

Green bond market in Vietnam: barriers to corporate issuers, attractiveness to investors and potential growth

Hong Minh Le and Andrew Vivian

Loughborough Business School, Loughborough University, Loughborough, UK

Abstract

Purpose – This study investigates the challenges impeding the development of an effective green bond market in Vietnam and evaluates its potential to support the country's transition from carbon-intensive industries to a greener economy, in line with its climate commitments.

Design/methodology/approach – This study uses a qualitative research approach, conducting semi-structured interviews with 15 stakeholders representing different segments of Vietnam's financial sector. Thematic analysis was carried out in three stages: initial coding, exploring connections between codes and developing three main themes: barriers for corporate issuers, investor attractiveness and the green bond market's potential.

Findings – The major barriers for corporate issuers include a lack of intermediaries, regulatory shortcomings, high issuance costs and an underdeveloped corporate bond market. From the investor perspective, green bonds are perceived as less attractive due to relatively low yields, high project risks, limited market awareness and a scarcity of investment options. Despite these challenges, the market holds significant potential, supported by Vietnam's net-zero ambitions, government backing and continuous legal framework improvements.

Research limitations/implications – The study covers a sample weighted towards issuers, due to the limited public awareness of green investment. Future research could also include regulatory perspectives and use quantitative methods to expand upon these findings, especially as the market matures. Findings inform policymakers and practitioners, offering recommendations such as establishing intermediaries, developing a green taxonomy, legal reform, infrastructure enhancement and investor education. A stronger green bond market can support sustainable development, reduce emissions and promote long-term environmental and social wellbeing.

Originality/value – This study contributes by addressing a research gap in Vietnam's green bond market using a qualitative, interview-based method, which is uncommon in the existing literature. It offers real-world insights from a diverse range of market actors, enabling a multidimensional understanding of market dynamics.

Keywords Vietnam, Green bonds, Green economy, Sustainable finance, Green finance, Net-zero transition

Paper type Research article

1. Introduction

Amid growing concerns over environmental degradation, climate change and resource depletion, the need for sustainable development has become increasingly urgent. In response, the global community has adopted the United Nations' 2030 Sustainable Development Goals (SDGs) and the Paris Agreement, emphasising the integration of economic growth, social inclusion and environmental protection. Achieving these goals, however, demands large-scale investment and innovation, with green finance, particularly instruments like green bonds, playing a pivotal role in funding climate-resilient and sustainable projects.

Despite global progress in green finance, emerging economies often face challenges that hinder their development and growth in this area. Vietnam, a fast-growing Southeast Asian nation that is highly vulnerable to climate change, offers a striking example. The country has



JEL Classification — G28, Q58, Q50

© Hong Minh Le and Andrew Vivian. Published in *Asian Journal of Economics and Banking*. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at [Link to the terms of the CC BY 4.0 licence](#).

strong climate policy commitments, including aligning with SDGs and pledging net-zero emissions by 2050. Yet, its green bond market remains underdeveloped compared to regional peers.

This study aims to explore the disconnect between Vietnam's ambitious climate targets and its relatively low green bond activity. The ultimate objective and contribution of this research is twofold. Firstly, to uncover the challenges and opportunities that impact the growth of green finance in Vietnam. Secondly, to develop practical strategies and recommendations that can enable the potential of green bonds to be fully harnessed. These insights would help the country achieve its sustainability goals. The recommendations from this market could guide policymakers and practitioners in other countries as well; thus significantly impacting global climate progress.

The study is structured as follows: [Section 1: Introduction](#) outlines the global and national context of sustainable development; [Section 2: Literature Review](#) deals with a green bond framework, highlighting its advantages/disadvantages and impacts; [Section 3: Research Methodology](#) details a qualitative approach involving semi-structured interviews; [Section 4: Findings](#) identifies barriers for issuers, attractiveness to Investors and potential of the Green Bond Market in Vietnam; [Section 5: Discussion](#) develops three propositions and [Section 6: Conclusion](#) reflects on the study's contributions and policy implications.

1.1 Sustainable development and climate action – global and Vietnam practices

In 2015, the United Nations established the SDGs as part of the 2030 Agenda to tackle interconnected global challenges. That same year, global leaders achieved a key milestone at COP21 in Paris by adopting the Paris Agreement, which was endorsed by 196 parties and became legally binding in 2016. The Agreement's goal is to keep global warming well below 2°C, with an ideal target of 1.5°C above pre-industrial levels ([United Nations, 2023a, b](#)). To achieve this ambitious goal, countries submitted their Nationally Determined Contributions (NDCs), outlining their targets for reducing emissions and implementing climate-related actions.

In 2015, Vietnam embraced the 2030 Agenda for Sustainable Development. The 17 global SDGs have been translated into 115 Vietnam SDG (VSDG) targets as part of the National Action Plan for Implementation of Agenda (2030) for Sustainable Development (SDG NAP) ([United Nations, 2018a, b](#)), which was stipulated in Decision 633/QĐ-TTg ([United Nations Vietnam, 2017](#)). Moreover, sustainable development principles have been mainstreamed into the 2011–2020 Social and Economic Development Strategy (SEDS) and the 2016–2020 Social and Economic Development Plan (SEDP). In the coming years, the SDGs will be integrated into Vietnam's 2021–2030 SEDS and 2021–2025 SEDP ([United Nations, 2018a, b](#)).

Vietnam is highly vulnerable to natural disasters and climate change, prompting strong commitment to climate action and a low-carbon economy. Vietnam committed to reducing its greenhouse gas emissions by 8% by 2030, with a 25% target conditional on global support, and contributed USD 1 million to the Green Climate Fund ([Ministry of Industry and Trade of Vietnam, 2021](#)). At COP26, Vietnam further committed to achieving net zero emissions by 2050 and reducing methane emissions by 30% from 2020 levels by 2030 ([Socialist Republic of Vietnam, 2022a, b](#)).

1.2 The need and potential growth of green finance

The SDGs outline the UN's vision for a sustainable society, with addressing the financial gap, especially for climate and environmental goals, being a key priority. Climate finance is a crucial element in achieving the 2030 Agenda, as highlighted in the UN Secretary-General's recent strategy ([United Nations, 2018a, b](#)).

According to the [Energy Transitions Commission \(2023\)](#), achieving a net-zero global economy by 2050 requires about USD 110 trillion in capital investment from 2021 to 2050,

averaging USD 3.5 trillion annually, exceeding the UK’s 2023 GDP of USD 3.1 trillion (World Bank, 2023). This is over three times the current annual investment of USD 1 trillion (Raconteur, 2023). Notably, as shown in Table 1, 70% of this investment will target low-carbon power generation, transmission and distribution, which are critical for decarbonising nearly all economic sectors (Energy Transitions Commission, 2023).

1.3 Global current green bonds market

As shown in Table 2, from 2019 to 2023, global green bond issuance totalled USD 1.7 trillion. Europe led with USD 1.1 trillion (63.1%), followed by Asia with USD 234.8 billion (13.6%) and North America with USD 214.6 billion (12.4%). Africa lagged significantly, issuing only USD 10.4 billion (0.6%). This highlights regional disparities in sustainable finance and the potential for growth in underdeveloped markets.

1.4 Vietnam’s current green bond market

1.4.1 Green finance gap in Vietnam. To meet the targets to combat climate change, the Vietnamese government aims to increase renewable energy’s share in electricity production from 16.8% in 2022 to 33% by 2030 and 55% by 2050 (Decision No. 896/QĐ-TTg, 2022). McKinsey (2022) estimates that reaching net-zero will require about USD 30 billion in annual investment. Without this investment and corresponding policy and industrial changes, Vietnam’s emissions could nearly quadruple by 2050.

1.4.2 Green bonds in Vietnam. To bridge the green finance gap, Vietnam has actively promoted green bonds (East Asia Forum, 2023). A significant milestone occurred in July 2022, when EVN Finance JSC issued a domestically-validated green bond worth USD 75 million, receiving international verification. The Global Green Growth Institute provided technical support, while GuarantCo contributed a USD 50 million sponsorship, highlighting Vietnam’s commitment to sustainable growth and global environmental goals (Global Green Growth Institute, 2022).

As shown in Table 3, in ASEAN (excluding Singapore), Indonesia leads the Green Bond market with a cumulative issuance of USD 8.0 billion from 2012 to 2022 (IFC and Amundi, 2023). Thailand follows with USD 3.6 billion, the Philippines with USD 2.8 billion and Malaysia with USD 1.3 billion. Vietnam lags behind at just USD 0.2 billion, despite strong government commitment to climate goals, which is well below the investment level of USD 30 billion per year to drive progress towards the net-zero target (McKinsey, 2022).

Table 1. Global capital investment requirements by economic sectors

Economic sectors	Global capital investment requirements (USD billion)	%
<i>Total</i>	3,465	100%
Power sector	2,400	70%
Buildings	500	14%
Transport	280	7%
Removals	135	4%
Hydrogen	80	3%
Industry	70	2%

Source(s): Energy Transitions Commission – Financing the Transition: How to Make the Money Flow for a Net-Zero Economy – March 2023

Table 2. Green bond issuance volume by region (USD billion)

Year	Africa	Asia	Europe	North America	Oceania	South America	Supra-nationals	Total
2019	2	28	127	28	3	7	21	215.9
2020	1	22	162	41	4	3	13	246.5
2021	3	79	359	71	6	5	37	560.9
2022	4	64	271	46	9	3	45	441.3
2023	0	42	171	28	6	0	16	262.0

Source(s): ICMA Sustainable Finance – Sustainable Bond Market Data

Table 3. Cumulative volume of Green bonds issued in 2012–2022 (USD billion)

Country	Cumulative volume of green bonds issued in 2012–2022 (USD billion)
Indonesia	8.0
Malaysia	1.3
Philippines	2.8
Thailand	3.6
Vietnam	0.2

Source(s): IFC and Amundi – Emerging Market Green Bonds Report – July 2023

Given the small size of Vietnam's green bond market despite its net-zero ambitions, there is a clear need to investigate the factors behind its underdevelopment. This research seeks to identify the key barriers and recommend strategies to help Vietnam catch up with more advanced regional peers.

