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Identifying The Impact of Green Bonds on Company Reputation and Risk

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ABSTRACT

This paper aims to provide other researchers and stakeholders with some new ideas and a clear understanding of the important research trends in studies about how certain methods linked to issuing green bonds can impact a company's reputation and associated risk. By employing a Systematic Literature Review (SLR) and content analysis of 45 articles, the research takes a corporate-centric perspective. The findings of this paper reveal a gap in the literature concerning the direct influence of green bond issuance on company reputation and associated risks. While previous studies have explored the impact of bond issuance on various performance metrics, there remains a notable absence of detailed analysis on the relationship between green bonds and corporate reputation. By shedding light on the implications of green bond issuance for corporate reputation and risk, this research underscores the importance of integrating environmental and social considerations into strategic decision-making processes.

SARI PATI

Makalah ini bertujuan untuk memberikan peneliti dan pemangku kepentingan lainnya dengan beberapa ide baru dan pemahaman yang jelas tentang tren penelitian penting dalam studi tentang bagaimana metode tertentu yang terkait dengan penerbitan obligasi hijau dapat memengaruhi reputasi perusahaan dan risiko yang terkait. Dengan menggunakan Systematic Literature Review (SLR) dan analisis konten dari 45 artikel, penelitian ini mengambil sudut pandang yang berpusat pada perusahaan. Temuan dari makalah ini mengungkapkan kesenjangan dalam literatur mengenai pengaruh langsung dari penerbitan obligasi hijau terhadap reputasi perusahaan dan risiko yang terkait. Meskipun penelitian sebelumnya telah mengeksplorasi dampak penerbitan obligasi pada berbagai metrik kinerja, masih ada kekurangan analisis rinci tentang hubungan antara obligasi hijau dan reputasi perusahaan. Dengan membahas implikasi penerbitan obligasi hijau bagi reputasi perusahaan dan risiko, penelitian ini menegaskan pentingnya mengintegrasikan pertimbangan lingkungan dan sosial ke dalam proses pengambilan keputusan strategis.

INTRODUCTION

Following the global challenges presented by the Covid-19 pandemic, the imperative of addressing climate change becomes even more salient (Kim & Kim, 2022). This pandemic emphasizes the serious consequences that human activities, such as the overexploitation of natural resources and escalated greenhouse gas emissions, impose on the environment manifested through rising temperatures, polar ice melt, and intensified weather phenomena. As outlined in the 'Global Risk Report 2022' by the World Economic Forum, humanity faces major risks from the failure to take action on climate, extreme weather events, and the loss of biodiversity. The immediate implications of climate change are evident in phenomena like droughts, wildfires, floods, depleting resources, and species extinction. As the world economy has grown so quickly, environmental issues have also gained significance abroad. As a result, economic growth and sustainable development have gained popularity and are now major concerns for most nations (Zhou & Cui, 2019). The gravity of climate risks has been more widely recognized in recent years. Because climate risks happen often internationally, their effects are irreversible and challenging to address (Chenet et al., 2021; Esteves et al., 2021; Shu et al., 2023; Wei et al., 2023). Thus, it is imperative for individuals, governments, and corporate entities to collaboratively address and mitigate the effects of climate change, safeguarding against further environmental degradation and public health implications. The preservation of the environment is now a global priority. Making the shift to a low-carbon economy is a critical strategy in the fight against climate change (Jin & Zhang, 2023).

In recent years, companies are expected not only to maximize profits and satisfy stakeholders but also to support sustainability financing. Increasing global awareness of issues related to environmental damage, the climate crisis, and resource scarcity has created a demand for companies to implement sustainable financing (Aydoğmuş et al., 2022). Several factors contribute to this, including changes in consumer preferences (Han et al., 2022; Shao & Ünal, 2019), government pressure (Liu et al., 2023), and a growing awareness of the harmful impact of economic operations on the environment (Arnott & Lemos, 2021). Companies that were initially evaluated solely based on their financial performance are now being held accountable for their role in promoting sustainability, addressing the impacts of climate change, and encouraging environmentally friendly ethical behavior (Lee & Suh, 2022).

Companies are now considered as key players in the pursuit of sustainability, rather than solely profit-oriented entities. They are required to actively incorporate environmental, social, and governance (ESG) criteria into their decision-making processes, such as investment, bond issuance, and financing (Natalucci et al., 2022). Furthermore, regulatory developments in various countries and global agreements with a growing environmental focus are propelling the shift from discretionary sustainable practices to a fundamental business necessity for companies (Boffo & Patalano, 2020). This transformation in the landscape encourages companies to perceive sustainability as both a corporate responsibility and a critical aspect of their long-term survival and profitability (Iacona, 2010). In many instances, environmental awareness is not just a social responsibility but can also enhance a company's reputation, mitigate risks, and create new business opportunities (Marsat et al., 2022; Meidute-Kavaliauskiene et al., 2021; Meng et al., 2023).

The move towards environmentally conscious investments has been enabled by the introduction of a new financial tool designed to assist issuers in funding their transition to ecological sustainability: green bonds. According to the International Capital Market Association (ICMA) in 2021, A green bond is defined as a bond where the funds, or an equivalent amount, are exclusively used to fund or refinance eligible green projects, whether they are new or existing. A particular kind of fixed-income debt instrument called Green bonds has recently become popular in South East Nations, the practice of sustainable financing through green bonds has garnered global attention in recent years. Green bonds serve as the primary instrument in sustainable financing, designed to fund environmentally friendly projects and initiatives (Fatica et al., 2021; Kaminker, 2015). These bonds were first issued in the mid-2000s and have attracted global attention from various stakeholders, including governments, companies, and investors. The increase in the number of global green bond issuances over time can be explained as follows: in 2019, the number of green bond issuances amounted to $262.50 trillion, and it saw a significant increase in 2021, reaching $560.99 trillion. Green bond issuance in the first half of 2023 reached $310 billion, marking the highest half-year total compared to previous years (S&P Global, 2023).

Primarily, green bond has played a crucial role as a catalyst in directing capital towards sustainable projects, including renewable energy infrastructure, energy-efficient buildings, and initiatives aimed at mitigating climate change. When encouraging projects that put sustainability and environmental protection ahead of financial gains, green bonds can help investors demonstrate their support (Azhgaliyeva et al., 2020). The primary distinction between green bonds and conventional bonds, despite having similar mechanisms in terms of face value, maturity date, and issuer, is the “green” label, which mandates that the issuer use the funds from the green bond issuance for environmental protection, cleaner operations, and climate change mitigation in order to support a climate-resilient economy (Quatrini, 2021). Despite the recognition of green bonds as an advanced financial instrument capable of addressing uncertainties arising from pollution and climate damages while maintaining financial efficiency, there is a need for increased institutional legitimacy and pressure from a diverse set of market participants (Reboredo & Ugolini, 2020). It is essential to note that Green Bond markets in developing countries lack standardization (Choudhury et al., 2023; Tolliver et al., 2020), and thus stronger institutional legitimacy and pressure from a wide range of market actors are required.

