



LUND UNIVERSITY
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Green Bonds

The Influence of Standards on the Use of Proceeds

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May 2019

Master's Programme in Accounting and Finance

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Abstract

Seminar date: June 3, 2019

Course: BUSN79 Degree Project: Accounting and Finance

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Keywords: Green Bonds, Green Bond Principles, Climate Bonds Standard, use of proceeds, greenwashing

Purpose: The purpose of this study is to investigate how the current green bond standards influence the use of proceeds obtained from the issuance of green bonds. We also aim to explore the limitations of the standards and how the standards can be further improved to promote the development of the green bond market.

Methodology: A qualitative research approach was used, consisting of a literature review, semi-structured interviews, and three case examples.

Theoretical perspective: The theoretical perspective is based on theories regarding CSR, ESG, legitimacy theory, institutional theory, stakeholder theory, information asymmetry, and greenwashing in the context of green bonds and green bond standards.

Data: The data is obtained from semi-structured interviews with ten experts within the field of green bonds from ten different companies that are issuers, investors, and underwriters of green bonds.

Conclusions: This study finds that current green bond standards do not solely influence how the proceeds obtained from green bond issues are used. The issuers use several guidelines rather than a specific green bond standard to guide the use of proceeds. In addition, it is evident that there are some gaps in the existing standards, such as the lack of proper green definition and criteria. This indicates that there is a need for more detailed and harmonized green bond standards to promote the development of the green bond market.

Acknowledgements

On this note, we would like to take the opportunity to thank our supervisor Reda M. Moursli for his valuable guidance and feedback throughout the process of writing this master thesis. Your insightful comments and thoughts have increased our ability to be more critical and think far and beyond. We would also like to convey our sincere gratitude and appreciation to all the interview respondents for sharing their knowledge and experiences as an invaluable contribution to our study. Your inputs have been essential and provide a great depth of understanding to our research topic. Finally, we would like to express our profound gratitude to our family and friends for the strong encouragement and support throughout this master's programme.

Lund University
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Lund, 25 May 2019

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List of Abbreviations

BREEAM	Building Research Establishment Environmental Assessment Method
CBI	Climate Bonds Initiative
CBS	Climate Bonds Standard
CICERO	Centre for International Climate and Environmental Research
CO ₂	Carbon dioxide
CO ₂ eq.	Carbon dioxide equivalent
COP	Convention on Climate
CSR	Corporate Social Responsibility
EMEA	Europe, the Middle East and Africa
ESG	Environmental, social, and governance
EU	European Union
EUR	Euro
EXIM	Export and Import Bank of India
GBPs	Green Bond Principles
GHG	Greenhouse Gas
GSIA	Global Sustainable Investment Alliance
ICMA	International Capital Market Association
IFC	International Finance Corporation
MSCI	Morgan Stanley Capital International
MTN	Medium Term Note
NGO	Non-governmental organization
OECD	Organization for Economic Co-operation and Development
SEK	Swedish Krona
S&P DJI	Standard & Poor's Dow Jones Indices
SDGs	Sustainable Development Goals
UN	United Nations
U.S.	United States
USD	United States Dollar

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1 Introduction

The first chapter provides an overview of the climate initiative that led to the introduction of green bonds, followed by the development of the green bond market, the current green bond standard as well as the problems and concerns regarding the standard.

1.1 Background

A green bond is one of the important debt instruments intended to support environmentally friendly institutions and projects (Preclaw & Bakshi, 2015). The market of green bonds initiated in June 2007 when the European Investment Bank (EIB) issued a climate awareness bond (Breen & Campbell, 2017). In the following year, the World Bank issued a green bond with a size of SEK 2.3 billion and maturity of six years, for a group of Scandinavian pension funds looking for investments that would also tackle climate change (IFC, 2016; Breen & Campbell, 2017; Faske, 2018). Since 2007, the market for green bonds has grown substantially and reached a total issuance volume of USD 521 billion in 2018 (CBI, 2018d). According to Calder et al. (2017), the primary purpose of green bonds is to raise funds to support projects that positively impact the climate and the environment. The key differentiating feature is that a green bond is marketed as green to investors and their proceeds are earmarked for green projects. This is contrary to conventional bonds, of which the bondholder has no say over how the proceeds of the bond are utilized (Ng & Tao, 2016).

The green bond market is growing as the issuers aim to promote green initiatives and the investors increasingly incorporate an environmental, social, and governance (ESG) component in their investment strategy due to the mandates (Preclaw & Bakshi, 2015). Despite the expansion of the green bond market in recent years, several concerns could constrain its growth. According to Shishlov et al. (2016), the green bond market has been developing without mandatory regulations. The voluntary nature of the standards leaves the issuers at the discretion of determining what constitutes green (Breen & Campbell, 2017). This indicates that the issuers are free to label their bonds as green and define their frameworks at their discretion, including allocation of proceeds (Shishlov et al., 2016). In addition to this, the lack of harmonized standards is one of the major problems restricting the growth of the green bond market (Berensmann, 2017). For instance, the definition of what makes a bond green could not be determined due to variability in principles and standards (Ehlers & Packer, 2016). As a result of the absence of globally accepted standards or consistent verification, it is difficult for the

market participants to determine whether a bond is green or not (Promina, 2019). Since what defines green is not specified by any standard regulator, it is therefore up to the investors and advisors to determine the greenness of bonds by themselves (BloombergNEF, 2017). Besides, there is no consensus among many different certification mechanisms that should be used to verify the greenness of green bonds (Ehlers & Packer, 2016).

Currently, the Green Bond Principles (GBPs) are the most used criteria for issuing green bonds, developed by the International Capital Market Association (ICMA) in 2014. The GBPs are voluntary guidelines that recommend transparency and disclosure to promote integrity in the development of the green bond market by clarifying how a green bond is to be issued (Fosse et al., 2017; OECD, 2017; Calder et al., 2017). It provides a recommendation on four major elements, which are the use of proceeds, the process for evaluating and selecting projects, management of the proceeds, and reporting (ICMA, 2018). However, the GBPs do not endorse any particular definition of ‘greenness’.

At the heart of green bonds is how the proceeds are to be used (Calder et al., 2017). Labeling bonds as green is a commitment to use proceeds towards projects with environmental benefits, primarily concerning climate change mitigation (Lee, 2017; Miller, 2019). The growth in the issuance of green bonds, however, has not given rise to any internationally binding standards that could be used by issuers to establish the integrity of the green bonds and be subsequently verified by investors (Breen & Campbell, 2017). As a result, the standards for what constitutes a green bond still vary by jurisdiction, and no international harmonization has been achieved (Faske, 2018). However, because of the diversity of green projects, it is difficult to standardize the level of greenness of an asset (Preclaw & Bakshi, 2015). To protect the integrity of green bonds, there is a need for more credibility, transparency, and consistency in the green bond market (Breen & Campbell, 2017). Faske (2018) highlights that although some policymakers have made hard-law commitments toward regulating the green bond market, other issuers choose to adopt the soft guidelines, such as the Green Bond Principles (GBPs). Despite the absence of a clear definition of green, the GBPs are the most widely used guideline for the issuance of green bonds.

1.2 Motivation & Research purpose

Green bond has been one of the financial instruments used for sustainable financing and has been growing at an increasing rate over the years. The nature of current standards impairs the ability of green bonds to fully contribute to environmental sustainability (Berensmann, 2017). The current standards are voluntary and only serve as guidelines to the actors in the market (Breen & Campbell, 2017). As a result, the issuer is left with the sole decision of how to use the proceeds from green bond issuance (Shishlov et al., 2016). Therefore, we believe there is a need to explore how current standards are involved in the allocation of proceeds from green bonds and the gaps that exist in the standards. In addition, there is limited evidence on the impact of standards on the use of proceeds.

Therefore, the objective of our research is to investigate how the current standards and regulations influence the use of proceeds obtained from the issuance of green bonds and how they help to ensure transparency in the green bond market. We also examine the gaps in the existing green bond standards and how the standards can be further improved. To achieve this, we aim to explore the perspectives of the key actors who are directly and actively involved in the green bond transaction, namely issuers, investors, and underwriters.

1.3 Research questions

The research questions are constructed to achieve the mentioned objectives.

1. How do the current standards and regulations influence the use of proceeds obtained from the issuance of green bonds?
2. What are the gaps in the existing green bond standards and how can the standards be improved to facilitate the development of the green bond market?

1.4 Outline of the Thesis

Our thesis is structured as follows. First, we introduce the background of green bonds and the related standard. The first chapter further covers the research motivation, research purposes, and research questions. This is then followed by a methodology chapter with a description of the research approaches taken to collect and analyze data, the considerations for selection, and limitations of the selected methods. The next section is information on the definition of green bonds, the emergence and development of the green bond market, and major market

participants. This is followed by a literature review consisting of the theoretical background to provide the underlying theories and definitions which are relevant for the analysis of findings regarding the standards in the green bond market. The next chapter is a presentation of findings that includes three cases regarding the controversial use of green bond proceeds and responses from semi-structured interviews with ten respondents who are issuers, investors, and underwriters of green bonds. This is followed by a discussion and analysis of collected data in connection with theoretical background and literature review. The purpose of this section is to provide answers to our research questions. Lastly, in the concluding chapter of our thesis, we provide a conclusion of the research, theoretical and practical contributions, policy recommendations as well as suggestions for further research.

2 Methodology

Chapter two describes the methodology for collecting, interpreting, and analyzing the findings, as well as the limitations of the selected research methods.

2.1 Research Strategy and Design

There are two major research approaches that researchers use for their studies, which are quantitative and qualitative methods (Rahman, 2017). Since the purpose of our thesis is to investigate the current green bond standards adopted by the market participants and its influence on the use of proceeds and identify the gaps for standard improvement, we believe the qualitative approach is more appropriate for our study. The reasons for selecting this type of method will be discussed below.

The qualitative research, according to Atieno (2009), is a way of simplifying and managing data without decreasing its complexity and context, and its objective is to generate new ways of seeing existing data. The qualitative method is suitable when a question needs to be explained and investigated in some depth (Shields & Twycross, 2003). Because the data collection process is not constrained to fixed categories, it can generate unique data in terms of the observation of participants' thoughts and behaviors, thereby enabling the researcher to understand and examine the phenomena deeply (Hyde, 2000; Daniel, 2016). Therefore, we find that this method would provide in-depth information in helping us analyze the issues related to the green bond standards in detail.

There are several different methods of data collection in qualitative research, for example, observational methods, in-depth interviewing, group discussions, narratives, and the analysis of documentary evidence (Ritchie & Lewis, 2003). For our research, we intend to collect data using the interview method and case examples. As the core advantage of an interview is the new insights that can be gained from the perspective of the participant (Adams, 2010). The interview method is, therefore, the most suitable approach for our research. This method is also chosen because we aim to obtain data from the views of different stakeholders in the green bond market. The perceptions of various stakeholders are vital in order to understand their roles in the green bond market and to what extent each of them refers to the standard when issuing green bonds, investing in green bonds or facilitating green bond transactions. The cases are used to explore the controversial use of green bonds proceeds.

2.2 Literature Review

The literature related to the research problems has been thoroughly selected and gathered to support the purpose of this study. To generate a better understanding of the standards and its influence on the use of green bond proceeds, we start by conducting research on previous academic journal articles by using LUBsearch and Google Scholar as major search tools. However, there has been very limited academic research on standards in the green bond market, particularly in relation to the use of green bonds proceed. As a result, limited academic articles were retrieved from these sources. This has limited the academic depth of this paper to some extent. More academic papers would have supported the theories and discussion and provide a more theoretical contribution. Therefore, to provide the needed literature to answer the research questions, we incorporate the data from the websites in the form of research papers, company reports, and recent news. The data collected from the academic journals and other sources are collaborated in order to create a stronger foundation for our analysis and to provide a more detailed view of current research in this area. Furthermore, the non-academic papers are also used to complement the views from the academic articles and to further provide a critical view of the different perspectives. In the search process, the keywords such as *green bonds*, *Green Bond Principles*, *Climate Bonds Standard*, *green investment*, *use of proceeds*, *disclosure*, *transparency*, and *greenwashing* are used.

2.3 The role of theory

To provide a suitable theoretical background that supports the research findings, theories that relate to the company's environmental commitment are needed. For that reason, Corporate Social Responsibility (CSR), Environmental, Social, and Governance (ESG), information asymmetry and greenwashing have become the most suitable theories for this research. CSR and ESG are incorporated in this study to demonstrate that green bonds can be considered as a CSR tool by the issuing companies to raise money to finance the projects that deliver positive environmental impact, which is connected with the E element in the ESG criteria.

Gray et al. (1995) highlight that the social and political theory such as legitimacy theory, stakeholder theory and that of the political perspective (institutional theory), provide more interesting and insightful theoretical perspectives than those of the economic theories of the CSR. Furthermore, green bonds have social and environmental impacts that are beyond their

economic impacts. Institutional, legitimacy, and stakeholder theories offer different perspectives on similar sustainability phenomena. These theories together provide a wider theoretical understanding of the research in the area of social and environmental accounting (Tavares & Dias, 2018).

The legitimacy theory is chosen due to its associated notion of the social contract. Furthermore, as the current standards are voluntary, the legitimacy of the issuers is vital. When the green promise is not delivered, the credibility of the green bond market is undermined. Therefore according to the legitimacy theory, failure to embark on activities that promise to society may result in the entity no longer being considered legitimate (Deegan, 2009). Stakeholders are interested in organizations' activities and green practices are no exception, and therefore have an influence in the organizations green mandate. Stakeholder theory is used to provide an understanding of how stakeholders influence the green investments of the firm, as the theory predicts that management is more likely to give more attention to the expectations of powerful stakeholders (Deegan, 2009). Furthermore, to draw attention to the regulatory needs of the green bond market, the institutional theory provides an understanding of how activities of organization may contribute to sustainability (Jennings & Zandbergen, 1995). In this study, we focus on the regulative pillar of the institutional theory to explain the tendency of organizations to conform to regulative rules when adopting green practices in order to respond to growing environmentally needs.

In connection with CSR and green bonds, the concepts of information asymmetry and greenwashing are also incorporated. Information asymmetry serves as a basis for designing the interview questions about the disclosure of information on the utilization of proceeds. Additionally, since information is highly relevant for any financial transaction, the issue of information asymmetry could also arise in the green bond transaction if the information on the use of proceeds is not sufficiently provided. In relation to information asymmetry, the greenwashing concept is also used to analyze the three cases where green bond proceeds are used for projects that do not have positive environmental benefits and contradict green promises of the issuing organizations.

2.4 Data Collection

For our research, we have collected data on three controversial cases and semi-structured interviews, which will be discussed in detail below.

2.4.1 Semi-structured interviews

To explore the opinions and perspectives of stakeholders in the green bond market, namely issuers, investors, and underwriters, we have chosen interviews as the means for primary data collection. The benefit of the interview is that the researchers interact directly with respondents and the linkage between the researcher and the participants makes it easy for the participant to contribute to the research, thereby providing detailed data (Daniel, 2016; Rahman, 2017). Specifically, we conduct semi-structured interviews in our study. A semi-structured interview can be referred to as a semi-standardized interview, in which the interviewers prepare the open-ended questions in advance, then ask the questions, in the same way, each time, and probes for deeper information (Ritchie & Lewis, 2003; Fox, 2009). It is more relevant to our research due to two considerations. First, it facilitates the exploration of the participants' perceptions and opinions on complex and sensitive issues (Barribal & While, 1994). Second, it enables probing for additional information and issue clarification (Barribal & While, 1994). The open-ended nature of the question also allows both the interviewer and respondent to discuss in further detail (Fox, 2009).

The semi-structured interview is in between a structured interview and an unstructured interview, in which the interviewees are not restricted by the specific questions and the interviewers can follow up on interesting topics that emerge during the discussion (Blandford, 2013). Whereas in the structured interview, participants are only limited to answering the same questions (Fox, 2009). Structured interviews involve very tightly arranged questions, usually designed for quantitative analysis (Fox, 2009). On the other hand, in an unstructured interview, a broad discussion is involved and the interviewer frames successive questions as the interview progresses, thus the interviewee's responses cannot be controlled (McIntosh & Morse, 2015; Ritchie & Lewis, 2003). Therefore, structured and unstructured interviews are not ideal for our type of research.

