

Accounting for Climate Change: Exploring Earnings Management in the Face of Environmental Risks

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ABSTRACT

This paper argues for the urgent need to address the intersection of climate change and accounting, particularly concerning earnings management. The key objectives of the study are (1) identifying existing gaps and challenges, (2) proposing future research directions, and (3) clarifying the significant implications of climate change for financial reporting. This research makes a vital contribution to the academic literature by providing a historical review that reveals a notable oversight regarding climate change risks in earnings management studies. It offers a thorough discussion of various perspectives on measuring and disclosing climate change information, as well as the complexities involved in identifying and quantifying these risks. The time to act is now; this study serves as a call to action for scholars and practitioners to prioritize this crucial issue. Furthermore, the paper identifies additional avenues for investigation, including the influence of climate-related risks on financial performance metrics, the role of corporate governance in managing carbon-sensitive earnings, and the regulatory landscape pertaining to environmental risk reporting practices. It also examines several research challenges, such as the absence of standardized frameworks for measuring and reporting climate-related risks, the complexities involved in forecasting future risks, and potential conflicts of interest among stakeholders. By addressing these constraints, this study seeks to establish a framework for researchers investigating the influence of climate change risk on earnings management. The findings aim to facilitate informed decision-making and encourage environmentally responsible practices within sustainable business, thereby contributing to the mitigation of additional environmental threats.

Keywords: Climate Change, Earning Management, Risk, Financial Reporting, Environment

INTRODUCTION

Accounting issues related to climate change have emerged as a central focus in sustainability research. The intersection between accounting, climate change, and earnings management has become a popular area of research in recent years, highlighting the importance of environmental factors in corporate governance and financial reporting. Past empirical studies have clarified the complex relationship between climate-related issues and financial reporting, especially concerning earnings management. The increasing adoption of carbon accounting as a tool for addressing climate change impacts has prompted corporations to incorporate carbon reduction strategies and emissions reporting into their management accounting systems (Hartmann et al., 2013). This shift is driven by institutional pressures and value creation considerations, reflecting an increased awareness of the financial risks associated with climate change. However, integrating carbon accounting into traditional decision-making and reporting processes poses significant challenges, warranting further academic investigation (Hartmann et al., 2013; Okafor et al., 2022).

In addition, the interplay between financial crises and earnings management practices is described as non-monotonic. This suggests that during periods of mild crises, earnings management tends to decrease, whereas it intensifies during more severe crises (Trombetta & Imperatore, 2014). This observation implies that the preservation of organizational survival may emerge as the predominant objective of earnings management during significant economic downturns, thereby potentially influencing the manner in which firms disclose climate-related financial risks and opportunities.

In conclusion, the intersection of accounting, climate change, and earnings management is a rapidly evolving field. As corporations face increasing pressures to address climate-related risks and opportunities, the importance of financial reporting and earnings management in communicating these issues to stakeholders is heightened. Future research should focus on developing comprehensive frameworks for integrating climate considerations into financial reporting and examining the effects of climate-related disclosures on earnings management practices (Barth, 2024; Okafor et al., 2022).

Analyzing the relationship between climate change, accounting, and earnings management is crucial. Its potential effects on decision-making, resource distribution, and the sustainability of businesses. Understanding on how climate change risks are integrated into accounting practices and managed allows stakeholders to make well-informed decisions, devise effective strategies, and allocate resources efficiently, all of which are vital for achieving long-term value creation and sustainable development.

The nexus between climate change, accounting, and earnings management is becoming increasingly critical as businesses encounter pressures to address environmental issues while upholding financial integrity. Research indicates that climate change disclosures and environmental performance can profoundly influence a company's financial reporting practices and overall reputation. For instance, studies have shown that the voluntary adoption of carbon assurance and disclosure is negatively correlated with earnings management, implying that firms with stronger commitments to environmental sustainability tend to exhibit higher reporting integrity (Bui et al., 2021). This observation aligns with the perspective that sustainability-oriented firms are more likely to consider broader stakeholder interests and strive for high-quality financial reporting.

Furthermore, research has identified a positive correlation between climate risk disclosures and firm value; however, this relationship may become adverse as the focus on climate change intensifies (Vestrelli et al., 2023). Notably, there are some inconsistencies in the findings. While certain studies suggest that environmental performance can diminish the effect of sustainability report disclosures on earnings informativeness, it may simultaneously enhance the impact of corporate innovation on earnings informativeness (Dhyanasaridewi & Murwaningsari, 2021). Additionally, the relationship between profitability and carbon emission disclosures is not consistently significant, yet market value has been found to exert a positive influence on disclosure levels (Dharma et al., 2024).

