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Unveiling the Green Bond & Sustainability-linked Bond Mystique

A Dive into Market Dynamics and Investor Psyche

by

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Abstract

Sustainable finance plays a crucial role in driving sustainable development forward, and as the market grows more accustomed to ESG measures and targets, novel debt instruments have been emerging as a result. Green bonds and sustainability-linked bonds are two financial instruments that play an important role in supporting sustainable development. In this study, these two bond types are examined to gain insights and knowledge about the underlying reasons for the significant preference for green bonds over sustainability-linked bonds in the market. In order to explore this market outcome, semi-structured interviews were conducted with four cases; issuers, underwriters, investors and second-party opinion providers from various established Swedish companies. Behavioral economics and signaling theory was used as theoretical lenses to further understand the perspectives of the participants, exploring the nuances of how different factors impact their preferences and behaviors in the market for sustainable finance.

The study's key findings suggest that market maturity, risk aversion, signaling incentives, cognitive biases, societal factors, bounded rationality as well as more standardized frameworks work in favor of green bonds in the market. However, the flexible nature of sustainability-linked bonds allow certain companies in hard-to-abate industries as well as companies lacking the assets and/or operations for green project investments, the opportunity to engage in the transition towards a more sustainable market.

Keywords: Green bonds, Sustainability-linked bonds (SLBs), Sustainable Finance, Behavioral Economics, Prospect Theory, Signaling Theory, Transitioning

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1. Introduction

In recent years, the global financial landscape has witnessed a profound shift towards sustainable investing and environmental responsibility. As the urgency of addressing climate change becomes increasingly apparent, investors, issuers and regulators are exploring innovative financial instruments to mobilize capital towards sustainably beneficial projects and initiatives. With the increasing awareness for sustainable development, and more specifically, sustainable finance, different categories of bonds have emerged with the aim of aligning financial activities with sustainable development goals, such as GSS+ bonds (CBI, 2023). The GSS+ category of bonds comprises green bonds, social bonds, transition bonds, sustainability bonds and sustainability-linked bonds (SLBs) (CBI, 2023). Among these instruments, green bonds and SLBs have emerged as prominent tools for financing sustainable projects and aligning capital with environmental objectives.

Bracking et al. (2023) underline the elevated growth of the market for sustainable finance in 2020 and 2021. This was enabled due to a combination of repeated quantitative easing, low interest rates and reduced yields in conventional bonds, ultimately increasing the investment opportunities involved with sustainable finance by investors seeking higher returns or alternative investment opportunities (Bracking et al. 2023). Moreover, legal frameworks at both national and international levels are progressively incorporating sustainability measures, particularly in alignment with the collective climate objectives outlined in the Sustainable Development Goals (SDGs) (Berrada et al. 2022). Such transformations will influence the use of financial securities, arguing for the importance of green bonds and SLBs.

Differences in preferences for these two types of sustainable bonds in financial markets are apparent, where green bonds have shown to be consistently more common than SLBs, despite the, oftentimes, similar objective of the two financial instruments (CBI, 2022). With a market value of 76 billion dollars in 2022, SLBs represent only a fraction of the total 859 billion dollar

GSS+ market (CBI, 2022). However, several scholars argue that SLBs are more efficient and have a greater potential to promote issuers in their transition towards becoming carbon neutral compared to green bonds (Affolter et al. 2024; Bracking et al. 2023; Haq & Doumbia, 2022; Vulturius et al. 2022). Despite this, green bonds remain the preferred bond option, suggesting that further investigation into the underlying preferences for both types of bonds is essential.

1.1 Background

According to the Green Bond Principles (2021), a green bond is a debt security instrument that appropriates its entire profit to finance or refinance new and/or existing green projects. Green bonds are similar to conventional bonds as they are seen to finance various aspects of an issuer's operations, but unlike conventional bonds, funds raised from green bonds will be allocated specifically towards financing environmentally beneficial projects or assets (Maltais & Nykvist, 2020). Typically issued by governments, municipalities, corporations, or financial institutions, green bonds provide issuers with a transparent mechanism to allocate capital towards projects such as renewable energy infrastructure, energy efficiency improvements and climate adaptation initiatives (Flammer, 2021). In this study, however, the focus will be on corporations and their issuance.

The market for green bonds has experienced significant growth in recent years, with issuance reaching record levels as investors increasingly prioritize environmental, social and governance (ESG) considerations in their investment decisions (Flammer, 2021). Since the first issue, the global green bond market has grown from 36 billion USD issued in 2014 to 487 billion USD issued in 2022 (Statista, 2023), showing the rapid increase of green bonds as fixed-income securities. Yet, green bond issuance as a percentage of total bond issuance by all issuers in the EU reached only 9 percent in 2022 (European Environment Agency, 2023), indicating the, still, fairly small size but rapid development of the green bond market.

On the other hand, SLBs represent a newer form of sustainable finance, where the bond's terms and conditions are linked to the issuer's sustainability performance targets rather than being tied to specific project proceeds (Berrada et al. 2022; ICMA, 2023). These bonds aim to incentivize issuers to improve their sustainability practices and outcomes over time, with financial penalties or rewards tied to predefined sustainability targets. SLBs offer flexibility compared to green bonds, as they allow issuers to use proceeds for general corporate purposes while still aligning their financing with sustainability objectives (Berrada et al. 2022). Being first issued in 2019, SLBs are relatively novel in the area of sustainable finance, specifically compared to green bonds (Vulturius et al. 2022).

The characteristics of the SLB vary depending on the issuer's ability to meet certain ESG-related Key Performance Indicators (KPIs) and objectives within a predetermined time frame (ICMA, 2023). The funds generated may be used for any purpose of the issuer's choice given that the KPIs are met within the time frame (ICMA, 2023). Furthermore, SLBs are accessible to a wider array of issuers than green or social bonds as they do not require heavy investments and capital expenditure in green facilities such as renewable energy, green and sustainable buildings and utilities (Murphy, 2022). Additionally, this borrowing instrument can be utilized by both private and public sectors to raise capital (Filewood & Padin-Dujon, 2023).

SLBs are emerging as a considerable sustainable capital financing instrument, shown by its rapid increase in only a few years (CBI, 2022). Some argue that the rapid growth and differentiation from other sustainable bond options, such as green bonds, could enhance the success of SLBs and their effectiveness to signal sustainability, ultimately impacting investors' and issuers' preferences into choosing SLBs over conventional bonds (Affolter et al. 2024).

1.2 Problematization

As the market for sustainable finance continues to evolve, there is a growing interest in understanding the distinct characteristics, benefits and challenges associated with green bonds and SLBs. Furthermore, as bonds are priced partially based on their associated risks (Vipond, 2024), there should, in theory, be no clear market winner, as risk-to-return ratios of various bonds should be equal. Equal such ratios, but a significant disparity in market value suggests that other factors might be influencing the discrepancy in investor preferences. With this study, we therefore aim to provide valuable insights into issuer and investor behavior and market dynamics within sustainable finance. Factors such as regulatory differences, sustainable development and investor awareness could be possible explanations for differences in investor and issuer preferences will be explored. In addition, these factors might derive from psychological and societal factors impacting the behavior and decision making of actors engaging in the bond transaction process. In addition to addressing the practical problem, consideration is further given to the underlying theoretical aspects in understanding the much greater popularity of green bonds over SLBs.

We aim to uncover the greater popularity of green bonds over SLBs by conducting several semi-structured interviews with different actors that are involved in the bond transaction process in order to investigate how differing preferences might impact players on different levels of the transaction. This includes conducting interviews with issuers, underwriters, investors and an SPO-provider working with both green and SLBs across various companies. These cases allow for a broad and nuanced understanding of the fundamentals behind and attractiveness of such bonds from several perspectives.

1.3 Research Purpose

This study seeks to clarify the relative advantages and limitations of green bonds and SLBs, offering valuable insights for issuers, underwriters, investors, SPO-providers and policymakers in the sustainable finance environment. By doing so, the study seeks to contribute to the existing knowledge base and share these findings with the community interested in bonds and sustainable financial practices. Furthermore, this thesis aims to explore the behavioral mechanisms behind market dynamics favoring green bonds over SLBs, as well as to offer knowledge regarding sustainability incentives through signaling mechanisms.

Our anticipated contribution with this study was made clear when talking to a Sustainable Finance Specialist at a large, Swedish bank. She emphasized that the bank is observing a clear preference for green bonds over SLBs, which from the bank's point of view, is intriguing due to the flexibility and accessibility that SLBs can offer. The bank provoked thoughts regarding why such differences in preferences are observed. This paper therefore aims to shed light on the underlying factors, structural features and market dynamics driving issuer and investor preferences and informing future decision-making in sustainable finance. Moreover, as the bond market is a global concept and not only relevant for a single country, the findings from this study are interesting in an international context.

The novelness and rapid growth of these fixed-income securities in corporate finance indicate that the market for sustainable finance is still forming, thus, the literature on our chosen topic is relatively sparse and insufficient. To date, there appears to be limited comprehensive research conducted on issuer and investor preferences and comparisons between these two debt instruments, underscoring the importance and relevance of this study. Therefore, the research question guiding this study is as follows:

What factors contribute to the greater popularity of green bonds compared to sustainability-linked bonds in the financial market, and how do these factors influence investor preferences and issuers' choices in sustainable financing instruments?

1.4 Outline of the Thesis

This thesis comprises seven chapters, where the first chapter serves as an introduction to the subject of the thesis, describing the core problems and the research objectives. The second chapter delves into an examination of existing literature, providing a comprehensive review of prior expertise relevant to the subject. In chapter three, theoretical perspectives are introduced to help understand the themes that emerged from the findings. In the fourth chapter, the reasons behind the choice of methodology will be presented, alongside a discussion of the research quality and inherent limitations of the thesis. In the fifth chapter, the findings gathered from interviews conducted with actors from different cases will be presented, offering a nuanced understanding of their perspectives on the subject. Furthermore, in chapter six, a detailed discussion of the data derived from interviews will be presented, drawing connections between emergent themes, existing literature and theory. Lastly, chapter seven serves as the culmination of the thesis, reflecting upon the attained objectives, summarizing key findings, discussing the implications and proposing avenues for future research. Through this structured approach, the thesis aims to provide a thorough exploration of the subject, grounded in both theoretical insights and empirical evidence.

2. Literature Review

The following section of the thesis presents previous literature that is of relevance to the subject matter, building upon the problematization outlined previously. By providing insights into the field of sustainable finance, this chapter explores the structure and presence of green bonds and SLBs.

2.1 Sustainable Finance

According to Cunha et al. (2021), the term sustainable finance refers to financial activities, investments and practices that support economic development while simultaneously promoting positive social and environmental impacts through these activities. Although a universally agreed upon definition for the wide range of activities encompassed within sustainable finance is lacking (Singhania et al. 2023), Ziolo et al. (2020) defines it in a general manner; financing that takes ESG factors into consideration when conducting financial decision-making. The European Commission (2022) proposes that sustainable finance involves financing what is already environmentally-friendly, as well as financing what is transitioning towards becoming environmentally-friendly over time. In other words, financing projects with known environmental benefits and financing the ones that tie the issuer's financial performance to broader sustainability objectives, incentivizing them to improve their environmental performance over time.

Sustainable finance has emerged as a crucial tool for influencing behavioral change. Due to its pivotal role in realizing sustainable development objectives, sustainable finance enables the allocation of financial resources towards initiatives that support sustainability goals (Chang et al. 2017; Joshipura et al. 2024; Ziolo et al. 2020). Moreover, it plays a leading role in allocating

investment to sustainable corporations and projects, thus accelerating the transition to a low-carbon dependent and circular economy (Chang et al. 2017; Joshipura et al. 2024).