Moreover, the decision for corporations to issue green bonds is not easy due to several factors, including information disclosure, up-front costs for certification and personnel, and reputation risks. If companies fail to align themselves with the goals outlined in the green bond framework, they may suffer damage, reputation and loss of credibility. As a result, key stakeholders and investors may develop perceptions that emphasize the need for companies to wholeheartedly uphold their environmental commitments when participating in green bond initiatives. The International Organization of Securities Commissions (IOSCO) has identified potential risks in green bond issuance. There is no clear interpretation of the “green” projects that will be invested in from the proceeds of green bond issuance, and the green rating standards that are assessed still do not exist, so investors cannot objectively compare an issuer’s track record in handling green projects. The other challenges, green bonds are considered less liquid in the secondary market (Financial Services Authority, 2016). Highlighting from challenges faced such as low liquidity, particularly in the secondary market and lack of track record as the number of previous issuers was limited. A significant worldwide obstacle to expanding the supply of green bonds is the deficiency of green assets and project identification or definitions (World Bank, 2020).

Research on green bonds has significantly advanced over the past decade, becoming a subject of extensive research spanning from environmental to financial impacts. Figure 1 describes growth in the number of publications related to green bonds from 2018 to mid-2023 and explains that these obstacles have prompted researchers to study the development of green bonds over time.

There are also several systematic literature review (SLR) studies concerning green bonds and their

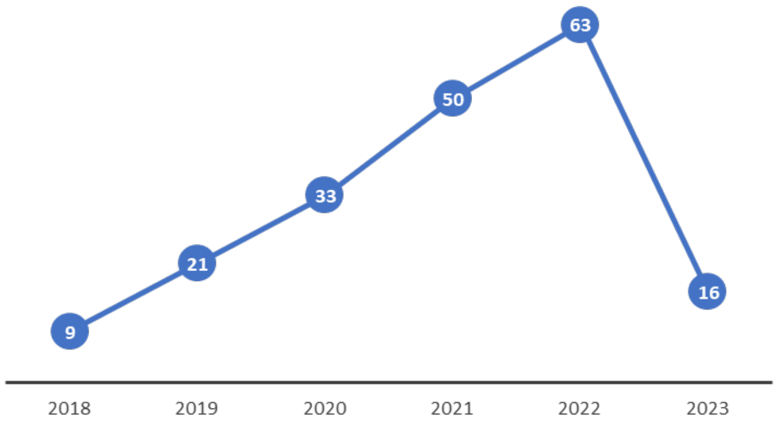


Figure 1. Number of Publications in Green Bond Literature Based on Selected Reputation Journal
Source by: Multi Source Journal Publications summary by Author

impacts. Among them, Cortellini and Panetta (2021) analyzed the green bond literature with a focus on empirical research using narrative, theoretical, and practical approaches. Other research, such as Abhilash et al. (2022), reviewed 265 articles taken from the Scopus database from 2011 to 2022 in the green bond market literature. Additionally, Alsmadi et al. (2023) conducted a bibliometric analysis of green bond literature from 2007 to 2022.

Our primary objective is to give investors, key market participants, and policymakers some useful insight into how environmental investments contribute to the financial markets' transformation and the economy's sustainability through a thorough literature review on the green bond market. Instead, the main focus of this paper is a comprehensive and systematic review of the literature, which aims to provide future researchers with some ideas for new directions as well as a clear picture of all of the significant research trends in the empirical literature on green bonds. Based on the review conducted, this study makes several contributions. Firstly, this research focuses on the financial instrument that are increasingly significant in the realm of sustainable finance, namely green bonds. The analysis was conducted through content analysis methods to identify important elements in companies related to green bond issuance and the extent to which this influences their perception, reputation, and associated risk factors.

There is a significant gap in the literature regarding how specific mechanisms related to the issuance of green bonds can affect a company's reputation. For the summary, the literature review papers revealed a notable segmentation of the discourse surrounding green bonds into three distinct categories; 1) greenium and green bond innovation, 2) intricate links between green bonds and other financial instruments, 3) the relationship between green bonds and stock market reaction. Next, it is evident that a majority of the studies in this literature base their research on established frameworks such as resource-based view, agency theory, and stakeholder theory. Future research is likely to explore additional emerging theories, building upon the findings of this study. Additionally, this study has identified several gaps that can guide the direction of future research. In the literature on green bonds, most of the existing research is concentrated on financial dimensions, such as their impact on financial performance, companies, and investments (Zheng et al., 2023). For example, a study by Lebelle et al. (2020) examined the impact of issuing green bonds on the financial performance of issuers using an international case study from 2009 to 2018. Some of these studies aim to understand the implications of green bond issuance for companies, including the cost of capital (T. Wang et al., 2022; Zhang et al., 2021), corporate and innovation performance (Khurram et al., 2023; Tan et al., 2022)

The systematic review process is guided by research questions that articulate the study's topic, object, and scope. Consequently, our study tackled the following research questions as its primary review protocol:

RQ1. What are the principal empirical research academic trends regarding green bonds' effect on corporate reputation and related risk?

RQ2. How about future directions and gap research on this topic?

The remaining section of this essay is structured as follows: The study's sample construction and methodology are briefly described in Section 2. The results of the systematic review are shown in Section 3. Here, the findings are incorporated into our suggested taxonomy and are followed by macro-areas that address any gaps in the literature. Lastly, Section 4 presents the conclusions