For the interview process, ten experts from ten different companies were interviewed in a semi-structured setting. The experts are involved in the issuing, investing, and underwriting processes of green bonds. According to Bogner et al. (2009), “who is identified as an expert and who not

depends on the researcher's judgment" (p. 18). We believe that the interviewees possess expert knowledge which has been developed through their work experiences and specialized knowledge obtained from direct involvement in the green bond transactions. Therefore, we consider them as experts in the field of green bonds. Their knowledge and perspectives could provide us with insights on green bonds and their practical experiences and perceptions would help us to understand to what extent the current green bond standards and regulations affect how the proceeds are utilized. Furthermore, we conducted the interviews by telephone because it is considered as an effective and economical way of collecting data (Fox, 2009). Since our interviewees work at the companies headquartered in the cities distant from Lund, for example, Stockholm, we perceive that conducting telephone is more suitable. The interviews were recorded using a phone application and the responses were subsequently transcribed into text according to each interview question to facilitate the presentation and analysis of findings. The interviews were also complemented with data related to green bonds from the company's annual reports and websites.

2.4.1.1 Selection of interviewees

The selection of interviewees is not based on the positions the interviewees play in the companies, but rather their involvement in the companies' green bond transactions. A major criterion for selecting the interviewees was that the interviewees have to be listed as contact persons in the green bond section on their companies' websites. However, since some companies do not provide contact details of responsible persons in the green bond section of their websites, we decided to send emails to the external relations department to inquire if they could refer us to the experts in their companies who work with green bonds. In addition, we have been referred to individuals that are considered as experts in green bonds by their former colleague who is also one of our respondents.

In the interviewee selection process, the role of the different actors is highly important to capture the viewpoints of each. There are several actors in the green bond market, ranging from issuers, investors, underwriters, rating agencies, etc. Despite various types of actors in the green bond market, we have chosen to interview companies that are issuers, investors, and underwriters of green bonds, because they are the parties that have direct involvement in the green bond transactions i.e. in the issuance process, the investment process, or the facilitation of the green bond transactions. Due to this, we were able to explore the actual problems or challenges related to the green bond standards that are faced by them and arrive at the key areas

that could be further improved. The perspective of issuers will provide details about how they rely on the standards when selecting the projects to be funded by green bond proceeds. The perspective of the investors will contribute to our study by enabling us to understand how they rely on the standards to evaluate the greenness of green bonds and how they could influence the way proceeds from green bonds are used by the issuers. The perspective of the underwriters is needed to provide an understanding of how they facilitate green bond transactions and the standards they rely on in assisting the issuing companies.

The interview invitation was sent via email to the professionals who work with green bonds in each company. A total of 67 emails were sent to issuers, investors, and underwriters. However, we were only able to get 2 email replies. Therefore, we deemed it necessary to make phone calls as emails may not be seen by these individuals, as contact numbers were available on some companies' websites. Out of the calls that were successful, two could not participate due to busy schedules. Finally, ten respondents agreed to participate in total from ten different companies, ranging from issuers, underwriters, to investors. However, one of the respondents prefers to remain anonymous, therefore we respect her decision by keeping her identity confidential.

2.4.1.2 Formulation of Interview Questions

Interview questions were designed and adapted to three types of interview respondents: issuers, investors, underwriters, which can be found in Appendix A, B, and C respectively. The questions are directed based on the role of the company in the green bond market. As a result, issuers, investors and underwriters have different but related questions. The research questions of this thesis and previous research are used to guide the formulation of the interview questions. The theories of information asymmetry and greenwashing, and the GBPs are also used to a great extent to frame the questions. This is because the GBPs are used by the issuers as a basis to formulate the green bond framework. Many issuers believe that by complying with the GBPs, they can bring transparency to the dynamically growing green bond market (Pronina, 2019). The aim of this is to identify problems caused by limitations in the standards. The interview guidelines were sent to the respondents approximately a week before the interview. We believe it would help them to become familiar with the questions, enabling them to prepare in advance and provide detailed answers during the interview.

2.4.2 Controversial Cases

Along with the interviews, we realized that the irregular use of proceeds and greenwashing is evident. Therefore, we went on to further examine the problem and understand the influence of standards on how the proceeds are used from a more practical perspective. However, greater evidence of greenwashing is found on an international level, rather than in the Swedish green bond market. Furthermore, interviews have drawn our attention to the problematic green bonds, how they impact the credibility of the market, and how they affect the investors' ability to invest in green bonds in the international market. Therefore, a correlation is evident in how the activities in the international market affect the investments of domestic Swedish companies in the green bond market. Three international cases serve as examples to demonstrate the problems regarding the use of proceeds arising from the gaps in the existing green bond standards.

2.4.2.1 Selection of cases

To answer the research question and fulfill the aim of this thesis, practical evidence regarding the controversial use of proceeds is needed. Three controversial cases have been selected to be used as examples to illustrate the problems regarding the use of proceeds arising from the gaps in the existing green bond standards. The criterion for selecting the cases was based on the projects financed by green bonds proceeds, and most importantly the environmental impact of these projects. The cases provide a more practical understanding of how the standards were used or could guide the use of proceeds, relating to the two research questions. Each of the examples has unique features and each is selected to demonstrate the underlying perspectives of the use of proceeds obtained from the issuance of green bonds by companies in different sectors. This is also done to draw attention to the different categories of green projects or taxonomies, thereby highlighting the gap from a more practical perspective.

The cases are used to answer the how research questions, which can be referred to as the explanatory study, as the idea of the exploratory case goes beyond that of a mere description towards an explanation (Otley & Berry, 1994). Therefore, three controversial cases have been chosen to examine and provide practical evidence for irregularities in the use of proceeds from green bonds and the role of standards. These are relevant to provide sufficient practical evidence for in-depth analysis and to ensure enough generalization from an international level. The chosen cases are expected to help identify the potential gaps related to the current green bond standards, which may slow down the acceleration of the green bond market. The controversial

cases selected are focused solely on the projects financed by the proceeds from green bonds and the potential environmental impact of the projects.

2.5 Presentation of Data

The interview findings are presented in a manner that relates to the research questions. To give a clear picture of how the interview findings relate to the first research question, we categorize the findings into three categories that are the issuance process, green criteria, and influence of standards on the use of proceeds and transparency. First, the readers are introduced into how the standards are involved in the issuance of green bonds. This is followed by the issuers' criteria of selecting green projects to be financed by the proceeds obtained from green bond issues and the assistance from the underwriters in this aspect, as well as the investors' criteria for determining the greenness of green bonds. The third topic shows how the standards guide the use of proceeds. Similarly, the findings related to the second research question are divided into three categories as well, namely greenwashing risk and measures to ensure that the proceeds are used for green projects, costs and challenges, and lastly a need for internationally accepted or uniform green bond standards. To begin with, we present the respondents' perceptions of greenwashing and the initiatives they take to avoid the related risks. After that, costs and challenges that are faced by the three types of actors are provided, in order to identify the gaps in the green bond standards. Finally, we present the thoughts of the respondents regarding the need for uniform standards in the green bond market. Their perceptions of the current standards enabled us to identify gaps or areas in the standards where improvements are needed.

This is followed by the presentation of three controversial cases. We firstly begin by presenting the background of each company to give an in-depth understanding of the activities of the firms. Then, the facts regarding the controversial green bonds issued by each of the three companies are described, including how the proceeds are used and the effects of projects funded by green bond issues on the environment.

2.6 Data Analysis

The data is analyzed according to themes in which they answer the two research questions and how the findings relate to the theories. The first section of the discussion and analysis focuses on how the standards influence the use of proceeds. This section further entails a discussion of

the cases as well as the interview findings alongside the theories and how they relate to each other. The second section focuses on the discussion of the gaps and improvement of the standards, which relates to the second research question.

The data obtained from three cases are analyzed by using the techniques of pattern-matching and analytic generalization suggested by Yin (1994). Pattern matching is conducted by comparing a theoretical pattern with an observed empirical pattern (Sinkovics, 2018). In other words, the pattern of results obtained from a study is compared with patterns from past studies, knowledge or theory (Gurdial Singh & Jones, 2007). Therefore, our interview findings are observed along with the theories and an analysis is made according to how they relate. Analytic generalization is a process when a previously developed theory is used as a template for comparing the empirical results of the case study (Yin, 1994). Specifically, we compare the cases, connect the pieces of relevant information to the theoretical propositions such as greenwashing and generalize the case findings based on the theory. This enabled us to identify the common patterns among the three cases.

Regarding the interviews, after the data are transcribed and organized in relation to the interview questions, we further grouped the interview questions according to the two research questions. Then, we interpreted and analyzed the results by reading the transcripts to identify themes emerging from the respondents' answers (Guion et al., 2001).

2.7 Validity and Reliability

Reliability is the degree to which the finding is free from accidental circumstances of the research and the repetition of data collection procedures will still generate the same finding (Yin, 1994; Kirk & Miller, 2011). The objective of this is to minimize errors in the study (Yin, 1994). On the other hand, validity is the extent to which the result is interpreted correctly (Kirk & Miller, 2011). To ensure validity, we have recorded all the interviews by using the phone application. This has enabled us to go back to the recordings whenever the need arises.

According to Denzin (1989), the validity and reliability of the semi-structured interview depend on conveying equivalence of meaning, rather than the repeated phrasing in the questions. In other words, the equivalence of meaning helps to standardize the semi-structured interview and promote comparability (Barriball & While, 1994). To ensure the data from the interviews are reliable, we have transcribed all the recordings. The recordings are transcribed manually and

also through data transcription software. The transcriptions are again compared to the recordings to ensure relevant data is not lost. To further convey equivalence of meaning, we ensure that we communicate the same way to all participants when we ask them the questions and save all the interviews in an audio format for further analysis. Additionally, as mentioned in BARRIBALL and WHILE (1994), interviewer friendliness, approach, and manner towards respondents can substantially help with securing data validity and reliability, hence we ensure this by stating in the invitation emails sent to the respondents that we would conduct the interviews upon their convenience, meaning that they can specify the date and time that they are available for the interviews.

2.8 Limitations of Research Design and Methodology

Despite the richness in data that the qualitative approach provides, there are also some limitations embedded in this strategy. First, the research findings cannot be extended to a wider population because it is not statistically tested to discover whether they are significant or not, and the qualitative method incorporates multiple realities (Atieno, 2009; Rahman, 2017). Second, the findings and analysis might be subjective, because it depends on how we (the researchers) understand and interpret the situation (Daniel, 2016). For example, we present findings according to how they answer our research questions, instead of presenting findings according to each respondent. This might bring bias as we may include only what we deem relevant to our research. This can be supported by Atieno (2009) who mentions that the same data will be interpreted differently by different researchers because each researcher thinks differently.

Concerning the interviews, due to time limitations, we were unable to interview all types of actors in the green bond market. Therefore, the view of other types of actors is lacking. Similarly, due to the busy schedule of some of the respondents, we were unable to achieve detailed discussion with those respondents. This has led to less detailed responses in some interviews. Furthermore, the respondents' answers might be influenced or framed by the strategies of the companies they currently work for. However, this does not apply to one of the respondents who choose to be anonymous in our study. In regards to the controversial cases, we find it difficult to obtain views of academic scholars because the academic sources are very limited. This leads to the reliance on non-academic sources to some extent.

3 The Green Bond Market

The purpose of this chapter is to provide an overview of green bonds, including the definition, initiation, and the development of the green bond market, and the market participants.

3.1 Definition of a green bond

According to Reed Smith (2015) and Meltzer (2016), there is no specific universally accepted definition of a green bond. However, there has been an attempt made by the researchers to give a general meaning to it.

A green bond is fixed income security that offers investors and issuers the opportunity to participate in green financing, with the aim of helping to mitigate climate change and supporting adaptation plans against climate change (Ehlers & Packer, 2017; Bachelet et al., 2019). It is a debt instrument that is sold or promoted as green and involves a commitment by issuers to use proceeds of the bond only for projects with environmental benefits, such as investment in clean energy (Ng & Tao 2016; OECD, 2017b; Tripathy, 2017). They can also be used to refinance existing green projects that are initially funded by conventional non-green financial instruments (Fosse et al., 2017). The distinguishing characteristics of green bonds in comparison with ordinary bonds are that green bonds are advertised as green to investors and their proceeds are earmarked only for green projects (Ng & Tao, 2016). Overall, the purpose of green bonds is to contribute to sustainability. Green bonds are also considered as double impact bonds, as they deliver a return as commercial debt and at the same time deliver an impact for financing the environmental transition (Rust, 2019).

According to Preclaw and Bakshi (2015), despite no universally accepted definition for what makes a bond green, a high amount of effort is put to formalize the necessary criteria to identify a green bond. The GBPs do not provide details on what is green, therefore the issuers are left with the discretion to determine the green criteria (CBI, 2019a). The lack of uniform definition has created controversies as to what constitutes green or the level of greenness for a bond to be deemed green enough. Regardless of these controversies, the international green bond market grew modestly since the first issuance and experienced a rapid development from 2013 when the first USD 1 billion worth green bond was sold within an hour of issuance (Wang & Zhi, 2016; Breen & Campbell, 2017).

3.2 Emergence & Trend

The green bond market started in June 2007 when the European Investment Bank (EIB) issued a climate awareness bond (Breen & Campbell, 2017). After that, the World Bank issued the first labeled green bond in 2008, amounting to SEK 2.3 billion with a maturity of six years (IFC, 2016; The World Bank, 2018). The World Bank’s green bond was sold to a group of Scandinavian pension funds looking for safe investments that help tackle climate change (Breen & Campbell, 2017). Furthermore, in December 2015, 195 countries signed the climate agreement with the objective to maintain the global average temperature increase below 2 degrees Celsius in the 21st Conference of the Parties to the United Nations Framework Convention on Climate (COP21) which took place in Paris (IFC, 2016; Mihálovits & Tapaszt, 2018; OECD, 2017b). Following the COP21 agreement, the activities related to green finance had grown significantly in 2016, especially the issuance of green bonds, in order to help support carbon reduction as well as other environmental initiatives (GSIA, 2016; OECD, 2017b). For the overall market trend, Figure 1 shows that only 5 green bonds were issued in 2008, whereas in 2018 up to 511 green bonds were issued.

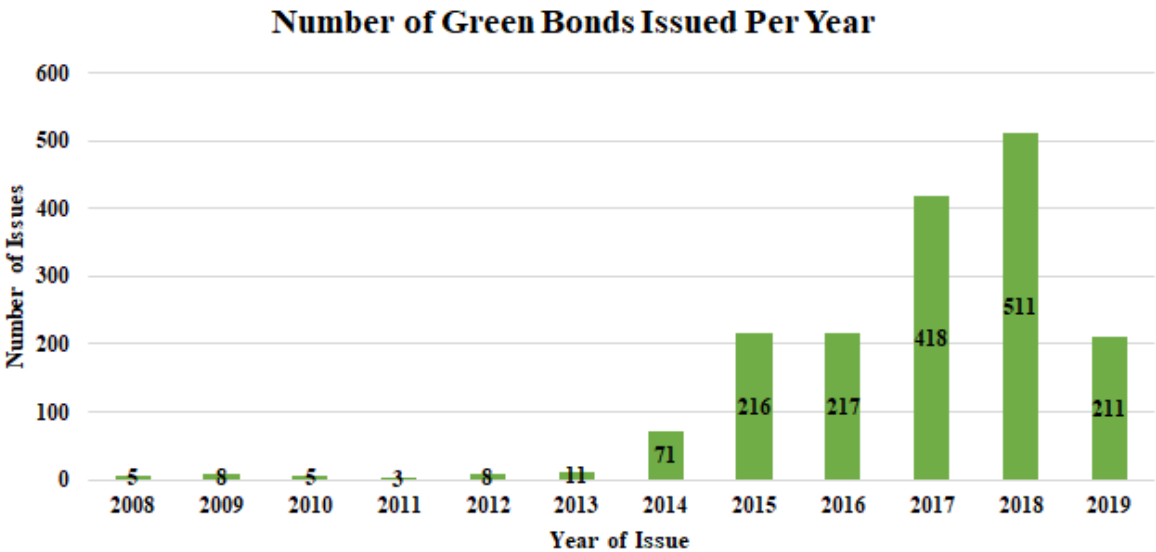


Figure 1: Number of Green Bond Issued per year

(Source: Bloomberg Terminal, Retrieved 16 May 2019)

According to a report by Climate Bonds Initiative, USD 521 billion worth of green bonds have been issued from 2007 to 2018 (CBI, 2018d). In 2017, it can be seen from Figure 2 that the issuance volume has sharply increased to over USD 140 Billion. It is also interesting to note that the amount issued has decreased in 2018.

