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Green Accounting and Information Quality for Green Credit and Green Bond Markets: A Literature Review and Analytical Framework for Emerging Green Finance Markets

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Abstract

Existing research on the relationship between green bonds, green credit, and accounting information quality has largely followed an empirical, firm-level quantitative approach, while a theoretical synthesis systematizing the transmission mechanism from green accounting to capital allocation efficiency in green finance markets remains absent. Using a desk-research method, this paper synthesizes, analyzes, and compares empirical studies published between 2020 and 2026, together with international green bond principles and standards, to construct an analytical framework describing a three-layer transmission mechanism: green accounting, information disclosure quality moderated by the degree of

standards convergence and third-party independent verification, and green finance market efficiency as reflected in green bond issuance cost and green credit allocation efficiency. The synthesis indicates that green accounting information quality reduces information asymmetry and investors' greenwashing risk expectations, thereby lowering the cost of capital and improving credit allocation efficiency. Building on this framework, the paper proposes policy implications for emerging green finance markets, including Vietnam, where the principal bottleneck is identified at the level of disclosure quality and intermediating governance mechanisms.

Keywords: Green Accounting, Disclosure Quality, Green Bonds, Green Credit

1. Introduction

The global green finance market has expanded rapidly over the past decade, with the stock of green bond issuance estimated at approximately USD 6.8 trillion as of 2026 (Nicolici, Adjal, Ionel, & Grecu, 2026) ^[5]. This growth has created a fundamental requirement: investors and credit institutions need reliable information to distinguish projects that genuinely deliver environmental benefits from projects that merely carry a green label. Green accounting, through its function of recognizing, measuring, and presenting environmental information linked to a firm's financial activities, constitutes the information infrastructure that underpins this screening function.

Existing academic literature on the relationship between green accounting and green bond and green credit markets has predominantly adopted an empirical, quantitative approach using firm-level data. Tang, Wang, Pan, and Li (2023) ^[8], using a sample of 561 green bonds issued in China between 2016 and 2020, demonstrate that the quality of environmental information disclosure reduces the yield spread of green bonds through the mediating channels of information transparency and reduced investor risk expectations. Wang and Wijethilake (2026) ^[11], drawing on a panel of 166 Chinese listed firms over 2014-2024, reinforce this finding, showing a statistically significant negative relationship between carbon disclosure quality and green bond financing cost. At the level of international markets, Ghitti, Gianfrate, Lopez-de-Silanes, and Spinelli (2023) ^[3] analyze more than 1,200 global corporate green bonds and show that independent Second Party Opinions can reduce information asymmetry between issuers and investors, although this effect weakens substantially once a bond already carries a formal credit rating.

What these studies have in common is an empirical approach that tests causal relationships within a specific market and a defined data period. They provide robust evidence of a link between green accounting information and the cost and efficiency of green financial instruments, but no study to date has offered a theoretical synthesis systematizing the transmission mechanism across stages: from the quality of recognition and measurement in green accounting, to the quality of external

disclosure, to the efficiency of green credit capital allocation and green bond pricing. This gap is particularly salient in the context of emerging green finance markets, where the regulatory framework for green taxonomy, disclosure standards, and independent verification capacity remains at an early stage of development. Vietnam illustrates this concretely: green bond issuance value fell from approximately VND 37 trillion in 2021 to approximately VND 3 trillion in the first ten months of 2023, while annual green capital demand is estimated at approximately USD 20 billion (Vietnam News, 2024, June 21) ^[10].

Against this background, the paper sets three research objectives. First, to synthesize and systematize existing empirical evidence on the relationship between green accounting information quality and both green bond issuance cost and green credit allocation efficiency. Second, to construct a theoretical analytical framework describing the transmission mechanism from green accounting to green finance market efficiency, clarifying the moderating role of independent verification and standards convergence. Third, to propose policy implications for emerging green finance markets, including Vietnam.