2. Literature review

Increasing awareness of environmental issues, combined with the implementation of regulations and policies by governments and international organisations to support green initiatives, has heightened the focus on sustainable and eco-friendly financing options. Consequently, numerous studies at global, regional and national levels have been carried out to explore different aspects of green bonds and offer recommendations on how to effectively access this market.

2.1 Theoretical framework of green bonds

The International Capital Markets Association (ICMA) has outlined the Green Bond Principles, which characterise green bonds as financial instruments designated for the sole purpose of funding or refinancing either partially or entirely, new and/or existing eligible green projects. Green bonds may be issued by public bodies or by private institutions to finance environmental initiatives. To guarantee that the funds are used appropriately and align with the intended purposes, an independent and credible third party should oversee their management, ensuring transparency and integrity in the process. The key elements of green bonds are:

- (1) *Debt Instrument:* Green bonds are a debt financial instrument similar to traditional bonds.

- (2) *Exclusive Use of Proceeds*: The funds raised through green bonds must be dedicated exclusively to finance or refinance green projects.
- (3) *Eligible Green Projects*: Must meet criteria under frameworks like the Green Bond Principles or Climate Bonds Standard.
- (4) *Transparency and Reporting*: Issuers must regularly report on fund allocation and environmental impact to ensure accountability.

2.2 Impact of green bonds

Green bonds have become a crucial financial instrument, delivering wide-ranging benefits across environmental, economic and social sectors, thus playing a significant role in promoting sustainable development.

Environmentally, according to the [European Commission's Joint Research Centre \(2021\)](#), issuers of green bonds have lowered carbon emissions by an average of 4%, with newer initiatives achieving reductions above 8% compared to traditional financing. Economically, green bonds offer several advantages. Firstly, they generally feature a "greenium", a lower yield compared to conventional bonds, making them a cost-effective financing tool. Studies ([Agliardi and Agliardi, 2019](#); [Gianfrate and Peri, 2019](#)) found the greenium ranges from 0.43 to 20 basis points, often offsetting the higher issuance costs. In emerging markets, the greenium widened from 4.2 basis points in 2021 to 7.2 in 2022 ([IFC and Amundi, 2023](#)). Green bond issuance also benefits shareholders by boosting stock prices and improving liquidity ([Tang and Zhang, 2020](#)). It is also supported by government incentives, such as Thailand's fee waivers ([ADB, 2022](#)) and Vietnam's Circular No. 101/2021/TT-BTC, which provides tax breaks and credit rating enhancements.

Green bonds are associated with enhanced ESG practices, particularly among first-time issuers who adopt explicit sustainability goals ([Migliorelli and Dessertine, 2020](#)). These issuers tend to show greater accountability and openness, strengthening stakeholder confidence and social legitimacy. Overall, green bonds serve not only as a source of funding but also as a catalyst for transitioning to a low-carbon, inclusive and resilient economic system.

2.3 Barriers to green bond growth – global and emerging markets

Although green bonds offer well-recognised advantages, they still represent a relatively small share, approximately 3% of the global bond market ([Climate Bonds Initiative, 2019](#)). As noted by [Deschryver and Mariz \(2020\)](#), several factors contribute to this limited uptake: (1) the lack of internationally unified standards, (2) fears of greenwashing, (3) the perception among issuers that green bonds entail higher costs and (4) the market's early stage of maturity, which results in a limited supply of green bonds for investors.

In developing countries, challenges include weak institutional frameworks, high issuance costs and minimum size requirements ([Banga, 2018](#)). [Nguyen et al. \(2022\)](#) also highlight vague definitions, financial concerns and COVID-19 disruptions. Meanwhile, demand outpaces supply in emerging markets, as shown by widening Greenium trends ([IFC and Amundi, 2023](#)) and investor surveys in Malaysia and Thailand ([GGGI and ADB, 2022](#)).

2.4 Green bonds legal framework

The global regulatory foundation for green bonds began with ICMA's Green Bond Principles in 2014 to improve transparency and integrity. In the EU, key milestones include the 2020 EU Taxonomy for sustainable activities and the 2023 EU Green Bond Standard. In ASEAN, the ASEAN Green Bond Standards were introduced in 2017 and updated in 2018, aligned with ICMA principles. The ASEAN Taxonomy for Sustainable Finance was launched in 2021, with

a second version released in 2023, offering a unified framework tailored to the region's diverse economies. Details on Global and Regional Green Bond Principles and Green Standards are summarised in [Table 4](#).

Following the issuance of global and regional standards and taxonomy for sustainable finance, efforts that establish a profound legal framework have accelerated across ASEAN, with Indonesia, Malaysia, Philippines, Thailand and Vietnam having either developed or been in the process of developing their national taxonomies. Details on the National Green Bond Framework and Green Taxonomy in South East Asia are summarised in [Table 5](#).

Despite being introduced under the fixed-income regulatory framework, Vietnam's green bond market remains underdeveloped due to key constraints: a lack of clear classification for green assets, insufficient issuance guidance and low stakeholder awareness and capacity. Compared to regional peers, Vietnam lags in its legal framework for green bonds, as it is still developing its National Green Taxonomy, highlighting the country's ongoing efforts to align with international standards and regional progress in sustainable finance.

A green bond taxonomy could transform Vietnam's market by preventing greenwashing, enhancing investor trust and increasing funding for renewable sectors. By aligning with ASEAN and EU taxonomy standards – like Singapore and Indonesia – Vietnam can develop a credible, internationally recognised framework tailored to its local context. This alignment would boost Vietnam's regional competitiveness and appeal to foreign investors.

2.5 Green bonds research in Vietnam

Regarding the nascent Green bond market in Vietnam, the number of researches specifically designed to address this issue for this particular market is relatively limited. One notable study by [Tu et al. \(2020\)](#) used the Analytic Hierarchy Process (AHP) to identify key factors influencing market development, highlighting the legal framework and SBV's monetary policy as most impactful, while political stability and social support were least influential. However, as the study predates recent regulatory and market changes, its findings may be outdated. Moreover, MCDM methods like AHP have inherent limitations, such as a narrow factor scope and potential omission of critical variables, which can affect the validity and comprehensiveness of conclusions. Updated research is needed to reflect current market dynamics and regulatory developments.

3. Research Methodology

In order to complement the selection of research on the green bond market in Vietnam and to uncover the barriers to green bond issuance in Vietnam from the viewpoints of industry experts, interviews are employed as the chosen methodology for this research. This approach offers rich, in-depth qualitative data with flexibility to explore emergent themes, and direct insight into participants' perspectives, making it ideal for capturing complex, subjective experiences.

3.1 Research setting and sample

This research employs a qualitative approach centred on individual interviews. Given the early stage and limited awareness of the green bond market in Vietnam, interviews offer an effective way to explore the subject in depth. By engaging directly with experts, the study can access detailed knowledge, insights and real-world experiences that may not be available through other methods. This approach helps reveal the unique challenges and opportunities within Vietnam's green bond sector, providing a thorough understanding of the market's complexities and potential.

The research sample consists of 15 carefully chosen participants, all of whom possess pertinent experience within Vietnam's green bond sector. These participants are drawn from diverse segments of the financial industry in Vietnam, including banking, securities firms,

Table 4. Global and regional green bond principles and green standards

Scope	Name	Issuer	Time	Description
Global	Green Bond Principles	The ICMA	2014	The Green Bond Principles, a set of voluntary guidelines for issuing green bonds, have been formulated to enhance transparency, disclosure and reporting within the Green Bond market. These principles advocate for a transparent process and disclosure requirements for issuers, offering a framework that investors, banks, underwriters, placement agents and other stakeholders can utilize to gain insights into the specifics of any given Green Bond. At the heart of the Green Bond Principles lies the assessment of the utilization of proceeds, which includes a range of sectors that qualify for green bonds under these principles, such as renewable energy, sustainable transportation, environmentally-friendly construction, climate change adaptation and various other sectors (ICMA, 2021)
The EU	EU Green Bond Standard	The European Union	2023	The EU Green Bond Standard establishes a framework of standards and criteria applicable to green bonds issued within the European Union (EU). Its primary objectives are to enhance transparency, credibility and uniformity within the green bond market, all while aligning with the EU's environmental and climate goals. The EU GBS forms an integral part of the broader sustainable finance initiatives undertaken by the European Union, which encompasses the EU Taxonomy Regulation. It functions as a complementary tool to the taxonomy by offering precise directives and guidelines specifically tailored to green bonds (Cadwalader, 2023)
	EU taxonomy for sustainable activities	The European Union	2020	The EU taxonomy for sustainable activities is a classification system that establishes criteria for economic activities that are in line with both a net-zero emissions trajectory by 2050 and broader environmental objectives, encompassing areas beyond climate considerations (European Commission, 2023a, b)
The ASEAN	ASEAN Green Bond Standards	The ACMF	Initial release: 2017 Latest lease: 2018	Derived from ICMA's Green Bond Principles, the ASEAN Green Bond Standards serve as a set of guidelines meticulously designed to enhance consistency, transparency and credibility throughout the issuance of green bonds within the ASEAN region. These standards are crafted to establish precise criteria and prerequisites for the identification and verification of green projects, thereby actively promoting sustainable investments and stimulating the expansion of the green bond market. While ICMA's Green Bond Principles offer overarching principles pertaining to green bonds, the ASEAN Green Bond Standards aim to furnish more detailed instructions on how these principles should be applied across ASEAN countries to warrant the label of "ASEAN Green Bonds" (ACMF, 2023)