In conclusion, the investigation of climate change, accounting, and earnings management is essential for understanding how enterprises navigate environmental challenges while maintaining financial integrity. As climate change remains a pressing global concern, further research is warranted to elucidate the complex interrelationships among environmental performance, disclosure practices, and financial reporting quality. Such insights will be invaluable for policymakers, investors, and other stakeholders in promoting sustainable business practices and ensuring transparent financial reporting in the context of climate-related challenges.

The primary objective of this conceptual paper is to examine the existing literature, identify gaps and issues, propose future research directions, and understand the effects of climate change on financial reporting and earnings management practices. Specifically, this paper aims to: (1) Conduct a comprehensive literature review on the intersection of accounting, climate change, and earnings management, analyzing key findings and insights. (2) Identify gaps in the current literature, emphasizing areas that necessitate further investigation to enhance understanding of the relationship between climate change risk and earnings management. (3) Propose future research avenues that can contribute to the advancement of knowledge in this domain, including potential research questions and methodologies. (4) Discuss the research challenges associated with the convergence of accounting, climate change, and earnings management, such as the lack of standardized frameworks, difficulties in anticipating future climate risks, and conflicts of interest among stakeholders.

To achieve these objectives, the present study will provide a thorough review of the topic, establish a foundation for future research endeavors, and facilitate the development of informed strategies and practices in response to climate change concerns. The remainder of the paper is structured as follows: the subsequent section offers a comprehensive review of the existing literature on the relationship between climate change and earnings management. Following this, we will highlight future research directions and potential challenges. Finally, the concluding remarks will be presented in the last section.

LITERATURE REVIEW

Overview of Accounting, Climate Change, and Earnings Management

Numerous studies have delved into the topic of earnings management and its implications. Srivastava (2019) recommends enhancing the accuracy and reliability of measurement models to prevent misspecification. Meanwhile, the study by DeFond et al. (2019) about fair value accounting investigates how it affects the role of income statements in evaluating management performance, particularly the change in earnings pay-performance sensitivity following the adoption of IFRS. Their research offers valuable insights into how accounting standards influence practices related to earnings management.

In analyzing audit reporting requirements, Liu (2019) investigates how mandatory signature of audit reports by an engagement partner affects real and accrual-based earnings management in the UK, highlighting the potential impacts of disclosure requirements on earnings management practices. Additionally, Free et al. (2019) provide recommendations on how to implement climate-adaptive fisheries reform, emphasizing the profitability and advantages of climate-adaptive management in contrast to conventional practices across multiple countries.

Kliestik et al. (2020) analyze the development of earnings management in the Visegrad Four countries and find that it is not random, emphasizing the need for further examination of earnings management practices within specific country groups. Engler (2020) provides an overview of the considerations framing the capacity of regional fisheries management organizations to implement ecosystem approaches in the context of climate change.

In the realm of climate change mitigation, Schulze et al. (2020) propose the use of a CO₂ tax to recognize the contribution of forest management to fossil fuel substitution and climate change mitigation. Khanna et al. (2022) offer an overview of the relevance of the circular economy for climate change, employing the theory of change approach framework to explore its implications. Other influential works in the field include those by Neethling et al. (2019) and Srivastava et al. (2021), which have made valuable contributions to the literature on earnings management and related topics.

These studies collectively contribute to the understanding of earnings management, the impact of accounting standards, the consequences of disclosure requirements, the profitability of climate-adaptive practices, the development of earnings management in specific country groups, the implementation of ecosystem approaches, and the recognition of forest management's role in climate change mitigation. By synthesizing these diverse findings, a comprehensive understanding of the topic can be achieved, highlighting the gaps and issues that warrant further exploration in the field of climate change risk and earnings management.

Existing Research on the Intersection of These Fields

Research at the intersection of accounting, climate change, and earnings management is still emerging, with several key areas of focus: Climate change poses new challenges for financial reporting and accounting standards. Mary Barth highlights sustainability and climate change as unresolved financial reporting issues that require further research (Barth, 2024). She suggests that addressing these may necessitate reconsidering underlying accounting concepts and incorporating more nonfinancial information beyond traditional financial statements. The transition to new accounting standards like IFRS can impact earnings management practices. Studies have found mixed evidence on whether IFRS adoption improves financial reporting quality and reduces earnings management (Al-Janabi et al., 2021; Eiler et al., 2021). For example, research on Mexican firms found that IFRS adoption was associated with lower earnings smoothing, especially for cross-listed companies (Eiler

et al., 2021). However, other studies have found no significant relationship between IFRS transition and earnings management (Al-Janabi et al., 2021). Interestingly, greater transparency in reporting formats, such as for comprehensive income, has been shown to reduce both income-increasing and income-decreasing earnings management (Hunton et al., 2004; Hunton et al., 2015). This suggests that enhanced climate-related disclosures could potentially constrain earnings management practices. In conclusion, while direct research on climate change accounting and earnings management appears limited, related studies on accounting standards, transparency, and earnings quality provide relevant insights. As climate risks become more financially material, further research is needed to understand how climate accounting intersects with earnings management and overall financial reporting quality. The global nature of climate change also highlights opportunities for international accounting research in this domain (Barth, 2024).