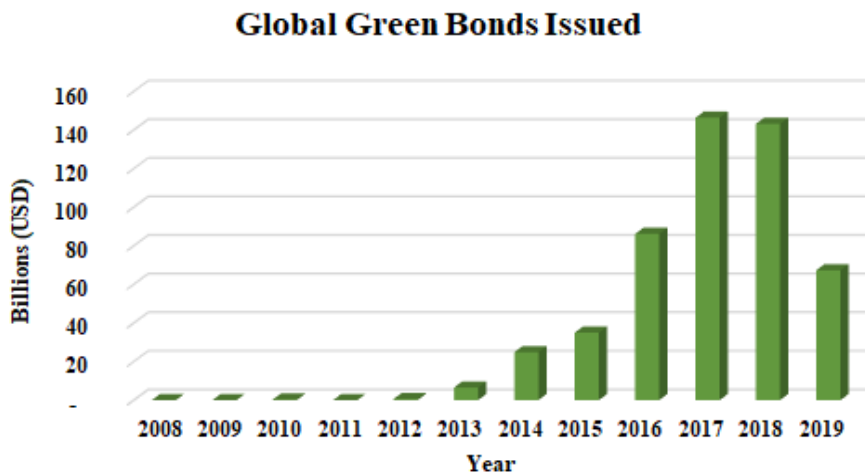


Figure 2: Global Green Bond Issuance per year

(Source: Bloomberg Terminal, Retrieved 16 May 2019)

The pioneers of the green bond market were supranational institutions and development banks, and private sector companies and financial institutions started entering the market in 2013 (Kaminker et al., 2018). This is also confirmed by Noordin et al. (2018), stating that green bonds were predominantly issued by multilateral development banks, but nowadays many different types of issuers such as public entities, utilities, corporate and financial institutions begin to play significant roles in the green bond market as well. Financial institutions have the highest rate of 34% of issuance based on Figure 3. According to Park (2018), Poland was the first country to issue a sovereign green bond in 2016 and Vasakronan, a Swedish real estate company, was the first to issue a corporate green bond in 2013. Overall, according to Figure 4, the U.S. currently has the highest volume of issuance, followed by China.

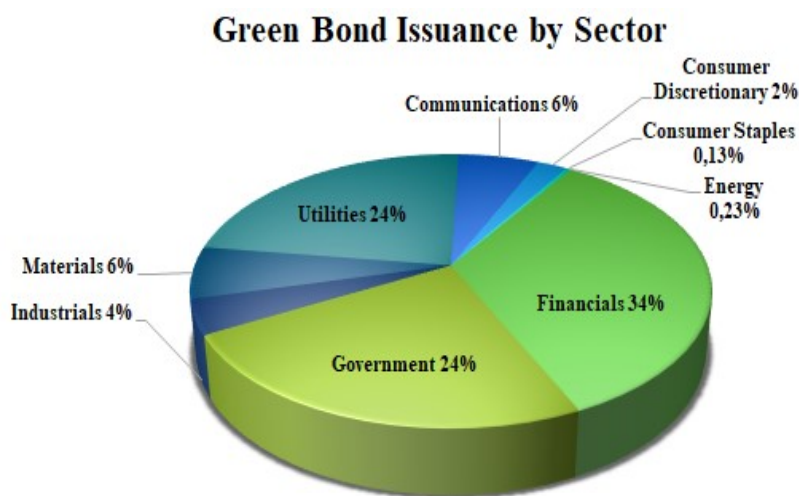


Figure 3: Global Issuance by sector from 2008 to 16th May 2019

(Source: Bloomberg Terminal, Retrieved 16 May 2019)

The USA, China and France record top 3 country volumes in 2018

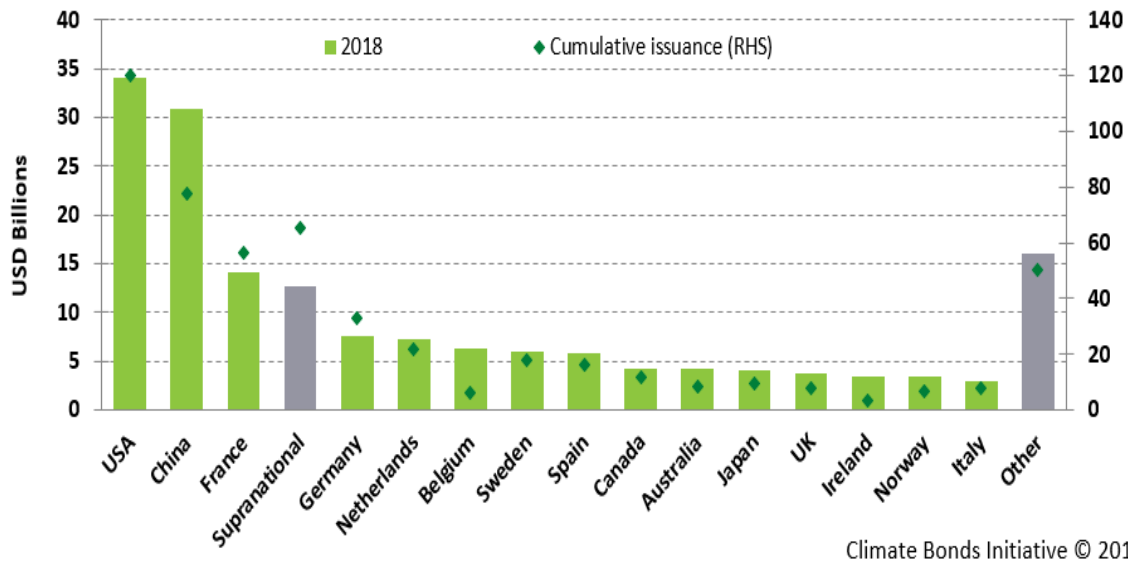


Figure 4: Volume of Issuance per Country

(Source: CBI, 2019b)

Over the years, several trends have shaped the rapidly expanding green bond market with an increasing number of issuers, new investment markets, as well as the rise of instruments with different legal and financial characteristics (Park, 2018). In 2014, the International Capital Market Association (ICMA) introduced the Green Bond Principles (GBPs), which contributed to the further growth of the market of green bonds (Mihálovits & Tapasztai, 2018). According to OECD (2017b), in 2015, 46% of proceeds raised from green bond issuance were to finance renewable energy, followed by energy efficiency (20%), low-carbon transport (13%), sustainable water (9%), waste and pollution (6%), climate adaptation (4%), and agriculture and forestry (2%). In 2016, the total volume of green bonds issued had exceeded the USD 100 billion limit and passed the USD 150 billion level by 2017 (Mihálovits & Tapasztai, 2018). The market is concentrated in the hands of institutional investors and asset management companies (Paranque & Revelli, 2019). Although the green bond market is growing dynamically, there is still much room for development (Shishlov et al., 2016; Mihálovits & Tapasztai, 2018).

3.3 Actors in the green bond market

Park (2018) lists several stakeholders involved in regulating the green bond market, such as issuers, underwriters, investors, credit rating agencies and research organizations, government

agencies, etc. However, we have chosen to discuss three types of market participants that are directly and constantly involved in the green bond transaction which are issuers, underwriters, and investors.

3.3.1 Issuers

Initially, issuers of green bonds were supranational, and government-related entities and recently corporate issuers have become increasingly active, especially from China (Faske, 2018). Green bonds have proven to provide several benefits to its issuers such as diversification of the investor base and providing the potential to enjoy pricing advantages (Bachelet et al., 2019). The GBPs serve as guidelines to issuers, recommending that they provide up to date information on the allocation of the entire process and use an external reviewer for certification (Breen & Campbell, 2017). Furthermore, Canfin (2016) emphasizes that issuers are not only expected to report on the environmental impact of the green bonds but also an analysis of the promise and actual environmental benefits based on suitable key performance metrics.

Nevertheless, issuers of green bonds often face challenges of standardization due to the lack of harmonization of the definition of green criteria (Faske, 2018; Fosse et al., 2017; KPMG, 2015). Furthermore, the major limitation for the green bond issuers is the additional costs related to tracking, monitoring and reporting processes, administrative certification, verification, and initial investment to define the bond's green criteria and sustainability objectives (Fosse et al., 2017; KPMG, 2015). According to Bachelet et al. (2019), the reputation of an issuer and the verification of a third party are vital in reducing information asymmetric, avoids greenwashing suspicions and produce relatively more suitable financing conditions.

3.3.2 Underwriters

Underwriters facilitate the issuance and investment process by positioning and structuring green bonds, and they are usually the investment banks (Kaminker et al., 2018; TheCityUK, 2018). Typically, this process includes appointing a green structuring advisor and arranging fixed-income investor meetings for upcoming green bond transactions (Kaminker et al., 2018).

3.3.3 Investors

According to Ehlers and Packer (2016), investors interested in buying green bonds need to assess various types of information to know which bonds are truly green and to assess how the use of proceeds positively affects the environment. However, this might incur the cost

associated with information seeking. Moreover, the current issue of differing green standards may lead to confusion for the investors. Kaminker et al. (2018) highlight that, the harmonization and transparency of practices and standards are ongoing concerns for the investors. To address these problems, Berensmann (2017) suggests that there should be a standardized green bond regulation, which would benefit the investors by decreasing the transaction costs for verifying green bonds and assessing the environmental impact of the use of proceeds. Another essential point for the green bond investors to consider is the possibility of greenwashing. To mitigate this problem, several kinds of certifications are available in the market for investors to verify the integrity of green bonds (Ehlers & Packer, 2016).

4 Literature Review

This chapter provides an overview of the theoretical concepts, such as ESG, CSR, legitimacy theory, stakeholder theory, institutional theory, information asymmetry, and greenwashing, as well as the literature on current green bond standards and problems related to the standards.

4.1 Theoretical Background

4.1.1 Environmental, Social and Governance (ESG)

The Environmental, Social and Governance (ESG) is a concept used by institutional investors to evaluate a firm's CSR performance from three perspectives: environmental, social, and corporate governance practices (OECD, 2017a; Yoon et al., 2018). The meanings of the three elements will be described next. First, the environmental component (E) represents the firm's recognition of environmental challenges such as climate change and their effort to reduce resource consumption and emission (Yoon et al., 2018; Ruggie & Middleton, 2019). Second, the social part (S) reflects the company's concern for society, such as labor practices and human rights (McGuigan et al., 2017). Lastly, corporate governance (G) indicates the company's quality of corporate governance, such as the reputation and effectiveness of management (McGuigan et al., 2017; Ruggie & Middleton, 2019). With regards to green bonds, it is suggested by KPMG (2015) that investors with a focus on ESG performance are a group of investors that would potentially invest in green bonds. Furthermore, as a growing number of investors start to incorporate ESG factors into their investment decisions, this can help to support the development of the green bond market (Breen & Campbell, 2017).

4.1.2 Corporate Social Responsibility (CSR)

Corporate Social Responsibility or CSR is a company's approach to integrating ESG policies and practices in their operations (Gary, 2016). According to Yoon et al. (2018), firms perform CSR activities with the aim of promoting long-term profit, establishing a good relationship with society and building investors' trust. Similarly, the study of Soppe (2009) found that the entities adopt CSR practice because they want to redefine their goals and reorganize the production process into a more sustainable manner by extending organizational objectives beyond financial

success. Furthermore, CSR activities also enable the firm to do voluntary disclosure which could benefit the company in terms of stakeholder acknowledgment and/or approval of the firm's objectives and strategies (Simmons et al., 2018). The green bond can be classified as a CSR practice, in which social responsibility is embedded in the terms of the financial instrument itself (Park, 2018). Attempts have been made to place the empirical investigation of CSR in some sort of theoretical context (Deegan, 2009). These attempts related to three broad groups of theories that are focused on organization-society information flows, for example the legitimacy theory, stakeholder theory, and institutional theory.

4.1.2.1 Legitimacy Theory

Legitimacy theory proposes that firms seek to ensure that they are deemed to comply with or operate within the expectations and norms of their societies, that is all organizational activities are seen to be legitimate (Deegan, 2009; Tavares & Dias, 2018). As a result, there is a social contract between organizations and the society or people affected by their operations (Tavares & Dias, 2018). Compliance with societal norms and expectations is assigned the status of 'legitimacy' (Deegan, 2009).

According to Mousa et al. (2015), legitimacy theory is a vital concept in analyzing the relationships that exist between companies and their environment. Firms achieve legitimacy by demonstrating that companies' activities are in accordance with the social values of society (Mousa et al., 2015). Firms through their legitimacy practices demonstrate social and economic aptitude by being compliant to institutional pressures (Tavares & Dias, 2018).

In regards to green bonds, for more legitimacy, issuers often obtain external reviews on the green credentials of the use of proceeds (CBI, 2014). As issuance extends to less obvious green areas such as renewable energy, investors are expected to require more clarity and better standards on what types of projects can be defined as green (Boulle et al., 2014). This is especially vital, given the accelerating growth of bond markets, and a measure for accessing legitimacy is needed by investors, especially when decision-making windows are very short (Boulle et al., 2014). As a result, the institution i.e. the ICMA developed the Green Bonds Principles to promote legitimacy in the green bond market (ICMA, 2018). The GBPs provide recommendations regarding disclosures and the use of proceeds to ensure credibility among the various actors.

4.1.2.2 Stakeholder Theory

Stakeholder theory has similar concepts to those of the legitimate theory, as both focus on the organization and society. However, the stakeholder theory provides a more narrow perspective by referring to a specific group within the society that is the stakeholder groups (Deegan, 2009). Stakeholder theory relies on a strictly organization-centered perception and as such, there is a need to integrate social and environmental disclosures with company strategies (Gray et al., 1995). According to Branco and Rodrigues (2007), the stakeholder theory is based on the concept that beyond the organization's shareholders there are numerous other agents who have an interest in the actions and decisions of companies.

From the stakeholder theory's point of view, green bonds can be regarded as accommodating the sustainability appetite of investors, especially investors with a green or ESG mandate (Tang & Zhang, 2018). To some extent, stakeholders such as investors with a green mandate who are interested in sustainable investments and environmentally friendly projects will influence the green bond market (Tang & Zhang, 2018).

4.1.2.3 Institutional Theory

“Institutional theory suggests that organizations will appear to publicly embrace particular institutional forms due to regulative, normative and cultural-cognitive influences, and therefore reflected in the nature in which the organization presents itself to society in terms of its organizational structure, or in the nature of the reports it presents to the public” (Deegan, 2009, p.384). The regulative pillar of the institutional theory indicates rule setting, laws and sanctioning activities (Scott, 2008a; Scott, 2008b; Deegan, 2009). According to Scott (2008b), the regulatory process involves the capacity to formulate rules, verify compliance, and when necessary manipulate sanctions, rewards or punishments to influence future behaviors. The regulative pillar is held through various ‘coercive’ mechanisms, many of which are imposed by government or institutions that the organizations are reliance on (Deegan, 2009; Scott, 2008b).

Therefore, rather than seeing CSR explicitly as a voluntary action, institutional theory recommends placing CSR explicitly within a broader domain of economic governance characterized by different modes of governance such as the market, state regulation and beyond (Brammer et al., 2012). The institutional theory also regards markets as being socially entrenched in a broader field of social networks, business associations and political rules (Brammer et al., 2012).

The institutional theory highlights that environmental problems as being not primarily technological or economic in character but behavioral and cultural (Hoffman & Jennings, 2015). However, according to the study by Juárez-Luis et al. (2018), the institutional theory focuses on the study of external factors that influence how green practices are implemented in business and does not consider internal organizational factors. They further propose an extension of the institutional theory to reflect environmental concern as a means of reconciling the relationship between institutional pressures and green practices.

According to Jennings and Zandbergen (1995), institutional theory helps to understand how consensus is developed between the concept of sustainability and practices associated with sustainability and how it is spread among organizations. They further argued that addressing sustainability issues do not necessarily require the discovery of the best definition of sustainability and identification of best practices but how the meaning of sustainability is built and how best practices are adopted by organizations.

4.1.3 Information Asymmetry

Information asymmetry is a condition when information is not fully distributed among individuals involved in the economic process, for instance, some actors possess more information than the other participants, meaning that they might benefit from this situation (Fosse et al., 2017). Furthermore, information asymmetry can lead to two main problems, which are adverse selection and moral hazard. Adverse selection results from asymmetric information prior to entering into a contract, whereas moral hazard occurs after a contract is already established (Waller, 1993; Rauchhaus, 2009). From the CSR perspective, adverse selection arises when it is difficult or impossible for the buyers to obtain the information and verify the sustainability quality of a product or a company's behavior, while moral hazard emerges when a firm provides misleading information about its CSR activities and buyers do not receive the goods for which they paid for (Poret, 2019).

Regarding the green investment, the lack of environmental information disclosure by borrowing companies limits the investors from knowing the real impact of the environmental project and increases the investors' search costs, thus reducing their interests in investing in green projects or green assets (Fosse et al., 2017; G20 Green Finance Study Group, 2016). Consequently, if informational asymmetry restricts the buyers from assessing the quality of the investment products, then there is an opportunity for the seller to propose and sell the non-green products

as green (Fosse et al., 2017). In connection with green bonds, the study by Bachelet et al. (2019) reveals that institutional issuers have established rules on information and transparency that could help reduce informational asymmetries and clarify investors' doubts on the greenness of green bonds. However, the findings show that there is a higher risk of greenwashing in the bonds that lack verification from third parties, therefore it is concluded that the issuer's reputation or green third-party verification plays an essential role in reducing informational asymmetries, avoiding suspicion of greenwashing and creating more convenient financing conditions.