Sustainable finance has become considerably attractive due to its potential to offer affordable capital, mitigate climate and regulatory risks as well as foster enduring value creation (Joshipura et al. 2024). However, the literature on sustainable financing lacks cohesion as it continues to evolve, making it difficult to conclude what constitutes the field and what differentiates it from conventional financing (Cunha et al. 2021; Singhania et al. 2023). Sustainable finance is defined differently in each country according to their own taxonomies and due to this, there is no global consensus on a standardized definition of the broad set of activities within sustainable finance (Singhania et al. 2023). In other words, an organization might score high on metrics related to sustainable financial activities based on the taxonomies of one country, while receiving a contrasting assessment in another country.

Critics highlight that solely relying on market dynamics to steer the market towards sustainable development rather than also implementing government-imposed laws and regulations to govern corporate activities may be inefficient (Lumley & Armstrong, 2004). In line with the above statement, the lack of adequate regulation could therefore result in insufficient incentives for the market to penalize companies engaging in unsustainable practices (Chiu et al. 2022; Lumley & Armstrong, 2004). The lack of regulation within sustainable finance could also result in counterproductive practices, as argued by Urban and Wójcik (2019). The authors propose that the sustainable transition in finance primarily involves a taxonomic process aimed at categorizing debt and equity finance that has already been issued and traded on secondary markets, aligning with different interpretations of sustainability to meet investor preferences. This prioritization hinders the approach to actively promote the issuance of new debt and equity finance that aligns with sustainable development goals, posing questions regarding the efficiency of the measures taken towards sustainable development (Urban & Wójcik, 2019).

With inconsistent definitions and a constantly evolving landscape, sustainable finance makes for an interesting field for exploration and knowledge-creation. The dynamic nature of this field requires a continuous examination of the mechanisms and instruments that drive sustainable finance, and hence a deeper examination of green bonds and SLBs will be conducted.

2.2 Green Bonds

As described in the background, green bonds are debt securities specifically allocated to fund projects or assets that have clear environmental benefits (Green Bond Principles, 2021). The following section outlines previous literature on the green bond market, the impact of green bonds on firms and investor preferences.

2.2.1 Development of the Green Bond Market

The European Investment Bank (EIB) first launched the concept of allocating profits from bonds to fund sustainable projects in 2007 by issuing a EUR 600 million Climate Awareness Bond (Deschryver & De Mariz, 2020). The first green bond, however, was issued in 2008 by the World Bank in cooperation with the Swedish Bank SEB, to account for increasing investor preferences for a fixed-income security addressing environmental challenges (World Bank, 2019). The popularity of green bonds as fixed-income securities have increased ever since, with the cumulative value of green bonds issued since 2006 reaching 2.613 billion US dollars in 2023 (CBI, 2023).

Flammer (2021) suggests that the rapid increase in issuance of green bonds could be explained by a heightened societal focus on sustainable development. Consequently, firms and governments issue green bonds to align with societal and investor preferences, signaling their commitment to environmental initiatives. Moreover, Bhutta et al. (2022) acknowledge the

importance of a favorable regulatory environment and that improvements in effectiveness of corporate governance and reporting practices have facilitated the growth of the green bond market, allowing businesses to seek funding for long-term sustainable projects.

On the contrary, others argue that institutional, infrastructural and economic criteria, take precedence over political and social factors in influencing and driving growth in the green bond market (Tolliver et al. 2020; Tu et al. 2020). Barua and Chiesa (2019) argue in similar terms, namely that credit ratings and profitability of firms are factors that positively impact the supply of green bonds in the market, highlighting the intersection between environmental concerns and financial viability in driving the issuance of green bonds.

Taken together, there are several factors that are observed to influence the growth in the green bond market, which Maltais and Nykvist (2020) summarizes using their three factors of motivation for explaining participation in the green bond market; the Financial case, Business case and Legitimacy/Institutionally oriented drivers. The authors put forward that engagement in the green bond market is largely influenced by the benefits gained by business-case incentives, for example to attract specific customers and employees, implementing sustainable practices within the company's operations and signal commitments to sustainable practices to stakeholders, including investors, competitors and regulators.

2.2.2 Green Bond Impact on Firm Performance

Several scholars agree that the issuance of green bonds is associated with various positive outcomes for firms compared to conventional bonds (Flammer, 2021; Tang & Zhang, 2020; Wang et al. 2020; Zhou & Cui, 2019). These scholars recognize the positive response of the stock market and improved firm performance to announcements of green bond issuance, especially in environments that provide financial benefits to issuers. Firms issuing green bonds tend to benefit from a pricing premium, and by committing to green initiatives, they enhance

their CSR rating and their overall long-term performance (Wang et al. 2020). According to Zhou and Cui, (2019) issuing green bonds therefore results in increased profitability and operational efficiency compared to firms that refrain from doing so.

The above statement aligns with the research conducted by Riillo (2017), who highlights a U-shaped relationship between green management and firm performance. The author's findings suggest that companies prioritizing green initiatives experience improved performance as a result of their progressive environmental management practices. Zhang and Du (2020) argue in line with Riillo (2017), highlighting the potential tradeoff between firm performance and green management due to market failures and market mechanisms. To mitigate this tradeoff, Zhang and Du (2020) emphasizes the importance of well-designed policies and regulatory strategies aimed at fostering green environments.

Lastly, the advantages of green bonds are significant for corporate issuers, indicating that green bonds provide financial benefits to issuers and are used as an effective source for promoting environmental sustainability without negatively affecting their financial interests (Gianfrate & Peri, 2019). However, it should be noted that financing green projects through green bonds are risky investments, where Sartzetakis (2019) argues for the reputational risk and size of investment involved in managing green bond issues. In line with this risk surrounding green bond issuance, some markets have been seen to negatively react to the issuance of green bonds, perceived as uncertainty by the market (Lebelle et al. 2020).

2.2.3 Investor Preferences

The success of green bond issuance depends largely on investor preferences, where Flammer (2021) acknowledges that firms are able to signal commitments to long-term sustainable investments through green bond issuance, appealing to investors with a long-term investment perspective who are then more likely to invest in green bond securities. Equivalently, the success

of green bond issuance is connected to the transparency in the use of funds by the issuer, more specifically, how well investors recognize the societal benefits associated with these investments, increasing investor confidence in investing in green bond securities (Martin & Moser, 2016). Agliardi and Agliardi (2019) support the statement above, arguing that increased investor awareness in funding environmentally beneficial projects result in significant increases in green bond investments. Consequently, the cost of borrowing is lowered for issuers of green bonds, making such investments an attractive source for financing sustainable initiatives. Such financial incentives serve both investors and issuers in terms of diversification opportunities (Mathews & Kidney, 2012; Maltais & Nykvist, 2020).

Maltais and Nykvist (2020) recognize that investors can benefit from green bonds since they may offer lower risk, better returns and improved diversification compared to other investments, while issuers can benefit from issuing green bonds since they may reduce their cost of capital and improve access to capital, thereby minimizing capital availability risks. Boermans (2023) adds another layer to this, highlighting the concept of "green bond preferred habitat," where certain investor groups, especially European investors, display a higher demand and lower price elasticity for green bonds than other investors. Understanding investor preferences is therefore important for green bond issuers to attract specific investors who prioritize sustainability over returns.

2.3 Sustainability-linked Bonds

As described in the background, SLBs aim to incentivize issuers to improve their sustainability practices and outcomes over time, with financial penalties or rewards tied to predefined sustainability targets rather than specific green projects. The following part of the literature review highlights the characteristics of the bond, the market development as well as the risk of greenwashing with SLBs.

2.3.1 Characteristics of Sustainability-linked Bonds

The most notable difference between SLBs and other similar financial instruments is that the characteristics of SLBs in terms of, for instance, coupon rates, maturity dates and repayment amounts vary depending on the issuer's ability to meet the set targets (Vulturius et al. 2022). The most common characteristic being subject to change is the coupon rate, which increases as issuers fail to meet Sustainability Performance Targets (SPTs) based on certain KPIs. This setup is called a step-up coupon, meaning that the issuing company must pay a higher interest rate to the bondholders should they fail to meet their targets (Ramel & Michaelsen, 2020). Therefore, the selection of KPIs is crucial for the credibility of SLBs.

According to the Sustainability-linked Bond Principles (2023), the KPIs should be measurable, relevant, externally verifiable and able to be benchmarked, aligning with the issuer's overall sustainability strategy (ICMA, 2023). Historical performance data should be disclosed, and KPIs should be clearly defined, including the scope and calculation methodology. Furthermore, calibration of the SPTs is essential, ensuring they are ambitious and consistent with the issuer's overall sustainability goals (ICMA, 2023). Issuers are to provide regular reporting and seek independent verification on KPI performance to incorporate a second level of surveillance and control (Ansari, 2023). Hence, the SPTs should be met by the issuer's KPIs in order to achieve the more desirable characteristics of the bond (ICMA, 2023).

2.3.2 Market Development

The very first sustainability-linked bond was issued by the Italian utility company Enel back in 2018 (Vulturius et al. 2022). The bond was a $1.5 billion, 5-year bond with a coupon rate of 2.650%. This rate was subject to the company having at least 55% of its installed capacity within renewable energy by 2021 (Crédit Agricole, 2019). If Enel would have missed the SPTs, the coupon rate would have been increased +25 basis points (bps), equivalent to a 0.25% increase,

until the bond matured (Crédit Agricole, 2019). In 2020, only 10 months after Enel's premier issuance, ICMA published its Sustainability-linked Bond Principles (SLBPs), which functioned as a starting point for the rapid acceleration of the market (Nordea, 2022).

Since then, the market has grown to $76 billion in 2022 with 142 different issuers during the same year (CBI, 2022). However, it still only accounts for a minor fragment of the total market for sustainable debt, more specifically around 8.9% (CBI, 2022). Notably, the market for SLBs grew by over 800% from the initial issuance in 2019 to 2021 when the market value hit over $100 billion (De La Orden & De Calonje, 2022). The decline in 2022 can partially be explained by the market turbulence affecting the whole bond market negatively in terms of total value issued (ICE, 2023). With such rapid growth, SLBs are one of the fastest growing financial instruments in the world (Nordea, 2023).

However, with limited precedents and a relatively short track record, understanding the long-term implications, nuances and trends of SLBs remains a challenging task. Stakeholders, such as underwriters, investors, SPO-providers as well as researchers, face difficulties in comprehensively evaluating the impact, risks and opportunities associated with SLBs within the broader context of sustainable finance (Teo & Tang, 2023).

2.3.3 Greenwashing with Sustainability-linked Bonds

Without clearly set ESG-targets and transparency provided by the issuer, investors may perceive the risk of potential greenwashing with SLBs. Furthermore, as opposed to issuers of green bonds, SLB issuers have the option to not deliver on the set KPIs. This, in turn, leads to legitimacy issues for the SLB market as a whole (Ramel & Michaelsen, 2020). The United Nations define greenwashing as the process of "... misleading the public to believe that a company or other entity is doing more to protect the environment than it is" (UN, 2024). According to a study by Kölbel and Lambillon (2022), there is definite potential of greenwashing in this new and

emerging market segment. They found that the average step-up penalty for failing to meet SPTs with SLBs was +26.6 bps, equivalent to a 0.266% increase in interest rate payable. Furthermore, they found, by comparing SLBs and conventional bonds issued by the same issuers, that the average sustainability premium for issuing SLBs rather than conventional bonds was 29.2 bps, implying that the cost of capital is lower when deciding to opt for SLBs (Kölbel & Lambillon, 2022). This suggests that issuers are better off by issuing SLBs even when they fail to meet the set KPI targets, enhancing the risk of greenwashing.