Over time, the requirements for disclosing climate-related risks have undergone changes due to regulatory and market expectations. For instance, when new mandatory disclosure requirements are introduced, managers may still choose not to share relevant information with external users. However, companies tend to adjust to these new requirements with time and provide more inclusive disclosures, as observed in a 2012 study on Italian listed companies by Greco.

In a 2021 article on the evolution of reporting, Bychkova et al. discussed a trend towards non-financial reporting, which includes information on environmental and social issues. This trend has led to a greater emphasis on the risks and opportunities related to climate change. Thus, companies must respond by providing more thorough disclosures on these issues.

While concerns about information overload and decreased readability may arise from the increased length, boilerplate language, and redundancy of 10-K disclosures, it is important to recognize the regulatory motivations behind these developments. The FASB and SEC regulations aim to provide investors and stakeholders with the necessary information to evaluate risks and make informed decisions. Understanding these developments will enable regulators, practitioners, and investors to navigate an increasingly complex business environment.

According to a 2021 article by Afsharipour and Paranjpe on the evolution of risk management oversight in Indian boards, there have been advancements in board oversight of risk management. These include regulatory requirements for such oversight and the incorporation of globally recognized concepts of Enterprise Risk Management (ERM). Yet, recent risk management crises in major Indian companies underscore the difficulties and significance of corporate risk oversight by boards. Overall, climate-related risk disclosure requirements have changed over time, with a greater focus on non-financial reporting and increased expectations for comprehensive disclosures. While there are still no specific regulatory requirements for disclosing climate-related risks, companies are expected to provide more detailed disclosures in this area.

Future Research Directions

As research on accounting for climate change and earnings management develops, there are multiple promising directions for future studies that can advance our comprehension of this intricate interplay. The suggested research avenues below offer crucial perspectives on the impact of climate change risk on financial reporting and the role of different factors in reducing climate-related earnings manipulation.

To better understand how climate change affects a company's financial performance, future research can look at the impact of climate change risk on metrics including profitability, liquidity, and market value. It may be possible to gain insight into the potential long-term effects of environmentally friendly company practices by examining the relationship between climate-related risks and financial performance. Future studies may explore these factors to determine how climate change affects a company's financial performance.

Examining how regulatory measures affect how businesses disclose environmental risks is a crucial factor to consider. Such measures include mandatory disclosure requirements and environmental reporting standards, and may have a significant influence on companies' reporting quality and transparency levels regarding climate change-related information. Future research can delve deeper into the effects of regulatory interventions, providing insights into how regulations shape reporting practices. This is bound to result in the establishment of

more effective regulatory frameworks for dealing with environmental risks.

Corporate governance is of the utmost importance in promoting transparency, accountability, and ethical behavior inside organizations. An inquiry into the effectiveness of governance mechanisms, such as board independence, diversity, and expertise, in reducing climate-related earnings management can provide crucial insights into managing environmental risks through governance practices. Consequently, comprehending the ways corporate governance can encourage responsible financial reporting considering increasing climate change can assist policymakers and practitioners in developing capable governance structures.

By exploring the suggested paths for future research, experts and practitioners can acquire crucial understandings of the intricacies and consequences of climate change risk on earnings management strategies. These research directions can aid in making well-informed decisions, establishing sustainable business practices, and creating efficient policies to tackle climate-related difficulties in the accounting and reporting domain.

Research Impediments

The lack of standardized frameworks for evaluating and reporting risks associated with climate change is a critical hindrance. The absence of consistency in methodology and measures makes comparing and analyzing data across firms and industries difficult. This impediment hampers efforts to establish consistent benchmarks, hindering accurate assessments of the financial implications of climate change. Addressing this issue requires the development of robust frameworks that provide clear guidelines for assessing, measuring, and reporting climate-related risks.