(continued)

Table 4. Continued

Scope	Name	Issuer	Time	Description
	ASEAN Taxonomy for Sustainable Finance	The ASEAN Taxonomy Board	Version 1: 2021 Version 2: 2023	<p>The ASEAN Taxonomy for Sustainable Finance serves as a shared framework for sustainable finance practices in the region and underscores the significance of having an all-encompassing, inclusive guide that unifies the efforts within the ASEAN community. This taxonomy is firmly grounded in scientific principles and represents an inclusive approach to categorizing activities based on their impact on the environment within the ASEAN region (ASEAN, 2023)</p> <p>The ASEAN Taxonomy for Sustainable Finance is designed as a flexible, multi-tiered framework that takes into consideration the unique characteristics and variations among ASEAN Member States. It comprises two primary components: the Foundation Framework, which is universally applicable across all ASEAN Member States and facilitates a qualitative evaluation of activities, and the Plus Standard, which incorporates specific metrics and thresholds to provide a more detailed and comparative assessment of eligible green activities and investments (ASEAN, 2021)</p>

Source(s): Authors' compilation from multiple sources

consulting services and market research entities. The deliberate selection of participants ensures a well-rounded representation of viewpoints, encapsulating a panoramic view of the green bond landscape. To enhance the rigour of the study, the participants are categorised into five distinct groups: Issuers, Intermediaries (Underwriters), Institutional Investors, Individual Investors and Others (Market research services, Consulting services). Each group is provided with a customised set of interview questions, meticulously designed to address their specific roles and vantage points within the green bond ecosystem. This tailored approach ensures that the interviews remain focused and yield targeted insights.

The interviews are semi-structured, meaning they are guided by a set of prepared questions but allow flexibility to follow the natural direction of the conversation. This approach lets participants express their ideas freely and explore topics that may emerge unexpectedly. It also enables the interviewer to ask follow-up questions to gain deeper insight into specific points raised. Using semi-structured interviews helps the research capture a broad range of perspectives, experiences and insights on green bonds in Vietnam. This method encourages participants to provide detailed explanations, share personal experiences and offer rich, context-driven responses beyond standard answers. Consequently, the study aims to deliver a nuanced and comprehensive understanding of Vietnam's green bond market, based on the real-world knowledge and expertise of those involved.

3.2 Data collection

The sample for the research consists of 15 participants with relevant experience in green bonds in Vietnam, who are currently working in Vietnam's financial industry with various sub-sectors (banking, security company, consulting services and market research services). These participants have been intentionally selected to cover various aspects of the green bond market in Vietnam with corresponding points of view. The 15 participants are categorised into five groups: Corporate Issuer, Intermediary (Underwriter), Institutional Investors, Individual

Table 5. National green bond framework and green taxonomy in South East Asia

Country	Regulation	Issuer	Time	Description
Indonesia	Indonesia Green Taxonomy	The Indonesian Financial Services Authority (“OJK”)	2022	In January 2022, the OJK (Financial Services Authority) of Indonesia introduced the Indonesia Green Taxonomy 1.0, outlining the criteria for qualifying economic activities eligible for green financing. This taxonomy classifies 919 sectors into green, yellow or red categories based on their environmental effects. To adhere to this framework, companies are required to meet specific Indonesian certifications related to reducing greenhouse gas emissions and promoting sustainable palm oil production. The introduction of this taxonomy is a concerted effort to incentivize the private sector to prioritize green investments and adhere to ESG regulations (Sustainable Finance Indonesia, 2022)
Malaysia	Sustainable and Responsible Investment Sukuk Framework (SRI)	The Securities Commission Malaysia	Initial release: 2014	In 2014, the Securities Commission Malaysia unveiled the SRI framework, aimed at fostering an environment conducive to sustainable and responsible investing for both SRI investors and issuers. This framework aligns with global standards and leading industry practices, highlighting the significance of transparency in terms of disclosure requirements (Securities Commission Malaysia, 2014)
	Climate Change and Principle-based Taxonomy	Bank Negara Malaysia	2021	In April 2021, the Bank Negara Malaysia emerged as one of the pioneering central banks within the ASEAN region to introduce the Climate Change and Principle-based Taxonomy for financial institutions (Bank Negara Malaysia, 2021)

(continued)

Table 5. Continued

Country	Regulation	Issuer	Time	Description
Philippines	Memorandum Circular No. 12/2018	The SEC	2018	The SEC in the Philippines issued Memorandum Circular No. 12/2018, which laid out guidelines for the issuance of green bonds in the country, ensuring their alignment with the ASEAN Green Bond Standards (SEC, 2018)
	Sustainable Finance Framework	The Bureau of the Treasury	2022	In January 2022, the Bureau of the Treasury in the Philippines introduced the nation's Sustainable Finance Framework, designed to bolster its sustainability endeavours. This framework sets the stage for the Philippines to issue green, social and sustainability bonds, loans and various other debt instruments in the international capital markets (Republic of Philippines, 2021)
Thailand	Sustainable Finance Initiatives for Thailand	Working Group on Sustainable Finance (WGSF)	2021	In August 2021, WGSF jointly released Sustainable Finance Initiatives for Thailand, outlining the strategic direction and framework for promoting sustainable finance within the country's financial sector (WGSF, 2021)
	Green Taxonomy	The Bank of Thailand and SEC	2023	In July 2023, Thailand has officially adopted the Green Taxonomy, representing a pivotal milestone in the nation's climate policy. The adoption of the Green Taxonomy provides the country's business sector, government and experts with a comprehensive roadmap toward a sustainable and environmentally friendly future. Phase 1 of the taxonomy covers just two sectors, energy and transportation, responsible for up to two-thirds of the country's emissions. It will expand to include more sectors, targeting up to 95% of emission-related activities in the foreseeable future (Bank of Thailand, 2023)

(continued)

Table 5. Continued

Country	Regulation	Issuer	Time	Description
Vietnam	Decree No. 95/2018/ND-CP Decree No. 93/2018/ND-CP Decree No. 153/2020/ND-CP	The Vietnam Government	2018–2020	Decree No. 95/2018/ND-CP for sovereign green debt instruments Decree No. 93/2018/ND-CP for municipal green bonds Decree No. 153/2020/ND-CP for privately placed corporate green bonds
	National Green Taxonomy	The Ministry of Natural Resources and Environment (MoNRE) and SBV	Under preparation	In May 2022, MoNRE and SBV collaborated with the International Finance Corporation (IFC) to establish and put into effect a policy and regulatory framework. Initially concentrating on green procurement, green taxonomy and waste management, this initiative seeks to encourage private sector engagement in advancing the country's climate objectives and sustainable development. The National Green Taxonomy will offer precise guidelines for defining eligible green projects, enhancing clarity on this matter

Source(s): Authors' compilation from multiple sources

Investors and Others (Market research services, Consulting services). The code for each interviewee was generated accordingly and all respondents were assured anonymity by name and institution. The only information disclosed is the types of organisations the interviewees work for and their Job titles. [Table 6](#) provides more information about the pool of interviewees for the research:

When selecting interviewees within the Corporate Issuer category, the emphasis is placed on obtaining insights from Commercial Banks. These banks serve as pivotal market players in the Asian Green bond market, given that the banking sector holds a dominant position, accounting for 60% of all issuances in the Asian Green bonds market ([Hesary et al., 2021](#)).

Each group of interviewees (A, B, C, D, E) is then assigned a different set of interview questions, which is tailored to best suit their viewpoint and expertise. Therefore, five sets of interview questions are designed, following the perspective of each interviewee group. It should be noted that as the interviews are semi-structured, with sets of interviewing questions prepared beforehand to cover all the major subject matters (specifically designed for each interviewee category) and guide the conversation, there is room for flexibility and adaptability based on the flow of the dialogue. The list of guide questions was sent to the interviewees before the interview from 2 to 3 days so the interviewees could prepare better for the conversations. In case any clarification is needed regarding the set of questions, the interviewees were encouraged to communicate with the interviewer during this period in order to ensure the flow of the actual interviews. The list of guide questions for each interviewee group is shown in [Table 7](#)

Table 6. Interviewees details

No.	Category	Type of organisation	Job title	Interviewee code
1	A. Issuer	Commercial Bank	Financial Market and Transaction Banking – Senior Relationship manager	A1
2	A. Issuer	Commercial Bank	Financial Market and Transaction Banking – Relationship manager	A2
3	A. Issuer	Commercial Bank	Financial Market and Transaction Banking – Relationship manager	A3
4	A. Issuer	Commercial Bank	Legal and Compliance – Expert	A4
5	A. Issuer	Commercial Bank	ESG Risk Management – Manager	A5
6	A. Issuer	Commercial Bank	ESG Risk Management – Expert	A6
7	A. Issuer	Commercial Bank	ESG Risk Management – Senior Analyst	A7
8	A. Issuer	Commercial Bank	ESG Risk Management – Analyst	A8
9	B. Intermediary (Underwriter)	Security company	Investment Banking – Bond Specialist	B1
10	C. Investor – Institutional	Security company	Treasury – Manager	C1
11	D. Investor – Individual	Commercial Bank	Integrated Risk Management – Expert	D1
12	D. Investor – Individual	Commercial Bank	Risk Management – Senior Analyst	D2
13	E. Others	Market research services	Market research services – Manager	E1
14	E. Others	Market research services	Market research services – Senior Analyst	E2
15	E. Others	Financial consulting services	Financial consulting services – Consultant	E3

Source(s): Table by authors

3.3 Data analysis

The data analysis process embraced a thematic analysis approach, a well-established method renowned for its effectiveness in uncovering patterns, themes and deeper meanings inherent in textual data. This approach provided a structured yet adaptable framework for delving into the underlying ideas, concepts and experiences contained within the dataset. The analysis unfolded across several distinct phases, each contributing to a comprehensive understanding of the research findings.