Additionally, a study conducted by Haq and Doumbia (2022) found that issuers of SLBs commonly and strategically set the target dates during the latter half of the bonds' terms to reduce the amount of coupon penalties payable. As shown in Figure 1, issuers of bonds with step-up rather than step-down penalties favor setting the target periods late. Some even placed them during the final 10% of the bonds' terms, suggesting that issuers can minimize financial obligations while still claiming sustainability commitments, which can be perceived as greenwashing (Haq & Doumbia, 2022). The authors further describe another way to exploit the structure of SLBs through the ability to repurchase the outstanding debts and thereby calling them in cases of expected failure to meet the targets. With around 65% of SLBs being callable back in 2021 compared to only 23% of green bonds, significant differences between the instruments are evident (Dias, 2021). This further strengthens the proposition of potential greenwashing in the market for SLBs.

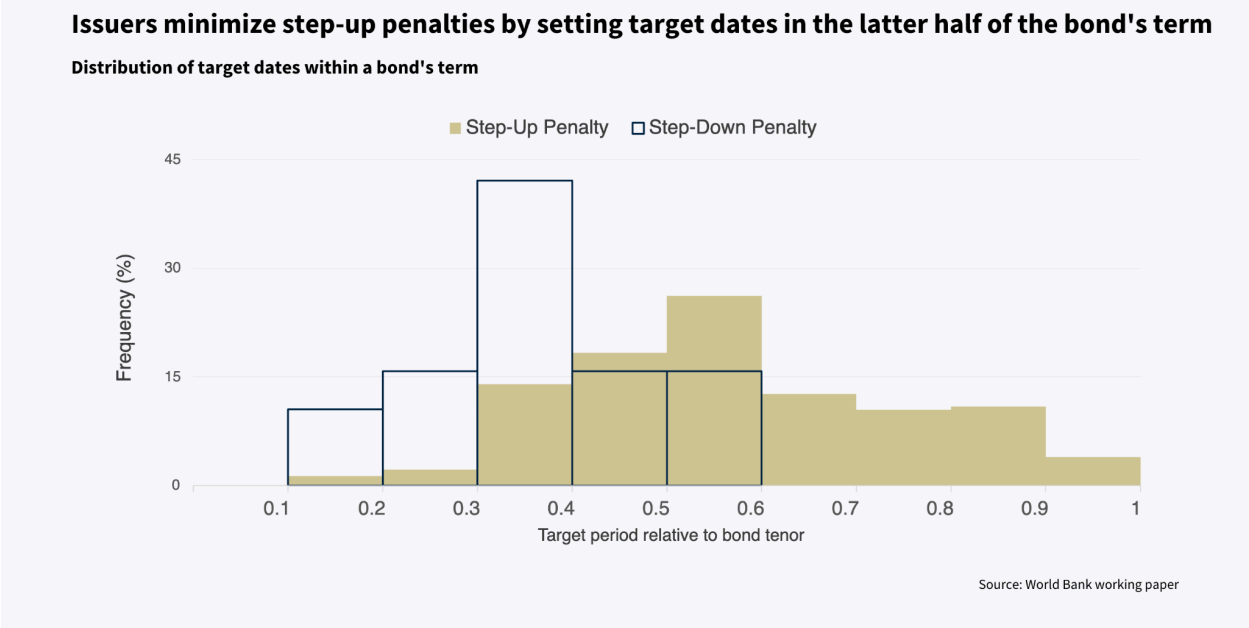

Figure 1: Structural Loopholes in Sustainability-Linked Bonds (adapted from Haq & Doumbia, 2022)

2.4 Comparison of Green Bonds and Sustainability-linked Bonds

The main difference apparent between green bonds and SLBs is the discrepancy in the use of the proceeds generated, where the proceeds from the former must finance a specific, predetermined green project. The green bond is called a *use-of-proceeds* bond, contrasting SLBs where the generated proceeds can be utilized with a high degree of freedom, given that certain SPTs are met within a set time frame (Berrada et al. 2022; Bracking et al. 2023; Kölbel & Lambillon, 2022; Vulturius et al. 2022). Thus, SLBs present a highly flexible approach in funding sustainable development, compared to the more rigid green bonds.

Many argue that the flexible approach in supporting sustainable initiatives offered by SLBs will enhance the success of issuers in terms of ESG metrics, as they have a greater potential to promote issuers in their transition towards becoming carbon neutral compared to green bonds

(Affolter et al. 2024; Bracking et al. 2023; Haq & Doumbia, 2022; Vulturius et al. 2022). Hence, from this perspective, SLBs might be a more effective option in promoting sustainable initiatives (Affolter et al. 2024; Bracking et al. 2023; Vulturius et al. 2022).

On the contrary, several other scholars highlight the popularity and widespread use of green bonds, which remain a more prevalent financial instrument in the market compared to SLBs (Berrada et al. 2022; Deschryver & De Mariz, 2020; Flammer, 2021; Vulturius et al. 2022; Zerbib, 2019). As previously mentioned, the reason that SLBs are less preferred compared to green bonds could be considered a result of the novel nature of SLBs, being first issued as late as 2019 (Vulturius et al. 2022). For instance, SLBs are not included in the standardized GSS category and were added under the new category, GSS+ bonds, in 2020, strengthening the argument of being a novel financing instrument (CBI, 2023). As a result of the novelty, limited empirical evidence and literature are available on SLBs, which complicates the comparison-process between preferences for green bonds and SLBs.

On the other hand, SLBs are still considered as a viable alternative to green bonds in the financial market, especially within certain sectors. SLB issuance is seen to prevail in companies operating in carbon-heavy industries considered as hard-to-abate, comprising industrial, manufacturing and energy companies, while green bond issuance is most prevalent within utilities, real estate and the financial sector (Mohanty & Sarkar, 2024). As argued by Maino (2022), these hard-to-abate industries are principally excluded from the green bond market, considering their emission-intensive operations. As a result, this exclusion hinders companies in such industries from engaging in projects that are fulfilling the requirements of the Green Bond Standards. SLBs can therefore provide an opportunity for hard-to-abate industries to signal sustainability commitments, an opportunity that is not available for such companies in the green bond market (Maino, 2022).

3. Theory

The following section outlines the theoretical frameworks of behavioral economics and signaling theory that will be utilized later in the discussion in order to understand the findings from different theoretical lenses.

3.1 Behavioral Economics

Behavioral economics can be traced back to the 1950s, when economist Harold Johnson first described it in one of his papers (Johnson, 1958). Mullainathan and Thaler (2000, p. 2) describe behavioral economics as " ... the combination of psychology and economics that investigates what happens in markets in which some of the agents display human limitations and complications." It is an interdisciplinary area that combines principles from psychology with traditional economic theory to enhance the understanding of human decision-making processes within economic contexts (Mullainathan & Thaler, 2000; Thaler, 2016).

Hence, integrating psychological insights into economic analysis provides practical benefits by improving our ability to predict real-world outcomes and guiding policy decisions (Chetty, 2015). This integration introduces innovative policy instruments, improves the accuracy of predictions related to current policies and uncovers novel considerations for welfare outcomes, all of which contribute to a deeper understanding of human behavior within economic settings (Chetty, 2015). Using behavioral economics as a theoretical lens in this study allows for an understanding of the human decision-making processes, shedding light on factors influencing human behavior in bond choice, thereby enriching the depth of our analysis.

Prospect theory, developed by Daniel Kahneman and Amos Tversky in 1979, can be observed as an extension of behavioral economics. Prospect theory diverges from expected utility theory by

elucidating how individuals perceive gains and losses asymmetrically, a phenomenon known as loss aversion (Kahneman & Tversky, 1979). For instance, losing $100 may evoke more distress than the joy derived from gaining $200 for some, loss averse individuals. Unlike expected utility theory, which assumes rational decision-making, prospect theory aims to capture real-world human behavior that can present itself in irrational forms (Kahneman & Tversky, 1979).

Finance has been the field where prospect theory has been most actively applied to explain certain behavior of its participants (Barberis, 2013). Research in finance has actively employed the theory in three primary areas: analyzing average returns across various financial assets, understanding the aggregate stock market and studying the trading behavior of financial assets over time (Barberis, 2013). The theory challenges traditional models like the Capital Asset Pricing Model (CAPM) by suggesting that securities with higher skewness in their returns, even if unrelated to the overall market, may be overpriced (Benartzi & Thaler, 1995). Therefore, prospect theory as an extension of behavioral economics can be useful in understanding the variations in bond preferences.

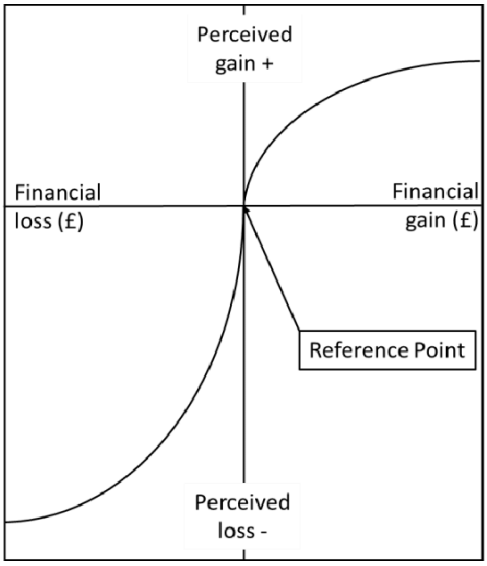

Figure 2: The prospect theory 'S-curve' shows the difference in perceived magnitude of losses and gains (adapted from Kahneman & Tversky 1979)

3.2 Signaling Theory

Signaling theory, originating from the influential work of economist Michael Spence in 1973, focuses on the strategic transmission of private information by individuals or entities to external parties. It entails the study of how individuals communicate information about their attributes or intentions through observable actions or signals (Spence, 1973). Signaling theory explains how parties with different information levels communicate and interpret signals, holding significance across management disciplines like strategic management and human resource management (Connelly et al. 2011). Scholars have integrated signaling theory with economic analysis in order to gain valuable insights into the mechanisms governing decision-making processes and information asymmetry in markets. This combination offers pragmatic advantages by facilitating more precise forecasts of market outcomes and guiding policy interventions aimed at mitigating information imbalances (Connelly et al. 2011).

Moreover, signaling theory introduces innovative perspectives on how individuals navigate social and economic landscapes, thereby providing a nuanced understanding of behavior in fields such as education, employment and consumer choices (Bird & Smith, 2005). Consequently, using signaling theory in our study provides an opportunity to enhance our comprehension of how individuals utilize signals to convey information and make decisions, thereby enriching our analysis of how signaling plays a role in the market for our focus bonds.

4. Method

The method chapter aims to explain and motivate the approach followed in order to gather and analyze the data that is used to answer the presented research question. Firstly, the choice of an inductive research approach with abductive reasoning is presented, followed by a discussion regarding a qualitative multiple-case study research design. Secondly, the data collection method is presented, including discussions on purposeful sampling, case selection, interviewee selection and interview design. Thirdly, the method used for data analysis is described, which highlights a thematic analysis used for the findings from the interviews. The methodology ends by describing the research quality of the collected data, as well as a discussion on potential methodological limitations.

4.1 Research Approach

The research approach is useful for establishing a link between established theoretical concepts and empirical data within the study (Bryman & Bell, 2015). To uncover the underlying reasons for the differences in preferences between green bonds and SLBs, an inductive research approach was used, complemented by the application of abductive reasoning.