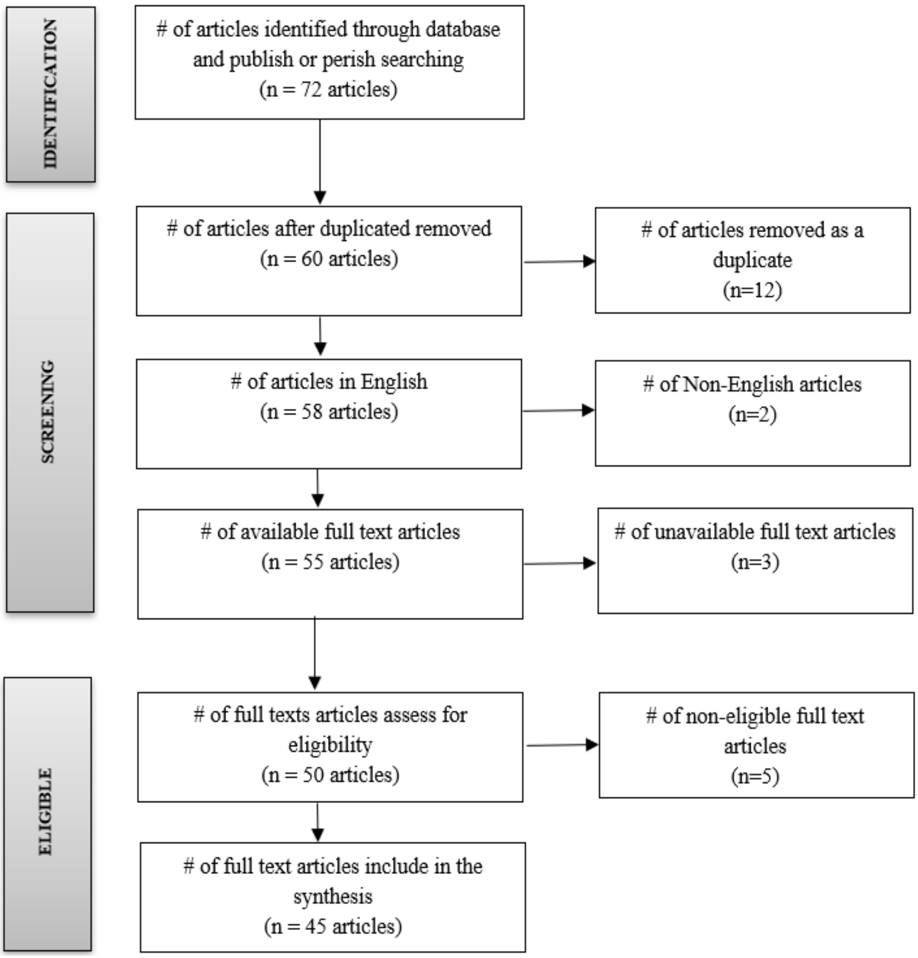
METHODS

This research employs a systematic literature review method as its primary analytical approach. The primary purpose of this method is to comprehensively identify, gather, and synthesize relevant literature related to the research question, which is, «how does green bond impact corporate reputation and risk associated with the company.» A systematic literature review approach will guide the research process with organized and transparent procedures (MacAskill et al., 2021). The initial step involves searching for pertinent literature from a variety of sources, including scientific journals, and online articles in English. The search was conducted using the Publish or Perish application on the Scopus Database, and added with samples obtained from websites (such as Emerald and Sagepub). Subsequently, a selection process was undertaken to choose the most relevant and high-quality sources. Data from the selected literature will be extracted and analyzed to identify key findings and research trends. The synthesis of results will aid in understanding the impact of green bond issuance on corporate reputation and uncover the relationship between companies that indirectly affect the environment, such as the banking sector, and their efforts in issuing green bonds using content analysis.

The PRISMA Statement process was followed, and the second step was to define an inquiry query for a sample of bibliometric databases. The research primarily focuses on journal articles and industry reports published between 2018 and 2023, with a cutoff date of 1 October 2023. This approach facilitates access to the most recent literature relevant to the research topic. Broad and inclusive search criteria were chosen to screen all pertinent literature while striving to mitigate confirmation bias. The Scopus Database is the scientific database utilized in this research, recognized for its reliability and high-quality information. Additionally, this research seeks to include industry reports, which are frequently cited in the literature as additional relevant sources.

This research gives priority to articles that have undergone a peer-reviewed process with robust methodology. Moreover, this study also incorporates various other sources, including conference proceedings and pertinent industry analysis reports. This combination of different types of literature contributes to a comprehensive understanding of the research topic. Sample selection was based on a systematic three-step process.

Sample selection is based on systematic sample selection which is illustrated in graph 1, which reported to follow the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) flowchart mechanism by following Liberati et al. (2009). There are three stages carried out in sample selection. First, this research conducted a search using keywords were combined to create the database query: «green bonds», «firm impact



Graph 1. PRISMA Diagram on Sample Selection
Source: Figure by Author, based on Liberati et al. (2009)

for green bonds», «premium for green bonds», «green bond market», «firm reputation», «risk green bonds», «corporate green bonds», and «spread risk green bond». The examination was carried out based on author-selected keywords, abstracts, and publication titles. A pre-simulation test is conducted to capture all of the existing literature in the databases, which supports the choice of keywords. We concentrated on publications related to the following topics in order to eliminate any articles that are not mentioned in economics. From the initial sample search, 13 articles were obtained from Publish or Perish with the Scopus Database, and 55 additional samples. The authors found two additional articles referenced by the reviewed literature relevant to the green bond topic while reading the full-text articles. The two articles are: 1) Green Bond: A Systematic Literature Review for Future Research Agenda, by Cortellini & Panetta (2021); 2) Green bond issuance and corporate ESG performance: Steps toward green and low-carbon development, by Zheng et al. (2023). Second, this research selects articles using duplicate screening, and focuses on top journals with a minimum ranking of 2, based on three categories, finance, business and economics. Third, this research ensures that the selected articles or samples only discuss those that are relevant to the research question. Based on the sample selection carried out, 45 articles were obtained as the final sample.

Based on the eligibility criteria, the identified article titles, abstracts, and keywords are explored and chosen. Complete or limited readings of the articles

Table 1. Details of Keywords and Sample Selection

Keyword	Period	Search Tool	Initial Sample	Selection Sample
"Green Bond" AND "Firm Reputation"	2018 – 2023	Scopus & Website (Emerald, Springer & Google Scholar)	7	7
OR				
"Green Bond" AND "Corporate Reputation"	2018 – 2023	Scopus Website (Emerald, Springer & Google Scholar)	5	3
OR				
"Green Bond" AND "Company Reputation"	2018 – 2023	Scopus & Website (Emerald, Springer & Google Scholar)	3	1
OR				
"Green Stock" AND "Firm Reputation"	2018 – 2023	Scopus & Website (Emerald, Springer & Google Scholar)	2	2
Additional Sample	2018 – 2023	Website (Emerald, Springer & Google Scholar)	55	33
Final Sample				**45**

Source: Author

Table 2. Influential Journal in Green Bond Literature

Journal	Number of Publication	Number of Citation	Journal's h index	Impact Factor	Time (MM/DD/YY)
Business strategy and the environment	4	61	17	12.8	10/01/2023
Energy Economics	4	40	187	12.8	10/01/2023
Global finance journal	3	35	41	5.2	10/01/2023
International review of financial analysis	2	18	79	8.2	10/01/2023
Finance research letters	2	17	81	10.4	10/01/2023
Pacific basin finance journal	2	149	67	4.6	10/01/2023

Source: by Author based on Scimago As October 1, 2023

that were not excluded in the previous phase were done to assess whether they were eligible for inclusion in the study based on the eligibility requirements. The form that had the author(s), journal name, article title, theoretical framework(s), research setting, and research methods was used to hand collect the articles. Every author evaluated articles that might be relevant. Reading the entire text and selecting the most important details is the assessment.

The study weaves a cohesive narrative by drawing on articles from influential journals in management, economics, and environmental studies, with a particular focus on the exploration of green bonds and their impact. Table 3 intricately details the top 6 influential journals in green bond literature, including "Business Strategy and the Environment", delving into strategic environmental initiatives, "Energy Economics", examining the economic facets of energy-related practices, and "Global Finance Journal".

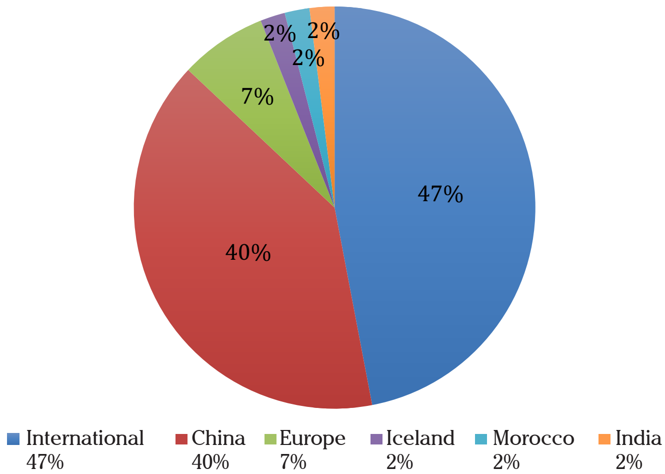


Figure 2. Research Object of Green Bonds Literature

This research relies on a sample of 45 articles to examine case studies of green bonds across diverse regions as seen in Figure 2. Predominantly, the study features international and Chinese case studies, with 21 articles dedicated to international cases and 18 articles presenting case studies within China. Additionally, the remaining articles explore cases in various markets, including Europe, India, Morocco, and Iceland. The selection of these articles contributes to a comprehensive analysis of green bond practices, considering their application and impact in various global and regional contexts.