- (1) **Phase 1:** This initial stage involved combining all raw data collected from the interviews. Subsequently, initial coding was carried out. This phase began with generating initial codes, which served as labels or tags assigned to various dimensions of the data. These codes were used to encapsulate meaningful units, concepts, or patterns within the dataset. The focus was on identifying recurring phrases and elements across all data sources, enabling the extraction of key concepts and themes that authentically represented the experiences and viewpoints expressed by the respondents in their narratives.
- (2) **Phase 2:** Building upon the initial coding, the analysis proceeded to a more in-depth examination of the findings and concepts. This phase aimed to elucidate the interconnections and recurring patterns present within the data. Through this process, conceptual categories were constructed, rooted in the emergent themes. These categories facilitated a more structured and coherent representation of the data, allowing for a deeper exploration of the research findings.

Table 7. List of guide questions for each group of interviewees

Group of interviewees	List of guide questions
A. Corporate issuer	<ol style="list-style-type: none"> 1. What motivated issuers to issue green bonds in Vietnam? What is the advantage, if any, of issuing green bond instead of get access to funding resources via other conventional channels? 2. What is your perception of the demand for green financing via green bond issuance in Vietnam? 3. How do you assess the market demand and investor appetite for green bonds in Vietnam compared to conventional bonds? 4. Is the current volume of green bonds issued compatible with the market demand? 5. What challenges, if any, do issuers face during the green bond issuance process in Vietnam? 6. What are the potential risks associated with green bond issuance in Vietnam? 7. How developed is the secondary market for green bonds in Vietnam? How does it affect the decision to issue green bonds? 8. What are the legal complexities related to green bond issuance in Vietnam? 9. What role do regulatory frameworks play in shaping the green bond market, and how do they impact issuers' decision to issue green bonds? 10. How do you see the development of the green bond market impacting your company's overall sustainability strategy and reputation? 11. In your opinion, what can be done to develop the green bond market in Vietnam further?
B. Intermediary (underwriter)	<ol style="list-style-type: none"> 1. How familiar are you with the concept of green bonds, and what motivated your institution to participate in green bond issuances? 2. How do you assess the market demand and investor appetite for green bonds in Vietnam compared to conventional bonds? 3. In your experience, what are the key challenges in green bonds issuance in the Vietnamese market? 4. How do you perceive the potential risks associated with green bond issuance in the Vietnamese market, and how do you address them in your underwriting practices? 5. In your opinion, what can be done to further develop and expand the green bond market in Vietnam?
C. Investor – institutional	<ol style="list-style-type: none"> 1. As an institutional investor, how do you view green bonds as part of your investment portfolio? What role do they play in your overall investment strategy? 2. What criteria do you consider when evaluating potential green bond investments in Vietnam? 3. Have you encountered any specific challenges or obstacles in sourcing and evaluating green bond opportunities in the Vietnamese market? 4. How do you see the development of the green bond market impacting institutional investors' approaches to sustainable investing in Vietnam? 5. Do you believe that the green bond market offers attractive opportunities for risk-adjusted returns, and how does it compare to conventional bond investments? 6. How available are Green bond in Vietnamese market for Institutional investors? And will you be interested in Green bonds investment if the supply is more abundant? 7. What is the role of green bond in overall investment portfolio? Does investment in green bond diversify risk or increase return?

(continued)

Table 7. Continued

Group of interviewees	List of guide questions
D. Investor – individual	<ol style="list-style-type: none"> 1. Are you familiar with green bonds, and have you ever purchased or considered investing in them? Why or why not? 2. What factors influence your decision to invest in green bonds as opposed to conventional bonds? 3. What information or assurances would you need to feel confident about investing in green bonds in the Vietnamese market? 4. Do you believe that investing in green bonds aligns with your personal values and sustainability goals? How important is this alignment to your investment choices? 5. How available are Green bond in Vietnamese market for individual investors? And will you be interested in Green bonds investment if the supply is more abundant? 6. What barriers or challenges do you perceive as hindrances to individual investors' participation in the green bond market in Vietnam?
E. Others	<ol style="list-style-type: none"> 1. How familiar are you with the concept of green bonds and their role in financing environmentally sustainable projects? 2. What is your perception of the current state of the green bond market in Vietnam? How does it compare to other financial markets in the region? 3. In your opinion, what are the main factors influencing the development of the green bond market in Vietnam? 4. How do you perceive the level of awareness and interest in green bonds among various stakeholders, including investors, issuers, and regulators? 5. What challenges do you believe need to be addressed to foster the growth of the green bond market in Vietnam? 6. How would you compare the risk-return profile of green bonds to traditional financial instruments in the Vietnamese market?

- (3) **Phase 3:** The final stage of the analysis involved the development of aggregate dimensions derived from the conceptual categories established in the previous phase. This stage was marked by the integration of insights obtained from the existing literature on green bonds. These insights were carefully aligned with the theoretical aspects derived from the conceptual categories. As a result, they were organised into overarching dimensions, providing a more comprehensive and theoretically grounded framework for understanding the research findings.

Consequently, this rigorous analysis unveiled three distinct dimensions based on the rich dataset provided by the interviewees. These dimensions, namely “Barriers for Issuers,” “Attractiveness to Investors” and “Potential of the Green Bond Market in Vietnam,” encapsulated the multifaceted insights garnered from the research and shed light on the complexities and opportunities within the context of Green bonds in Vietnam. The data structure of the research is shown in [Figure 1](#).

4. Findings

4.1 Barriers for corporate issuers

The interviewees in this study collectively shed light on the challenges facing the Green bond market in Vietnam compared to its counterparts in other countries. These challenges are multifaceted and were highlighted by different interviewees, each contributing unique insights into the obstacles hampering the market's development.

Interviewee B1 underscored a critical challenge which is *the absence of intermediary organisations* within Vietnam's bond market, particularly for green bonds. Independent rating agencies, Second Party Opinion providers for Green Bond Frameworks and Certified Climate Bond Application and issuance entities are notably lacking. Their absence impedes the market's ability to provide essential assessments, opinions and certifications required for green

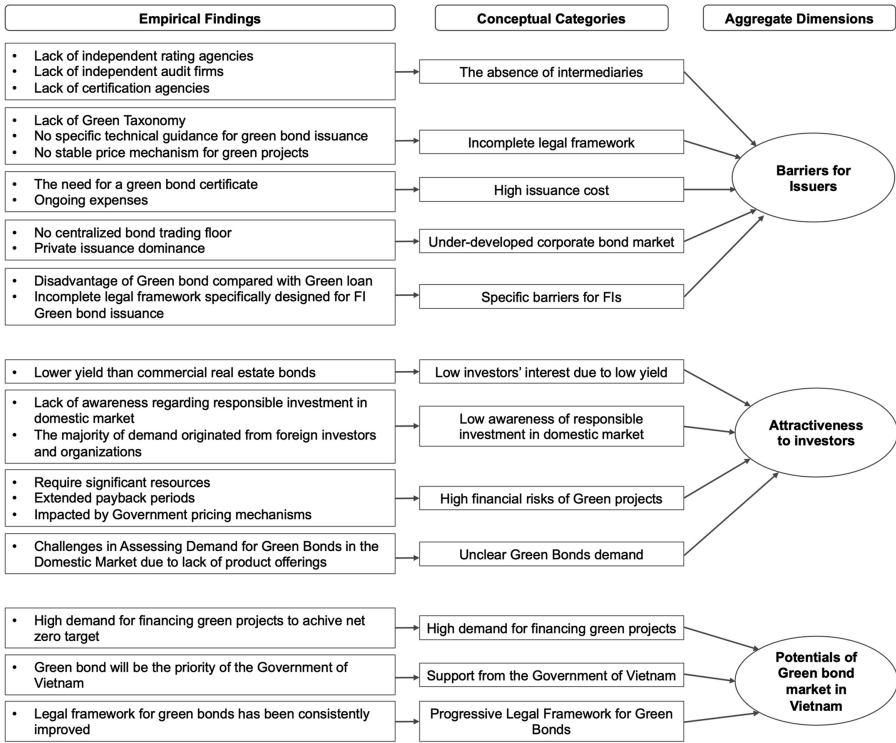


Figure 1. Data structure. Source: Figure by authors

bonds. These intermediaries are vital for ensuring transparency and adherence to international standards, crucial for the market's growth.

Building upon this absence of intermediaries, *Interviewee A1* pointed out the need for comprehensive regulatory restructuring. The existing legal framework governing green bond issuance in Vietnam has *several key regulatory gaps* that require attention. This includes the need for a national green classification system, specific technical guidance for green bond issuance, procedures related to Third-Party Audits or Second-Party Opinions and the establishment of a price mechanism or stable support source. Thus, regulatory enhancements are essential to encourage green projects and align the Vietnamese market with international best practices.

