.

Chapter II – Stakeholder Participation and Standard-Setter Responsiveness

The second chapter analyzes the FASB's standard-setting process leading to ASU 2023-08, the amended accounting standard on intangibles that includes crypto assets under U.S. GAAP.

The findings for RQ1 reveal that the comment letters were submitted by diverse grous of stakeholders, highlighting input legitimacy in this due process. Similar to other accounting standard-setting contexts, the accounting profession emerges as the most active group, consistent with their incentives to advocate for outcomes alogned with their professional interests. Notably,

users constitue the second-most engaged group, in contrast to previous findings, reflecting the importance of this ED for users (e.g., investors), given its focus on crypto assets. Furthermore, a relatively high number of individuals (coded as "others") submitted comment letters, which can be attributed to personal interest in crypto, rather than technical accounting expertise.

For RQ2, the content analysis of 83 comment letters reveals that stakeholders, including accounting professionals, users, society members, widely supported the proposed amendments (63.4%). Respondents frequently provided positive feedback, while expressing minimal disagreement (3.92%) and partial agreement (6.25%). This positive response aligns with the high demand for clear guidance on accounting for crypto assets. The accounting profession category provided more detailed arguments, frawing on their expertise and experience to both support the amendments and identifying shortcomings or suggesting improvements. This is due to the fact that this group becomes much more engaged when proposals significantly influence a firm's accounting figures.

In regards to RQ3, stakeholders suggested several aspects that could be improved. Particularly, the accounting profession's arguments predominantly focused on seeking clarification (52.66%). These requests were aimed at ensuring accurate and consistent application of the amended standard, underscoring their technical expertise. Conversely, users focused more on disclosure-related issues (37.84%) rather than other categories. This aligns with prior literature (Jorissen et al., 2012; Kulik & Dobler, 2023) indicating that users are more motivated to engage when proposed standards impact the transparency and usefulness of financial information.

Finally, the results to RQ4 show that the FASB considered stakeholders' feedback, as it is largely characterized by agreement. The Board incorporated some of the most frequent suggestions made by respondents, particularly in relation to clarification, scope and measurement. This demonstrates the Board's responsiveness and supports throughput legitimacy in this crypto standard-setting process. At the same time, the FASB adopted a relatively narrow revision strategy, while citing time constraints, leaving several issues outsite the scope of these amendments. Nevertheless, by acknowledging stakeholders' concerns and continuing their work on this topic, through their 2025 Invitation to Comment which includes a crypto-related question, the FASB shows ongoing commitment to strengthening its legitimacy.

Chapter III – Audit Risk and Behavioral Determinants in Cryptocurrency Engagements

The third chapter investigates how auditors evaluate risks associated with cryptocurrencies. First, for RQ1, the findings indicate that market volatility, inconsistent valuation methods, and valuation difficulties are perceived as the highest risks due to their potential for material misstatement. The additional uncertainty ranking shows that transaction errors, fraudulet activities, ownership verification and wallet-related issues are areas where auditors are uncertain, less confident, indicated limited expertise and highlighting the need for clearer guidance and enhanced training.

For RQ2, the evaluation of the outer and inner models shows strong reliability and validity, with no collinearity concerns. Although predictive power is just above the recommended threshold, the model remains appropriate given the emerging context. Furthermore, the PLS-SEM results demonstrate that professional skepticism significantly improves risk assessment, aligning with literature suggesting skeptical auditors make more cautious judgments in high-risk contexts like crypto. Crypto-specific experience and expertise had a strong effect on skepticism, indicating that auditors familiar with crypto are more likely to question and critically assess evidence. Next, time budget pressures negatively impacted professional skepticism, as such pressures lead to constraints and stress, which reduce auditors' skeptical judgment. Crypto experience and expertise also boost general audit experience and expertise, which may further influence audit quality over time. In contrast, audit experience and expertise did not impact skepticism or risk assessment, suggesting that, in crypto audits, domain-specific knowledge may outweigh general experience or time constraints. Last, both crypto experience and expertise, as well as time pressures, impact risk assessment indirectly through professional skepticism. These findings confirm that behavioral and contextual variables often outweigh technical experience and expertise in shaping auditors' professional responses. The study proposes a risk-ranking list for crypto audits and calls for enhanced auditor training and ethical guidance to manage these novel challenges.