Moreover, this study systematically identifies and analyzes crucial elements within companies that are intricately tied to green bond issuance. The examination extends beyond the mere presence of green bonds to understand how specific aspects of companies' engagement with sustainable financing shape their reputation. Content analysis is widely recognized as a rigorous approach to evaluating and synthesizing knowledge in a particular field of study (Kleinheksel et al., 2020). This study explores the extensive research surrounding green bonds, highlighting their attributes, issuers and market trends. Additionally, this paper examines the complex interactions between green bond issuance, corporate reputation, risks associated and explains how environmentally responsible financial practices can improve or diminish a company's image.

RESULTS AND DISCUSSION

Future Agenda and Research Gap

1. The Impact of Green Bond Issuance on Company Reputation

Green bonds wield a profound impact on a company's reputation. According to a study by Petreski et al. (2023), the consistent issuance of green bonds holds the potential to reduce a firm's overall cost of capital, signaling financial prudence and commitment to sustainability. However, the inverse effect shows up with the initial issuance of green bonds, stressing the complex character of the relationship between environmental financing and financial costs. According to the reputation capital theory, companies who publish green bonds have a lower cost of equity capital, which sends a positive signal to investors about the company's long-term value and commitment to ethical business conduct, an advantage that non-green bonds tend not to endure.

Moreover, Tan et al. (2022) research underscores that companies engaging in renewable energy funding initiatives have the potential to amplify their public visibility and cultivate an exceptional brand reputation. The company's external social image improves in the public, particularly in connection with the issuance of green bonds. Drawing from signal theory, these bonds serve as credible indicators, signaling the company's unwavering commitment to environmental preservation, consequently shaping its future societal standing. The positive reputation acquired by the company, as a result, contributes to enhanced overall performance. This progress can be aided by media outlets that highlight the company's sustainable practices, disseminating positive news that not just increases consumer willingness to make purchases but also fosters brand loyalty. As a result, a company's reputation for environmentally responsible behavior becomes critical for improving its competitive edge, mitigating operational risks, and growing trust among its stakeholders.

Khurram et al. (2023) research highlights hat the issuance of green bonds not only impacts social investors' perceptions but also designates the company as environmentally conscious, influencing its financial standing and public image beyond debt financing support. Green bonds, referred to as medium and long-term financial instruments linked to low-risk environmental projects, are compatible with the preferences of the vast majority of investors, making them easily accepted and incorporated into investment portfolios. This acceptance not only increases the company's social and personal recognition, but it additionally provides a conducive operating environment and lays a solid foundation for future growth by establishing the company's identity as a green enterprise. In essence, the issuance of green bonds is not merely a financial strategy but a strategic step toward creating a positive corporate image, aligning with investor values, and laying the groundwork for sustainable growth.

Chen et al. (2023) study elucidates that, according to neo-institutional theory, corporate competition extends beyond resource acquisition to include the domains of legitimacy and social acceptance. Given the escalating awareness of contemporary environmental issues, a company's legitimacy and reputation are increasingly intertwined with its ESG performance. Moreover, the surge in environmental regulations underscores the need for companies to divulge more comprehensive sustainability information. In response, companies opt to issue green bonds as a manifestation of their commitment to environmentally friendly investments, anticipating associated ecological advantages. The issuance of green bonds, as part of this green investment strategy, correlates positively with a company's ESG score, leading to enhanced access to capital and an improved reputation, thereby eliciting a positive response from the capital market. This, in turn, attracts investors and fortifies the company's competitive edge. The media plays a pivotal role as an external entity to the company, serving as an essential source of information and a gauge of public perception, ultimately influencing investment decisions through its exposure.

Furthermore, Zheng et al. (2023) emphasizes the findings of previous studies, underscoring the significance of the discussion. Their research underscores that the issuance of green bonds serves as an avenue for companies to secure funds directly from the capital market. This financial mechanism not only aids in capital acquisition but also mitigates information asymmetry by leveraging ESG disclosure practices. By adopting a commitment to ESG transparency, companies can capture the attention and endorsement of external investors, bolstering their environmentally friendly reputation. The positive reputation, in turn, exerts an indirect influence on the company's internal governance capabilities through two principal avenues. Firstly, it shapes consumer behavior, encouraging purchases of the company's products, thereby expanding sales, augmenting overall business operations, increasing revenue, and ultimately enhancing long-term profitability. Secondly, a favorable reputation attracts external investors and media attention, elevating the company's competitive standing and fostering a stable growth trajectory. In essence, the issuance of green bonds not only secures financial resources but also becomes a strategic tool for fostering both external and internal facets of corporate success.

Another research, including Bhutta et al. (2022) and J. Wang et al. (2020), affirms that companies engaging in the issuance of green bonds do so with the anticipation of cultivating a positive environmental reputation. Simultaneously, investors hold expectations regarding both the company's environmental performance and the market valuation of the green bonds, as noted by J. Wang et al. (2020). Furthermore, various investigations assert that the act of issuing green bonds serves as a tangible demonstration of a company's commitment to environmental responsibility, a sentiment analyzed by García et al. (2023). This commitment, in turn, has been observed to enhance environmental ratings, as indicated by Benlemlih et al. (2023), and facilitate funding for initiatives centered around green innovation, according to T. Wang et al. (2022). In summary, the issuance of green bonds is recognized in the literature not only as a financial strategy but also as a means of signaling and reinforcing a company's environmental commitment and performance.

From a different perspective, Eliwa et al. (2021) show that the growing emphasis on ESG issues has heightened lending institutions' recognition of the potential reputational hazards associated with borrower companies. There is a concern that if financial institutions extend loans to companies with a subpar environmental and social track record, they may be perceived by the public as enablers of adverse ESG practices. Consequently, the disclosure of corporate ESG metrics serves as an inducement for lending institutions during the evaluation of a company's creditworthiness. Companies with robust ESG performance and transparent disclosure mechanisms stand to benefit from lower costs of debt, as this enhances their overall financial standing in the eyes of lenders. In essence, the integration of ESG considerations into lending practices is not merely a risk mitigation strategy but also a financial incentive for companies committed to sustainable and responsible business practices.

Based on the research mentioned, this paper recognizes a gap in studying how green bonds affect company reputation. While existing studies have explored the impact of bond issuance on performance, innovation and financing costs there is a lack of detailed analysis on how issuing green bonds directly influences a company reputation. This research emphasizes the need for studies that delve into the specific relationship between green bond issuance and its impact on the reputation of companies involved. By addressing this research gap we can gain an understanding of how green bond issuance affects the aspects of companies involved and contribute to a more holistic understanding of these dynamics.

Existing research has dominantly concentrated on the financial consequences associated with the issuance of green bonds, examining aspects such as their impact on firm value, financing costs, and innovation outcomes. However, there is a clear gap in the literature, warranting investigations that probe the perceptual and qualitative dimensions of how green bond issuance specifically shapes corporate reputation. This gap emphasizes the need for research that explores the subjective aspects of green bond issuance, particularly its impact on the perception of companies in relation to environmental responsibilities, sustainability initiatives, and their general standing in the eyes of stakeholders and society. Therefore, a more comprehensive understanding of the non-financial impacts of green bond issuance is critical for an assessment of its implications for corporate reputation.