Interviewee A3 brought to light another concern: *the elevated cost associated with green bond issuance*. Despite incentives for various aspects of green bond issuance, the overall cost remains high compared to regular bonds. Under the guidelines outlined in Circular No. 101/TT-BTC, both green bond issuers and investors are eligible for a 50% discount on various service fees. These discounted services include registration for listing, listing management, transaction-related charges, securities registration fees, partial cancellation of securities registration and securities depository fees. However, green bond issuance necessitates a green bond certificate and ongoing expenses related to information disclosure and reporting. Additionally, managing proceeds throughout the project's lifecycle adds to these expenses, making green bond issuance financially burdensome.

Interviewee A6 underscored the *underdeveloped nature of Vietnam's corporate bond market* as a challenge affecting green bonds. A number of limitations that hinder the

development of the corporate bond market in Vietnam and affect the attractiveness of green bonds are the lack of transparency and information disclosure, the absence of corporate bond credit rating activities, the absence of a centralised trading platform and the prevalence of privately issued bonds. This underdevelopment has implications not only for green bonds but also for the broader corporate bond market in Vietnam.

Specifically addressing *financial institutions (FIs)*, Interviewee A4 notes their preference for green loans over green bonds due to their simplicity and accessibility during the early stages of green finance adoption. Building on the barriers to financial institutions, Interviewee A5 highlights the unique challenges FIs face, particularly regarding *capital utilisation control* when issuing green bonds. These complexities arise because FIs rely on a diverse portfolio of green projects rather than a single, specific project. Tailored guidance is essential to streamline capital management and allocation processes for FIs issuing green bonds.

4.2 Attractiveness to investors

The interviewees collectively provided valuable insights into the current landscape of demand for green bonds in Vietnam, shedding light on several pivotal factors that contribute to the market's relatively low demand. These factors include relatively lower yields and higher associated risks compared to other investment options, limited awareness of responsible investment within the domestic market and a scarcity of diverse investment products for potential investors.

Interviewee D1 brought attention to the *competitiveness of interest rates*, highlighting a critical aspect that affects investor preferences. Specifically, it was pointed out that green bonds often do not offer interest rates as attractive as those available with commercial real estate bonds. This difference in yield can deter potential investors from opting for green bonds, especially when higher returns are available through other investment avenues. Interviewees D1 and D2 as individual investors also agreed that currently in Vietnam's corporate bond market, commercial real estate bond is dominant with attractive yield and most accessible for individual investors.

Interviewee C1 highlighted the issue of *awareness within the domestic market*, a fundamental factor influencing demand. It was revealed that both investors and issuers in Vietnam exhibit limited understanding and awareness of responsible investment. Notably, most of the demand for green bonds is generated by foreign investors and organisations. This finding suggests that raising awareness and education within the domestic market about the benefits and significance of green investments could play a pivotal role in stimulating demand.

Interviewee E3 brought forward the vital consideration of *risk associated with green projects*, adding depth to the understanding of demand challenges. It was underscored that green projects often require substantial financial resources, possess extended payback periods and can be influenced by government pricing mechanisms related to renewable energy sources. In 2022, numerous renewable energy firms in Vietnam experienced financial losses attributable to shifts in electricity procurement policies and the prolonged repercussions of the COVID-19 pandemic (The Investor, 2023). Furthermore, several companies operating in the wind power sector have incurred losses as a result of issuing bonds with increased interest rates. Notably, Trung Nam Dak Lak 1 Wind Power JSC reported a substantial loss of VND 860 billion (equivalent to USD 36.7 million) in 2022, compared to the net profit of only over VND 1 billion in 2021 (VnExpress, 2023; The Saigon Times, 2023). The majority of wind farms experiencing financial losses procured funds from the corporate bond market and these companies are grappling with elevated financial leverage and negative cash flow, resulting in a significant burden on them with debt-to-equity ratio surging to five to six times higher than their equity (The Saigon Times, 2023). These characteristics introduce a level of financial risk that potential investors may perceive as a deterrent, impacting the overall demand for green bonds.

Interviewee E2 shed light on the *availability of investment products*, a crucial component in gauging market demand. It was noted that the limited popularity of green bond trading in

Vietnam results in a scarcity of investment options for individuals and organisations seeking environmentally responsible opportunities. This dearth of choices for investors to compare with conventional bonds complicates the assessment of the market's actual demand for green bonds. Individual investors D1 and D2 also confirmed that they have never been introduced to any green bond investment options by the brokers/financial advisors/wealth managers.

4.3 Potential of the green bond market in Vietnam

While there are evidently some barriers facing issuers, and the current demand for green bonds within the Vietnamese market remains relatively modest, it is noteworthy that the interviewees uniformly emphasized the substantial potential that lies ahead. *Interviewee E1* underscored the enormous financial requirements necessary to achieve Vietnam's ambitious net-zero emissions goal by 2050. Meeting this target demands significant capital, with a significant portion anticipated to originate from the private sector. *Interviewee A2* accentuated the commitment of the Vietnamese government to the development of green bonds. Recognizing the significance of sustainable finance, the government has proactively promoted green bonds since as far back as 2012, designating them as a priority. This sustained commitment signals a conducive environment for the expansion of the green bond market in Vietnam. *Interviewee A1* further reinforced the government's dedication by highlighting the continuous enhancement of the legal framework surrounding green bonds despite the current gaps, which are expected to be addressed in the foreseeable future. Interviewees' representative quotes for each finding are illustrated in [Table 8](#).

5. Discussion

Now we present a discussion of the research findings, reflecting the perspectives and experiences of market participants concerning the emergence of the green bond market in Vietnam. Building on this discussion, several propositions are formulated, which serve as recommended subjects for future research and investigation.

Green bonds have surfaced as promising financial tools for securing funds for environmentally friendly projects. In recent times, these bonds have made inroads into the Vietnamese market, aiming to create a viable investment avenue that promotes ESG investment and sustainable development. The Vietnamese government has been actively involved in nurturing and advancing domestic green bond markets. The insights and experiences shared by market participants have shed light on the barriers faced by issuers, the appeal to investors and the potential of the green bond market in Vietnam. From this study, three key propositions emerge, which are:

- Proposition 1.* There are several key barriers facing green bond corporate issuers in Vietnam. These include: the absence of intermediaries, incomplete legal framework, high issuance cost, under-developed corporate bond market, specific barriers for FIs (disadvantage of Green bond compared with Green loan).

Regarding the absence of intermediaries in Vietnam's green bond market, this point reflects the findings from the study by [Tran \(2023\)](#), who pointed out the limitations in Vietnam's green bond market, including the lack of activities of intermediaries such as credit rating agencies, independent rating agencies, accrediting organisations to determine whether the project is "green". The study also confirmed the shortage of legal provisions to monitor the purpose of proceeds, separate accounting and post-issuance reports as well as the absence of specific guidelines for green bond issuance. In addition, the lack of a price mechanism for renewable energies in Vietnam has created a state of uncertainty. This uncertainty has led to various challenges, including grid congestion, output limitations in solar projects, financial difficulties for project owners and a shift in government priorities towards onshore and offshore wind energy ([Wantenaar, 2023](#)).

Table 8. Representative quotes

Dimensions and Conceptual categories	Empirical findings	Representative quotes	Interviewees
<i>Barriers for issuers</i>			
The absence of intermediaries	Lack of independent rating agencies Lack of independent audit firms Lack of certification agencies	“The role played by underwriter is not sufficient for the issuance of Green bond [. . .] There has to be the involvement of other intermediaries during the green bond issuance process, such as rating agencies, audit firms, reputable agencies for certification following to flag a bond as green. But these are not yet available in Vietnam”	B1
Incomplete legal framework	Lack of green taxonomy No specific technical guidance for green bond issuance No price mechanism for green projects	“While others peer countries in ASEAN have developed their own national green classification system, Vietnam is still in the process of formulating its own National Green Taxonomy. Without this system in place, there is a high concern from investors on the potential green wash, which reduce the issuers’ motivation to mobilise fund via this channel” “Issuers also are still unclear about the detail process and requirements to issue green bonds. For a new financial instruments, it is necessary to provide detail guidance to help the issuers be familiar and streamline the guidance to encourage their engagement” “The investment in green projects in Vietnam also faces some financial issues due to the lack of government pricing mechanisms (e.g. wind, solar, biomass) [. . .] or a stable source of support to encourage green projects and renewable energy initiatives”	A1
High issuance cost	The need for a green bond certificate Ongoing expenses	“The support from Government on related fees such as registration, listing management, and transactions are not enough to offset the issuance cost of green bonds [. . .] The issuance cost for Green bond is higher than that of regular bonds due to additional expenses incurred by issuers for obtaining a green bond certificate, information disclosure and reporting. All these additional layers are to mitigate the risk of green wash” “Additionally, managing the allocation of proceeds from green bonds throughout the project’s lifecycle adds to these costs”	A3
Under-developed corporate bond market	No centralized bond trading floor Private issuance dominance	“The underdeveloped green bond market is not the typical issue for green bond only but lies in the overall corporate bond market in Vietnam [. . .] There are a number of issues that need to be fixed for the whole corporate bond market, including the absence of centralized trading floor, and the overconcentration on private issuance rather than public issuance. These fuel in the inefficient secondary market for corporate bond in Vietnam”	A6

(continued)