The lack of standardized frameworks for evaluating and reporting climate change risks is indeed a critical hindrance, as evidenced by several studies in the provided context. Multiple papers highlight the need for standardized approaches to assess and disclose climate-related risks. Brown et al. (2014) presents a Health Impact Assessment (HIA) framework to evaluate potential health impacts of climate change, aiming to improve risk assessment methodologies and provide decision-makers with actionable information (Brown et al., 2014). Similarly, Nasr et al. (2021) proposes a conceptual framework for rationally considering climate change effects in infrastructure asset design, addressing the challenge of large uncertainties in climate risks (Nasr et al., 2021). Interestingly, while efforts are being made to create resilient health systems by incorporating climate change into health policies, obstacles such as poor policy implementation, financial constraints, and inadequate data hinder comprehensive adaptation measures, particularly in developing nations (Ansah et al., 2024). This underscores the importance of standardized frameworks that can be applied across different contexts and resource levels. In conclusion, the development of standardized frameworks for climate risk evaluation and reporting is crucial for effective adaptation and mitigation strategies. This is further emphasized by the growing attention from policymakers, standard setters, and investors who regard climate change risk information as material to their decision-making processes (Bernardi et al., 2021). The proposed checklist and assessment framework for evaluating generative AI in medical applications (Chen et al., 2024) could serve as a model for developing similar standardized guidelines in the climate risk domain, potentially improving the quality and consistency of climate risk reporting across various sectors.

Another impediment lies in the inherent difficulties associated with predicting and quantifying future climate risks. Climate change is characterized by complex and interconnected systems, making it challenging to accurately forecast the long-term effects on businesses and financial performance. Factors such as changing regulatory landscapes, technological advancements, and social dynamics further complicate the prediction process. Overcoming these challenges requires interdisciplinary collaboration, incorporating expertise from climate science, economics, and accounting to develop reliable models and methodologies for quantifying and incorporating future climate risks into financial reporting.

A critical impediment to consider is the potential conflicts of interest among stakeholders involved in addressing climate change within the accounting and reporting context. Different stakeholders, including investors, corporations, regulators, and advocacy groups, may have divergent perspectives and priorities regarding climate-related disclosures. Conflicting interests can lead to challenges in developing and implementing effective reporting standards and guidelines. Understanding and managing these conflicts of interest is crucial to ensure

the integrity and transparency of climate-related reporting practices.

By addressing existing research impediments, scholars and practitioners can significantly advance the field of accounting concerning climate change and earnings management. Establishing standardized frameworks for measuring and reporting climate-related risks will enhance comparability and transparency, thereby facilitating more informed decision-making. Furthermore, improving the prediction and quantification of future climate risks can assist in evaluating their financial impact and developing appropriate risk management strategies. Additionally, addressing potential conflicts of interest is essential to ensuring the credibility and effectiveness of climate-related reporting initiatives. By overcoming these impediments, researchers can contribute to a more comprehensive understanding of the implications of climate change on earnings management practices and promote the adoption of sustainable business practices in response to environmental risks.

CONCLUSION

In this conceptual paper, we examine the critical intersection of accounting, climate change, and earnings management. Our objective is to analyze the existing literature, identify gaps and issues, and propose future research directions in this evolving field. Our findings indicate that current research has inadequately addressed the implications of climate change risk within the context of earnings management. Additionally, we observe a diversity of perspectives on the measurement and disclosure of climate-related information, complicating the identification and quantification of climate-related risks. This paper contributes to the literature by highlighting these findings and emphasizing the importance of integrating climate change risk into earnings management practices.

This paper identifies deficiencies and challenges in earnings management practices influenced by climate change risk and proposes avenues for future research to enhance understanding in this area. Suggested areas of inquiry include the impact of climate change risk on financial indicators, the role of corporate governance mechanisms in mitigating climate-related earnings management, and the effects of regulatory policies on environmental risk reporting practices. These research directions present significant opportunities to advance knowledge in this field.

Addressing the research challenges outlined in this paper is essential for advancing the fields of accounting related to climate change and earnings management. These challenges include the absence of standardized methodologies for measuring and reporting climate-related risks, the complexities involved in forecasting and quantifying future climate risks, and potential conflicts of interest among various stakeholders. Overcoming these obstacles is crucial for informed decision-making and the implementation of sustainable business practices. By tackling these issues, researchers and practitioners can deepen their understanding of the complexities and implications of climate change risk on earnings management practices, ultimately leading to more accurate evaluations of financial performance and the development of sustainable business strategies.

In conclusion, this paper integrates contemporary research, identifies areas necessitating further exploration, proposes future research avenues, and underscores the importance of addressing challenges within the research domain. By engaging in more comprehensive investigations of the proposed research areas and addressing the identified issues, scholars and practitioners can enhance our comprehension of the relationship between climate change risks and earnings management. This enhanced understanding will enable more informed decision-making, foster the adoption of sustainable business practices, and significantly mitigate the financial risks associated with climate change.

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