4.1.1 Qualitative Research

Qualitative research encompasses a wide range of methods that aim to delve into and explain individuals' experiences, behaviors, interactions, and social contexts (Bryman & Bell, 2015; Fossey et al. 2002). Firstly, as the purpose of this study was to understand the greater preferences for green bonds over SLBs, exploring individual behaviors and preferences was deemed most suitable using a qualitative research approach. Secondly, due to the novelty of SLBs and the

limited amount of research and theory connected to the field, an exploratory approach was necessary.

By emphasizing the viewpoints of participants of this study, qualitative research facilitated a deep understanding of the intricate and varied perspectives, processes and patterns among the participants. Since issuing and investment decisions regarding green bonds and SLBs are made by individuals, the research was most effectively conducted by gathering insights from those with firsthand experience. Due to the factors outlined above, a qualitative research strategy was the best approach to achieve the most promising developments and deep understandings through this study.

4.1.2 Inductive Approach and Abductive Reasoning

With this study, we aimed to observe phenomena that explain different preferences for various bond types, using an inductive approach to derive practical and theoretical implications for these phenomena (Bryman & Bell, 2015). The inductive approach is most appropriate within this study due to the novel nature of sustainable financing in current research, arguing for the importance of theory application in this context. Especially in terms of SLBs, whose recent emergence within the field of sustainable finance calls for clearer definitions, where an inductive approach could provide directions into emerging patterns and theory formation in future research.

Furthermore, abductive reasoning allowed for an iterative approach between theory and data, guiding the explanation of the observed phenomena (Bell et al. 2019). The study made use of existing research on green bonds and SLBs, while aiming at providing new understanding on the underlying preferences between them, a study area where limited research has been conducted. By applying abductive reasoning, the iterative process between data and previous literature on green bonds and SLBs enabled the analysis of the empirical evidence provided from the interviews to facilitate and create theoretical explanations of the data (Shepherd & Suddaby,

2016). Therefore, the use of abductive reasoning is motivated by the importance of established theory as it may offer valuable insights, while also remaining open to exploring other factors, perspectives or patterns for the specific phenomenon being studied that the theory might not adequately address (Bell et al. 2019).

4.2 Research Design

The selection of the research design established the structure for both the research method and the examination of gathered data, with the aim of answering the research question (Bryman & Bell, 2015). Within this section of the paper, the research design is outlined and justification is provided for the chosen methodology.

Multiple-Case Study

When constructing a qualitative study, a common method through which to obtain significant knowledge regarding a certain phenomenon is by performing a case study (Gerring, 2004). One of the primary advantages of case studies is their ability to provide detailed and in-depth insights into complex phenomena or situations (Feagin et al. 2011). Additionally, they facilitate the application of theoretical concepts to practical scenarios, enabling researchers to observe theory in action (Gerring, 2004). Therefore, a case study was used in this paper to examine the underlying preferences for green bonds and SLBs, in line with the factors stated above.

Furthermore, this study integrated multiple cases, namely, issuers, underwriters, investors and an SPO-provider within the designated domain of sustainable finance and, more specifically, the dual bond markets, thereby constituting a multiple-case study. Additionally, the comparative nature of the multiple-case study design allows for the identification of similarities, disparities

and emergent themes (Baxter & Jack, 2008; Bryman & Bell, 2015), thereby contributing to a broader understanding of the bonds' position in the market.

The choice of a multiple-case study is further motivated by the intention to explore various perspectives inherent in the bond transaction process and investment decisions, facilitating a nuanced understanding of the factors influencing preferences and market dynamics (Abdul Kareem et al. 2023). This contributes to the advancement of knowledge in sustainable finance and further guides policymakers, issuers, underwriters, investors, SPO-providers and practitioners in navigating the complexities of the green bond and SLB market landscapes. Since the findings are not limited to one specific case or actor, this allowed for some degree of generalizability (Bryman & Bell, 2015).

4.3 Data Collection Method

The data collection method refers to the specific approach applied to gather data for research purposes (Bryman & Bell, 2015). The choice of data collection method is crucial as it directly influences the research quality of the data acquired (Bryman & Bell, 2015). Moreover, selecting a data collection method is customized to fulfill distinct objectives; therefore, it's crucial to pinpoint a method that corresponds with the research aim (Suri, 2011).

4.3.1 Purposeful Collection

Purposeful sampling regards collecting a sample in a strategic way in which the researcher seeks out key informants who possess relevant understanding of the phenomenon in that particular field (Bryman & Bell, 2015; Suri, 2011).

A purposeful sampling method was chosen for this study due to various reasons. Given the relatively novel nature of the chosen field of study, notably the concept of SLBs, it's imperative that interviewees possess a strong understanding of the subject matter to provide valuable insights. Due to the fact that participants with relevant expertise of SLBs are scarce, a purposeful sampling method ensured the inclusion of a satisfactory number of individuals with sufficient knowledge within the chosen subject. Consequently, the study deliberately encompassed a sample comprising issuers, underwriters, investors, as well as an SPO-provider of green bonds and SLBs, aimed to capture perspectives and insights from the main parties involved in the bond transaction process. Participation from these four cases provided a wider perspective in which to understand the research problem. Finally, with over ten years of experience in the GSS+ market respectively, we argued that the selected participants possess the knowledge and depth of understanding required to provide nuanced perspectives on these complexities.

Following our initial correspondence with a Sustainable Finance Specialist at a large, Swedish bank, we employed a snowball sampling technique, whereby the initial contact facilitated the identification of additional underwriters within a large, Swedish bank, namely Handelsbanken's sustainable finance department. Hence, the primary data collection in this study was gathered through interviews from a purposeful sample. The other case groups, namely the issuers, investors and the SPO-provider, did not follow a snowball sampling approach, as they were contacted directly through a mutual connection.

4.3.2 Case Selection

In order to retrieve information to answer the presented research question, the multiple-case study design required the gathering of cases providing relevant data through semi-structured interviews. As the aim of this study was to investigate the factors that influence both investor preferences and issuers' choices in sustainable financing instruments, interviewing actors from

various parts the bond transaction process influenced our case selection into finding issuers, underwriters, investors and one SPO-provider.

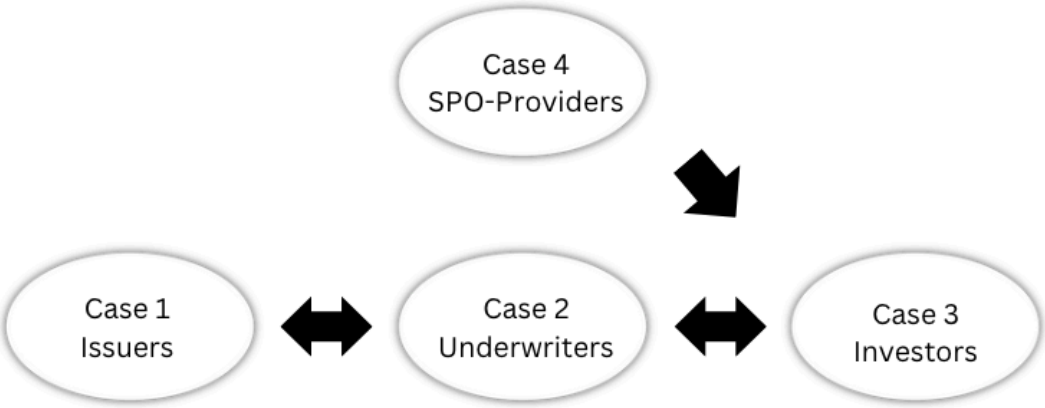

Figure 3: The bond transaction process containing Case 1, 2, 3 and 4

Bond Transaction Process

In this paper, the bond transaction process is defined as the process of issuing and investing in bonds, comprising issuers, underwriters, investors as well as an SPO-provider.

Case 1 - Issuers

The first case studied was issuers, representing the starting point in the bond transaction process. Upon deciding on bonds as a means for acquiring additional capital, companies must choose which bond to issue. This decision is influenced by factors such as their financial needs, creditworthiness, prevailing market conditions and investor preferences (Fama, 1978). Understanding investor preferences is crucial, as some prioritize higher yields while others seek safety (Fama, 1978). Furthermore, with green bonds and SLBs, companies must recognise and understand the demand for these less conventional bonds (Gianfrate & Peri, 2019). Creditworthiness also plays a critical role, with higher-rated companies issuing investment-grade bonds and lower-rated ones opting for high-yield bonds. Bond terms and structures, such as

coupon rates and maturity dates, are carefully decided based on factors like cash flow projections and investor propensities. This process ensures the issuance of bonds with favorable terms for both investors and the company (Fama, 1978) and the responsibility of this lies on the issuer.

Case 2 - Underwriters

When issuers have decided upon the ideal bond type in line with their aspirations and goals, the issuing company can utilize the expertise and assets of underwriters to facilitate the process and ensure its success (Dick-Nielsen et al. 2021). This collaboration begins with the establishment of an underwriting agreement, outlining terms and conditions (GFOA, 2014). Underwriters aid in structuring the bond offering to meet both investor demands and the issuer's financing objectives. Further, their involvement extends to marketing and distribution, leveraging their expertise and networks to generate interest among potential investors (GFOA, 2014). Underwriters assist in determining optimal pricing based on market conditions, investor feedback and the issuer's creditworthiness. This process, known as book-building, leads up to the establishment of the final offering interest rate and price (GFOA, 2014).

Case 3 - Investors

The third case studied was investors, representing the demand side of the bond market (Campbell & Viceira, 2001) and thereby the final step of the bond transaction process as defined above. Investors play a critical role in the bond market, especially in the green- and sustainability-linked bond markets where they can drive sustainable finance initiatives through their demand for green and/or sustainable products (Agliardi & Agliardi, 2019). Every investor looks to optimize returns, but some investors also wish to see substantial improvements in sustainability as a result of their investments (Campbell & Viceira, 2001). They actively seek out investment opportunities that align with their sustainability objectives, making green bonds and SLBs particularly attractive (Pham & Huynh, 2020).

Case 4 - Second Party Opinion Providers

The final case under examination was SPO-providers, who contribute a critical evaluative dimension to the issuance of green bonds and SLBs. Positioned as an independent institution in the bond transaction process, SPO-providers offer assessments and opinions on the ESG characteristics of bonds, thereby aiding investors in their decision-making process (Dorfleitner et al. 2021). SPO-providers conduct thorough evaluations of the sustainability credentials of bond issuers and their respective bond offerings. This assessment involves scrutinizing various aspects, such as the issuer's environmental impact, adherence to relevant ESG standards and regulations, transparency in reporting practices and alignment with sustainability goals and frameworks (Dorfleitner et al. 2021).

Before the case selection, several criteria were established to ensure the relevance of the cases included in this study. The selected cases needed to possess significant market presence in the market for sustainable finance to ensure a more comprehensive understanding of the overall market (Seawright & Gerring, 2008). Actors with substantial influence in the market of sustainable finance in terms of high visibility and recognition were preferred due to their greater likelihood of influencing and engaging with other actors in the market, ensuring the cases of providing significant insights into the market as a whole.

Upon establishing the four cases chosen for exploring the bond transaction process, companies that fulfilled the criteria presented above were contacted via a mutual connection. The companies that subsequently accepted the invitation to participate in conducting interviews included issuers from Atrium Ljungberg and Loomis, underwriters from Handelsbanken and a large, Swedish bank, investors from AP3 and SEB, as well as an SPO-provider from Standard & Poor.