4.1.4 Greenwashing

According to Lu (2018), greenwashing can be regarded as a problem related to adverse selection and can also be used as an opportunistic business strategy. Greenwashing occurs when an organization makes false or exaggerated claims about its CSR or green activities in order to create good public relations, without actually allocating the resources essential for delivering positive environmental impact (Lepoutre et al., 2007; Rothlin & McCann, 2015). Similarly, Bachelet et al. (2019), and Ehlers and Packer (2016) describe that greenwashing happens when companies' actual environmental commitment does not align with their declaration to be environmentally responsible. For instance, distorting the projects or financial instruments with the purpose of making them appear environmental-friendly.

Greenwashing delivers the benefits to the issuers of green bonds in terms of increased reputation and the environmentally conscious investor's willingness to pay (Bachelet et al., 2019). On the other hand, greenwashing is a major risk for green bonds and can entail a significant cost for the issuers in the form of sanction when the public realizes that there is the gap between the declarations and facts (Fosse et al., 2017; Bachelet et al., 2019). According to a report by KPMG, the potential circumstances that may bring potential accusations of greenwash and reputational risk to the issuers are: First, when the proceeds of green bonds are used to finance activities that are considered by the stakeholders as not green enough. Second, when the core business activities are perceived as unsustainable. Third, when the proceeds are not strictly monitored or managed to assure the use for intended projects. Lastly, when issuers cannot prove how the proceeds are used to meet green objectives and what positive environmental impacts the funded projects provide (KPMG, 2015). Similarly, Preclaw and Bakshi (2015) mention that a significant concern that greenwashing brings to market participants is when the green bond issues fund projects that lack sufficient environmental benefits.

With regards to the causes of greenwashing, Ehlers and Packer (2016) point out that the growing interest towards the green bond market increases the company's incentives to perform greenwashing activities. On the other hand, other researchers agree that the problem of greenwashing is caused by the absence of precise and standardized regulations in the green bond market, thereby hindering the implementation of truly sustainable projects (Fosse et al., 2017; Wang, 2018). However, if investors see the potential for greenwashing, they might demand greater information from the issuers than that provided by the green labels (Fosse et al., 2017). To avoid greenwashing cases, G20 Green Finance Study Group (2016) suggests that there should be the definition of green bonds and disclosure requirements of the use of proceeds in order to enhance the credibility of a green bond market.

4.2 Current Standards in the Green Bond Market

There are various initiatives to develop standards that specify how proceeds from green bonds are utilized, how to evaluate and select sustainable projects, and reporting schemes to be used by the issuing organization to describe the use of proceeds (Meltzer, 2016). Currently, there are two widely accepted green bond standards, which are Green Bond Principles (GBPs), and the Climate Bonds Standard (CBS) established by Climate Bonds Initiative (CBI) (Siswantoro & Syakhroza, 2018).

4.2.1 Green Bond Principles (GBPs)

As the market for green bonds expands, more corporate and municipal issuers enter the market and the need for legal regulations emerges, which is expected to play an important role in ensuring the bonds are actually used to address environmental issues (Trompeter, 2017). In response to the increasing concerns regarding the transparency of the green bonds, the International Capital Markets Association (ICMA), along with other large investment banks, published the Green Bond Principles (GBPs) in 2014 (Talbot, 2017). This move could be regarded as one of the important drivers for the growth of the green bond market (Fosse et al., 2017).

The Green Bond Principles (GBPs) are voluntary guidelines that highlight the process and disclosure for issuance of a green bond with the aim of promoting transparency and integrity in the green bond market (ICMA, 2018). The principles have been used as a basis for the issuers to construct the green bond framework before issuing green bonds (The World Bank, 2018).

The GBPs provide issuers with guidance on the key components of a green bond and help to ensure investors have the information needed to evaluate the environmental impact of their green bond investments (Fosse et al., 2017). Each component of the GBPs highlights best practices for those issuing the green bonds to follow at each step, for example use of proceeds and project evaluation and selection are used for the marketing and sale of green bonds, while management of proceeds and reporting guide the issuers in using the proceeds generated from the sale of green bonds (Park, 2018). Therefore, green bond issuers need to provide clear information to its investors about the environmental objective of the bond, how the project fits the categories listed under the GBPs, and how it intends to fulfill the objectives of green projects (Wang, 2018). The GBPs are coordinated by an Executive Committee of 24 members constituting key issuers, investors and underwriters that oversee the annual update of the GBPs (Kaminker et al., 2018).

From 2014 to 2019, a higher number of green bond issues is compliant with GBPs. Despite the increase in yearly compliance, the gap is still quite significant. In 2018, according to Figure 5, only 200 out of 511 green bonds issued or approximately 40% are GBPs compliant.

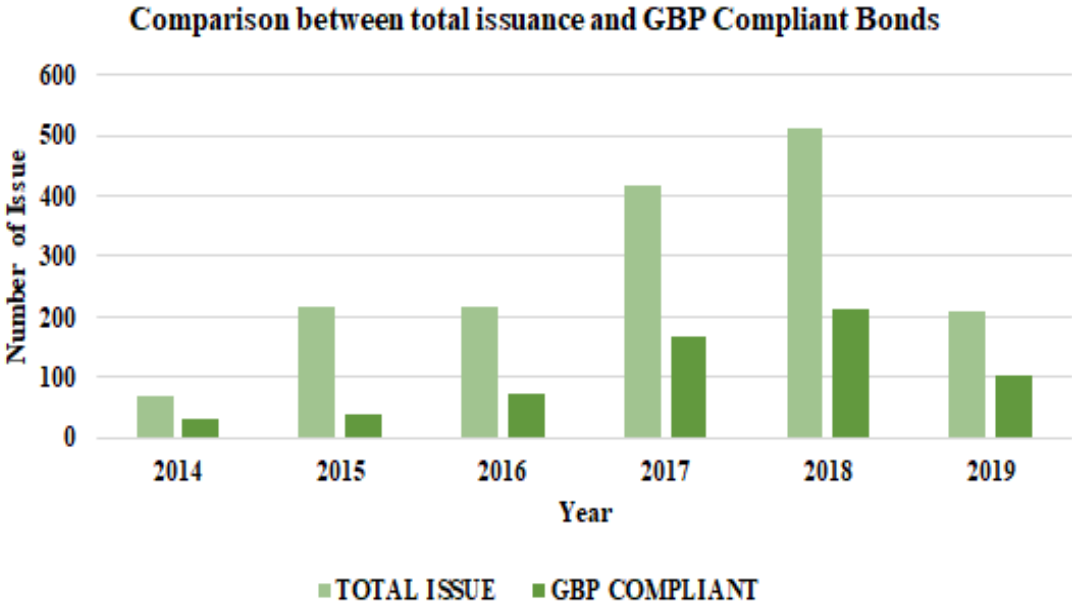


Figure 5: Comparison between total issuance and GBPs compliant green bonds

(Source: Bloomberg Terminal, Retrieved 16 May 2019)

However, the GBPs do not establish for what clearly constitutes a green bond, but rather outline four core components that should be considered when judging if a bond should be deemed green. The four components are discussed below.

4.2.1.1 Use of Proceeds

The key to a green bond is how the proceeds will be utilized. The green credentials of the bond rely upon the underlying projects or assets linked to its issuance (Ng & Tao, 2016). Therefore, the use of proceeds should be properly described in the legal documentation for the security (ICMA, 2018; Kaminker et al., 2018). Green bond proceeds are to be applied to projects that have environmental benefit with an indicative list of eligible project categories (The World Bank, 2018).

In the event where part of the proceeds are used to refinance project, it is recommended to disclose the share of financing and refinancing, and should clarify which investments or project portfolios refinanced, and, to the extent relevant, the expected look-back period for refinanced green projects (The World Bank, 2018; ICMA, 2018). According to Wang (2018), the GBPs advise issuers to hire auditors or third parties to verify and track the allocation of the funds, as a way to foster transparency when managing its proceeds. The GBPs outline several categories of eligible green projects that contribute benefits to the environment. The list, according to ICMA (2018), includes but not limited to the following:

Categories	Eligible Green Projects
1. Renewable energy	Production, transmission, appliances, and products.
2. Energy efficiency	New and refurbished buildings, energy storage, district heating, smart grids, appliances, and products.
3. Pollution prevention and control	Reduction of air emissions, greenhouse gas control, soil remediation, waste reduction, and energy/emission-efficient waste to energy, etc.
4. Environmentally sustainable management of living natural resources and land use.	Environmentally sustainable agriculture; environmentally sustainable animal husbandry; climate-smart farm input; environmentally sustainable fishery, aquaculture, forestry, etc.
5. Terrestrial and aquatic biodiversity conservation	The protection of coastal, marine and watershed environments.
6. Clean transportation	Electric, hybrid, public, rail, non-motorized, multi-modal transportation, infrastructure for clean energy vehicles and reduction of harmful emissions.

7. Sustainable water and wastewater management	Sustainable infrastructure for clean and/or drinking water, wastewater treatment, sustainable urban drainage systems and river training and other forms of flooding mitigation
8. Climate change adaptation	Information support systems, such as climate observation and early warning systems.
9. Eco-efficient and/or circular economy adapted products, production technologies and processes	Development and introduction of environmentally sustainable products, with an eco-label or environmental certification, resource-efficient packaging and distribution.
10. Green buildings	That meets regional, national or internationally recognized standards or certifications.

Table 1: Eligible green project categories

(Source: ICMA, 2018)

However, Wang (2018) and ICMA (2018) both note that, these categories are not exhaustive, other projects may also qualify because definitions for the categories may vary based on the sector and geography. According to the ICMA (2018), the GBPs are not responsible for ensuring that green technologies, standards, claims, and declarations are eligible for environmentally sustainable benefits. It further pointed out that there are international and national initiatives to produce taxonomies that ensure comparability. In addition, for independent analysis, advice, and guidance on the quality of different green solutions and environmental practices, issuers may refer to institutions that provide such services (ICMA, 2018).

4.2.1.2 Process for Project Evaluation and Selection

According to Kaminker et al. (2018), this process should include outlining of the issuer’s process in determining the eligibility of green projects, which may include environmental risk assessment criteria and external standards that have been applied, and information regarding issuer’s sustainability objectives and strategy. Issuers should also indicate how it plans to fulfill the objective (Wang, 2018). This information includes “the environmental sustainability objectives; the process by which the issuer determines how the projects fit within the eligible green projects categories identified above; the related eligibility criteria, including, if

applicable, exclusion criteria or any other process applied to identify and manage potentially material environmental and social risks associated with the projects” (ICMA, 2018, p.4).

To ensure the transparency and fulfillment of the evaluation and selection process, the GBPs also suggest that the bond issuers utilize external third-party reviews to confirm that their bonds are in accordance with the four components in the GBPs (Wang, 2018; ICMA, 2018). Additionally, issuers are advised to disclose any green standards or certifications used in project selection (Wang, 2018).

4.2.1.3 Management of Proceeds

Based on ICMA (2018), the net proceeds of the green bond, or an equivalent amount should be credited to a sub-account, shifted to a sub-portfolio or otherwise monitored by the issuer in an appropriate way, and verified by the issuer in a formal internal process associated with the issuer’s lending and investment operations for green projects. The GBPs specify that the sub-account should be periodically used to track how the proceeds are used and to ensure compliance with environmental sustainability objectives (Talbot, 2017). The GBPs further recommend to verify and track the allocation of the funds, issuers should hire auditors or third parties as a way to encourage a higher level of transparency (Wang, 2018; Talbot, 2017).

In an event where the green bond is outstanding, the balance of the net proceeds is required to be adjusted to match allocations to eligible green projects during that period (ICMA, 2018). Moreover, the issuers should communicate to the investors which types of temporary placements the balance of unallocated proceeds will be assigned to (ICMA, 2018).

4.2.1.4 Reporting

Reporting should be at the heart of any financial instrument, and the green Bonds are no exception. According to ICMA (2018), until the full allocation is made, issuers are expected to produce and keep up to date information that is readily available, regarding the use of proceeds and is to be renewed annually and on a timely basis in case of material developments. The GBPs also suggest that the projects to which the proceeds have been allocated, a short description, the allocated amounts, and the expected impact be listed in the annual report (ICMA, 2018). For enhanced transparency when describing project impact, the annual report should include qualitative performance indicators and when applicable, quantitative performance indicators about the environmental sustainability impacts that result from the green projects (Talbot, 2017;

ICMA, 2018). The quantitative measures may include information such as energy capacity, energy generated, electricity generation, amount of greenhouse gas emissions reduced, etc. (ICMA, 2018). When the amount of detail that can be made available is limited by factors such as confidentiality agreements, competitive considerations, or a large number of underlying projects, the GBPs recommend that information is presented in a general form or on an aggregated portfolio basis (ICMA, 2018). However, issuers still need to provide enough information to satisfy a bond purchaser's or investors' need for transparency (Talbot, 2017). Therefore, the authenticity and communication of much-needed information are required to enable investors to know what they are actually funding and to assess the impact or criteria of the green bond (Paranque & Revelli, 2019).

According to Whiley (2017b), impact reporting is a form of reporting in which an issuer of green bonds attempts to quantify the environmental impact of green projects. Challenges often arise as firms tend to report impacts from green bonds. Issuers may not be able to determine the expected environmental and social outcomes of projects (The World Bank, 2018). While some issuers deem it as an extra undertaking, it could be a potential impediment, on the other hand, it is becoming a mainstream consideration of ESG by some institutional investors (Whiley, 2017b). Furthermore, smaller issuers with small green bond may not be able to provide impact reports because it can be quite a time and resource consuming process in relation to the size of the firm (Whiley, 2017b)

In addition to fulfilling each of these four conditions, the GBPs also recommend the green bond issuers to seek external reviews to confirm that their bonds are in compliance with the GBPs (Wang, 2018). In each component, there is an emphasized focus on transparency as the primary means to promote the integrity of the green bond market (Park, 2018).

4.2.1.5 External Review

As mentioned above, it is also recommended in the GBPs that issuers should appoint external review providers to provide assurance on the alignment with the four key characteristics and to enhance the level of transparency (ICMA, 2018). For issuers, according to KPMG (2015), external consultants are commissioned to guide them in designing their green bond criteria and processes if there is a potential reputational risk that their bond's green credentials are challenged. Similarly, for investors, the external review provides evidence that the criteria for the use and management of proceeds are robust, and that green bond proceeds are used to finance the intended green projects (KPMG, 2015). According to Breen and Campbell (2017),

various issuers hire external reviewers to evaluate the credibility of their green bonds and the majority of the reviewers use the GBPs or Climate Bonds Standard (CBS) in the evaluation process. Therefore, as recommended by the GBPs, external reviews should be used to confirm the issuer's alignment with the distinct characteristics of green bonds (Kaminker et al., 2018).

Based on ICMA (2018), independent external reviews can be categorized into four different types as follows.

Types of external review	Description
1) Second Party Opinion	According to ICMA (2018), a second opinion or second party consultation is generally an assessment of the issuer's alignment with the GBPs. An external expert, typically an environmental consultant, reviews the green aspects of the bond, for example, the issuer's framework and criteria for selecting projects and investments to be funded by green bonds (CICERO, 2016; KPMG, 2015). ICMA (2018) also requires second party opinion providers to be independent of the party advising the issuers' Green Bond Framework. One of the leading providers is CICERO, a Norwegian climate research institute (Ehlers & Packer, 2016). They use the Shades of Green methodology to assess the issuer's Green Bond Framework, ranging from dark, medium, to light green bonds, depending on the contribution to the long-term climate vision (CICERO, 2016; Berensmann, 2017). However, the second opinion approach has its limitations. Firstly, it does not evaluate whether or not the bond has been managed as intended (KPMG, 2015). Secondly, it does not examine the changes in the framework or environmental impacts after issuance (Ehlers & Packer, 2016; KPMG, 2015). Furthermore, there is no certain regulation on who should provide a second opinion (Siswantoro & Syakhroza, 2018).
2) Verification	The GBPs recommend that the issuer's management of proceeds be supported by the use of an auditor or other third parties to verify the issuer's tracking and proceed allocation process (ICMA, 2018). There are various definitions of verification provided in the GBPs, meaning that issuers can select a specific aspect of their green bonds to be verified by third parties.