Following an extensive review of the literature, this paper has identified key future research agendas centered on the impact of green bond issuance on company reputation. These include a focus on enhancing transparency in green bond practices, investigating how green bonds reflect corporate social responsibility, developing improved measures for assessing the cost of debt, expanding sample sizes to encompass diverse contexts, scrutinizing

Table 3. The Impact of Green Bond on Company Reputation Empirical Literature

Author(s)	Empirical Evidence	Sample Size	Time Span	Methods	Main Results
Petreski et al. (2023)	Swedish	1500 bonds	2011 - 2021	Difference-in-Difference	Issuing green bonds lowers the firm's cost of equity capital
Tan et al. (2022)	China	Chinese listed companies (16 sectors) from CSMAR database	2010 - 2020	Dynamic Difference-in-Difference	Green bonds can reduce corporate operational risk and enhance the confidence of their stakeholders due to their good reputation
Khurram et al. (2023)	China	11 sub-divided industry	January 2016 – September 2020	Difference-in-Difference	The issuance of green bonds by companies positively influences both corporate innovation performance and corporate value
Chen et al. (2023)	China	6432 firm-year observations from 830 listed firms	2012 - 2020	Difference-in-Difference	Issuing green bonds boosts ESG performance, internally focusing and externally overseen, strengthening commitment to sustainability.
Eliwa et al. (2021)	Europe	Non-financial firms in 15 EU countries from Thomson Reuters Asset4 database	2005 - 2016	Newey and West standard errors pooled regression	Stronger ESG performance have a lower cost of debt, and ESG disclose has an equal impact on the cost of debt
Zheng et al. (2023)	China	More than 5000 data of listed companies' green bond issuances from the CSMAR and Wind database	2013 - 2019	Fixed effect	Green bond issuance can significantly increase the ESG performance, on average increasing ESG scores by about 20.5 percent.
T. Wang et al. (2022)	China	32122 year-firm from CSMAR database	2007 - 2020	Differences-in-Differences	The issuance of green bonds can ease financial limitations and notably boost green innovation within enterprises

Source: Multiple source, summary by author

the specifics of environmental commitment through green projects, and exploring the implications of corporate leaders' characteristics on ESG/CSR activities. Furthermore, the future agenda can be seen in table 4.

2. The Impact of Green Bond on Associated Risk

There is a scarcity of literature addressing the influence of green bonds on corporate risk. Research by Khurram et al. (2023) explains that green bond issuance can provide financial assistance and risk mitigation for corporate technological innovation. Moreover, contemporary business landscapes are characterized by substantial capital needs, extended project cycles, and high risks in innovative activities. The emergence of green bonds provides funding support for companies to help them allocate risks. Additionally, the issuance of green bonds requires companies to disclose detailed information about the use of funds, environmental impacts, and ongoing reporting regarding environmental projects funded by the bonds. This requires additional

Table 4. Future Agenda of The Impact of Green Bond on Company Reputation

No.	Future Agenda / Future Research Questions	Author
1.	Enhance theoretical design for transparency, external supervision, and smooth development of green bonds	Khurram et al. (2023)
2.	Explore how green innovation and green bonds issuance reflects social responsibility and potentially mitigates stock risks for enterprises	T. Wang et al. (2022)
3.	Investigate the broader impact of green bonds on enterprise green innovation beyond financing constraints	T. Wang et al. (2022)
4.	Explore improved measures for cost of debt, addressing noise from year-end debt changes	Eliwa et al. (2021)
5.	Extend sample to diverse emerging economies, explore how cultural and institutional settings impact ESG-debt association	Eliwa et al. (2021)
6.	Analyze green bond funds' specific use for corporate green projects to verify environmental commitment	Zheng et al. (2023)
7.	Explore implications of corporate leaders' characteristics on ESG/CSR activities associated with green bond and their alignment with shareholders' interests	Gillan et al. (2021)
8	Leadership qualities significantly influence management decisions on ESG/CSR, and green bonds are linked to positive stock market reactions and enhanced company sustainability efforts	Flammer (2021)

Source: Author

administrative and reporting efforts, so upfront costs for certification and personnel can be a risk for companies issuing green bonds (Gao & Schmittmann, 2022).

Research by Deschryver and de Mariz (2020) also emphasizes that the issuance of green bonds poses significant risks to a company's reputation, as can be seen from the potential consequences of failure to meet the environmental objectives set out in the green bond framework. If non-compliance occurs, the company will face the risk of reputation damage and loss of credibility. Such impacts have the potential to create negative perceptions among key stakeholders and investors, who may perceive the company as failing to fulfill its commitment to environmentally responsible practices. Furthermore, Investors, issuers, and financial institutions supporting green bonds encounter numerous challenges in their investment, underwriting, and risk management processes. These challenges collectively hinder the broad acceptance of green bonds as a key solution to tackle climate change issues. Barriers to the growth of the green bond market involve unclear understanding about issuers' financial advantages, insufficient benchmarks, a shortage of diversity in liquidity and supply, a lack of standardized fund management approaches, and the compounding impact of reporting difficulties, intensifying the risk of greenwashing.

Research by Tang and Zhang (2020) citing Cowan (2017) explains green bond issuance's implications for associated risk through the lens of stakeholder theory. serve as a method to incorporate environmental impacts within a company, appealing specifically to investors with a focus on sustainability. Investors prioritizing sustainable growth and environmentally friendly projects, alongside conventional risk and return considerations, are drawn to the green bond market, leading to heightened demand and subsequently influencing market dynamics. This surge in demand has been observed to impact prices positively, with green bond issuers potentially charging a premium, showcasing the growing recognition and willingness of investors to support environmentally conscious initiatives.

Katori (2018) explores the potential impact of various green certification schemes on the financial characteristics of bonds. This study specifically examines three certification schemes prevalent in the market: ICMA Green Bond Principles, Climate Bond Certification by the Climate Bond Initiative, and Moody's Green Bond Ratings. The main findings of this research highlight that certification under the Climate Bond Standard has an important relationship with increasing bond value. The significance of this research lies in the fact that bond-issuing entities can choose certification schemes strategically based on whether the objective is to increase the value of the bond or simply reduce investor concerns regarding risk.

Moreover, Lebelle et al. (2020) highlights the potential risks associated with Green Bonds, considering their status as a relatively new and unfamiliar financial instrument, amid an ongoing debate within the financial community about their efficacy in addressing climate change. This uncertainty introduces the possibility that investors may factor in the risk of Greenwashing when evaluating a company, influencing its standing in the stock market. In addition, He identifies a more adverse reaction to green bond issuance in developed markets compared to developing nations. These findings imply that issuers in developed countries may confront greater legal challenges related to transparency compared to those in developing countries. He emphasizes that companies employing green bond funds for greenwashing attract heightened scrutiny from investors, resulting in increased reputational risks. Consequently, investors may adapt their strategies, penalizing such practices through divestment and triggering a negative market response.