4.3.4 Interviewee Selection

The interviewees from the four cases that accepted the invitation to participate in the study were contacted via a mutual connection, who then appointed other interviewees that he/she viewed as relevant to this study. The various numbers of interviewees in the cases could serve as a potential limitation in this study, which is described in greater detail in chapter 4.6. Case 1 consists of two issuers from Atrium Ljungberg and Loomis, respectively. For the second case, two underwriters from Handelsbanken and one underwriter from a large, Swedish bank that work with structuring green bonds and SLBs were interviewed. For case three, two investors working with green bonds and/or SLBs agreed to participate in the study, namely one interviewee from AP3 and another from SEB. Case 4 includes one employee from the second party opinion provider, Standard & Poor. Despite the rather low number of interviewees in each of the four cases, they are deemed to accurately represent their function in the market due to the interviewees' extensive experience and knowledge of the GSS+ market with over a decade of experience respectively.

Table 1 - Interviewee Selection

All interviewees agreed to the inclusion of their companies and positions in this research paper with the exception of participant 6 who wished to keep the company name anonymous.

Company	**Case (case number)**	**Position**
Atrium Ljungberg	Issuer (1)	Head of Treasury
Loomis	Issuer (1)	Head of Treasury
Handelsbanken	Underwriter (2)	Fixed Income Sales
Handelsbanken	Underwriter (2)	Head of Bond Origination
A large, Swedish bank	Underwriter (2)	Sustainable Finance Specialist
SEB	Investor (3)	Senior Portfolio Manager

AP3	Investor (3)	Chief Executive Officer
Standard & Poor	Second-party opinion provider (4)	Regional Head of Sales

4.3.5 Interview Design

The following section outlines the overall structure of the interviews, accompanied by a brief overview of the frameworks that underpin the interview questions. Interviews using a qualitative design put significant emphasis on the interviewee's viewpoint and veering off-topic is encouraged (Bryman & Bell, 2015). In addition, the wording as well as the specific questions asked can vary between each interview. In that sense, qualitative interviewing is characterized as a flexible approach (Bryman & Bell, 2015). The authors observe that when conducting multiple-case study research with several interviewers, increased structure is essential to maintain comparability across different cases and interviewing approaches. Based on this, a semi-structured interview design was deemed most suitable for this study.

Before constructing the questionnaires, a thorough examination of relevant research in the field was undertaken to guide the formulation of the questions. Initially, broader questions were presented, followed by progressively detailed inquiries as the interview progressed. Furthermore, open-ended and imprecise questions decrease the risk of the person conducting the interviews to influence and clout the data (Bryman & Bell, 2015), ensuring accuracy and relevance of the empirical findings. The chosen approach facilitated the exploration of supplementary topics and questions depending on how detailed and comprehensive the initial answers to the primary question was. The interview length varied between 45 minutes to an hour, depending on the depth of the discussion and the extent of follow-up questions.

Before commencing the interviews, every participant consented to recording the session and for their responses to be transcribed with the aid of an AI-tool called “Riverside”, along with

permission for quotes from the interviews to be included in the paper. In addition, they were informed about the fact that the transcription as well as the audio recording was going to be deleted upon receiving the final grade. The interviewees were also told that they were allowed to skip questions that were out of their knowledge or comfort as they saw fit. The interviews were conducted online, through the usage of the application software Microsoft Teams.

The transcriptions were handled in a private manner on our own accounts and computers, prohibiting outstanding parties from accessing the adata. The recordings were made using the voice memo app on iPhone, whereafter the file was converted to a MP3-file using the online tool “VEED”. The MP3-file was then uploaded and transcribed using “Riverside”, enabling the creation of an accurate textual representation of the audio content. This approach was utilized to ensure that the material was explicitly captured in accordance with the interviews, an important element for the detailed analysis used in qualitative research (Bryman & Bell, 2015). The full transcripts were thereafter uploaded to our own private accounts, using the platform Google Drive, where the material was categorized into different themes.

Every participant was asked if they preferred to remain anonymous during the study in terms of name and position within their respective companies. While each participant's names were removed, they all agreed to include their positions and company name in the study, apart from one participant, who preferred to keep the company name anonymous. After conducting and transcribing the interviews, the transcripts underwent proofreading. This involved careful examination of the transcript while simultaneously listening to the audio recording in order to ensure accuracy and allow for editing of potential transcription errors. Finally, the interviewees received the final transcription of their respective interviews and confirmed that it accurately reflected their perspectives. Upon receiving the final transcript, some participants requested minor edits which were corrected.

4.4 Data Analysis

The data analysis strategy applied to this study is thematic analysis which entails “identifying, analyzing and reporting patterns within data” (Castleberry & Nolen, 2018, pp.808). Thematic analysis is a common approach in qualitative research (Bryman & Bell, 2015), especially when the data is obtained from semi-structured interviews. It allows for exploring the context at a deep level, incurring flexibility and interpretation when analyzing the data (Castleberry & Nolen, 2018).

The systematic examination of the data generated from the interviews conducted with different actors of the bond transaction process involved several steps. The first step involved organizing the transcript of the interviews and familiarizing with the content by repeatedly reading the transcript in order to gain a deep understanding of the material. Secondly, as deeper knowledge of the transcripts was gained, interesting features of the data set were identified on several occasions and labeled sporadically throughout the transcripts.

Furthermore, tension between the interviewees were also identified, guiding the construction of themes in terms of what the interviews had in common and how they were different. This process, the coding, is utilized to categorize comparable data, enabling the extraction and analysis of all the data within the dataset linked to that specific code (Castleberry & Nolen, 2018). Thus, the coding strategy was not established prior to the interviews, but rather emerged during the coding process (Castleberry & Nolen, 2018). Once the coding was complete, it was analyzed to identify overarching patterns emerging from the data and established themes, organized by color. The final step involved reviewing the themes in order to make clear distinctions between them and their relevance to our research.

Upon establishing themes, it became evident that behavioral economics and prospect theory, as well as signaling theory would be suitable theoretical lenses to understand the implications of these emergent themes. The analysis was organized based on the themes derived from the data,

exemplified using quotes from the interviewees. The findings and quotes were later discussed in terms of the theoretical framework adopted in this study in order to understand the underlying factors influencing individuals' preferences in a broader societal context. Past literature was connected to the findings and their subsequent themes in order to develop the discussion, showcasing where the findings supported past literature and where it was challenged. The overarching themes derived from the thematic analysis further enabled us to make comparisons between the cases, as well as the respective interviewees.

4.5 Research Quality

In order to assess the research quality in a study, three main criteria for evaluating research quality are widely adopted, where Bryman & Bell (2015) and Golafshani (2003) argue for reliability, replicability and validity. However, the relevance of such criteria when evaluating the quality of qualitative research have been debated, resulting in different criteria that diverge from the ones adopted in quantitative research (Bryman & Bell, 2015; Golafshani, 2003). An alternative criterion has been established by Lincoln and Guba (1985) in the field of qualitative research, namely, *trustworthiness*. The hypernym trustworthiness entails several components that serve as indicators of the quality of the study; *credibility, transferability, dependability and confirmability* (Golafshani, 2003). These criteria were used to assess the quality of this research, as they build upon the notion that there is no single truth of social reality, which is presumed by the application of reliability and validity (Lincoln & Guba, 1985). The approach outlined by Lincoln and Guba connects well to this study as it deliberately seeks to uncover a complex subject which has no single answer.

According to Lincoln and Guba (1985), credibility concerns the extent to which we can rely upon the findings and information within the scope of the subject area. In order to enhance the credibility of this study, respondent validation was utilized; the participants confirmed that the interpretations and findings accurately represented their perspectives (Bryman & Bell, 2015). In

addition, the participants in this study are actors with managerial positions at different, established companies in the GSS+ market, arguing for great experience and knowledge of the field of study, as well as a high degree of credibility. In line with this, credibility is strengthened by the inclusion of the main parties involved in a bond transaction process, as well as several interviewees in each case.

Furthermore, Lincoln and Guba (1985) claim that applying the concept of dependability strengthens the trustworthiness of a study. Thorough documentation of the methodology is integrated into each phase of the thesis process to improve transparency regarding the research conducted in this study. Moreover, the concept of confirmability refers to the researchers ability to be objective (Bryman & Bell, 2015). while Lincoln and Guba (1985) acknowledge that complete objectivity is unattainable, minimizing the interference of personal values and steering the research toward predetermined outcomes enhance the confirmability of the study. In accordance with increasing conformability , quotes derived from the interviews are included in the analysis, verifying the accurate wording of the interviewee rather than our interpretation.

Transferability of research findings refers to whether or not the findings can be attributed to other social contexts or the same social context in another time (Bryman & Bell, 2015). By including several actors involved in the bond transaction process such as issuers, underwriters, investors as well as the SPO-provider, this study could serve as a point of reference in several different contexts, one example being its possible foundation for incentivizing sustainability in policy decisions.

4.6 Methodological Limitations

There is a risk that the responses provided by interviewees could be influenced by ulterior motives, complicating the perception of the findings. One example of such an ulterior motive could be the possibility that participants answer in the interest of the company rather than from

their individual perspectives and opinions. Their perception and exposure to green bonds and SLBs differ accordingly which may compromise the legitimacy of the responses, especially since few individuals within each case were interviewed. This risk underscores the need for caution when drawing conclusions from the interviews and emphasizes the importance of acknowledging potential biases in qualitative research. In light of such biases, the interviewees selected for this study operate in diverse parts of the bond market, with different positions within their respective companies, leading to varying approaches and perspectives in working with bonds. Conducting interviews with actors in diverse positions within the bond market allows for a comprehensive analysis of perspectives and insights related to our research question.

Moreover, by conducting semi-structured interviews, the findings could be subject to compatibility issues, as the design of the interviews and the exact questions asked varied between the interviews. Questions especially varied between interviews with issuers and investors, as they represent polar sides of the bond market. To allow for better consensus between the interviews, they were all conducted in English. On the one hand, this poses potential language difficulties since neither interviewers nor interviewees are native English speakers. On the other hand, this approach was chosen due to its reduction in translation errors and since all interviewees spoke English at a fully professional level. Hence the risk of language errors was reduced.

Another limitation apparent in this study was the relatively low number of interviewees from each case and that the number of interviewees varied between each case, potentially limiting the study by its small scope. By including an extended number of interviewees and diverse companies in each case, the study could gain deeper insights and further perspectives. Furthermore, varying numbers of interviews were conducted within the different cases, which could also serve as a limitation in this study. The consequences of varying numbers of participants from each case could entail that the interviews conducted with issuers, investors and SPO-providers relies heavily on the subjective interpretation of solely one and two interviewees, possibly biasing the study results. Researchers also face constraints on being open to new

information. In an interpretive study like this, where we become the voice of the interviewees, our interpretation of the quotes and empirical material provided from the interviews are informed by influences that develop us as individuals. While we have strived to maintain openness to the best of our ability, our interpretations of the findings are inevitably constrained by our understanding of the broader societal context.

Nevertheless, considering the time constraint and scope of this study, as well as the limited reach in terms of diversity of companies and interviewees for each case, the findings from the conducted interviews capture the complexity and richness of individual experiences in the financial market. Additionally, the inclusion of multiple companies in the issuer and investor cases, enhance the perspective of the findings by offering insights from diverse organizational contexts. Thus, despite potential limitations connected to the quantity of interviewees across the cases, this study offers valuable and diverse insights into the factors driving investment preferences surrounding green bonds and SLBs. Furthermore, critical reasoning was consistently applied throughout this study, guiding decisions in the selection of research approach, research design, case selection, data collection and data analysis. Various approaches were evaluated; nevertheless, the selected methodology was deemed the most suitable approach for this study.