	<p>Verification can be provided based on the issuer’s compliance with either internal standards, external standards, or claims made by the issuer themselves (ICMA, 2018). Moreover, the issuer can obtain independent verification against criteria related to business processes and/or environmental criteria. Verification also includes the evaluation of the environmentally sustainable characteristics of underlying assets. Lastly, assurance on the internal processes for tracking the use of proceeds, allocation of proceeds, report on environmental impact, or alignment with the GBPs is also considered as verification.</p>
3) Certification	<p>According to ICMA (2018), the issuer can appoint the qualified and accredited third parties to certify their green bond frameworks or the use of proceeds against a specific green standard, criteria, or recognized label.</p>
4) Green Bond Scoring/Rating	<p>The process takes place when the issuers’ commission qualified third parties, such as specialized research providers or rating agencies to evaluate the entire Green Bond Framework or only a core component such as the use of proceeds, based on a scoring or rating methodology (ICMA, 2018). In other words, green bond rating is a rating of the green bond based on GBPs, provided by the rating agencies (Siswantoro & Syakhroza, 2018). After the assessment, the result regarding the focus on environmental performance data, the process concerning the GBPs, or the benchmark such as a 2-degree climate initiative will be reported to the issuer (ICMA, 2018).</p>

Table 2: Types of External Review

Apart from the GBPs that are commonly used by the green bond market participants, the Climate Bonds Standard and Certification Scheme is another major standard that can be used as a reference for green bonds (Siswantoro & Syakhroza, 2018).

4.2.2 Climate Bonds Standard (CBS) & Certification Scheme

Climate Bonds Standard (CBS) was launched by the Climate Bonds Initiative (CBI) in 2011 to assist investors and issuers in selecting investments that solely contribute to climate change (Shishlov et al., 2016; CBI, 2018a). According to KPMG (2015), CBS is “a standard that issuers can have their green bond certified to” (p. 6). The standard is composed of two parts, in which the first part is the parent standard detailing management and reporting processes and the second part is sector-specific criteria detailing the requirements for the assets to be eligible for certification (CBI, 2018a). Underlying the CBS is the Climate Bonds Taxonomy, where the detailed criteria for the sectors and guidance about green assets are listed (CBI, 2017a). The taxonomy is divided into 8 sectors, including energy, water, land use, and marine resources, waste, transport, buildings, industry, and information and communications technology (ICT) (CBI, 2018b). However, the eligibility criteria for some investment areas are still under development and have not been launched yet, for example, water transport, bioenergy, fisheries and agriculture (CBI, 2019c).

According to CBI (2018a), the CBS and certification scheme extends beyond the GBPs by establishing detailed green definitions and eligibility criteria for certification and providing a pre-and post-issuance assurance framework. Apart from full alignment with the GBPs, CBS and certification scheme has clear mandatory requirements for the use of proceeds, tracking, and reporting, specific eligibility criteria for low carbon and climate resilient projects and assets, an assurance framework with independent reviewers, and the most importantly certification by a Climate Bonds Standard (CBS) Board (CBI, 2017a). The issuers are required to appoint the external verifiers approved by the CBS Board, such as Sustainalytics, Ernst & Young, and PwC to confirm that the project is eligible under CBS and that the issuer has internal processes and controls deemed enough to track the proceeds (Breen & Campbell, 2017; CBS, 2018a).

Unlike the GBPs, CBS is more prescriptive and inclusive (Park, 2018). The CBS provides sector-specific, performance-based minimum standards that are defined by eligibility criteria based on climate science (Breen & Campbell, 2017; CBI, 2018b). The CBS requirements are split into pre-issuance and post-issuance requirements, in which some are similar to the GBPs, such as maintaining proceeds in a separate account, describing what projects will be funded by the proceeds, and reporting annual disbursement (CBI, 2017a; Breen & Campbell, 2017). In addition to this, for the bonds to be included in the CBI green bond database, it is required that

at least 95% of the proceeds are dedicated to financing or refinancing environment-related projects (CBI, 2018c).

4.3 The Lack of Standardization in the green bond market

As the green bond market accelerates and attracts more involvement from the private sector, the integrity of green bonds is being questioned (Ehlers & Packer, 2016). This is due to the absence of a robust definition of green, the self-regulated nature of the green bond market (Ng & Tao, 2016) and lack of harmonized standards (Andreeva et al., 2018). Furthermore, the existing standards such as the GBPs are voluntary or non-binding and are too broad to address several challenges (Meltzer, 2016; Paraque & Revelli, 2019). For example, The GBPs only indicate broad sectors that constitute green projects, but do not specify how to account for the projects of which purposes are not 100 percent green (Meltzer, 2016). Therefore, the challenge lies in the ability to determine whether or not a green project is actually green and that the proceeds are fully allocated to the green project (Paraque & Revelli, 2019).

According to Pronina (2019), the absence of standardization in the green bond market can cause inconsistency in evaluating the greenness of green bonds across countries. Moreover, some countries have formulated and issued their own standards, most dominantly China (Ehlers & Packer, 2016). For example, as the world's largest carbon emitter and the second largest green bond issuer, China is criticized for using funds from green bonds to finance coal power plants, even if they show a commitment by using clean facilities (Pronina, 2019). Nevertheless, considering the international harmonization issue, the domestic guidelines could hinder green certification from benefiting the investors outside the domestic markets (Ehlers & Packer, 2016).

The divergent views on what constitutes a green project have further raised concerns regarding the transparency in the use of green bond proceeds. As a result, the validity of the green concept is another form of reputational risk in translation (Tripathy, 2017; KPMG, 2015). In that case, potential concerns of so-called 'greenwashing' could arise (OECD, 2017b; Mihálovits & Tapaszt, 2018). However, the GBPs advocate for transparency in the use of proceeds (Paraque & Revelli, 2019). Transparency is one of the key characteristics of a green bond, with disclosure and reporting on the use of proceeds being essential components in meeting expectations of market participants (CBI, 2017b). In the event where misleading information is provided, it becomes almost impossible to determine whether there has been an extreme departure from a

reasonable standard of care, due to the absence of proper standards (Trompeter, 2017). Therefore, with the growing increase in the issuance of green bonds and the entrance of more corporate and municipal entities into the market, the voluntary system is not enough (Cooper, 2016).

Due to the absence of unified standards, several researchers have provided some suggestions to promote and ensure the green integrity of green bonds. According to Kaminker et al. (2018), the initiatives from policymakers and non-governmental parties are the key factor to help foster the growth of the green bond market. In the same way, Santibanez et al. (2015) and Berensmann (2017) describe that for continued growth, the market will need to rely on commonly accepted standards on what constitutes a green bond and transparency as to how proceeds are used. Similarly, Ng and Tao (2016) recommend for consistent step-by-step procedures to be established to assure the financial and environmental integrity of the green bonds issued. Furthermore, the financial market regulators should work together with stakeholders in the green bond market to set up penalties for the violation of green claims and adopt a procedural approach to help regulate the sector (Berensmann, 2017; Ng and Tao, 2016). For the purpose of transparency and authenticity in the use of proceeds, Paranque and Revelli (2019) recommend that specialized environmental auditing or certification companies are needed to certify the green bonds as recommended in the GBPs. Similarly, Meltzer (2016) also suggests two possible ways to mitigate the concerns about the greenness of green bonds and reassure investors over the use of proceeds, which are the independent second opinion and green bond indices. He mentions that second opinion can help to increase investor confidence, whereas the indices such as the Barclays-MSCI Green Bond Index can help determine what qualifies as green by expanding the scope beyond the voluntary standards such as the GBPs and includes details about the use of proceeds (Meltzer, 2016).

4.4 Summary of theoretical background and literature review

Environmental needs, sustainability pressures, and society have pushed corporations to take actions towards sustainability. This has been the motive of why companies incorporate ESG into its strategy and adopt CSR practices. The theoretical background includes a discussion of ESG and CSR which has further included environmental and social theories. Furthermore, the stakeholder theory is used to provide an analysis of how stakeholders' interests influence an organization's green practices. The legitimacy theory is employed in discussing the fulfillment

of the green promise and how external reviews are used to provide legitimacy in the green bond market. Institutional theory is applied in analyzing the regulatory needs of green bond standards and how the standards could be further improved. The theoretical background further incorporates greenwashing and information asymmetries, which is used to analyze the findings and to reflect how findings from the interviews and case examples could be confirmed from a theoretical point of view.

The literature review has identified two types of standards, namely the GBPs and the CBS. The nature of the two standards will be analyzed based on how they influence the green bond issuance process, particularly the selection of green projects and the way green criteria are determined. The literature review has further revealed the scope and problems regarding the nature of the standards. This will be used in supporting the analysis of the gaps in the standards, and in the discussion of how the standards could be improved to enhance transparency in the green bond market.

5 Presentation of Findings

This chapter presents the interview responses from the perspectives of the issuers, investors, and underwriters of green bonds, followed by three case examples concerning the irregular use of proceeds obtained from green bond issues.

5.1 Interviews

The information about the interview participants and their companies is as follows. Details, such as date and time when the interviews were conducted, are provided in Appendix D.

5.1.1 Interview Respondents

The respondents are presented according to the roles of their companies in the green bond market, which include issuers, investors, and underwriters.

5.1.1.1 Issuers

1. Anna Denell - Vasakronan

Anna is Head of Sustainability at Vasakronan, a property company in Sweden operating in four main regions – Stockholm, Uppsala, Gothenburg, and Öresund (Vasakronan, 2017). Vasakronan issued the world's first green corporate bond in November 2013 (Vasakronan, 2017). Sustainability work consists of financial, social responsibility and environmental efforts which are based on the UN Global Compact, internal policies or guidelines and the company's Code of Conduct. The UN Sustainable Development Goals (SDGs) are recently added to their framework with efforts to integrate it into the overall strategy (Denell, 2019).

2. Henrik Molin - Vacse

Henrik Molin is a Chief Financial Officer at Vacse, a real estate company in Sweden. Apart from shared capital, Vacse finances their company through bank loans and bonds (Molin, 2019). Therefore, their role in the green bond market is an issuers of bonds. Since Vacse is owned by pension funds, they have a very long-term perspective of their investments and the financing side. Vacse has high sustainability standards and goals, and green bond fits in very well with respect to that (Molin, 2019).

3. Fredrik Jönsson - SBAB Bank

Fredrik is a Head of Treasury at SBAB Bank, which is the first bank in Sweden to issue a green bond in 2016 (SBAB, 2016). In addition to the role as an issuer, SBAB also invests in green bonds (Jönsson, 2019). Involvement in the green bond market is part of the bank's sustainability campaign. SBAB's green bonds are subject to the condition that the funds raised will be used exclusively to finance or refinance residential properties that meet several energy-efficiency criteria or hold an environmental certification. Until now, SBAB has issued two green bonds with a total outstanding volume of SEK 3.75 billion.

4. Anders Jakobsson - Sveaskog

Anders is a Head of Group Finance, Treasury & Risk Management at Sveaskog. Sveaskog is Sweden's largest forest company owned by the Swedish government. The company is the second largest forest owner in the world with 4 million hectares of forest (Jakobsson, 2019). The company issued its first green bond in 2016, which amounted to SEK 1 billion (Sveaskog, 2017). Since the company has a green production such as harvesting forests and replanting with new seedlings, a green bond is considered as another opportunity that could further make the whole company green (Jakobsson, 2019).

5. Malin Svedberg - Landshypotek Bank

Malin is the Business and Sustainability Coordinator at Landshypotek Bank. Landshypotek Bank is one of Sweden's ten largest banks and has financed agriculture and forestry in Sweden for almost 200 years now. Sustainability is a very basic part of the bank's business model and has recently allocated SEK 138 million to forestry and the farmers in Sweden as part of their mandate to give back to the society (Svedberg, 2019). Landshypotek Bank has issued its first green bond amounting to SEK 5.25 billion in May 2018 and the proceeds are contributed to sustainable forestry (Landshypotek Bank, 2018).

6. Albert Olofsson - Atrium Ljungberg

Albert Olofsson is a financial controller at Atrium Ljungberg, responsible for the treasury department. Atrium Ljungberg has issued SEK 5.8 billion of green bonds during the last two years and they are quite a large player in the green bond market (Olofsson, 2019). The company has been working and focusing on the sustainability side for around four years, and they have used the knowledge acquired from the sustainability work to issue green bonds (Olofsson,

2019). Recently, on 13 May 2019, the company issued SEK 800 million of green bonds (Olofsson, 2019).

5.1.1.2 Investors

1. Carina Silberg - Alecta

Carina Silberg is head of sustainability at Alecta, a Swedish occupational pension fund. Alecta manages occupational pensions as the default option in the white collar collective bargaining agreements (Silberg, 2019). Their assignment is to create the highest value possible for beneficiaries and as long-term investors, with a clear fiduciary duty and with a good fit with capital requirements, the green bond is an attractive investment, compatible with their strategic goals (Silberg, 2019). Fixed income represents almost 50 percent of Alecta's investment portfolio. In short, Silberg (2019) maintains that Alecta's strategic goals are aligned with the investment in the green bond.

2. Joakim Blomqvist - AP3

Joakim is Senior Portfolio Manager who is responsible for investments in corporate bonds and managing credit bonds. AP3 is a Swedish state-owned pension fund with its autonomy from the central government and its role is to protect public pensions through investment and management of buffer capital (AP3, 2019). AP funds have a fundamental task of managing surpluses and deficits that arise in the pension system (AP3, 2018). AP3 has its sustainability goals with climate change in the forefront and has raised holdings of green bonds more than three-fold, from SEK 4.5 billion in 2014 to SEK 15 billion in 2018, with a total green bond portfolio of SEK 16.5 billion on 31 December 2018 (AP3, 2018).

5.1.1.3 Underwriters

1. Anonymous

She is currently working at one of the investment banks in Sweden and has been working with green bonds for approximately 4 years. She noted that the roles of the investment banks are mainly educating both issuers and investors and creating market presses together with other stakeholders. What they do is forming the green bond frameworks for the issuers, so that they are aligned and easy for investors to understand and compare them in terms of the greenness of

green bonds. Moreover, the investment banks also present the ideas of funding green projects to the issuers.

2. Ebba Hytting - Swedbank

Ebba Hytting works with Green, Social & Sustainability Bonds in Debt Capital Markets at Swedbank. Swedbank has a strong position in working with sustainability and issued its first Green Bond with a volume of EUR 500 million in October 2017 (Swedbank, 2018). Apart from being an issuer, Swedbank also plays an intermediary role as an underwriter of green bonds. The bank has been number one in league tables for green bonds in the first quarter of 2019 as a result of several transactions and has intentions of being at the top in terms of green bond transactions (Hytting, 2019).

5.1.2 Interview Findings

In this section, we present the findings obtained from the semi-structured interviews with ten experts from the companies that issue, invest in, and underwrite green bonds.

5.1.2.1 The standards and the issuance process

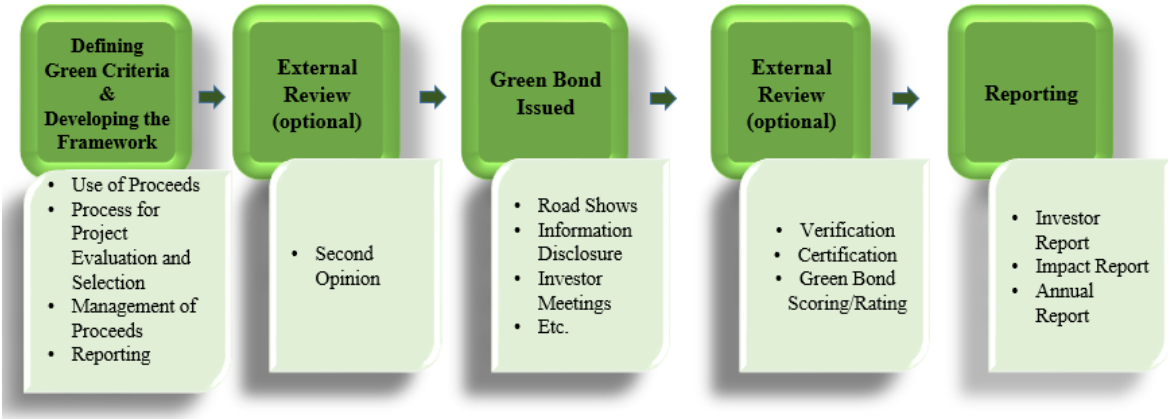


Figure 6: Issuance Process

The process of issuing green bonds is quite similar among many of the participating companies. All the respondents have highlighted similar approaches taken before the issuance is made. The starting point is cooperating with investment banks to prepare or write the framework and getting an external reviewer to review it and provide a second opinion on the framework. This is followed by meetings with investors. Many of the issuers go through the same process of

formulating the green bond framework. However, the company strategy is of high significance when designing the framework.

“Investment banks draft the GB framework and advise the issuers during the process. The issuing companies add the specific things according to their industry sector” (Anonymous, 2019).