Table 8. Continued

Dimensions and Conceptual categories	Empirical findings	Representative quotes	Interviewees
Specific barriers for FIs	Disadvantage of Green bond compared with Green loan	“Financial institutions have easier access to green loan in comparison with green bond and the outcomes are similar, with lower related expenses. That is why green loan is an obvious choice for FI at this stage”	A4
	Incomplete legal framework specifically designed for FI Green bond issuance	“In contrast to businesses, financial institutions face several unique challenges to control the utilisation of capital mobilised from green bond issuance [. . .] Financial institutions issuing Green bond cannot rely on a single, specific green project but instead depend on a diverse portfolio. The disbursement of funds to these green projects is dependent on the actual requirements of customers. The changes in financial needs for green projects potentially result in changes or disruptions to the project list during implementation” “There is a need for clear and tailored guidance to financial institutions issuing green bonds, streamlining capital management and allocation processes”	A5
<i>Attractiveness to investors</i>			
Low investors’ interest due to low yield	Lower yield than commercial real estate bonds	“Currently commercial real estate bonds are dominance in the corporate bond market in Vietnam with more attractive interest rate”	D1
Low awareness of responsible investment in domestic market	Lack of domestic awareness The majority of demand originated from foreign investors and organizations	“Both investors and issuers in the domestic market exhibit a lack of awareness regarding responsible investment [. . .] The majority of demand originated from foreign investors and organizations”	C1
High financial risks of Green projects	Require significant resources. Extended payback periods. Impacted by Government pricing mechanisms	“Broadly speaking, green projects typically require substantial resources, have long payback periods, and can be subject to government pricing mechanisms, such as those related to wind power, solar power, and biomass power purchase prices [. . .] High financial risks are expected for green projects, especially in Vietnam market”	E3
Unclear Green Bonds demand	Challenges in Assessing Demand for Green Bonds in the Domestic Market due to lack of product offerings	“The domestic market lacks diverse product offerings for comparison with standard bonds, primarily due to the relatively limited popularity of green bond trading. Therefore, it is challenging to accurately gauge the market’s demand for green bonds”	E2

(continued)

Table 8. Continued

Dimensions and Conceptual categories	Empirical findings	Representative quotes	Interviewees
<i>Potentials of green bond market in Vietnam</i>			
High demand for financing green projects	High demand for financing green projects to achieve net zero target	“To meet net-zero goal, Vietnam will need significant financial resources to fund for green projects till 2050, in which a major part is from private sector”	E1
Support from the government of Vietnam	Green bond will be the priority of the Government of Vietnam	“The Government of Vietnam has recognized the significance of green bonds and prioritises their development [. . .] Since 2012, the Vietnamese government has been actively promoting sustainable finance”	A2
Progressive legal framework	Legal framework for green bonds has been consistently improved	“Although there are obvious gaps in legal framework [. . .], it is worth praising that since 2012, the Vietnamese government has steadily enhanced the legal framework surrounding green bonds” “It is expected that the current gaps in Vietnam legal framework for green bond will be gradually filled soon”	A1

Source(s): Table by authors

However, the finding of the high green bond issuance cost in Vietnam is against the conclusion from research conducted by [Gianfrate and Peri \(2019\)](#) who suggested that even though the issuance of Green bonds involves green certification cost and other additional costs for monitoring and reporting in the use of the proceeds, the Greenium more than offsets the additional costs to get the green label or rating. This could be explained by the fact that in Vietnam, green projects represent high financial risks resulting from substantial financial resources, extended payback periods and government pricing mechanisms related to renewable energy sources. In fact, the financial health of several companies operating in renewable energy in Vietnam is under close watch given the recent financial losses incurred and high leverage ([VnExpress, 2023](#); [The Saigon Times, 2023](#)). This high risk should be covered by the higher interest offered to investors, which eliminates the Greenium for these bonds in Vietnam.

The underdeveloped corporate bond market in Vietnam is evidenced by the lack of transparency and information disclosure, the absence of corporate bond credit rating activities ([Nguyen and Vu, 2021](#)), the absence of a centralised trading platform and the prevalence of privately issued bonds ([Ratings, 2021](#)). Meanwhile, specific barriers for FIs has led to the use of more green loans, a more accessible financing option, instead of green bond. For example, in early 2019 VPBank coordinated with International Finance Corporation (IFC) to develop a plan for the issuance of green bonds in the international market with a value of 120 million USD. However, in the end, the bank has switched to a green loan mobilisation from international partners due to the complex requirement of the governance system, challenges standardising policy frameworks and operating procedures ([VPBank, 2022](#)).

Proposition 2. The attractiveness of green bond as an investment channel for investors needs to be raised. Currently, green bonds are not highly appealing due to: relatively lower yields, higher associated risks, limited awareness of responsible investment within the domestic market and a scarcity of diverse investment products for potential investors.

The perception of the low yield of Green bonds in Vietnam is understandable given that the most well-known green bond issuance was the one by Electricity Finance Joint Stock Company (EVNFinance), which is the only internationally verified green bonds in Vietnam so far. This bond only offers an interest rate of 6.7% per year (Tran, T.T.H. (2023), in comparison with the average issuing rate of real estate bonds of 10.6% per year, with various issuers in March 2023 offered 12–13% per years (VBMA, 2023). Even though some other green bonds offer more attractive yields (e.g. wind energy companies offer annual coupons ranging from 9 to 10.75% in the first few years and then turn to floating rates (The Saigon Times, 2023), such yields cannot compare with the one offered by corporate real estate bonds).

Regarding the risks associated with green project investment, in 2022, numerous renewable energy firms in Vietnam experienced financial losses attributable to shifts in electricity procurement policies and the prolonged repercussions of the COVID-19 pandemic (The Investor, 2023). Furthermore, several companies operating in the wind power sector have incurred losses as a result of issuing bonds with increased interest rates. Notably, Trung Nam Dak Lak 1 Wind Power JSC reported a substantial loss of VND 860 billion (equivalent to USD 36.7 million) in 2022, compared to the net profit of only over VND 1 billion in 2021 (VnExpress, 2023; The Saigon Times, 2023). The majority of wind farms experiencing financial losses procured funds from the corporate bond market and these companies are grappling with elevated financial leverage and negative cash flow, resulting in a significant burden on them with debt-to-equity ratio surging to five to six times higher than their equity (The Saigon Times, 2023).

The limited public awareness of green bond investment in Vietnam hindering its attractiveness to investors is consistent with the findings from the study by Tran (2023). In addition, the scarcity of investment products is represented by the limited number of outstanding green bonds in Vietnam's domestic corporate market. Notably, due to various barriers facing issuers, some companies opted for international issuance instead of domestic issuance (e.g. In 2021, BIM Land successfully issued its inaugural USD bond and had it listed on the Singapore Exchange (The Saigon Times, 2021).

Proposition 3. The Green Bond Market in Vietnam possesses substantial potential for further growth. This potential needs to be unlocked given the financing required to meet the ambitious target of Net-zero by 2050. Key enablers include support and promotion from the Vietnamese Government and the continuing enhancement of the legal framework surrounding green bonds.

The need to fill the green finance gap is supported by the estimation by McKinsey's (2022) report which suggests that the net-zero pathway in Vietnam requires a total investment of approximately USD 30 billion per year. This underscores the imperative role that instruments such as green bonds can play in mobilising private investment for green projects.

Regarding legal aspects, since 2012, the legal framework in Vietnam for the green bond has been continually developed and enhanced by the following legal documents: (1) National Strategy on Green Growth: Decision No. 1393/QD-TTg dated September 25, 2012; (2) National Action Plan on Green Growth: Decision No. 403/QD-TTg dated March 20, 2014; (3) Action plan for the implementation of the Paris Agreement on Climate Change: Decision No. 2053/QD-TTg dated October 28, 2016 and (4) Approval of the bond market development roadmap during 2017–2020, with a vision to 2030: Decision No. 1191/QD-TTg dated August 14, 2017. These legislative advancements serve as a sturdy foundation, offering clarity and guidance for both organisations and individuals interested in engaging in green bond investments. The current gap in legal framework is fully acknowledged by the Vietnamese Government and continuous efforts have been made to address this issue. Notably, in May 2022, MoNRE and SBV joined forces with IFC to craft and put into operation a policy and regulatory framework. Initially, the framework concentrates on green procurement, green taxonomy and waste management, with the overarching goal of catalyzing private sector engagement in advancing the nation's climate objectives and fostering sustainable growth.

Besides streamlining the legal framework, the support from the Vietnamese Government was also evidenced by the incentives for various aspects of green bond issuance under the guidelines outlined in Circular No. 101/TT-BTC, both green bond issuers and investors are eligible for a 50% discount on various service fees. These discounted services include registration for listing, listing management, transaction-related charges, securities registration fees, partial cancellation of securities registration and securities depository fees.

6. Conclusions

This research serves as an examination of the development of Vietnam's green bond market, uncovering the challenges that impede its potential growth. These challenges deter issuers from contributing more to market expansion and discourage potential investors from seizing these investment opportunities. Despite the recognised effectiveness of green bonds in bridging the green finance gap, as highlighted by benefits such as Greenium (as suggested by Agliardi and Agliardi, 2019) and advantages for shareholders of issuers (as suggested by Tang and Zhang, 2020), Vietnam's green bond market remains relatively underdeveloped compared to its ASEAN counterparts. By assessing the perceptions and experiences of market participants, this study sheds light on the existing barriers for issuers, the appeal of green bonds as an investment avenue for investors and the potential expansion of Vietnam's green bond market. Consequently, this research contributes both theoretically and practically to the field.