The identified gap in research concerning green bonds and corporate risk stems from a lack of focused exploration on the specific relationship between these two elements. While numerous studies have delved into the connection between green bond issuance and ESG performance, a noticeable gap exists in investigating the potential risks associated with green bond issuance, encompassing factors like liquidity and credit risks. Furthermore, there is an urgent call for research that scrutinizes the broader implications of green bond issuance on a company's financial performance and its overall risk profile. The scarcity of existing literature underscores an opportunity to enhance our comprehension of how green bond activities can impact the intricate landscape of corporate risk dynamics. In addition, based on Lebelle et al. (2020), future research endeavors could aim to delve deeper into market reactions by analyzing the behaviors of various stakeholders, especially investors. This involves analyzing how investors interpret green bond issuances, the impact of these perceptions on their viewpoints, and the subsequent adjustments made in portfolio management. On the side of issuers, a potential and valuable area for future exploration involves examining the influence of the issuer's information disclosure quality and transparency on the market.

By drawing on insights from existing literature, this research has identified several prospective research agendas regarding the impact of green bond issuance on corporate risk. Future investigations could delve into understanding investor behavior and portfolio management strategies influenced by green bonds, as well as analyzing market dynamics, participant behavior, and portfolio actions in response to green bond issuance. In addition, research is needed that examines the performance of environmentally friendly bonds (green bonds) in relation to associated risk, thereby providing a comprehensive view of their impact on financial markets. Further explanation regarding the future agenda and supporting research is explained in table 6.

Table 5. The Impact of Green Bond on Associated Risk Factor Empirical Literature

Author(s)	Empirical Evidence	Sample Size	Time Span	Methods	Main Results
Deschryver and de Mariz (2020)	International (Latin America, Asia, Europe)	interviews with eleven experts, including investors, issuers, and intermediaries, such as banks and consulting firms	2019	extensive literature review, market data analysis, and interviews	Barriers to the green bond market's scalability include a lack of global standards, greenwashing risks, perceived higher issuer costs, limited green bond supply for investors, and the market's overall early stage.
Tang & Zhang, (2020)	International (28 countries)	1510 bonds	2007 - 2017	Event study analysis using CAPM	The issuers' stock prices increase significantly around the announcement of green bond issuance
Lebelle et al. (2020)	International	475 green bonds issued by 145 unique firms	2009 - 2018	Event study using asset pricing model (CAPM, the 3-factor Fama, and the French the 4-factor Carhart models)	The market exhibits a negative response to green bond issuances, with a cumulative abnormal return falling between -0.5% and -0.2% on both the announcement day and the subsequent day.
C. W. Wang et al. (2022)	China	16 listed company in Taiwan Stock Exchange (TWSE)	2011 - 2020	Propensity Score Matching (PSM) and Difference-in-Difference (DID)	firms increase the ratios of acute physical risks, chronic physical risks, and climate-related opportunities after issuing green bonds .
Reboredo (2018)	International	Bond from 4 indices (Barclays MSCI Green Bond Index, The S&P Dow Jones Green Bond Index, Solactive Green Bond Index, Bank of America Merrill Lynch Green Bond Index)	October 2014 – August 2017	Copula models	Green bonds lack diversification benefits for investors in corporate and treasury bond markets, facing significant price spillovers

Source: Author

Table 6. Future Agenda of The Impact of Green Bond on the Associated Risk

No.	Future Agenda / Future Research Questions	Author
1.	Explore investor behaviors and interpretations of Green bond impact on vision and portfolio management strategies	Lebelle et al. (2020)
2.	Examine the influence of issuer's information disclosure quality and transparency on market dynamics and reaction	Lebelle et al. (2020)
3.	Investigate market participants' behaviors, interpretations, and portfolio actions in response to green bond issuances	Lebelle et al. (2020)
4.	Analyze the performance of the green bond market, including its growth, liquidity, and risk characteristics, and how it compares to other financial markets	Cortellini & Panetta (2021)

Source: Author

MANAGERIAL IMPLICATIONS

The managerial implications of this research provide valuable insights for companies considering the issuance of green bonds as part of their financial and sustainability strategies. The study highlights that issuing green bonds is not only related to environmental factors but also has the potential to impact a company's reputation and associated risks. Therefore, management should carefully evaluate how green bond issuance may influence stakeholder perceptions, including those of investors, customers, and business partners. Companies have to realize that issuing green bonds should not be viewed solely as a financial instrument, but rather as part of a broader sustainability strategy that aligns with corporate goals. For management, this requires a more holistic approach to decision-making, where environmental impacts and social responsibility are given weight alongside traditional financial performance metrics. By doing so, companies not only fulfill their sustainability obligations but also create additional value by mitigating risks associated with climate change, regulatory shifts, and public scrutiny. Moreover, transparent and consistent communication to internal and external stakeholders can help maximize the reputational benefits of green bond issuance, ensuring that stakeholders are fully aware of the company's commitment to sustainability and how it aligns with broader corporate objectives.

This research also offers strategic guidance for both financial institutions and non-financial companies in advancing their sustainability efforts, particularly through green bonds. Financial institutions have two key options: they can either provide green credit, which involves offering loans or financing to environmentally-focused projects but comes with explicit risks, or they can act as investors by purchasing green bonds, which offer lower risk and allow for portfolio diversification while achieving sustainability goals. For non-financial institutions, similar options exist, they can either become green bond investors, benefiting financially while supporting sustainability initiatives, or fulfill their CSR obligations by directly funding green projects or partnerships. Managers must evaluate these choices based on their organization's risk tolerance, financial capacity, and long-term sustainability strategies. For financial institutions, balancing the risks of green credit with the potential rewards is crucial, while non-financial institutions can leverage green bonds or CSR to enhance their reputation and align with global environmental goals.

CONCLUSION

This study adds to the knowledge of sustainable finance research that companies are doing through one of their funding tools, green bonds. So far, research has been dominated by the role of investors, either from the CSR perspective or other social activities with the majority of research conducted qualitatively. This research delves into green bonds by conducting a comprehensive and systematic literature review. The aim is to provide a holistic understanding of the current research landscape, particularly focusing on how green bonds influence a company's reputation and related risks. The study presents a detailed overview, analyzing the theories, methodologies, determinants, and effects identified in earlier studies.

The research findings show a fluctuating trend in studies on green bonds' impact on company reputation and associated risks. From 2018 to 2022, there was a steady increase in research interest on this topic, reflecting growing attention and concern in the field, however, 2023 saw a marked decline. Moreover, the study takes a perspective from the companies' side who have the potential to act commercially in terms of issuing green bonds through a careful approach which takes into account the associated risk and company reputation. Regarding the determining factors, the authors identify several factors including internal (social activity, corporate performance, level of risk, operating costs, company value and top management behavior) and external (information asymmetry, and market performance).

This study makes a significant contribution to the research on the development of green bonds by presenting a map of previous research, identifying gaps and providing suggestions for future research. Previous research maps are presented in a structured way in the form of lists of variables such as determinants, consequences and contingents. Thus, this study provides suggestions for future green bond research topics.

Implications of this study are not only for researchers but also for governments, practitioners and regulators. For corporate top managers and related stakeholders, this study can provide a brief overview of other approaches to determine corporate involvement in sustainable financial matters through green bond issuance. Specifically, these findings give implications to corporate stakeholder that green bond issuing activities can be seen as a commercial activity rather than as a social activity. This can have a stronger impact when there is support from governments and regulators, such as in terms of tax deduction or other incentives. By highlighting the implications of green bond issuance on corporate reputation and risk, it encourages businesses to integrate environmental and social considerations into their strategic decision-making processes, ultimately driving positive social and environmental outcomes. Companies that issue green bonds and effectively implement sustainable practices are likely to enhance their reputation as responsible corporate citizens, thereby increasing consumer trust, loyalty and positive brand perceptions.