Olofsson (2019), Jönsson (2019) and Svedberg (2019) mention that they took help from advisory banks and rely on the GBPs to structure their frameworks. However, according to Jakobsson (2019), Sveaskog has a medium-term note (MTN) documentation as a basis for the green bond framework and the second opinion. In addition, Olofsson (2019) states that if there is any new important information in the GBPs, it would also be included in Atrium Ljungberg’s Green Bond Framework. At Vasakronan, the firm does not follow any specific principle or standard, however they ensure that the framework is in line with the GBPs and it is certified according to the CBI (Denell, 2019). Furthermore, according to Svedberg (2019), Landshypotek Bank also compares its framework with that of others to find the area for further improvement.

“We also took help from other companies’ frameworks for comparison and also to see what is interesting in their framework that we could do better or differently” (Svedberg, 2019)

According to Molin (2019), the framework is prepared and set up with the support of Handelsbanken, who also recommends the level of reporting. Jakobsson (2019) highlights that Sveaskog works very closely with Danske bank in this process.

“It took almost a year to get it through. Then, we sent it to the second opinion institute, and they approved it. After that, we were able to enter the green bond market” (Jakobsson, 2019).

Investment banks not only help issuers in writing the green bond framework and/or provide advice in the whole process (Denell, 2019; Jakobsson, 2019; Hytting, 2019) but also enable them to get in contact with the market and to access the kind of capital needed (Svedberg, 2019).

“We also advise the issuers on the "greenness" of investors” that is assisting issuers in finding investors with a sustainability focus, to allocate the green funding to green investment portfolios (Anonymous, 2019).

According to Jönsson (2019), the second opinion gives investors some form of comfort, because an external party is able to confirm the greenness of the framework. Anonymous (2019) further

emphasizes that there is a high level of trust in the review provided by the external reviewers. According to Svedberg (2019), discussion regarding the framework starts internally and with the banks as to what the bank wants, and the market wants.

“We focus on what will sell for the future as well in terms of either conventional farming or ecological farming. We focus the framework on forestry and agriculture as we have decades of experience in this area” (Svedberg, 2019).

Regarding the significance of external review, all the respondents agree that the external review on green bonds is important. Jakobsson (2019) and Hytting (2019) indicate that there is a demand from both investors and investment banks. External review is a reassurance for investors to invest in green bonds and serves as a support for the issuers, therefore it is vital for issuers to get verification that their assets are valid for a green bond (Hytting, 2019). Olofsson (2019) states that Atrium Ljungberg employs two types of external reviews which are the second opinion and auditor’s report. Svedberg (2019), Dennell (2019), Jönsson (2019) and Molin (2019) had CICERO’s second opinions on their frameworks, while Jakobsson (2019) had their framework reviewed by a Norwegian DNV GL (Det Norske Veritas). Hytting (2019) adds that the issuers could also obtain another type of review from a credit rating agency as well (Hytting, 2019). Svedberg (2019) stresses the significance of external review and views it as a standard for green bond issuance. She notes that someone else’s opinion on the greenness of green bonds matters, since investors in the capital market may not be very familiar with the green criteria. Likewise, Molin (2019) explains that the third-party review helps confirm that the company has fulfilled what is stated in the green bond framework and minimizes the suspicion of greenwashing. Having an external review is putting a stamp on the bond, so the investors do not have to do their own due diligence on the green bond framework (Svedberg, 2019) and ensures the investors that the company really follows the entire process (Olofsson, 2019).

From the investor’s point of view, Silberg (2019) sees that external verification is needed to uphold the trust in the green bond market and bring robustness to the process because the existing standards are voluntary. Silberg (2019) and Blomqvist (2019) both emphasize that they only invest in green bonds that have, at the very least, a second opinion. Blomqvist (2019) further points out that they do not like a light second opinion and prefer it to be thoroughly green.

On the other hand, Anonymous (2019) recognizes the drawback of external reviews in relation to the investor size. She revealed that some investors are big and can review all the bonds they have invested in and hence invest from an ESG perspective without being dependent on external reviews, whereas small investors do not have such capability.

After a green bond is reviewed by external parties, according to Svedberg (2019), the information regarding a green bond is normally communicated through the road-show, where the framework and the kinds of assets included are presented to the investors. For the investors, a lot of information regarding green bonds is obtained before the investment in the form of documentation distributed by the issuers (Jönsson, 2019; Blomqvist, 2019). Blomqvist (2019) highlights AP3's inquiries the list of specific projects, the ESG profile of the company, the status of assets in the projects, and a look at the second opinion, etc. According to Olofsson (2019), during the investor meeting, the company will describe the pipeline of projects that the proceeds will be used for, however, the investors cannot see the exact projects that have been previously financed by green bonds.

Figure 6 below is a summary of the general procedures used in issuing green bonds. However, some of the steps are optional and may not be followed the same way by different issuers.

5.1.2.2 Green Criteria

Typically, a pool of green assets is created that is categorized as green and has fulfilled the green conditions (Denell 2019; Jönsson 2019; Svedberg 2019). Denell (2019), Jönsson (2019), Jakobsson (2019) Molin (2019), and Olofsson (2019), all state that how assets qualify as green and the minimum level of greenness is defined in the green bond framework. At Vasakronan, green criteria depend on whether it is a construction or renovation projects and qualification is defined by the framework (Denell 2019). Landshypotek Bank's green criteria are based on UN Sustainable Development Goals (SDGs), which Svedberg (2019) regards as important to the bank. According to Svedberg (2019), the focus has been on 3 out of the 17 goals, which include sustainable forest, renewable energy, and green buildings. For Vacse, criteria are based on a certain level of environmental certificate for the property (Molin, 2019). Molin also highlights that different standards can be used to make the environmental certificate, for example, a building standard called BREEAM. In addition to the different certification standards, the criteria are also based on energy efficiency. At SBAB, like Vacse, the criteria are that an asset

is required to have a valid energy performance certificate, otherwise, it becomes ineligible (Jönsson, 2019).

For many investors, there is no single criterion to determine the greenness of the bonds. A series of processes are taken to determine the green criteria. For Alecta, the starting point is to evaluate the issuers from a credit perspective, do a norm-based screening, and gather sustainability information (Silberg, 2019). The interesting fact is that Alecta has its own green bond framework to be used as a criterion for investing in green bonds. The firm also demands that the issuer's green bond framework be verified by the second opinion provider.

“We set up some criteria for the green bond investments. We're aligned with that framework and that's also what we want to see in an issuer. In the Green Bond Principles, it is voluntary or optional to have external verification, so that is one of our requirements. They need to have the second opinion (Silberg, 2019).

For AP3, the green criteria are based on a combination of second opinions from companies like CICERO and the company's own assessment by internal ESG team. According to Silberg (2019), the investor's ability to determine greenness is limited by the level of competence to determine which initiative is greener, and for that reason, heavy reliance is on the issuers. However, there are preferred partners who are fully aware of Alecta's green appetite, meaning those issuers know and tend to meet those requirements (Silberg, 2019).

“We would not make a green bond investment in the fossil industry. We would not make a green bond investment in a company that we do not see having some levels of preparedness in terms of sustainability or ESG” (Silberg, 2019).

When the underwriters assist issuers to determine the green criteria, they do not rely on a single principle or standard, but rather rely on multiple standards such as CBP, Social Bond Principles, and Sustainable Bond Principles to determine whether an asset is green or not (Hytting, 2019). In addition, banks rely on confirmation from systems of ethics, or assessment from external parties especially on sectors that are not considered sustainable, for example, aviation industries (Hytting, 2019).

5.1.2.3 Standards and the use of proceeds

Many of the actors agree that there is no exact principle that directly influences their use of proceeds (Denell, 2019; Svedberg, 2019). However, they put it to our attention that the current standards affect the design of the green bond framework. Denell (2019) states that Vasakronan makes sure that the proceeds are used based on those criteria.

“It (the standard) affects the use of proceeds to some extent because the principles have the sector-specific amendments with certain criteria for building and those criteria are considered when developing the framework” (Denell, 2019).

The allocation of proceeds at Vacse is not direct in most cases, because the firm only finances a pool of assets that fulfils the criteria of the green bond framework. A direct allocation will only be related to when building or acquiring a new building (Molin, 2019). SBAB made it quite clear that the GBPs are used, and they make sure the principles are followed when allocating the proceeds (Jönsson, 2019). Similarly, Olofsson (2019) says that Atrium Ljungberg has the GBPs as a basis for the use of green bond proceeds. For Sveaskog, the green bond committee decides where to put the money, which could be within the ordinary business or sustainable forest, however, the GBPs must be fulfilled (Jakobsson, 2019). Being active in the forests is the way Sveaskog meets the GBPs (Jakobsson, 2019). As sustainable forestry is one of the things they must do, proceeds are allocated between planning cost, seedlings, silviculture, fertilization and harvesting, and the company does a report regarding any outstanding amount (Jakobsson, 2019). From the view of underwriters, Anonymous (2019) and Hytting (2019) state that the GBPs are followed in the allocation of proceeds, stating that it is demanded by the market. In other words, they agree that the GBPs provide guidance for allocating the proceeds.

When it comes to the transparency of green bonds, we have found that there is no clear path towards transparency, as different actors have different ways of showing how transparent they are or can be. For Vacse, GBPs provide good transparency to their investors, as they provide details of properties that fulfil the criteria and how to report them (Molin, 2019). Svedberg (2019) and Olofsson (2019) also agree that the GBPs serve as a guideline and recommendation for structuring the framework, making it easier for investors to compare and therefore contributing some form of transparency to the investors.

Jakobsson (2019) believes that the market and the GBPs have been approved since a while ago and the responsible parties review the GBPs. Therefore, he believes that the GBPs and the market are fairly good and stable today and sees no need for a change.

” I think right now the GBPs are at a quite good level now. It was not so good initially and the questions were not answered at that time. I don't foresee that there should be any big changes in the green bond principles at this moment” (Jakobsson, 2019).

Contrary to Jakobsson (2019), Jönsson (2019) stresses that the GBPs are general guidelines that are not detailed enough and need a lot of improvement in terms of transparency and reporting.

“It is not a very detailed guideline. I think there needs to be a lot of attention given when it comes to green bond frameworks. And transparency and reporting criteria, it will be more standardized or even regulated in the future” (Jönsson, 2019)

The underwriters emphasize that reporting is the key to transparency.

“That’s about yearly reporting, so that’s also important” (Anonymous, 2019).

“It’s the reporting that gives the transparency” (Hytting, 2019).

Hytting (2019) further went on to highlight that the GBPs serve as a guideline to the issuers on how to report. She further stated that transparency is good as at now, but things could be better if regulations are coming with more information disclosure and reporting of more indicators, implying that there will be more transparency.

5.1.2.4 Greenwashing Risk & Measures to ensure that the proceeds are used for green projects

Anonymous (2019) regards greenwashing as the biggest risk restricting the green bond market from going forward. She provided an example of an oil company, Repsol that issued the green bond and consequently raised the concern related to transparency. Svedberg (2019) explained that greenwashing could happen especially with transactions that are not green, resulting from the issuer’s need to enter the market to acquire greenium or to be seen as green. She further stresses that green is promised when a green bond is issued. Therefore, an issuer should make sure that their bonds are truly green, otherwise, the green bond market will be disrupted and troublesome. According to Blomqvist (2019), there is a risk of greenwashing, as many companies issue green bonds, but do not commit more than that.

“We prefer issuers that are truly environmentally engaged. Participating in a green bond where the proceeds for instance would go to making oil tankers less polluting is out of scope for us” (Blomqvist, 2019).

Furthermore, Anonymous (2019) describes that the greenwashing risk may result in additional costs for the issuers because they need to pay more to verify their bonds, for instance, to get a second opinion for their framework. To prevent this risk, Olofsson (2019) suggests that the issuers should reflect transparency in how they use the proceeds and that there should be common green bond standards to solve the problem of greenwashing.

“It’s a problem if the investors think the issuers are using some type of greenwashing. That’s why it could be important to have greener bond standards that everybody is following” (Olofsson, 2019).

Investing in green bonds is still better than investing in ordinary bonds and disclosure and quality reporting is a way to deter greenwashing (Molin, 2019; Jönsson, 2019). Such as auditing by auditors, issue yearly investor’s report explaining how the funds are allocated (Molin, 2019), by complying with the GBPs and updating the Green Bond Framework accordingly (Jakobsson, 2019).

“If you have poor reporting, the investors will come back to you and ask for more information. If they are unsure whether you’re up to the standards as being a green bond issuer, they suspect that there is some kind of greenwashing and they would not buy the bonds. It’s the market itself that regulates that” (Molin, 2019).

In contrast, Hytting (2019) argues that greenwashing does not affect the demand of green bond investors, because she believes that investors are not just looking for transparency in green bonds. It is beyond that.

Regarding the risk of greenwashing, we asked the interviewees about the measures they take to ensure that the proceeds are actually used to finance green projects. Denell (2019) states that the proceeds cannot be used for anything other than what is stated in the framework and an impact reporting is done to show the outstanding balance and other indicators. Additionally, Molin (2019) indicates that the investor’s report explains how the funds are used and reports on the environmental impact and that Vasec has set up a sustainability committee to decide how the proceeds should be allocated. The auditors go through the criteria stated in the framework to assess if the proceeds are used as proposed in the framework (Molin, 2019). At Atrium

Ljungberg, information about their green bonds is provided in both the annual investor letter and the quarterly interim report, and the auditors to assess whether the proceeds are used for the right projects (Olofsson, 2019). At Landshypotek Bank, there are internal processes that are followed to ensure that the proceeds are used for sustainable forest (Svedberg, 2019).

Investors mostly rely on the information given by the issuers. According to Jönsson (2019), as an investor, proceeds are tracked through the relevant information provided by the issuer. For AP3, it is a combination of all the sources and keeping track of the issuer and their internal processes (Blomqvist, 2019). According to Silberg (2019), to ensure that the proceeds contribute to green projects, issuers are required to obtain external verification on their framework, because that sets how the proceeds are to be used and managed. However, they also point out that they cannot track where every single krona goes, and that they will have to trust the market and rely on the issuers.

“At this point, the green bond market is a very trust-oriented and there might be some scandals erupting and revealing that green bond proceeds were not used the same way. It is hard to really know how the proceeds are used, so there needs to be a certain level of trust in the market, otherwise, it would be too expensive” (Silberg, 2019).

“It's very difficult for us. For instance, if we make an investment in the World Bank (IBRD) and they are investing in projects all over the world, it is very difficult for us to keep track of all those investments. With such an institution, if you don't trust them, there's no one else you can trust” (Blomqvist, 2019).

Hytting (2019) points out that if the issuers fail to fulfil their promise to investors, their reputation will be at risk. Therefore, she advises that issuers should always make sure that the proceeds are used as promised and shown in the reports which are demanded by the issuers.

5.1.2.5 Costs & Challenges

In respect of the cost related to the green bond transactions, the issuers, Molin (2019) and Jakobsson (2019) agree that they incur additional costs for issuing green bonds, such as a startup cost in setting up the framework and having it reviewed by a second opinion provider and more administrative work, for example having a meeting with the green bond committee and reviewing the reports. However, both report that the gains from lower prices, lower basis points

or lower interest rates significantly outweigh those extra costs and work. From another issuer's view, Oloffson (2019) maintains that one important challenge is to describe what projects will be financed by green bonds.

On the other hand, the firm characteristics such as the size and the sector may restrict some potential issuers from issuing green bonds (Hytting, 2019; Anonymous, 2019). Anonymous (2019) explains that not all companies have a balance sheet that fits the schedule for green bond issuance, therefore there could be a risk of losing sustainable funding for potential green projects. Anonymous (2019) also emphasizes that the firm size affects the capability to issue green bonds because the process incurs follow-up costs, whereas Hytting (2019) stresses the importance of the company's ESG profile and rating as well as the sector they belong.

"It is a cost for the companies to have someone review the projects every year. Big companies possibly already review their projects on a recurring basis, but smaller companies often don't have manpower, so then they risk not issuing green bonds just because it is too process-heavy for them" (Anonymous, 2019).

"It is not possible for all sectors today to print green bonds, but we try to find ways to do that anyway or to push. It is becoming more important for companies to work on their ESG profiles as a whole. That is, we need to work with companies to improve their ESG risk rating. This often required a lot of time" (Hytting, 2019).

Another challenge for the issuers is concerned with data, which is reported by Jönsson (2019) and Svedberg (2019). Since there are debates about what should be included in the green bond framework and what constitutes green, acquiring data is one of the key challenges (Svedberg, 2019). Svedberg (2019) states that without data it could be quite impossible to issue green bonds. Likewise, Jönsson (2019) explains that collecting information about properties and energy performance certificates and keeping track of all data is challenging for SBAB. Additionally, Hytting (2019) points out a recent challenge from the EU proposed action plan on green bond standards, taxonomy, and benchmarks, which she believes is going to affect the green bond market no matter if it will be voluntary or not. She further describes that this may limit the market and makes it difficult for the business to fulfil the requirements. Moreover, she mentioned that it could also impact a second opinion provider, namely CICERO as two-thirds of their second opinions will not be valid if the taxonomy is enforced.