6.1 Contribution

Related studies have explored challenges facing the global green bond market (Deschryver and Mariz, 2020) and regional dynamics in developing countries (Banga, 2018; Nguyen *et al.*, 2022); however, research specifically focused on the Vietnam market has been limited (Tu *et al.*, 2020; Tran, 2023). Furthermore, none of these studies employed a qualitative approach involving individual interviews, which enables direct engagement with industry experts, offering valuable insights, in-depth perspectives and rich real-world observations. Therefore, this research gathers comprehensive and detailed insights from a diverse range of market participants, including issuers, intermediaries, investors and other stakeholders.

This study contributes by exploring the development of Vietnam's green bond market, providing valuable insights to regulators and market participants. Its goal is to deepen understanding of the current market landscape and the challenges facing the Vietnamese green bond sector. These include: what are the barriers facing potential green bond issuers? How can green bonds become more appealing to investors? What would enable to green bond market to grow further? By gathering diverse perspectives from key stakeholders – including issuers, intermediaries, investors and others – the research ensures a comprehensive view that captures all critical aspects.

Based on these insights, the study offers several recommendations to overcome barriers for issuers, boost the attractiveness of green bonds to investors and support market growth. These include: (1) establishing key intermediaries such as independent rating agencies and certification bodies; (2) strengthening the legal framework through a national green taxonomy, technical guidelines for green bond issuance and a stable pricing mechanism for green projects; (3) improving the corporate bond market by creating a centralised trading platform; (4) increasing government financial support and (5) promoting public awareness of responsible investment through education. Given the Vietnamese government's proactive efforts to combat climate change – highlighted by its goal of reaching net-zero emissions by 2050 and ongoing legal reforms since 2012 – along with growing government support, these current challenges are seen as temporary hurdles. Once addressed, the green bond market in Vietnam is expected to grow substantially.

The research findings on Vietnam's green bond market carry important implications for other Southeast Asian countries like Laos, Cambodia, Myanmar and beyond. By pinpointing and tackling the challenges faced by a developing country in growing its green bond market, this study

provides a useful model for similar economies aiming to develop sustainable finance frameworks. Policymakers in these regions can leverage Vietnam's experience to design effective strategies that encourage green bond issuance and investment, thereby supporting global sustainability objectives and speeding up the adoption of environmentally responsible financial tools.

6.2 Challenges and future research suggestions

Despite the comprehensive nature of this study, certain challenges must be acknowledged. Firstly, the sample of market participants mainly comprises issuers, primarily due to the limited public awareness of green investment. Consequently, issuers represent the stakeholder group with the most extensive expertise and knowledge regarding green bonds in Vietnam. While the study delves into the attractiveness of this investment opportunity, further research that surveys individual investors would be especially interesting. However, given the current low market awareness and the limited availability of green investment instruments, it is advisable to consider such surveys in the future when green bonds become more prevalent in Vietnam. Finally, although the research encompasses various category of market participants (issuers, investors, intermediaries and other supporting services), it would be advantageous for further research to include the perspectives of regulators. Hence, it is recommended to explore the challenges regulators face in enhancing the legal framework, establishing intermediaries for the green bond market and fostering the growth of the secondary market for corporate bonds.

In addition there is scope for quantitative research to estimate the impact of mitigating perceived obstacles on the expansion of Vietnam's green bond market, drawing upon data from similar countries. For example, quantifying the relationship between regulatory environment with the growth in volume of green bond market in the ASEAN to draw a forecast for the Vietnam market. This could involve quantifying the correlation between the regulatory framework and the growth of the green bond market within the ASEAN region, thus enabling the formulation of predictive models for the Vietnamese market. By examining how regulatory changes have influenced the development of green bonds in peer countries, such research can provide insights into potential strategies and policies that Vietnam could adopt to foster the growth of its own green bond market and align its trajectory with regional trends.

6.3 Policy implications for regulators

The findings highlight several critical areas where regulatory intervention can facilitate the growth of Vietnam's green bond market:

- (1) It is imperative to develop a supportive market infrastructure, including independent second-party opinion providers, credit rating agencies and green certifiers, to enhance transparency and credibility.
- (2) The legal framework should be strengthened through the adoption of a national green taxonomy and clear issuance guidelines aligned with international standards.
- (3) Further financial incentives, such as subsidies for certification costs and tax benefits, are needed to offset the higher issuance costs of green bonds.
- (4) Broader reforms to improve transparency, disclosure and credit rating in the corporate bond market will benefit green bond development.
- (5) Tailored regulatory guidance should be introduced for financial institutions issuing green bonds across diversified green projects.
- (6) Awareness-raising campaigns and capacity-building initiatives are essential to expand domestic investor participation.
- (7) Policy tools such as risk guarantees and public-private financing models should be considered to mitigate the risks associated with green investments, particularly in renewable energy.

A comprehensive regulatory approach, combining structural reforms, capacity building, financial incentives and sustained policy signaling, is essential to unlock the full potential of Vietnam's green bond market and support its transition toward a low-carbon, climate-resilient economy.

References

- ACMF (2023), "ASEAN green bond standards", available at: <https://www.theacmf.org/initiatives/sustainable-finance/asean-green-bond-standards>
- ADB (2022), "Green bond market survey for Thailand", available at: <https://www.adb.org/sites/default/files/publication/801601/green-bond-market-survey-thailand.pdf>
- Agliardi, E. and Agliardi, R. (2019), "Financing environmentally sustainable projects with green bonds", *Environment and Development Economics*, Vol. 24 No. 6, pp. 608-623, doi: [10.1017/s1355770x19000020](https://doi.org/10.1017/s1355770x19000020).
- Association of South East Asian Nations (2021), "ASEAN taxonomy for sustainable finance", available at: <https://asean.org/book/asean-taxonomy-for-sustainable-finance/>
- Association of South East Asian Nations (2023), "ASEAN taxonomy for sustainable finance – version 2", available at: <https://asean.org/book/asean-taxonomy-for-sustainable-finance-version-2/>
- Banga, J. (2018), "The green bond market: a potential source of climate finance for developing countries", *Journal of Sustainable Finance and Investment*, Vol. 9 No. 1, pp. 17-32, doi: [10.1080/20430795.2018.1498617](https://doi.org/10.1080/20430795.2018.1498617).
- Bank Negara Malaysia (2021), "Climate change and principle-based taxonomy", available at: <https://www.bnm.gov.my/documents/20124/938039/Climate+Change+and+Principle-based+Taxonomy.pdf>
- Bank of Thailand (2023), "Thailand taxonomy – a reference tool for sustainable economy", available at: <https://www.bot.or.th/en/financial-innovation/sustainable-finance/green/Thailand-Taxonomy.html>
- Cadwalader (2023), "EU publishes green bond standard", available at: <https://www.cadwalader.com/cwt-climate/index.php?eid=189&nid=43#:~:text=EU%20Publishes%20Green%20Bond%20Standard,21%2C%202023%20%7C%20Issue%20No.&text=Cadwalader%20Climate&text=On%20February%2028%2C%202023%20the,global%20framework%20for%20green%20bonds>
- Climate Bonds Initiative (2019), "Green bonds: the state of the market 2018", available at: <https://www.climatebonds.net/data-insights/publications/green-bonds-state-market-2018>
- Deschryver, P. and 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*, Vol. 13 No. 3, p. 61, doi: [10.3390/jrfm13030061](https://doi.org/10.3390/jrfm13030061).
- East Asia Forum (2023), "Vietnam needs a green bond legal framework", available at: <https://eastasiaforum.org/2023/02/10/vietnam-needs-a-green-bond-legal-framework/>
- Energy Transitions Commission (2023), "Financing the transition: how to Make the Money flow for a net-zero economy", available at: <https://www.energy-transitions.org/wp-content/uploads/2023/03/ETC-Financing-the-Transition-ExecutiveSummary-compressed.pdf>
- European Commission (2023a), "Daily news 1/3/2023", available at: https://ec.europa.eu/commission/presscorner/detail/en/mex_23_1301
- European Commission (2023b), "EU taxonomy for sustainable activities", available at: https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en#legislation
- European Commission's Joint Research Centre (2021), "Green bonds support carbon emissions reduction, research finds", available at: https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/green-bonds-support-carbon-emissions-reduction-research-finds-2021-02-02_en