5. Analysis

In this section, the findings from the interviews are showcased by presenting explanations to the related phenomena regarding green bonds and SLBs from the perspectives of the four cases. Moreover, the insights are interpreted further in order to understand the findings and guide the analysis.

5.1 Market Maturity

One emerging theme from the interviews was the participants' perception of large differences in market maturity between green bonds and SLBs, and as concluded previously in the paper, the market for green bonds is, indeed, more established than the one for SLBs. When encountered with questions regarding differences between the two various bonds, all of the interviewees swiftly delivered responses pointing towards the instruments' different levels of maturity, exemplifying the current market status.

> *... I would say green bonds are more of an asset class, it's a mature asset. [...] sustainability [-linked] bonds, they are more niche products. And it's easier to invest in a mature asset class rather than niche products (Case 3, Participant 2).*

> *... you can see that in terms of volume, the green is quite stable, while the sustainability-linked [bond] has had a slower growth and has not really kicked off yet, I would say (Case 2, Participant 6).*

And for green bonds, the advantage is that it's like a well-established market or a much better established market. So it's easier [compared to SLBs]. It's, like, no need to explain anything to investors. It's like standard procedure. There's a good demand there (Case 1, Participant 5).

With a significantly more mature and established market, it comes as no surprise that the market value of green bonds surpasses the market value of SLBs by an overwhelming amount. The market status is further represented by how the participants currently work with green bonds relative to SLBs.

I would say 95% of all the bonds we've done are green versus the SLBs [that] have been 5 % (Case 2, Participant 1).

The majority of our investments in sustainability bonds are green bonds. I don't know the exact percentage, but it's a very big difference (Case 3, Participant 2).

The statements above are, to a great extent, in line with the prevailing market conditions, but as we aim to uncover the rationale behind this, we wanted to understand their reasoning for favoring green bonds so heavily. One of the underwriters elaborated on the subject by arguing that the market for green bonds is not *strange* anymore.

We did four, five of them today. It's a market that is not strange anymore [...] (Case 2, Participant 1).

We interpreted the word strange in this context as something unusual and *uncomfortable* - a situation in which another course of action would be more preferable. There seems to be a clear connection between comfortability and willingness to work with a certain bond type. An insight from an investor may provide a solid explanation to this connection. The investor did, in fact, bring forward the argument of comfortability, by arguing that it is easier to invest in green bonds

due to the lower level of understanding and analysis needed relative to SLBs, which seems to lead green bonds into becoming a more convenient option for investors.

> *I think that many may be more comfortable buying green bonds than sustainability-linked bonds. Not from financial purposes, because it's exactly the same legal entities behind. [...] But it's perhaps a little bit more difficult to understand sustainability-linked bonds (Case 3, Participant 2).*

According to our interpretation, comfortability seemed to be a strong driving factor of certain market outcomes, where individuals tend to follow trends and the actions of others rather than initiating change themselves.

> *... somebody needs to take the lead in the financial markets. It's herd behavior. That is the signature of the financial markets. Everybody follows the crowd very much. So you need someone to step up being the lighthouse, the torch that positions sustainability-linked bonds in a very good way (Case 3, participant 2).*

> *It's like how markets are built that someone [...] does something and then everybody else sees what has been done and someone follows on the same path (Case 1, participant 5).*

These quotes illustrate that green bonds might not be as superior to SLBs as the market demand portrays it to be, but rather that this discrepancy in market demand stems from the tendency of prioritizing the feeling of safety that occurs when following what other people are doing and what the current trend is. In that sense, some companies as well as industries as a whole might even be better suited for issuing SLBs than green bonds, but refrain due to the perceived risk of not going along with the group.

A common outcome of a more mature market is higher demand for that market's associated products. From our conducted interviews, it was evident that the active participants in the bond markets experienced significantly higher demand for green bonds than SLBs.

> *... if the yield is the same, I would think that there is better demand for green bonds in the secondary market. And I would choose, in that case, green bonds because I know that if I need to sell them, if I want to sell them, it would probably be easier to find a buyer than for niche bonds (Case 3, Participant 2).*

> *The demand for green bonds is huge. [There's a] really, really strong demand for that (Case 2, Participant 3).*

What becomes evident from this theme is that all participants seemed to agree that market maturity is one of the most significant explanations for the great difference in bond preferences in the market. The fact that the green bond market has been around for over 10 years longer than the SLB market has led to a strong preference for working with green bonds, aligning with each of the four cases' insights from the interviews.

5.2 Clear Outcome

Another reason for the large discrepancy in popularity between green bonds and SLB seems to be the clear outcome of the green bond, which was a central theme covered in all of the interviews. All participants pointed out that the simplicity and clear purpose of green bonds served as a benefit, arguing for its popularity. Green bonds and SLBs inherit different structures in terms of proceed allocation, which was argued to make the green bonds an easier instrument to understand. Issuers, underwriters, investors and the SPO-provider all agreed with this proposition.

... use-of-proceeds bonds is an easier concept to understand. You know that the money would be earmarked (Case 3, Participant 2).

... it would be the simplicity factor. The fact that [...] sustainability-linked bonds will have more difficulties in evaluating targets, ambition to follow the targets and with all possible rebasings, etc. So simplicity in the concept of green bonds (Case 2, Participant 3).

I think you like them because you know what you get, you know what the money is directed at and you can also calculate an impact of that specific investment (Case 2, Participant 6).

In essence, the flexibility of SLBs in the allocation of funds may seem appealing to some issuers, but has on the other hand incurred a greater difficulty in understanding what distinct purpose and outcomes these investments obtain. All of the participants emphasized the simplicity of green bonds considering its specified project and outlined scope compared to the SLB.

Typically SLBs are much [...] more difficult for investors to understand. And I would also say that the benchmarks or the criteria that needs to be fulfilled in these bonds are typically tougher to track [...]. A green bond is typically easier. You have a defined project and you have a defined scope ... (Case 2, Participant 1).

And the reason why I like the green bonds was the purpose of the bond. [...] And green bonds put a purpose on the issues, because then in that issue, you could only use it for green purposes. And we like the notion that rather than lending funds just for corporate general purposes to lend to green purposes (Case 3, Participant 2).

By offering the investor clear insights into the tangible impact and outcome of the investment, green bonds provide essential transparency and accountability sought by investors in their

sustainable investments. From the issuer perspective, one participant highlighted a concern regarding the flexibility of SLBs and them not being tied to a specific green project.

> *I would demand that the company has ambitious sustainability targets that are easy to follow and to understand and so on, so that the whole company is moving into the right direction. And then I would like to know what they're going to do with the precise money that I would give them (Case 1, Participant 5).*

As shown from the issuer above, this detachment makes it difficult to assess the efficiency in promoting a sustainable transition, arguing for limited transparency when considering SLBs. Participants from the underwriter and investor cases also expressed views that align with the issuers' perspective.

> *... we hear from many companies that it [green bonds] provides a better internal understanding and better cooperation and hopefully also more sustainability work (Case 2, Participant 3).*

> *I would prefer a green bond because I would rather know the purpose of the investment, what it is invested in, than for general green purposes, it could be invested in any way that could help reduce the carbon emissions. But I think it's more difficult to buy a story about such a sustainability-linked bond (Case 3, Participant 2)*

The quotes suggest that green bonds possess a higher degree of credibility and trustworthiness due to their tangible environmental impact as well as the offered transparency and accountability, compared to the more uncertain environmental outcome of SLBs. From the issuer perspective, it´s emphasized that the complexity and uncertainty in understanding the actual environmental outcome of SLB suggest a higher required yield by investors.

> *... it creates more work for them because they [investors] need to understand [and] must dig into the details and that should mean that they would everything else equal require a higher yield [...] or then of course they have the risk that the payout subject to if we miss the KPIs or not it will be higher or lower. [...] So it's making things more complicated as well (Case 1, Participant 5).*

A higher yield potentially increases the cost of capital for issuers, making it a less desirable bond option. In line with this, the SPO-provider points to the complexity of SLBs compared to green bonds, which requires more effort by this independent party in order to provide a transparent rating to the market.

> *And it is a gray area because I mean it is very complex to actually determine, you know, is the KPI relevant? Well, if the KPI is relevant it's perhaps not so complex, but then to determine if the selected target is ambitious enough, that's quite complex and it requires some good knowledge ... (Case 4, Participant 7*).

Transparency of green bonds serves as an important factor in understanding its popularity over SLBs. In combination with the maturity of green bonds in the market, their clear environmental outcome was argued by issuers, underwriters, investors and the SPO-provider as a sign of trustworthiness, fostering confidence and attracting a wider pool of investors.

5.3 Associated Risks with SLBs

The SLBs have several favorable characteristics that makes them a considerable option to green bonds. However, one of the less favorable attributes of SLBs according to the cases regards the perceived risk associated with SLBs compared to the relatively more stable green bond.

If I need to make a forecast for my interest rate expenses for next year, with a green bond, that would be the same. Always. Then with an SLB, it depends on how we're doing on the KPIs there. So it's of course creating additional risk and no one likes risk in that area. So it comes at a slight price as well (Case 1, Participant 5).

... if you don't [...] deliver on the [KPI] targets, then we will see a penalty at the end of the bond. And then you also have the reputation risk of not reaching your [KPI] targets (Case 1, Participant 8).

As illustrated by these quotes from these issuers' perspective, there is a risk associated with not reaching the KPI targets, which do not exist when issuing green bonds. This risk stems from the potential financial penalties incurred for failing to meet sustainability-linked commitments that were promised, contrasting with green bonds where the focus is primarily on the use-of-proceeds for environmentally beneficial projects rather than ongoing performance metrics. The risk of not reaching the KPI targets also transgress into a reputational risk which is damaging for the issuing company.

On that note, investors are seemingly facing a different type of risk with SLBs, namely the liquidity risk which they do not consider as prevalent with green bonds.

I mean, one of the good things with green bonds is that they became very liquid. [...] And so the liquidity risk was smaller [compared to SLBs] when it came to green bonds because there was greater demand (Case 3, Participant 2).

They [green bonds] are easier to sell if you want to trade them (Case 3, Participant 4).

As showcased by the quotes from investors, considering their portfolio preferences, the ability to quickly liquidate assets on the secondary market is evidently a significant factor. This liquidity

consideration notably impacts investors' preference for green bonds over SLBs, as the green bonds typically possess a higher liquidity due to their broader appeal and larger market demand.

Another risk that is perceived to be higher with SLBs compared to green bonds regards the risk of greenwashing, according to issuers, underwriters, investors and the SPO-provider.

> *Since it's tricky for the investors to evaluate how ambitious an SLB is, how ambitious is [the] KPIs? [...] it would maybe [be] easier to greenwash in an SLB if you wanted to (Case 2, Participant 3).*

> *... you have to have a really, really credible process to show that they're [issuers] working in the right direction [with the KPIs] and it's not greenwashing (Case 3, Participant 4).*

> *And I think the other main reason is the skepticism around the sustainability-linked [bonds is] the risk of greenwashing as has been debated for the last few years (Case 4, Participant 7).*

> *Sustainability-linked bonds might be more exposed to these greenwashing discussions because it can be a little bit more blurry [compared to green bonds] (Case 1, Participant 8).*

With SLBs, the KPIs are linked to the issuer's overall corporate performance rather than specific projects. Due to the structure of SLBs, all cases concur on the fact that it can introduce a higher risk of greenwashing and greenwashing accusations because of the lack of specificity and the potential for the issuer to manipulate or misrepresent their sustainability performance. This allows issuers to engage in activities that are not as environmentally beneficial as they allude to be, but still meet the agreed-upon targets.