"We work with issuers and investors on trying to understand what consequences that will have on the market" (Hytting, 2019).

From the investor's perspective, Silberg (2019) finds that the lack of harmonization in impact reports from different issuers is challenging to Alecta as an investor and leads to additional administrative work. According to Blomqvist (2019), AP3 does not incur any additional cost in investing in green bonds but they incur cost in keeping track of what they are investing in. In that case, there is an indirect cost, especially time spent on tracking the bonds which could have been spent elsewhere (Blomqvist, 2019).

5.1.2.6 A need for internationally accepted or uniform green bond standards

Due to the green bond market being very young and emerging (Denell, 2019; Molin, 2019; Svedberg, 2019), there are many different views on the demand for uniform standards.

Molin (2019) believes that it is good to have a uniform reporting standard specifying the types of assets and investments that the issuers can allocate green bond proceeds to. According to Svedberg (2019), if everyone is doing an impact reporting or reporting at the same level, it will be easier for investors to compare between the bonds and where they need to put their money. Additionally, Hytting (2019) and Olofsson (2019) mentions that it will be appreciated to have a standard for the entire market to use, and investors, in particular, would benefit from the harmonized standard (Jönsson, 2019).

“When we started two years ago, I think it was good that there were not any international standards. But I think right now when many issuers have come to the market, I think it could be a good time to have more in green bond standards that we follow.” (Olofsson, 2019).

From the investor's perspective, Silberg (2019) also welcomes the internationally uniform green bond standards to enable the investors to estimate the impact of investment in green bonds. She notes that since the green bond market is global and investors are expanding the portfolio to different geographies, the variability in standards makes it difficult to compare the greenness of green bonds and is one of the major challenges in the market. She also draws our attention to the green bonds in China, stating that the Chinese green bond standards are different from the European standards. Alecta has not invested in green bonds in China.

“For this market to leverage globally, there may be some measures that need to happen, sort of standardized measurements, etc. As the market will mature, we will need to harmonize the reporting standards so that we will be able to aggregate the impact that we create for those bonds” (Silberg, 2019).

Blomqvist (2019) sees a need for new standards but not convinced that is going to be achieved due to conflict of interests. In addition, standardization is seen to help minimize the risk for greenwashing (Hytting, 2019; Jönsson, 2019; Molin, 2019). On the contrary, Jakobsson (2019) argues that he does not see a need for internationally accepted standards.

“When the very big institutions like the World Bank and some are issuing green bonds, they also accepted in some way the international standard and the green board principles. So, it's not always to set up a new commit to yourself. I don't think that would be so good” (Jakobsson, 2019).

Some respondents also expressed concerns on the call for new uniform standards, especially the potential negative effects the uniform regulation might bring to the green bond market. Despite the recognition for the demand for standard, market is quite young, new and it is too soon to have a regulation because it could hinder the market's natural growth (Denell, 2019; Svedberg, 2019) and therefore the standardization could limit the ability of some types of issuers from entering the market (Anonymous, 2019).

“The more you try to make something standardised, the more you risk too many potential issuers not fitting to that template” (Anonymous, 2019).

On top of that, some participants provide recommendations for improving the green bond standards. For example, Molin (2019) suggests that the green bond standard should be adjusted to different sectors or developed in cooperation with the investors and issuers in order to fulfil the demands of both parties. Denell (2019) says that there needs to be a balance between regulating and letting the market grow on its own pace. In addition, Anonymous (2019) suggests that the standards should be updated based on the current market situation.

However, according to Hytting (2019), despite the growth, the market still needs to be bigger. As the green bond market is mainly driven by issuers, banks, and investors, the government could also come into play to promote the development of the green bond market (Anonymous, 2019). Moreover, there should be standardization on what should be categorized as green to better structure the market (Svedberg, 2019). In addition to this, Hytting (2019) notes that there is a need to pay attention to the interests of the market and find different assets that work for different issuers. Silberg (2019) further draws our attention to brown companies producing heavy print on the environment issuing green bonds, for example, Repsol, an energy company. She suggests that for such a company to successfully emit green bonds or transition bonds, it would need to be backed by a solid sustainability strategy. She also points out the interesting

case of a sovereign green bond issued by a coal-reliant country such as Poland. For the future of green bonds, the hope is that the green bond market grows bigger and greener, and there will be no room for brown bonds (Carina, 2019; Denell, 2019; Anonymous, 2019).

“One of the strengths of green bonds is to understand how the proceeds are being used. Going forward, less and less bonds will probably leave for general corporate purposes. I think investors are about to ask much more questions about refinancing” (Silberg, 2019).

“The ones that are trying to get funding for non-green projects have to do all the heavy work, explaining what they are going to do with the money” (Denell, 2019).

“My hope is that in the end, we won’t be talking about green bonds. We would be rather talking about the brown bonds that no one wants to invest in” (Anonymous, 2019).

Lastly, we find that the issue brought up by Svedberg (2019) is interesting. She discusses that the EU proposed green bond standard and taxonomy could affect the green bond market and that this legislation may put a constraint on the small companies that lack the ability to report to that extent, for instance, CO₂ emissions, thereby limiting them from issuing green bonds.

5.2 Controversial cases regarding the use of proceeds

5.2.1 Case 1: Repsol

Repsol is a member of the Repsol Group, a Spanish integrated oil group and one of the largest industrial groups in Spain (Repsol, 2016). Thus, an integrated company is present in each stage of the entire value chain, both in the downstream and mainstream activities, such as re-gasifying and trading liquefied natural gas, refining through physical and chemical processes, extracting deposit's reserves, producing gas and electricity gas, processing and distributing AutoGas, marketing oil and gas, etc. (Repsol, 2019).

In May 2017, Repsol issued EUR 500 million Green Bond, in a 5-year deal and the coupon was set at 0.5%, which represents the lowest coupon ever achieved by Repsol in a public benchmark (Repsol, 2017). 45% of the bonds were allocated to investors with Environmental, Social and Governance (ESG) mandates (Repsol, 2017). The green bond will allocate EUR 500 million to investment projects aimed to avoid GHG emissions by around 1.2 million tons of CO₂eq (Repsol, 2017). Proceeds will be allocated to the refinancing of implemented projects since 2014, and the financing of two eligible projects categories solely in production facilities,

namely, energy efficiency projects and low emissions technologies (Repsol, 2017). 252,253 million of the proceeds are used to finance and refinance projects under chemical and refinery efficiency, such as upgrading of heating equipment (Repsol, 2017). In short, the proceeds will be used to finance and refinance energy efficiency investments in their chemical and refinery facilities in Spain and Portugal (Whiley, 2017a). In this case, the scope of the bond is 100% focused on the downstream activities of refineries and chemical facilities in Spain and Portugal to improve operations (Repsol, 2017).

5.2.2 Case 2: GDF Suez

GDF Suez (currently Engie) is a French power company that provides power, natural gas, energy services to individuals, cities and businesses by relying on diversified gas-supply sources, flexible and low-emission power generation with expertise in four sectors: independent power production, liquefied natural gas, renewable energy and energy efficiency services (Engie, 2014; Breen & Campbell, 2017). GDF Suez is active throughout the entire value chain (GDF Suez, 2014a).

In May 2014, GDF Suez issued a €2.5 billion green bond, comprising a 6-year tranche of EUR 1.2 billion with a 1.375% interest rate and a 12-year tranche of EUR 1.3 billion of a 2.375% interest rate (GDF Suez, 2014b; Boulle, 2014). The funds raised by this bond are intended to support the group to finance its growth in renewable energy and energy efficiency projects (GDF Suez, 2014b). Of the total issue, 64% was taken by socially responsible investors (Boulle, 2014). For the six-year tranche, 69% was purchased by asset managers, 12% by pension funds and insurers, 9% by banks and 6% by central banks (Boulle, 2014). The criteria for eligible projects are determined together with Vigeo (GDF Suez, 2014b). At December 31, 2014, the eligible projects financed by the green bond proceeds included the 3,750 MW Jirau Dam, which is expected to commission from 2013-2016 (GDF Suez, 2014b).

5.2.3 Case 3: EXIM Bank India

Export-Import Bank of India (EXIM Bank India) was established by the Government of India in 1982 based on a mandate to enhance exports and incorporate India's international trade and investment with its economic growth (EXIM Bank, 2016b).

In March 2015, EXIM Bank issued a USD 500 million Green Bond (EXIM Bank, 2015). The bond was priced at 147.50 basis points over US Treasuries (UST) at a fixed coupon of 2.75% per annum (The Hindu Businessline, 2015). 60% of the issue was distributed to Asian investors, 30% to EMEA and the remaining to offshore U.S. investors (EXIM Bank, 2017). According to

EXIM Bank (2016a), the green bond proceeds will be used to support green financing and renewable energy. Led by strong demand, the bond after its launch attracted a subscription of about 3.2 times the issue size, across 140 accounts (EXIM Bank, 2017). The bank promised to use the net proceeds from the sale of green bonds to fund eligible green projects related to transportation in Bangladesh and Sri Lanka (EXIM Bank, 2017). Based on the Auditor's Certification as of March 2019 (EXIM Bank, 2019), we performed a calculation to determine how the proceeds from green bonds are allocated to finance each project. We found that 72% of the proceeds are used in relation to the construction of railway and mass transit of persons by passenger rails in Sri Lanka, 20% is used in relation to railway design, construction and maintenance in Bangladesh, 7% is used for construction of bridges, and implementation of environmental management plan for railway, and 1% for the procurement of diesel locomotives.

5.2.4 Concerns regarding the use of proceeds

Critical to any green bond is how the proceeds will be used. It can be seen that proceeds from each of the cases above are allocated for a project that does not have positive environmental impacts.

Although the proceeds from Repsol's green bond are not directly invested in increasing fossil fuel output, refineries are still processing fossil fuels, which in this case, make refineries more efficient, prolong plant lifetimes and ultimately increase overall emissions over time (Whiley, 2017a). Moreover, a greater concern is that Repsol has not reported how they will address these potential indirect effects (Whiley, 2017a).

Similarly, the green credentials of this green bond issued by GDF Suez have been questioned because some of the proceeds went toward financing the Jirau Dam project in Brazil that has a negative environmental impact on the Amazon rainforest (Breen & Campbell, 2017; Conor, 2015). The project has destructive environmental and human rights impacts, as technical studies have concluded that the Jirau dam will cause transboundary impacts in Bolivia and Peru, such as causing serious impacts on freshwater ecology, the greater the risk of flooding, sedimentation, local communities and workers (International Rivers, 2012; Brightwell & Hurwitz, 2014).

For the case of EXIM Bank, upon the scrutiny of the bond, it has been revealed that some of its proceeds will go towards the Khulna–Mongla railway line, which is expected to deliver supplies of coal to the proposed and highly controversial 1,320 megawatt Rampal power project in

Bangladesh (Brightwell, 2016). The location of the plant is close to the Sundarbans, the world's largest mangrove forest, which is also a UNESCO World Heritage Site and home to several endangered species, such as the royal Bengal tiger (Brightwell, 2016; Ghosh, 2018). Once the plant begins operating, it is expected to burn 4.7 million tons of coal, emitting 7.9 million tons of carbon dioxide and other dangerous gases into the air (BankTrack, 2018).

Despite the improvements these projects promise to bring, the impacts they will bring are only incremental and not sufficient to contribute to a sub-2-degree pathway which requires the oil and gas sector to move away from fossil fuel-related energy production and invest in clean energy instead (Whiley, 2017a). For this reason, Repsol's controversial green bond is excluded from the CBI database. Furthermore, the bond is excluded from three green bond indices, namely Bloomberg Barclays MSCI, S&P DJI, and Solactive (Environmental Finance, 2017). On the other hand, regarding the GDF Suez case, CBI has concluded that it is a run-of-river project (no reservoir) after close examinations and also the only large hydro project under the Clean Development Mechanism (Boulle, 2014). Initially, the CBI had their concerns (Boulle, 2014), like many other actors in the green bond market. However, they have included this bond in their green bond database

These investments are believed to be strategic parts of the infrastructure for these companies, unfortunately, they have devastating impacts on the environment (Brightwell, 2016). Using green bond proceeds specifically for the railway project to support strategic coal infrastructure or to make fossil fuel production efficient in this way is inappropriate (Aitken, 2016). Several other institutions have raised concerns, for example the project is facing fierce opposition from a section of activists and experts who said that the plant will bring disaster to the fragile mangroves, and as a result a UN expert has called on the Bangladesh government to halt accelerating industrialization of the Sundarbans (Ghosh, 2018). For the case of GDF Suez, according to Canfin (2016), NGOs have levied a charge against the €2.5 billion bond issued by GDF Suez due to a risk of greenwashing. Moreover, according to Conor (2015), GDF has declined to discuss claims, saying in a written statement that they intend to be more transparent in the next quarter to increase cleaner energy production.

6 Discussion and Analysis

The first part of this chapter relates to the first research question, involving a discussion of the nature of standards in the green bond markets. This section further entails a description of how the green criteria is determined. This is followed by a discussion of how the standards have influenced the use of proceeds from the three controversial cases. The second section relates to the second research question, which involves the discussion of the gaps identified in the interviews and literature review, and how the green bond standards could be further improved.

6.1 How do the current standards and regulations influence the use of proceeds obtained from the issuance of green bonds?

The nature of the green bond standards provides limited clarity for issuers and they serve as a voluntary guideline. The contents of the standards lack a well-articulated description of the green criteria and categories of green projects. This has affected the way green projects are selected and how to identify green criteria. The limited prescription of the standards has led to issuers using several other guidelines when issuing green bonds, which can be observed from the issuers' variability in the development of green criteria. Apart from the commonly used GBPs, green criteria are also determined by different standards such as Social Bond Principles, Sustainable Bond Principles, UN SDGs, BREEAM, energy performance and energy efficiency, valid performance certificate, etc. Distinctly, there is no uniform standard used in determining the criteria for a green asset. This could cause confusion and even other related risks such as greenwashing. It is not ideal that an instrument with the sole purpose of climate change does not follow any uniform or well-established standard or regulation. This could enable the use of the green bond market as a platform for issuers who just want to use it as a form of CSR to make their companies look sustainable, thereby undermining the legitimacy of the market.

When issuing green bonds, there seem to be very similar processes followed by many of the issuers, which begins with the formulation of the framework based on the GBPs with the help of the investment banks (underwriters), which is followed by an external review from independent third parties. Some issuers also communicate information relating to their green bonds to the potential investors in road shows, investor meetings, and other similar activities, which can be seen as a way to convey their corporate social responsibility (CSR) and

environmental commitment. As suggested by Brammer et al. (2012) regarding the institutional theory, the CSR activities should be framed by the governance modes, such as rules and regulations. Therefore, the green bond market should also be properly regulated by governance modes such as state regulations or market regulatory bodies to truly reflect environmental benefits. There are a few issuing firms that target specific investors with a sustainability mandate which are those who focus on ESG criteria, and expect the issuers to have a good ESG performance. As reflected by the stakeholder theory, stakeholders such as investors with a green mandate who are interested in sustainable investments and environmentally friendly projects will influence the issuers' green practices (Tang & Zhang, 2018). Likewise, some green bond investors are keener to partner with highly sustainable issuers, as a result, they have established the criteria for their green bond investment. This is highly evident in the case of Alecta. Alecta can be considered as a stakeholder who are highly interested in the issuers' sustainability activities, and therefore the firm is an ESG focused investor, which, in the context of green bonds, a strong focus is put on the environmental aspect. This can be further be reflected with the stakeholder theory, in which green bonds are seen as a financial instrument for satisfying the sustainability appetite of investors, particularly those with a green or ESG mandate. In respect to disclosure of information about green bonds, it is highly dependent on the parties involved in the transaction, as the standards do not give any clear requirement as what is to be disclosed during the issuance process. Consequently, there is a potential risk of information asymmetry and related problems of adverse selection and moral hazard, as investors are unable to determine the real projects to be financed by the green bond proceeds and verify the sustainability quality of the green bonds they invest in. This could consequently result in green bonds being used by issuers as a tool for greenwashing.

The divided opinions of the actors on how the current standards affect the use of proceeds clearly show how fractured the standards in the green bond market are. From our observation, we believe issuers have limited knowledge of the standards and mainly rely on the investment banks in this aspect. The majority of the issuers believe that the current standards do not affect how the proceeds obtained from their green bonds are allocated. The GBPs are rather used as a guideline in constructing the green bond framework than in utilizing the proceeds. It will be interesting if issuers used GBPs for structuring the framework and CBI taxonomy for guiding the use of proceeds, hence this would provide more clarity until proper standards are implemented. This is because the GBPs are not detailed enough to help issuers in their drive for transparency. To ensure that the proceeds contribute to sustainability, actors rely heavily on

the impact reports and external verification. However, the impact report is the last result, as it presents what is already done and provides limited evidence of whether the proceeds are used properly. Therefore, the hard work should lie in determining the green criteria and the allocation of the proceeds.