- GGGI (2022), “Accelerating the green transition: first onshore verified green bond issuance in Viet Nam”, available at: <https://gggi.org/accelerating-the-green-transition-first-onshore-verified-green-bond-issuance-in-viet-nam/>
- GGGI and ADB (2022), “Survey on green bonds and sustainable finance in ASEAN”, available at: <https://www.adb.org/publications/survey-green-bonds-sustainable-finance-asean>
- Gianfrate, G. and Peri, M. (2019), “The green advantage: exploring the convenience of issuing green bonds”, *Journal of Cleaner Production*, Vol. 219, pp. 127-135, doi: [10.1016/j.jclepro.2019.02.022](https://doi.org/10.1016/j.jclepro.2019.02.022).
- Hesary, F.T., Yoshino, N. and Phoumin, H. (2021), “Analyzing the characteristics of green bond markets to facilitate green finance in the post-COVID-19 world”, *Sustainability*, Vol. 13 No. 10, 5719, doi: [10.3390/su13105719](https://doi.org/10.3390/su13105719).
- ICMA (2021), “The green bond principles”, *Voluntary Process Guidelines for Issuing Green Bonds*, available at: https://www.icmagroup.org/assets/documents/Sustainable-finance/2022-updates/Green-Bond-Principles_June-2022-280622.pdf
- IFC and Amundi (2023), “Emerging market green bonds”, available at: <https://www.ifc.org/en/insights-reports/2023/emerging-market-green-bonds-report>
- McKinsey (2022), “Charting a path for Vietnam to achieve its net-zero goals”, available at: <https://www.mckinsey.com/capabilities/sustainability/our-insights/charting-a-path-for-vietnam-to-achieve-its-net-zero-goals>
- Migliorelli, M. and Dessertine, P. (Eds) (2020), “The rise of green finance in Europe: opportunities and challenges for issuers, investors and marketplaces”.
- Ministry of Industry and Trade of Vietnam (2021), “Climate change adaptation: Viet Nam is making concrete actions to go green”, available at: <https://moit.gov.vn/en/news/energy/climate-change-adaptation-viet-nam-is-making-concrete-actions-to-go-green.html>
- Nguyen, D.T. and Vu, N.X. (2021), “Developing the corporate bond market- international experience and lessons for Vietnam companies”, *Asian Journal of Business Management*, Vol. 9 No. 2, 2321-2802, doi: [10.24203/ajbm.v9i2.6621](https://doi.org/10.24203/ajbm.v9i2.6621).
- Nguyen, A.H., Hoang, T.G., Nguyen, D.T., Nguyen, L.Q.T. and Doan, D.T. (2022), “The development of green bond in developing countries: insights from Southeast Asia market participants”, *The European Journal of Development Research*, Vol. 35 No. 1, pp. 196-218, doi: [10.1057/s41287-022-00515-3](https://doi.org/10.1057/s41287-022-00515-3).
- Raconteur (2023), “Financing the net-zero transition: meeting the \$3.5tn challenge”, available at: <https://www.raconteur.net/climate-crisis/financing-net-zero-transition#:~:text=The%20scale%20of%20global%20investment,are%20to%20decarbonise%20the%20global>
- Ratings, F. (2021), “Vietnam corporate bond outlook 2021”, available at: <https://fiingroup.vn/upload/docs/rating-insight-1-viet-nam-corp-bond-outlook-2021.pdf>
- Republic of Philippines (2021), “Sustainable finance framework”, available at: <https://www.treasury.gov.ph/wp-content/uploads/2022/01/Republic-of-Philippines-Sustainable-Finance-Framework-vF-with-disclaimer.pdf>
- Securities and Exchange Commission (2018), “Guidelines on the issuance of green bonds under the ASEAN green bonds standards in the Philippines”, available at: <https://www.sec.gov.ph/wp-content/uploads/2019/11/2018MCNo12.pdf>
- Securities Commission Malaysia (2014), “Sustainable and responsible investment Sukuk framework”, available at: <https://www.sc.com.my/api/documentms/download.ashx?id=84491531-2b7e-4362-bafb-83bb33b07416>
- Socialist Republic of Vietnam (2022a), “Nationally determined contribution”, available at: https://unfccc.int/sites/default/files/NDC/2022-11/Viet%20Nam_NDC_2022_Eng.pdf
- Socialist Republic of Vietnam (2022b), “Decision No. 896/QĐ-TTg on approving the nation strategy for climate change until 2050”, available at: <https://thuvienhdat.vn/van-ban-phap-luat-viet-nam/decision-896-qd-ttg-2022-approving-the-national-strategy-for-climate-change-until-2050-525126.html>

- Sustainable Finance Indonesia (2022), “Indonesia green taxonomy edition 1.0-2022”, available at: <https://keuanganberkelanjutan.ojk.go.id/keuanganberkelanjutan/en/home>
- Tang, Y. and Zhang, Y. (2020), “Do shareholders benefit from green bonds?”, *Journal of Corporate Finance*, Vol. 61, 101427, doi: [10.1016/j.jcorpfin.2018.12.001](https://doi.org/10.1016/j.jcorpfin.2018.12.001).
- The Investor (2023), “Vietnam’s renewable energy companies report loss”, available at: <https://theinvestor.vn/vietnams-renewable-energy-companies-report-loss-d4416.html#:~:text=Many%20renewable%20energy%20companies%20in,of%20the%20Covid%2D19%20pandemic>
- The Saigon Times (2021), “BIM Land raises US\$200 million via debut issuance of Singapore-listed bonds”, available at: <https://english.thesaigontimes.vn/bim-land-raises-us200-million-via-debut-issuance-of-singapore-listed-bonds/>
- The Saigon Times (2023), “Heavy debt eats into wind energy companies’ profits”, available at: <https://english.thesaigontimes.vn/heavy-debt-eats-into-wind-energy-companies-profits/>
- Tran, T.T.H. (2023), “Green bond market development-case of Vietnam”, *International Journal of Science and Research*, Vol. 12 No. 4, pp. 1206-1210, doi: [10.21275/sr23419071430](https://doi.org/10.21275/sr23419071430).
- Tu, C.A., Rasoulnezhad, E. and Sarker, T. (2020), “Investigating solutions for the development of a green bond market: evidence from analytic hierarchy process”, *Finance Research Letters*, Vol. 34, 101457, doi: [10.1016/j.frl.2020.101457](https://doi.org/10.1016/j.frl.2020.101457).
- United Nations (2018a), “The secretary-general’s strategy for financing”, *The 2030 Agenda for Sustainable Development (2018-2021)*, available at: https://www.un.org/sustainabledevelopment/wp-content/uploads/2018/09/SG-Financing-Strategy_Sep2018.pdf
- United Nations (2018b), “Vietnam’s voluntary national review – key messages”, available at: <https://hlpf.un.org/countries/vietnam/voluntary-national-submitted-for-publreview-2018>
- United Nations (2023a), “Take action for the sustainable development goals”, available at: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>
- United Nations (2023b), “The Paris Agreement”, available at: <https://www.un.org/en/climatechange/paris-agreement>
- United Nations Vietnam (2017), “The National Action Plan for the implementation of the 2030 sustainable development agenda”, available at: <https://vietnam.un.org/en/4123-national-action-plan-implementation-2030-sustainable-development-agenda>
- VBMA (2023), “Monthly report March 2023”, available at: https://vbma.org.vn/storage/reports/April2023/VBMA_MONTHLY%20BOND%20MARKET%20REPORT%20003%202023.pdf
- VnExpress (2023), “Wind power companies suffers losses as bond interest rates soar”, available at: <https://e.vnexpress.net/news/business/companies/wind-power-companies-suffers-losses-as-bond-interest-rates-soar-4604524.html#>
- VPBank (2022), “Task force on climate-related financial disclosures – update 2021”, available at: <https://www.vpbank.com.vn/-/media/vpbank-latest/8aboutvpbank/phat-trien-ben-vung/task-force-on-climate-related-financial-disclosures-2021.pdf>
- Wantenaar, A. (2023), “Vietnamese renewables in limbo until new price mechanism”, available at: <https://rethinkresearch.biz/articles/vietnamese-renewables-in-limbo-until-new-price-mechanism/>
- Working Group on Sustainable Finance (2021), “Sustainable finance initiatives for Thailand”, available at: <https://www.sec.or.th/TH/Documents/KnowledgeBase/SustainableFinanceInitiativesforThailand.pdf>
- World Bank (2023), “GDP by countries”, available at: <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>

Further reading

- ICMA (2023), “Sustainable finance – sustainable bond market data”, available at: <https://www.icmagroup.org/sustainable-finance/sustainable-bonds-database/>
- Socialist Republic of Vietnam (2018a), “Decree No. 95/2018/ND-CP on providing for issuance, registration, depositing, listing and trading of government debt instruments on securities market”, available at: <https://thuvienphapluat.vn/van-ban/EN/Chung-khoan/Decree-95-2018-ND-CP-issuance-registration-trading-government-debt-instruments-securities-market/389688/tieng-anh.aspx>
- Socialist Republic of Vietnam (2018b), “Decree No. 93/2018/ND-CP on providing for provincial-government debt management”, available at: <https://thuvienphapluat.vn/van-ban/EN/Tai-chinh-nha-nuoc/Decree-93-2018-ND-CP-providing-for-provincial-government-debt-management/390620/tieng-anh.aspx>
- Socialist Republic of Vietnam (2020), “Decree No. 153/2020/ND-CP on prescribing private placement and trading of privately placed corporate bonds in domestic market and offering of corporate bonds in international market”, available at: <https://thuvienphapluat.vn/van-ban/EN/Chung-khoan/Decree-153-2020-ND-CP-trading-of-privately-placed-corporate-bonds-in-domestic-market/463083/tieng-anh.aspx>
- Socialist Republic of Vietnam (2021a), “Circular No. 101/2021/TT-BTC on prescribing prices of securities services applied in stock exchanges and Vietnam securities depository and clearing corporation”, available at: <https://thuvienphapluat.vn/van-ban/Chung-khoan/Thong-tu-101-2021-TT-BTC-gia-dich-vu-linh-vuc-chung-khoan-tai-So-giao-dich-chung-khoan-495549.aspx>
- Socialist Republic of Vietnam (2021b), “Circular No. 101/2021/TT-BTC on prescribing prices of services in the field of securities applicable to the stock exchanges and the Vietnam securities depository and clearing corporation”, available at: <https://english.luatvietnam.vn/circular-no-101-2021-tt-btc-dated-november-17-2021-of-the-ministry-of-finance-on-prescribing-prices-of-services-in-the-field-of-securities-applicabl-213137-doc1.html>

Corresponding author

Hong Minh Le can be contacted at: hongminh01061995@gmail.com