2. Theoretical Foundations and Research Method

The paper's theoretical framework rests on three foundational theories. Akerlof's (1970) ^[1] information asymmetry theory explains why the absence of reliable information can push green capital markets toward adverse selection, as investors are unable to distinguish genuinely green projects from projects with a merely nominal green label, leading them to demand a higher risk premium or to withdraw from the market altogether. Spence's (1973) ^[6] signaling theory provides a basis for explaining why firms proactively disclose high-quality green accounting information as a signal that differentiates them from less transparent firms. Suchman's (1995) ^[7] legitimacy theory adds an institutional perspective, under which firms disclose environmental information not only to reduce information asymmetry but also to maintain social and stakeholder acceptance of their operations.

Methodologically, the paper employs desk research, combining synthesis, analysis, evaluation, and comparison of secondary sources. The data sources comprise three groups: empirical studies published in international scientific journals between 2020 and 2026 on the relationship between environmental information disclosure, green accounting, and the cost and efficiency of green bonds and green credit; international green bond principles and standards, including the International Capital Market Association's Green Bond Principles and the European Green Bond Standard; and market reports and data from international financial institutions and domestic regulatory authorities. The choice of a desk-research method is consistent with the objective of theoretical synthesis and ensures a high degree of feasibility in data collection, since all source material is publicly available and does not require primary surveys or access to confidential firm-level data.

3. Synthesis of Empirical Evidence on Green Accounting and Information Quality in Green Finance Markets

3.1 Green accounting disclosure quality and green bond issuance cost

Empirical evidence from the Chinese market, the world's second-largest green bond market, reveals a relatively

consistent pattern. Tang and colleagues (2023) ^[8] construct an environmental information disclosure quality index using the entropy method across 561 green bonds and demonstrate that information transparency and reduced investor risk expectations are the two mediating channels through which disclosure quality lowers green bond yield spreads. Wang and Wijethilake (2026) ^[11] reinforce this result using a fixed-effects panel regression model, showing that carbon disclosure quality reflects a firm's environmental governance commitment, which in turn directly affects investor risk perception and green bond financing cost. At the level of measurement frameworks, Nicolici and colleagues (2026) ^[5] develop an eight-indicator disclosure quality score applied to green bonds compliant with the European Green Bond Standard, finding that bonds compliant with this standard achieve a significantly higher average disclosure quality score than bonds complying only with voluntary market principles, although post-issuance verification remains a common weak point.

A notable feature of these studies is their confirmation of a two-step transmission mechanism: the quality of recognition and measurement of environmental information at the firm-level accounting stage is a precondition for the quality of external disclosure, and it is disclosure quality itself, rather than the mere act of green labeling, that determines the extent of cost-of-capital reduction.

3.2 The moderating role of independent third-party verification

A second strand of research focuses on the role of external oversight mechanisms in green accounting information quality. Ghitti and colleagues (2023) ^[3] analyze the informational content of Second Party Opinions in a global sample and find that the market assigns a premium to bonds with favorable independent assessments, particularly the greenest category of bonds. However, once a bond already carries a formal credit rating, information from independent reviews no longer adds significant value to market pricing. This finding suggests that independent verification and credit ratings may function as substitutes in reducing information asymmetry, a point of particular relevance for emerging markets where domestic credit rating systems remain underdeveloped.

With respect to natural-language disclosure, Gaur, Irfan, Ramasamy, Mohammad Mir, and Subramanian (2025) ^[2] analyze environmental, social, and governance disclosure text associated with green bonds using natural language processing techniques and find that firms communicating clearly, consistently, and verifiably receive a more favorable market reaction than firms whose communication is vague or inconsistent, indirect evidence that greenwashing risk is closely tied to the quality of accounting and non-financial information presentation.

3.3 Green accounting, information asymmetry, and green credit allocation efficiency

With respect to green credit, empirical evidence is drawn primarily from the context of China's green credit policy, implemented since 2012. Research on the redistribution of green credit shows that the degree of information asymmetry between firms and banks is one of three foundational factors shaping the efficiency of green credit allocation to environment-friendly manufacturing firms, alongside the level of regional financial development and

local government environmental investment. From the perspective of disclosure as a signaling mechanism, firms that proactively improve the quality of environmental information disclosure are regarded as transmitting a positive signal of green technological innovation, clean production, and environmental governance to credit institutions, thereby improving access to preferential financing. While these findings are tested within China's institutional context, they provide a reasonable basis for inferring that green accounting quality plays an analogous role in other emerging green credit markets, where the banking system remains the central channel of firm financing.