The nature of the KPIs being both company and industry-specific, can make it both challenging and time consuming for investors to assess whether the issuer is genuinely making ambitious progress towards its sustainability targets or not. The investor and SPO-provider offer compelling insights into how to increase the credibility for the instrument and thus, decrease the ability to greenwash with SLBs.

> *What I think the SLB market would benefit from, [...] is a couple of failures. And also that we see there is a consequence of the failure. Because then I think that would gain credibility for the market (Case 1, Participant 8).*

> *... when I've discussed with underwriters and advisors, they are concerned about who will monitor this and what will happen with the frameworks and with the second party opinions. So I think the entire sustainable finance market would benefit from more regulation and from more standardization. We have of course the principles in place, but that's not enough. So I think that is a key part which would bring more credibility to the market (Case 4, Participant 7).*

As seen by the issuer, credibility for SLBs could be enhanced by showing the market actors that the aftermath of missing the KPI targets are negative for the issuing company and that accurate penalties are in place. In addition, the SPO-provider plays an important role in investigating the risk of greenwashing and enhancing investors' confidence in the integrity of the SLBs. Thus, more regulation is needed in order to increase credibility. In light of this, issuers face considerable pressure from SPO-providers in the SLB market to set ambitious KPIs to signal to investors and the secondary market that the issued SLB is in fact a sustainable investment.

> *We are putting the issuers under scrutiny, [...] and we challenge the issuers. And that is reflected in our second party opinions, so that we can avoid the greenwashing. Because investors need to be certain that the KPIs are relevant and the targets are ambitious. I*

mean, that's key, of course. Otherwise, there's no point in having that instrument (Case 4, Participant 7).

On another note, green bonds face a considerably different risk, which, according to investors and issuers, is not applicable to SLBs to the same extent, namely the political risk.

... with green bonds and social bonds, compared to other bonds, there is a political risk. [...] Because a lot of times the underlying product can be dependent on subsidies. [...] maybe they have big business in solar panels and then [the] subsidies for solar panels disappear [...] So the project halted (Case 3, Participant 4).

... the risk is that a country who previously was aligned, internationally aligned, stops being that [when there is a change of government](Case 3, Participant 4).

Globally you have political risks like I mentioned China, Russia, whatever. [...] There's always some political risks (Case 1, Participant 5).

... what we're doing now, it's driven by political decisions. So I would say that is sort of the biggest challenge or the biggest opportunity to the market if the politicians stay as committed as they have been (Case 1, Participant 8).

Issuers and investors highlight the political risk that could unfold by the changes of government and policies, which can result in the withdrawal of subsidies that issuers relied upon when they started the green projects underpinning the green bond. A change of government could potentially result in the project being haltered or at least, make it significantly more expensive to execute the project.

Both investors and the SPO-provider identify the uncertainty surrounding SLBs as one of the reasons as to why green bonds are preferred, being a less risky option. Although engaging in the

bond market inherently comes with uncertainty, participants in both of these cases pinpoint additional uncertainty with SLBs.

> *... the big uncertainty we have [is] that will issuers, will companies, will countries be able to meet their ambitious goals? Because right now we have a lot of promises based on other promises and so on. So that uncertainty translates into the SLBs (Case 3, Participant 4).*

> *There is of course uncertainties around what happens when an issuer doesn't meet the targets. How will that be dealt with by themselves and by the market? (Case 4, Participant 7).*

As stated by the investor and the SPO-provider, the added uncertainty of SLBs regards the complexity of the bonds as well as the uncertainty of the KPIs not being met. As most participants have previously pointed towards, green bonds are easier to understand, being a mature instrument and structured as a use-of-proceeds bond. This clarity in green bonds simplifies investors' evaluation of them and increases the transparency.

> *... another interesting part in this is that some issues are starting to be very well educated on what needs to be done. Even banks and more and more issuers are like calling for regulations from governments or other entities. [...] if there's a law that says you cannot do this or that because it's bad for the environment, then they have to comply (Case 3, Participant 4).*

In this instance, the investor highlights the increasing demand for implementing more regulations to account for the risk associated with SLBs as well as the GSS+ market as a whole. A more developed regulatory framework for SLBs would ensure accurate KPIs and penalties when they are not met. This would enhance credibility of the instrument and mitigate the risk of greenwashing, as was argued by one issuer and SPO-provider previously.

5.4 Assessing Ambitiousness

As concluded from previous themes, the risks associated with SLBs seem to have negatively affected their position in the market as tools for sustainable financing and investments. As briefly explained in the literature review, assessing ambitiousness involves evaluating the extent to which the predefined sustainability goals set by issuers reflect impactful and ambitious goals for improved ESG performance. The most prominent risk associated with SLBs was found to be the perceived difficulties with assessing whether the KPIs associated with SLBs are ambitious or not.

> *... the sustainability-linked format requires that you can assess the ambition level of a sustainability-linked instrument and that requires more both from the company to explain that to the investors but also for the investors to evaluate why this is ambitious. Of course, you can look at different benchmarks, but I think it requires some more in-depth analysis (Case 2, Participant 6).*

> *The downside is of course, for the buying party here, they need to know what they're buying and it's all very flexible and very big and non-transparent. Yeah, it goes both ways, of course. Flexibility, yes, but it needs to be in a way that It's easy to follow as well ... (Case 2, Participant 1).*

Assessing the level of ambition with this instrument proves challenging, primarily due to the diverse and subjective nature of SPTs. Unlike the quantifiable metrics common in financial assessments, sustainability goals often vary widely across companies, industries and regions, making it difficult to establish consistent and standardized benchmarks for evaluation.

There would be a trade-off between, like, what is easy to administer and easy to communicate and is it relevant or not for a certain industry or for a certain company. [...] regulatory mechanisms would be difficult in practice due to the very different KPIs from company to company (Case 1, Participant 5).

The lack of standardization adds a layer of complexity, necessitating a closer examination of existing industry initiatives and frameworks. Complexity with SLBs was also observed by the investors, as they all agreed that they were experiencing difficulties with assessing ambitiousness due to the complexities surrounding SLBs and their KPIs. They explained that it is a time-consuming process that currently redirects them towards investments in green bonds with better and more clear structure, frameworks and outcome.

Interestingly, it appeared as if the investors were unable to identify an explicit institution where change needs to occur in order to increase transparency and decrease the complexity regarding ambition for SLBs. They suggested that the market has not yet adapted to SLBs, and highlighted the need for better and more straightforward KPIs. The SPO-provider, however, brought a different perspective to the discussion by underscoring the importance of SPO-providers in the market and how they need to increase their trustworthiness. In doing so, investors would be more confident in investing in SLBs and issuers would run a lower risk of greenwashing accusations.

So we support the market and the investments by focusing on being an independent provider of the second party opinions. It is really crucial that investors can trust us, that we are doing a thorough analysis, that we are providing an independent opinion (Case 4, Participant 7).

I think that for the market [...] for investors to trust the SLBs, there must be a robust methodology and a trustworthy second party opinion provider. So that's key, of course, that we and our peers or competitors really can demonstrate that we are putting the

issuers under scrutiny. [...] and that is reflected in our second party opinions, so that we can avoid the greenwashing (Case 4, Participant 7).

The importance of SPO-providers for increasing trustworthiness and simplifying the ambitiousness assessment was further strengthened by the issuers.

I think that KPIs in order to be relevant, they must be company specific. And then I think no matter what happens, it will still need some kind of analysis or second opinion or [...] someone doing thumbs up or thumbs down, whether it's a good framework and ambitious KPIs or not (Case 1, Participant 5).

The SPO-provider suggested increased standardization throughout the SPO-providing sector as a potential facilitator for this improvement, especially for smaller providers.

So there are many small second party opinion providers who don't have the robust processes in place who cannot ensure the independence that we can and some of the other larger providers. So I think that is a key part which would bring more credibility to the market. So more standardization in the second party opinion providing sector (Case 4, Participant 7).

Overall, the challenges associated with assessing the ambitiousness of SLBs underscore the complexity inherent in aligning them with sustainable development goals. While SLBs offer flexibility and the potential to drive sustainability in industries where traditional green bonds may not suffice, the lack of standardized benchmarks and the subjective nature of sustainability targets pose significant challenges for investors and issuers alike. Moreover, participants emphasized the crucial role of independent verification mechanisms, such as SPO-providers, in enhancing trustworthiness and transparency in the SLB market.

5.5 SLBs for Transitioning

An interesting theme that appeared throughout the interviews was the notion that SLBs are considered a useful instrument for companies and industries that are currently transitioning towards becoming more sustainable. Many participants emphasized that when the instrument was first launched, it was expected to gain traction due to its focus to include such transitioning companies.

> *… most market participants thought that this instrument [SLB] would grow much quicker and get more traction because it is an important instrument in the transition journey for all industries (Case 4, Participant 7).*

> *Well, sustainability-linked bonds [are] of course a smaller part of the sustainable finance market. It hasn't been around for as long and it hasn't perhaps gotten the uptick or the traction that many people thought it would when it started. But of course, it is still an important part of the transition journey that we're all on (Case 4, Participant 7).*

However, the instrument did not gain as much popularity as expected, but many participants expressed their belief that it could be an important instrument in the future.

> *One more thing I think is working in favor of SLBs is that I think we will have more and more focus on transition. So how we should target the companies that can't be called sustainable by themselves, but are really needed (Case 3, Participant 4).*

> *I think [...] what has gradually happened over the years is that there will be more focus on the transition and the not so green companies to look at how they can invest in climate friendly investments and help us reach the 2050 targets. So I think more focus on the less green companies (Case 4, Participant 7).*

Despite the SLB being considered a complex and ambiguous financial instrument by several actors in the GSS+ market, its distinct characteristics could serve many purposes and inherit benefits in the market for sustainable finance. As previously mentioned, an example of such a benefit lies in the opportunity for industries or companies that may not meet the criteria for issuing green bonds to still participate in the market for sustainable finance through the issuance of SLBs.

> *... if they [companies] don't have enough green investments, then the sustainability-linked instrument could be an alternative. Clearly, we're all expecting oil and gas companies to transition as well, so they have to do green investments, but it could be challenging to be aligned with the principles within certain sectors and then the SLB could be an alternative (Case 4, Participant 7).*

Other less controversial industries and companies were also seen to benefit from the structure of SLBs. Where their balance sheets and operations restrict them from green project investments, SLBs come into play. One underwriter and one issuer provided insights regarding this premise.

> *If you issue green bonds or sustainability-linked bonds, that goes down pretty much to your balance sheet and to your underlying business. And we [Loomis] don't have those sorts of typical projects or investments that you can link to a green bond (Case 1, Participant 8).*

> *I think if you are for instance a company that may not have projects or fixed assets to finance, but you still work a lot with the sustainability challenges, then you could support that work with this type of financing [sustainability-linked bond] (Case 2, Participant 6).*

Hence, the SLB could serve as a viable alternative, being a more flexible option to companies operating in industries where the green bond framework might be too narrow.

Several participants pointed out the potential saturation of the green bond market. In this case, the SLB could be an option to bypass the scarcity of green projects in the future.

> *And then if you would not have green projects or not enough eligible projects in a way, then of course you could not issue a green bond (Case 1, Participant 5).*

> *There's sometimes difficult to get hold of [green] projects [...] sometimes because they are running out of projects (Case 2, Participant 1).*

In line with the saturation of the green bond market, several participants also argued that the green bond market might become a bit outdated, considering its long establishment in the market for sustainable finance and the need for new innovative instruments that drive sustainable development further.