6. Thesis Conclusions

This doctoral thesis underscores that cryptocurrencies have impacted accounting and auditing frameworks and practices. Through insights from the structure literature review, the analysis of FASB's latest project on crypto, and the empirical analysis on crypto audit risks, the thesis shows

that both accounting and auditing practitioners navigate uncertain environments, regulatory gaps, and novel risks.

The literature on cryptocurrency accounting and auditing reflects the growing interest in this area, with a focus on related regulation, classification, measurement, disclosure, audit, and potential illegal activities. It highlights the urgent need for clearer and more comprehensive frameworks, as well as crypto-specific standards and methods.

Furthermore, the examination of FASB's standard-setting process for crypto assets confirms this demand for regulation in this area, revealing broad support among different stakeholders. Respondents encountered several practical challenges, making suggestions for improving the amended standard, frequently requesting clarifications, examples, definitions. While the FASB demonstrated responsiveness to stakeholder input through the incorporation of some of the most frequent suggestions for improvement, they decided to maintain a narrow scope for the standard, leaving several concerns unaddressed. This reflects a balance between the legitimacy of the standard-setting process and the ongoing challenges of regulation such unique and emerging assets.

The empirical analysis of crypto audit risk assessments revealed the highest risks percived by auditors, as well as high uncertainty. Professional skepticism emerged as a critical influence on risk assessment, shaped by auditors' crypto-specific experience and expertise, and time pressures. General audit experience and expertise does not sufficiently prepare auditors for the particularities and complexities of cryptocurrencies, underscoring the need for training and education in this area, mixed teams, and updated audit tools and methodologies.

The originality of the thesis is reflected through the comprehensive approach, as it links academic literature, regulatory analysis, and empirical evidence from audit practice. It is among the first studies to provide a structured and replicable literature review dedicated specifically to cryptocurrency accounting and auditing, addressing a fragmented and under-researched field. The thesis further distinguishes itself by examining the FASB's amended standard on crypto assets, incorporating multiple sources of evidence, such as stakeholder feedback, due process documents, and direct insights from standard-setters, thus offering a nuanced perspective on standard-setting in a novel context. In addition, it explores the largely unexplored area of cryptocurrency auditing through a behavioral lens, integrating behavioral accounting theory with empirical analysis (PLS-

SEM) to investigate how auditors assess risk in high-uncertainty environments. By combining these perspectives, the thesis delivers a comprehensive understanding of the challenges, risks, and implications associated with cryptocurrencies.

The thesis contributes to academic literature, theory and practice. First, it enhances the literature by expanding the limited body of knowledge on cryptocurrency accounting and auditing, providing one of the first SLR on this topic, offering an analysis of a recent and requested standard-setting process, and gathering empirical evidence on auditor's risk assessments in the crypto audit area. Second, it advances theory by exploring to the latest project on crypto accounting, namely the FASB amended standard to include crypto assets, through the lens of legitimacy theory. The thesis also enriches the behavioral accounting research by showing how psychological (skepticism) and context dependent factors (such as time pressures) influence audit behavior (risk assessment). Last, the thesis contributes to practice by identifying key challenges in accounting for and auditing crypto assets, highlighting stakeholder concerns, and providing actionable insights for regulators, standard-setters, and practitioners. These include guidance for improving disclosure and measurement practices, a risk-ranking framework and red flags for auditors, and evidence-based insights that can support training programs and the development of tools and methodologies for auditing cryptocurrencies.

The current thesis also acknowledges several limitations. First, it is limited by constraints of database selection and keywords used in the SLR of the first chapter. Another limitation is the use of a subjective method of analysis in the second chapter, namely content analysis, which could impact the comment letter classification and the understanding of respondents' views. The results of the second chapter cannot be generalized, as the analysis is focused on predominantly US respondets. The constraints from the third chapter include cross-sectional data in the survey and the subjective answers of respondents. Last, given the emerging nature of the topic (i.e., cryptocurrencies), the findings of the thesis could become outdated as novel guidance and methods develop.

These limitations open future directions for research, aiding the development of crypto-specific standards, improved tools and techniques for monitoring and tracking crypto transactions. Future studies could focus on investigating stakeholder perspectives across different georgraphical jurisdictions, examining different behavioral factors affecting audit judgment, or exploring the

crypto-related risks over time. These avenues for future research underline the need for continuous academic input on cryptocurrency account and auditing, supporting practitioners, regulators, policy-makers.