At the macro level, Liu and Wu (2023) ^[4] conduct a systematic literature review of green finance and sustainability disclosure, concluding that the need to reduce information asymmetry and agency problems constitutes the information-economics foundation underlying the necessity of sustainability disclosure, while also noting that current disclosure quality still lacks consistency and comparability at the global level, a systemic limitation rather than one specific to any single market.

4. Proposed Analytical Framework of the Transmission Mechanism

Building on the theoretical synthesis and empirical evidence above, the paper proposes an analytical framework comprising three structural layers.

The first layer is the green accounting input layer, encompassing the quality of recognition, measurement, and classification of environmental costs, assets, and liabilities at the firm level. This layer is the foundation determining the reliability of all information disclosed at subsequent stages.

The second layer is the disclosure quality layer, which is shaped by the input layer but is moderated by two groups of intermediating factors. The first group is the degree of convergence between accounting standards and green bond standards, reflected in whether a firm complies with mandatory standards such as the European Green Bond Standard as opposed to voluntary guidance such as the International Capital Market Association's Green Bond Principles. The second group is the presence and capacity of independent third-party verification mechanisms, including Second Party Opinions and credit ratings, which may act as complements or substitutes depending on the level of market development.

The third layer is the green finance market efficiency layer, measured through two outcome channels: the cost and pricing of green bonds in capital markets, and the efficiency of green credit allocation in bank lending markets. Information quality at the second layer affects the third layer through two mediating mechanisms confirmed by empirical evidence: reduced information asymmetry between issuers or borrowers and capital providers, and reduced greenwashing risk expectations among investors or credit institutions.

The contribution of this framework relative to existing empirical studies lies in clarifying the position of green accounting as the starting point of the entire information transmission chain, rather than treating disclosure merely as an isolated independent variable. At the same time, the framework distinguishes the moderating roles of standards convergence and independent verification, two factors whose level of development differs substantially between

developed and emerging markets, thereby providing a theoretical basis for explaining why the same level of disclosure can yield different cost-of-capital outcomes across markets.

5. Implications for Emerging Green Finance Markets and the Case of Vietnam

The framework above yields several specific policy implications. First, regulators should prioritize completing green accounting recognition and measurement standards before issuing detailed disclosure requirements. Disclosed information is only reliable once the underlying input data has been standardized. Second, where domestic credit rating systems remain limited, independent third-party verification mechanisms should be encouraged as an interim substitute. Third, commercial banks need support in developing dedicated green credit appraisal procedures based on standardized green accounting information, rather than applying conventional credit appraisal procedures.

Vietnam's case illustrates the urgency of these implications. The value of green bond issuance in Vietnam remains modest relative to estimated green capital demand, and the regulatory framework for green taxonomy and disclosure standards is still under development (Tu, Rasoulinezhad, & Sarker, 2020) ^[9]. The absence of a unified green taxonomy and of a domestic independent verification body raises transaction costs for issuing firms and reduces the reliability of information for international investors. Applying the three-layer framework above, the principal bottleneck in Vietnam's market appears to lie at the second layer, namely disclosure quality and intermediating governance mechanisms, rather than in capital demand or investor interest.

6. Conclusion

This paper has synthesized existing empirical evidence on the relationship between green accounting information quality and both green bond issuance cost and green credit allocation efficiency, and has proposed a three-layer analytical framework describing the transmission mechanism from green accounting to green finance market efficiency. The paper's main contribution is to clarify the central role of green accounting as the starting point of the information transmission chain, as well as the moderating roles of standards convergence and independent verification, two factors of particular significance for emerging green finance markets. A limitation of this study is that the framework is built primarily on empirical evidence from the Chinese and European markets, as these two markets account for the largest volume of published research. Future research should empirically test this framework using data from Southeast Asian markets, including Vietnam, as green bond and green credit issuance data become more complete.

7. References

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