Current standards, particularly the GBPs, do not provide detailed areas that should be excluded or not regarded as green and do not provide a clear description of the categories of eligible projects. On the other hand, the taxonomy by CBI excludes the projects related to fossil fuel efficiency. In the case of Repsol, the green bond is focused on the reduction of GHG emissions. However, based on the taxonomy by CBI (2019d), anything that helps to extend the life of fossil fuel usage needs to be excluded from its database and thus should not be regarded as green. Therefore, since Repsol is an energy-intensive company and GBPs do not provide the much-needed clarity on the eligible projects, Repsol could have further followed the criteria stated by the CBI to ensure that the proceeds are used only for projects that fall under the green criteria. Similar to the Repsol case, GDF Suez's green bond proceeds are intended to be used for energy efficiency solutions. The taxonomy by CBI (2019) states that energy efficiency measures for any type of GHG-intensive power source are excluded from the green criteria. On the other hand, the GBPs have no clear description of this category and only recommend the issuers to seek expert advice. Therefore, GDF Suez should have referred to other standards and eligibility criteria such as those of the CBI, to determine if the Jirau Dam has met positive climate conditions. This could have saved them from suspicions of greenwashing, and more importantly, helped to avoid the devastating environmental impact caused by the dam. Regarding the third controversial case, EXIM Bank of India promised to use the net proceeds from the sale of their green bonds to fund eligible green projects related to transportation in Bangladesh and Sri Lanka. Under the GBPs, the category of clean transportation includes rail, electric, hybrid, etc., but no further description or criteria is stated, and thus letting the bank determine by themselves what constitutes a green railway project. However, the CBI has excluded rail relating to fully dedicated rail lines, rolling stock or related infrastructure for transporting coal, and oil or other fossil fuels. Accordingly, CBS would have served as an appropriate criterion for EXIM Bank to select the projects that should be financed by the proceeds from the green bonds.

The regulative pillar of the institutional theory suggests for the regulatory process to involve the capacity to formulate rules, verify compliance, and when necessary, to manipulate sanctions, rewards or punishments to influence future behaviors (Scott, 2008b). Therefore, three

companies in the controversial cases could have used the proceeds in a better way by following proper regulations and the green criteria of the projects could have been verified for compliance. This can only be done if there is a proper regulatory institution. On that account, it could be concluded that the use of green bond proceeds by these companies is not entirely influenced by the standards. Moreover, if the criteria by CBI were followed, the proceeds of the green bonds would not have been eligible for use under the controversial projects but would rather be directed towards projects with positive environmental impact. Otherwise, the non-green projects funded by these controversial green bonds could have been funded with conventional bonds instead. This could avoid the controversies and the public's suspicion of greenwashing. Distinctly, these controversial bonds are one of the reasons why there is an urgent need for proper regulation and uniform standards. Bonds with a high degree of controversy on the use of proceeds can undermine the legitimacy of the green bond market, thus an appropriate standard should be established to properly regulate the market and prevent this kind of situation from happening in the future.

6.2 What are the gaps in the existing green bond standards and how can the standards be improved to facilitate the development of the green bond market?

The challenges highlighted by the interviewees and the problems discussed in the literature review have enabled us to identify major gaps in the green bond standards, which relate to the lack of proper definition, lack of harmonization, the non-regulatory or voluntary nature of the standard, etc.

Based on the interview findings, the greenwashing risk is recognized by all respondents. As reflected in the legitimacy theory, lack of legitimacy could lead to the destruction of the social contract. Similarly, the consequences of greenwashing are not detrimental to one party but the entire market. Currently, based on the GBPs, external review is voluntary, meaning that the issuers are not obligated to have their green bonds reviewed by external parties. However, CBI (2014), highlighted that external review provides legitimacy in the green bond market. In case that the issuers do not have their green bonds verified by the third party, it will then be difficult for investors to assess the greenness of the bonds, including how the proceeds are used, which could result in information asymmetry. Consequently, there is a potential that investors may be

exposed to greenwashed bonds i.e. invest in the green bonds that are not green as claimed by issuers, which can be explained by the concept of adverse selection and moral hazard. Therefore, we believe that the risk of so-called greenwashing can be overcome by making the external review a mandatory requirement. Moreover, as mentioned in the previous literature, the lack of harmonized green bond standards is the major factor triggering greenwashing cases, hence it is evident that there is a need for improved green bond standards to ensure that proceeds are contributed to green projects. This would also help to mitigate the greenwashing issues and promote transparency in the green bond market.

Obtaining the external reviews from third parties such as the darkest shade of green from CICERO seems to be highly relevant to all the actors. This indicates that issuers need to show compliance with the green criteria by getting a certification from independent external reviewers. Similarly, the legitimacy theory proposes that firms seek to ensure that they comply with norms of the societies, for organizational activities to be seen as legitimate (Deegan, 2009; Tavares & Dias, 2018). Therefore, in relation to the legitimacy theory, for the issuing firms to appear legitimate to the public and the investors, they should obtain external reviews on their green bonds to assure the investors that the proceeds are used only for green projects. The issuers' legitimacy is seen as vital for the investors' decisions to invest in green bonds. Moreover, some of the green bond issuers perceive enhanced transparency as an advantage provided by external reviews, which is the same objective as what the GBPs expect the issuers to achieve. Therefore, to increase the transparency and legitimacy of green bonds and reduce the risk that the proceeds will be used to finance projects that are not green. Therefore, it is recommended that the standard should include an external review as a mandatory requirement.

Furthermore, since a major gap in the standards is the lack of harmonization in impact reports provided by different issuers, resulting in the investors' difficulty in comparing green bond investments. We believe that this is due to the absence of uniform impact reporting practices which the issuers can commonly follow to report the environmental impact of green bonds. Moreover, the variability of the standards poses a challenge for investors to invest in green bonds in other parts of the world, for example China. The difference in the green scale, for instance between China and Europe, makes it difficult for investors to determine the greenness of green bonds, therefore limiting investment choice to some geographical areas. Therefore, the standardization in the green definition and reporting would make it easier for investors to make a comparison between the bonds and evaluate the green impact of their investments. Based on our analysis, there is a need for a globally accepted standard detailing what types of projects

qualify to be financed by the green bond proceeds, specific criteria to evaluate the greenness of green bonds, and a common reporting process. This would fill the gaps that are currently evident in the green bond standards.

7 Conclusion

This chapter reflects the conclusion of our study and provides policy recommendations. This is followed by theoretical and practical contributions, as well as suggestions for future research.

7.1 Conclusion of Findings

As a consequence of climate change, countries and supranational have come together to establish foundations to address climate and other environmental changes. This has led to a need to align sustainable development to the financial market.

Green bonds are issued to raise the funds for environmentally friendly projects, which relate to the environmental component in the ESG factors. It can also be adopted by the issuing companies as a CSR practice to promote their sustainability commitment. The market has grown exponentially since the issuance by the European Investment Bank in 2007 and the World Bank in 2008. However, the market is self-regulated and there is still no proper definition of 'green'. Furthermore, the gaps in standards and the lack of regulation continues to impact the potential of proceeds to contribute to sustainability. The literature review, the interviews, and the controversial cases have provided evidence that the green bond standards do not entirely affect how proceeds from green bonds are used. This is due to the lack of proper description of each category of green projects and the non-binding nature of the standards. Issuers rely on several other guidelines rather than a single standard to guide how they use the proceeds. However, the GBPs are followed to a great extent in establishing the issuing companies' green bond frameworks before the issuance of green bonds.

To fill the gaps in the current standards and improve the regulations, for green bond market development, actions need to be geared towards precisely defining the green criteria for what qualifies as a green project. Specifically, the standard needs to be enhanced by clearly defining each category of green projects and providing the proper description of the types of projects that should be excluded or not considered as green. Furthermore, the examples of eligible projects should be listed and the thorough explanation of what qualifies the projects to be excluded should be given. To conclude, green bond standards need to be fully standardized and highly regulated to promote confidence and enhance legitimacy in the green bond market.

7.2 Policy Recommendation

This research has identified several gaps in the green bonds standards such as the lack of proper definition of green criteria, lack of harmonization of the standards and reporting, the non-regulatory or voluntary nature of the standards, etc. Firstly, to ensure legitimacy and further strengthen the green bond market, current standards should be properly regulated by a state regulation or international regulatory body. Currently, one of the gaps is that external review is voluntary. Going forward, this should be a mandatory requirement for all green bond issuers. Secondly, external reviewers should also be regulated by a proper regulatory agency. Thirdly, a common standard should be established and thoroughly understood by every party and issuers need to meet this before obtaining certification. Finally, a proper and detailed taxonomy should be established together by ICMA and CBI, and an approval process should be put in place. This will ensure that standards are followed in order to obtain approval and therefore increase the issuer's alignment with the green criteria.

7.3 Theoretical Contribution

This paper contributes to a greater understanding of the environmental and social theories of CRS in relation to the green bonds. It contributes to understanding of how green bonds can be regarded as a form of CSR practice that enables the issuers to enhancing their sustainability image, while satisfying the sustainability appetite of the investors with a focus on ESG. This thesis further contributes theoretically by providing evidence that the issuer's legitimacy is important for the investor's decision to invest in green bonds. Additionally, three controversial cases regarding the use of green bond proceeds help to demonstrate the existence of the theory of information asymmetry and greenwashing.

7.4 Practical Contribution

In addition to the theoretical contribution, this study also contributes to the understanding of how the current standards influence how the green bond proceeds are used. It will contribute to the limited literature on green bonds and a thorough understanding of the varying green bond issuance process. The findings obtained from the issuers, investors, and underwriters would also contribute to the future improvement of the green bond standards in order to enhance the green bond market growth.

7.5 Research Limitations

The limitation for the implementation of our research is the geographical focus. Since our research only focuses on interviewing the participants from the companies in Sweden, this might limit the generalization of the findings to only a small segment of the global green bond market. Additionally, there is a very limited number of academic journal articles about green bonds and the related standards. This leads to the reliance on non-academic sources to a certain extent, which might affect the academic depth of this paper.

7.6 Suggestions for Further Research

As our thesis only focuses the perspectives of the issuers, investors, and underwriters. Perspectives of the regulators or standard setters are not incorporated. Therefore, further research should focus on the findings from the regulators or policymakers in order to better understand their views of the green bond standards. Additionally, because the green bond market is expanding globally, we believe that it would be interesting for further research to be extended to a vast variety of stakeholders, especially in the major issuing countries. Lastly, since some of the respondents point out an important issue regarding a new green bond standard that is currently developed by the EU, it would be ideal if further research could explore how this new standard would potentially influence the use of green bonds proceeds and how it would impact different types of stakeholders in the overall green bond market.

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Appendix A: Interview Guideline for Issuers

Categories	Questions
General	<ol style="list-style-type: none"> 1. What is your role in the green bond market? 2. How does your strategic goal relate to the nature of green bonds? 3. What are some of the vital processes you take in issuing a green bond? 4. Do you face any problems or challenges related to the issuance of green bonds? Do you incur any additional costs? 5. How do you determine or regard a bond as green? 6. What are the criteria in selecting the projects to be funded by green bond proceeds? 7. What are the necessary procedures do you follow to ensure that the proceeds from green bonds are contributed to green projects? 8. How do you perceive the risk of greenwashing?
Information & Disclosure	<ol style="list-style-type: none"> 9. Do you provide any information about green bonds to the investors or the public before the issuance? What is included? 10. How do you report the use of green bond proceeds? 11. Do you disclose the environmental impact of green bonds in your report? How?
Framework & Regulations	<ol style="list-style-type: none"> 12. What are the processes in designing your Green Bond framework? 13. Do the disclosure requirements affect the way the green bond proceeds are used? How? 14. Do you have any external review on your green bonds? What is it? 15. Do you think the external review is important? Why? 16. To what extent do you think the current Green Bonds Principles (GBPs) can help to guide the allocation of funds from green bonds? 17. How do you think the Green Bonds Principles (GBPs) provide transparency to the investors? 18. Is there a need for internationally accepted/uniform green bond standard?
Future of green bonds	<ol style="list-style-type: none"> 19. Is green bond a hope for sustainability? 20. Do you have any other remarks or ideas regarding the green bond market? What could be improved?

Appendix B: Interview Guideline for Investors

Categories	Questions
General	<ol style="list-style-type: none"> 1. What is your role in the green bond market? 2. How does your strategic goal relate to your investment in green bonds? 3. What are the vital processes you perform before investing in a green bond? 4. How do you determine the greenness of green bonds? 5. Do you assess the sustainability profile of a green bond issuer? Why and how? 6. In what ways do you benefit from investing in green bonds? 7. Do you face any problems or challenges regarding green bond investment? 8. How can you ensure that your investment in green bonds will be used to finance the green projects? 9. Do you incur any additional costs for tracking your investment in green bonds? 10. How do you perceive the risk of greenwashing?
Information & Disclosure	<ol style="list-style-type: none"> 11. What information do you consider before deciding to invest in green bonds? 12. Do you have access to the issuer's information about green bonds prior to the issuance? What is it? And to what extent is the information beneficial to you? 13. What information do you find useful for monitoring the issuer's use and management of green bond proceeds? 14. Do you track the environmental impact of green bonds you invest in? How?
Framework & Regulations	<ol style="list-style-type: none"> 15. Does the issuer's Green Bond Framework influence your investment decision? How? 16. Does the Green Bond Framework help you to evaluate how the issuers manage green bonds? How? 17. Is the external review related to green bonds important to you? How? 18. Do you think there is a need for internationally accepted/uniform green bond standard?
Future of green bonds	<ol style="list-style-type: none"> 19. Is green bond a hope for sustainability? 20. Do you have any other remarks or ideas regarding the green bond market? What could be improved?

Appendix C: Interview Guideline for Underwriters

Categories	Questions
General	<ol style="list-style-type: none"> 1. What is your role in the green bond market? 2. How does your strategic goal relate to the service you provide with regards to green bonds? 3. What are vital processes you take when facilitating the issuance of green bonds? 4. Do you face any problems or challenges related to green bonds transactions? 5. How do you determine or regard a bond as green? 6. Do you assist or advise the issuers in selecting the projects to be funded by green bond proceeds? How? 7. Do you perform any or necessary procedures to ensure that the proceeds from green bonds are contributed to green projects? 8. Why do you think investors still want to invest in green bonds, even though there could be risk of greenwashing?
Information & Disclosure	<ol style="list-style-type: none"> 9. Do you provide any information about green bonds to the investors before the issuance? What is included? 10. Do you have a specific group of investors that you contact when a green bond is initiated? 11. Do you give any form of advice to the issuers regarding the disclosure of green bonds?
Framework & Regulations	<ol style="list-style-type: none"> 12. Do you advise or help the issuers in designing their Green Bond framework? 13. Do the disclosure requirements affect the way green bond proceeds are used? How? 14. Do you think the external review is important? Why? 15. To what extent do you think the current Green Bonds Principles (GBPs) help to guide the allocation of funds from green bonds? 16. How do you think the Green Bonds Principles (GBPs) provide transparency to the investors? 17. Is there a need for internationally accepted/uniform green bond standard?
Future of green bonds	<ol style="list-style-type: none"> 18. Is green bond a hope for sustainability? 19. Do you have any other remarks or ideas regarding the green bond market? What could be improved?

Appendix D: Interview Respondents

Respondent	Position	Company	Role in the green bond market	Means of communication	Date & Duration
1. Anna Denell	Head of Sustainability	Vasakronan	Issuer	Telephone	03/05/2019 23 minutes
2. Henrik Molin	Chief Financial Officer (CFO)	Vacse	Issuer	Telephone	06/5/2019 33 minutes
3. Fredrik Jönsson	Head of Treasury	SBAB Bank	Issuer	Telephone	08/05/2019 23 minutes
4. Anders Jakobsson	Head of Group Finance	Sveaskog	Issuer	Telephone	08/05/2019 34 minutes
5. Malin Svedberg	Executive Assistant	Landshypotek Bank	Issuer	Telephone	10/05/2019 42 minutes
6. Albert Olofsson	Financial Controller	Atrium Ljungberg	Issuer	Telephone	15/05/2019 22 minutes
7. Anonymous	Investment Banker	-	Underwriter	Telephone	02/05/2019 24 minutes
8. Ebba Hytting	Investment Banker - Debt Capital Markets: Green, Social & Sustainability Bonds	Swedbank	Underwriter	Telephone	10/05/2019 37 minutes
9. Carina Silberg	Head of Sustainability	Alecta	Investor	Telephone	10/05/2019 29 minutes
10. Joakim Blomqvist	Senior Portfolio Manager	AP3	Investor	Telephone	20/05/2019 26 minutes