This study has limitations, as with other interpretive studies; these findings are limited to the researcher's interpretation of the literature review results. Other researchers conducting the same literature review may have different interpretations. ■

REFERENCES

Abhilash, A., Shenoy, S., & Shetty, D. (2022). A state-of-the-art overview of green bond markets: Evidence from technology empowered systematic literature review. *Cogent Economics and Finance*, *10*(1). https://doi.org/10.1080/23322039.2022.2135834

Alsmadi, A. A., Al-Okaily, M., Alrawashdeh, N., Al-Gasaymeh, A., Moh'd Al-hazimeh, A., & Zakari, A. (2023). A Bibliometric Analysis of Green Bonds and Sustainable Green Energy: Evidence from the Last Fifteen Years (2007–2022). *Sustainability (Switzerland)*, *15*(7). https://doi.org/10.3390/su15075778

Arnott, J. C., & Lemos, M. C. (2021). Understanding knowledge use for sustainability. *Environmental Science and Policy*, *120*, 222–230. https://doi.org/10.1016/j.envsci.2021.02.016

Aydoğmuş, M., Gülay, G., & Ergun, K. (2022). Impact of ESG performance on firm value and profitability. *Borsa Istanbul Review*, *22*, S119–S127. https://doi.org/10.1016/j.bir.2022.11.006

Azhgaliyeva, D., Kapoor, A., & Liu, Y. (2020). GREEN BONDS FOR FINANCING RENEWABLE ENERGY AND ENERGY EFFICIENCY IN SOUTHEAST ASIA. *ADBI Working Paper*, *1073*.

Benlemlih, M., Jaballah, J., & Kermiche, L. (2023). Does financing strategy accelerate corporate energy transition? Evidence from green bonds. *Business Strategy and the Environment*, *32*(1), 878–889. https://doi.org/https://doi.org/10.1002/bse.3180

Bhutta, U. S., Tariq, A., Farrukh, M., Raza, A., & Iqbal, M. K. (2022). Green bonds for sustainable development: Review of literature on development and impact of green bonds. *Technological Forecasting and Social Change*, *175*(November 2021), 121378. https://doi.org/10.1016/j.techfore.2021.121378

Boffo, R., & Patalano, R. (2020). ESG Investing Practices, Progress Challenges. In *OECD Paris*.

Chen, J., Yang, Y., Liu, R., Geng, Y., & Ren, X. (2023). Green bond issuance and corporate ESG performance: the perspective of internal attention and external supervision. *Humanities and Social Sciences Communications*, *10*(1). https://doi.org/10.1057/s41599-023-01941-2

Chenet, H., Ryan-Collins, J., & van Lerven, F. (2021). Finance, climate-change and radical uncertainty: Towards a precautionary approach to financial policy. *Ecological Economics*, *183*, 106957. https://doi.org/10.1016/j.ecolecon.2021.106957

Choudhury, T., Kamran, M., Djajadikerta, H. G., & Sarker, T. (2023). Can Banks Sustain the Growth in Renewable Energy Supply? An International Evidence. *The European Journal of Development Research*, *35*(1), 20–50. https://doi.org/10.1057/s41287-021-00492-z

Cortellini, G., & Panetta, I. C. (2021). Green Bond: A Systematic Literature Review for Future Research Agendas. *Journal of Risk and Financial Management*, *14*(12). https://doi.org/10.3390/jrfm14120589

Cowan, G. (2017). *Investors Warm to 'Green Bonds.'* The Wall Streat Journal.

Deschryver, P., & de Mariz, F. (2020). What Future for the Green Bond Market? How Can Policymakers, Companies, and Investors Unlock the Potential of the Green Bond Market? *Journal of Risk and Financial Management*, *13*(3). https://doi.org/10.3390/jrfm13030061

Eliwa, Y., Aboud, A., & Saleh, A. (2021). ESG practices and the cost of debt: Evidence from EU countries. *Critical Perspectives on Accounting*, *79*, 102097. https://doi.org/10.1016/j.cpa.2019.102097

Esteves, A. M., Genus, A., Henfrey, T., Penha-Lopes, G., & East, M. (2021). Sustainable entrepreneurship and the Sustainable Development Goals: Community-led initiatives, the social solidarity economy and commons ecologies. *Business Strategy and the Environment*, *30*(3), 1423–1435. https://doi.org/10.1002/bse.2706

Fatica, S., Panzica, R., & Rancan, M. (2021). The pricing of green bonds: Are financial institutions special? *Journal of Financial Stability*, *54*, 100873. https://doi.org/10.1016/j.jfs.2021.100873

Financial Services Authority. (2016). *Report on Green Bond Development in Indonesia*. https://www.ojk.go.id/sustainable-finance/id/publikasi/riset-dan-statistik/Documents/Pengembangan Green Bonds di Indonesia.pdf

Flammer, C. (2021). Corporate green bonds. *Journal of Financial Economics*, *142*(2), 499–516. https://doi.org/10.1016/j.jfineco.2021.01.010

Gao, Y., & Schmittmann, J. M. (2022). Green Bond Pricing and Greenwashing under Asymmetric Information. *IMF Working Paper*, *WP/22/246*. https://doi.org/10.2139/ssrn.4310211

García, C. J., Herrero, B., Miralles-Quirós, J. L., & del Mar Mirallles-Quirós, M. (2023). Exploring the determinants of corporate green bond issuance and its environmental implication: The role of corporate board. *Technological Forecasting and Social Change*, *189*(October 2022). https://doi.org/10.1016/j.techfore.2023.122379

Gillan, S. L., Koch, A., & Starks, L. T. (2021). Firms and social responsibility: A review of ESG and CSR research in corporate finance. *Journal of Corporate Finance*, *66*(June 2020), 101889. https://doi.org/10.1016/j.jcorpfin.2021.101889

Han, M. S., Hampson, D. P., Wang, Y., & Wang, H. (2022). Consumer confidence and green purchase intention: An application of the stimulus-organism-response model. *Journal of Retailing and Consumer Services*, *68*(June), 103061. https://doi.org/10.1016/j.jretconser.2022.103061

Iacona, G. (2010). GOING GREEN TO MAKE GREEN: NECESSARY CHANGES TO PROMOTE AND IMPLEMENT CORPORATE SOCIAL RESPONSIBILITY WHILE INCREASING THE BOTTOM LINE. *Journal of Land Use & Environmental Law*, *26*(1), 113–146. http://www.jstor.org/stable/42842914

Jin, J., & Zhang, J. (2023). The Stock Performance of Green Bond Issuers During COVID-19 Pandemic: The Case of China. *Asia-Pacific Financial Markets*, *30*(1), 211–230. https://doi.org/10.1007/s10690-022-09386-4

Kaminker, C. (2015). Policy Perspectives: Green Bonds - Mobilising the debt capital markets for a low-carbon transition. *OECD Publishing, OECD/Bloomberg Philanthropies*. http://www.oecd.org/environment/cc/Green bonds PP [f3] [lr].pdf

Katori, T. (2018). (The Financial Potential of Green Bonds: Comparing the Three Issuing Schemes). *SSRN Electronic Journal*, *March*, 1–18. https://doi.org/10.2139/ssrn.3172426

Khurram, M. U., Xie, W., Mirza, S. S., & Tong, H. (2023). Green bonds issuance, innovation performance, and corporate value: Empirical evidence from China. *Heliyon*, *9*(4), e14895. https://doi.org/10.1016/j.heliyon.2023.e14895

Kleinheksel, A. J., Rockich-Winston, N., Tawfik, H., & Wyatt, T. R. (2020). Demystifying Content Analysis. *American Journal of Pharmaceutical Education*, *84*(1), 7113. https://doi.org/10.5688/ajpe7113

Lebelle, M., Lajili Jarjir, S., & Sassi, S. (2020). Corporate Green Bond Issuances: An International Evidence. *Journal of Risk and Financial Management*, *13*(2). https://doi.org/10.3390/jrfm13020025

Lee, M. T., & Suh, I. (2022). Understanding the effects of Environment, Social, and Governance conduct on financial performance: Arguments for a process and integrated modelling approach. *Sustainable Technology and Entrepreneurship*, *1*(1), 100004. https://doi.org/10.1016/j.stae.2022.100004

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *Journal of Clinical Epidemiology*, *62*(10), e1-34. https://doi.org/10.1016/j.jclinepi.2009.06.006

Liu, Z., Tang, Y., Wilson, J., Tao, X., Lv, B., Wang, Z., Xu, Y., Zhang, Z., Zhang, Y., & Zhao, W. (2023). Influence of government attention on environmental quality: An analysis of 30 provinces in China. *Environmental Impact Assessment Review*, *100*(January), 107084. https://doi.org/10.1016/j.eiar.2023.107084

MacAskill, S., Roca, E., Liu, B., Stewart, R. A., & Sahin, O. (2021). Is there a green premium in the green bond market? Systematic literature review revealing premium determinants. *Journal of Cleaner Production*, *280*, 124491. https://doi.org/https://doi.org/10.1016/j.jclepro.2020.124491

Marsat, S., Pijourlet, G., & Ullah, M. (2022). Does environmental performance help firms to be more resilient against environmental controversies? International evidence. *Finance Research Letters*, *44*(March 2021), 102028. https://doi.org/10.1016/j.frl.2021.102028

Meidute-Kavaliauskiene, I., Çiğdem, Ş., Vasilis Vasiliauskas, A., & Yıldız, B. (2021). Green innovation in environmental complexity: The implication of open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(2). https://doi.org/10.3390/joitmc7020107

Meng, T., Hisham, M., & Haji, D. (2023). Heliyon Review article ESG performance , investor attention , and company reputation : Threshold model analysis based on panel data from listed companies in China. *Heliyon*, *9*(10), e20974. https://doi.org/10.1016/j.heliyon.2023.e20974

Natalucci, F., Gautam, D., & Goel, R. (2022). Sustainable Finance in Emerging Markets: Evolution, Challenges, and Policy Priorities. *IMF Working Papers*, *2022*(182), 1. https://doi.org/10.5089/9798400218101.001

Petreski, A., Schaefer, D., & Stephan, A. (2023). The Reputation Effect of Green Bond Issuance and its Impact on the Cost of Capital. *SSRN Electronic Journal*.

Quatrini, S. (2021). Challenges and opportunities to scale up sustainable finance after the COVID-19 crisis: Lessons and promising innovations from science and practice. *Ecosystem Services*, *48*, 101240. https://doi.org/10.1016/j.ecoser.2020.101240

Reboredo, J. C. (2018). Green bond and financial markets: Co-movement, diversification and price spillover effects. *Energy Economics*, *74*, 38–50. https://doi.org/10.1016/j.eneco.2018.05.030

Reboredo, J. C., & Ugolini, A. (2020). Price connectedness between green bond and financial markets. *Economic Modelling*, *88*, 25–38. https://doi.org/https://doi.org/10.1016/j.econmod.2019.09.004

S&P Global. (2023). *Global Sustainable Bonds 2023 Issuance To Exceed $ 900 Billion*.

Shao, J., & Ünal, E. (2019). What do consumers value more in green purchasing? Assessing the sustainability practices from demand side of business. *Journal of Cleaner Production*, *209*, 1473–1483. https://doi.org/10.1016/j.jclepro.2018.11.022

Shu, H., Tan, W., & Wei, P. (2023). Carbon policy risk and corporate capital structure decision. *International Review of Financial Analysis*, *86*(September 2022), 102523. https://doi.org/10.1016/j.irfa.2023.102523

Tan, X., Dong, H., Liu, Y., Su, X., & Li, Z. (2022). Green bonds and corporate performance: A potential way to achieve green recovery. *Renewable Energy*, *200*(September), 59–68. https://doi.org/10.1016/j.renene.2022.09.109

Tang, D. Y., & Zhang, Y. (2020). Do shareholders benefit from green bonds? *Journal of Corporate Finance*, *61*(March 2018), 101427. https://doi.org/10.1016/j.jcorpfin.2018.12.001

Tolliver, C., Keeley, A. R., & Managi, S. (2020). Drivers of green bond market growth: The importance of Nationally Determined Contributions to the Paris Agreement and implications for sustainability. *Journal of Cleaner Production*, *244*, 118643. https://doi.org/https://doi.org/10.1016/j.jclepro.2019.118643

Wang, C. W., Wu, Y. C., Hsieh, H. Y., Huang, P. H., & Lin, M. C. (2022). Does green bond issuance have an impact on climate risk concerns? *Energy Economics*, *111*(March), 106066. https://doi.org/10.1016/j.eneco.2022.106066

Wang, J., Chen, X., Li, X., Yu, J., & Zhong, R. (2020). The market reaction to green bond issuance: Evidence from China. *Pacific Basin Finance Journal*, *60*(December 2019), 101294. https://doi.org/10.1016/j.pacfin.2020.101294

Wang, T., Liu, X., & Wang, H. (2022). Green bonds, financing constraints, and green innovation. *Journal of Cleaner Production*, *381*(P1), 135134. https://doi.org/10.1016/j.jclepro.2022.135134

Wei, P., Li, Y., & Zhang, Y. (2023). Corporate green bonds and carbon performance: An economic input–output life cycle assessment model-based analysis. *Business Strategy and the Environment*, *32*(6), 2736–2754. https://doi.org/10.1002/bse.3267

World Bank. (2020). Spending For Better Result. *Indonesia Public Expenditure Review*.

Zhang, R., Li, Y., & Liu, Y. (2021). Green bond issuance and corporate cost of capital. *Pacific Basin Finance Journal*, *69*(November 2020), 101626. https://doi.org/10.1016/j.pacfin.2021.101626

Zheng, J., Jiang, Y., Cui, Y., & Shen, Y. (2023). Green bond issuance and corporate ESG performance: Steps toward green and low-carbon development. *Research in International Business and Finance*, *66*(28), 102007. https://doi.org/10.1016/j.ribaf.2023.102007

Zhou, X., & Cui, Y. (2019). Green Bonds, Corporate Performance, and Corporate Social Responsibility. In *Sustainability* (Vol. 11, Issue 23). https://doi.org/10.3390/su11236881