> *You could imagine that people get a little bit fed up with green bonds and it's like, well, it's nothing new. It's the same kind of projects. And also the urgency that we really have to do something now. So they will think that it's much more important to really look at transition (Case 3, Participant 4).*

We interpreted this quote as a call for continuous innovation in the sustainable finance field, which is essential for sustainable development. In order to drive the transition of companies towards improved ESG metrics, one cannot simply lean back and rely on what works in the current state of the market.

On another note, both issuers provided interesting insights into why the issuance of SLBs could potentially incur benefits for the issuer by being at the forefront of adopting innovative solutions, considering the novelty of this instrument.

... we thought it was a good idea to be first, [...] to get a bit of extra attention. [...] Well, it's kind of like marketing, [...] to show that Atrium Ljungberg is at the forefront of the development and that we're actively working on all these issues and get some extra attention. Because in this area, all publicity is good publicity (Case 1, Participant 5).

It's also a question of how [...] you want to position yourself in relation to your competitors. I think there is a benefit of being early in that process [sustainability-linked]. And then also use it to gain some advantages for your financing as well (Case 1, Participant 8).

Seeing that such statements were given by the two issuers, it provided interesting implications as it contrasts the views of other cases, who consistently put forward their preference of green bonds, being a more stable option. Issuing green bonds are considered safe and trustworthy actions by the market, while many participants mentioned the risk of being associated with greenwashing when issuing and investing in SLBs. The SPO-provider argued in line with the issuers, highlighting the importance of SLBs considering the future of the sustainable finance market.

... green bonds have become rather mainstream. [...] the symbolic value or the [...] commercial value or marketing value is slightly less [for green bonds]. [...] If you launch a sustainability linked framework, you stand out a little bit more, because there are not so many peers that have done the same thing. So from that perspective, you can probably get more attention from that type of instrument (Case 4, Participant 7).

... you can use it [SLB] like we did in 2022 in order to create a bit [of] publicity about your overall sustainability targets (Case 1, Participant 5).

With the right frameworks providing more transparency and authenticity into the SLB concept, being ahead of the market seems to be an important factor, seen from the perspective of the

issuer and SPO-provider. However, considering the novelty of the SLB, the framework and brand image that is apparent for green bonds has not yet developed, limiting the usage of SLBs in financial markets.

> *There's a lot of disturbance in [...] reality, so it makes the product a bit tricky to handle, to be honest. So in a perfect world, I think, SLBs would actually be a very, very good product, but it's messy because of everything that happens around. [...] That creates a lot of difficulties when it comes to [the] secondary market (Case 2, Participant 3).*

5.6 International Opportunities

As discussed earlier, sustainable finance has been an established field for a significant period of time and the GSS+ market is globally prominent. However, the extent of sustainable finance measures are unevenly developed around the world as some countries have embraced it wholeheartedly, while other countries struggle to keep up at the same pace.

> *... the Swedish bond market is the market with the highest proportion of green bonds. [...] If you look at the Euro market, I don't think the share is at all at that level [...]. In the US market, which is by far the biggest bond market in the world, it's an even lower share that is green (Case 2, Participant 3).*

The underwriter underlines the differences in engagement with sustainable finance and particularly, with green bonds around the world, pointing towards additional opportunities to expand the green bond and SLB markets in several parts of the world. However, participants noted barriers to such an adoption.

I think there are different regulations that act as barriers for SLBs and green bonds. I think within the EU it's quite similar, but it's a global market. So of course it will have an effect on different geographies (Case 2, Participant 6).

This underwriter points out that the discrepancy in preferences for green bonds and SLBs around the world could be explained by regulation differences which inhibit the widespread adoption and creates further complexities. However, several of the participants suggest that SLBs have a relatively strong market position in an international context compared to Sweden. Especially in emerging markets, where limited developments in sustainable finance have been made.

I think the sustainability-linked format is somewhat stronger internationally. Many emerging markets use that format to finance a transition. They have not been that much already into the green format and hence easier to adopt to this new format, the green not being as sticky as it is here perhaps (Case 2, Participant 6)

I think we have seen that in some less developed markets [...]. And I see that the sustainability linked [bond] is more common [...] in the Americas, both North and South America. Also in Asia, we see more sustainability linked [bonds] than we do here [in Sweden] (Case 4, Participant 7).

As highlighted by the underwriter and the SPO-provider, the flexibility of SLBs compared to green bonds could potentially make it a more popular option in markets where the maturity and the establishment of green bonds is not as prevalent, suggesting that the green bond popularity might not be a worldwide phenomenon. Thus, perhaps SLBs are more suitable in countries that are further behind on this issue and started to transition more recently.

... [in] the Nordic markets, I mean, where we had green bonds for more than 10 years. And those [emerging] markets are so far behind, so perhaps an easy way to start is to use the format [SLBs] for many issuers. So I think it's a question of maturity and development

> *of the local markets, for the regional markets. So yeah, we for sure see more sustainability [linked bonds] in other parts of the world (Case 4, Participant 7).*

As the SPO-provider points towards, emerging markets could benefit more from the flexibility offered by SLBs compared to the more rigorous green bonds. It becomes a valuable tool for driving sustainable development in emerging markets as SLBs offer these regions a bond that can be tailored to their specific circumstances, enabling a sustainability transition at a pace that aligns with their available resources.

Another participant, an underwriter, highlights another reason as to why SLBs could potentially be a better option than green bonds in an international context, especially in a forward-looking perspective.

> *I mean, in the SEK market, the share of real estate issues is also very high in an international perspective, whereas in the US market, it's a corporate market to a much larger extent. They're going to have the same difficulties to find green assets as the Swedish and European corporations (Case 2, Participant 3).*

The underwriter points out the scarcity of green projects that many companies face when wanting to issue a lot of green bonds. Since SLBs are not tied to an underlying green project, that issue is not as prevalent in the SLB market, pointing towards it being a viable alternative to green bonds. The viability of SLBs is especially true for countries where the green bond market has a larger market share and for companies that have been issuing green bonds for some time.

6. Discussion

This section of the thesis involves the discussion of the emergent themes, outlined in the subheadings. Examination of these themes will be conducted through the lens of relevant theories and connected with the previously reviewed literature. The discussion is divided into sections based on the main findings from the analysis. From the analysis section, it was concluded that the popularity of green bonds could be attributed to their simplicity, its long established presence in the market and the availability of information regarding them. However, in order to fully understand its popularity over SLBs, a deep discussion into the characteristics of SLBs is needed.

6.1 Market Dynamics

According to the active market participants that were interviewed, the market clearly shows a preference for green bonds. This preference could be explained by using insights found in behavioral economics, which suggests that people often prefer certain outcomes over abstract or uncertain ones (Mullainathan & Thaler, 2000). Green bonds offer a clear and tangible link between the proceeds raised and specific environmentally beneficial projects, such as renewable energy installations or energy-efficient buildings. This clear connection provides investors with a sense of certainty and reassurance about the impact of their investment, making green bonds more appealing than SLBs, which tie financial returns to broader sustainability contributions that may be more difficult to directly observe. The insights from the conducted interviews align with the findings from Martin and Moser (2016), who, as previously discussed, connected the success of green bonds to the transparency in the bond structure and consequently, the simplicity in recognizing the associated societal and sustainable contributions.

However, an issuer highlighted a proposition that people may seek to disregard the certainty and tangibility associated with green bonds in the hunt for attention and reputation as a courageous company at the forefront of sustainable development. This phenomenon cannot be fully explained using behavioral economics. Instead, signaling theory may be a helpful lens for understanding why such companies choose SLBs over green bonds. By executing something unusual and unconventional, issuers can signal attributes such as boldness, dynamic capability as well as having an innovative and progressive culture to the market. One issuer mentions that *all publicity is good publicity*, which does not necessarily mean that SLBs signal environmental contributions to the market, but rather are used to gain market attention. As many scholars recognize, the stock market tends to react positively to announcements of green bond issuances, which, according to signaling theory, could be the result of successful signaling (Flammer, 2021; Tang & Zhang, 2020; Wang, Chen et al. 2020; Zhou & Cui, 2019). Interestingly, the insights from the issuer argues for the applicability of these findings on SLBs as well, or at least suggests that issuers of SLBs may anticipate a similar market reaction.

Looking at signals related to the issuance of green bonds, Flammer (2021), Maltais and Nykvist (2020) and Martin and Moser (2016) delve on the ability of green bonds to signal commitments to long-term sustainable investments. Such a signaling mechanism aligns with the views expressed by all participants of this study, particularly regarding the transparency inherent in green bonds. As opposed to the transparency of green bonds, Ramel and Michaelsen (2020) points out the legitimacy issues for the SLB market and the inability to signal environmental commitments. Such legitimacy issues connect to the findings from the actors in the bond transaction process included in this study, who argue that credibility in SLBs cannot be reached to the same extent due to the lack of transparency in this instrument.

One of the issuers suggested an interesting proposition for how SLBs could gain more credibility in the market. He pointed out that the SLB market would benefit from more companies failing to meet their KPIs, which would signal to the actors in the bond market that there are consequences when failing to meet such targets. This type of reasoning can be understood using signaling

theory, as consequences to missing the KPIs would signal credibility in the instrument to the market, seeing that such actions are affecting the issuing company negatively. The search for credibility in the SLB market aligns with the views of the SPO-provider, who argued for greater standardization in second-party opinions and credit ratings for SLB issuers to enhance signals of trustworthiness to the market. Considering the views of Barua and Chiesa (2019), with credit ratings not being as standardized for SLBs as for green bonds, SLBs experience a hefty relative challenge in the market. Hence, from this perspective, green bonds can prevail due to the lack of credibility from standardized credit ratings and second-party opinions for SLBs.

6.2 Assessing Risk with SLBs

Observed in all of the cases, the participants' answers pointed towards the lack of knowledge and understanding regarding SLBs as a contributor to uncertainty and risk. With this negative perception associated with the debt instrument, an insightful finding was that people tend to resort to *herd behavior*, which encompasses the circumstance of when individuals observe the actions of others and let that guide their own behavior and decisions. According to behavioral economics, people's evaluation of risk as well as their decision-making process could be skewed and influenced by various biases and emotional factors, leading to irrational choices that may not align with their long-term best interests (Mullainathan & Thaler, 2000; Kahneman & Tversky, 1979).

Herd behavior refers to that it can feel safer to go along with the group, even if it means foregoing personal judgment or preferences. Moreover, such behavior occurs due to bounded rationality (Mullainathan & Thaler, 2000), and can also be driven by fear of social rejection if one does not act in accordance with the group. The proposition regarding the fear of social rejection aligns with Flammer (2021), who, as discussed in the literature review, attributes the rapid increase in issuance of green bonds to the heightened societal focus on sustainable development. As seen in the findings, issuers seemed to perceive a heightened risk of social

disapproval if they deviate from issuing the significantly more common green bonds, and instead issue SLBs. This perception seems to be applicable to investors as well, as they in turn have customers who may perceive green bonds as a more preferable way to finance sustainable development. As a result, issuers and investors may feel compelled to prioritize green bonds over SLBs, not necessarily because they offer superior sustainability outcomes, but because green bonds provide a perceived sense of acceptance within the market. In line with this, Maltais and Nykvist (2020) highlight that the engagement in the green bond market is largely influenced by the aspiration of attracting customers. As behavioral economics highlights, individuals do not always evaluate the options and associated risks objectively as they are oftentimes influenced by cognitive biases, emotions as well as societal factors, and limited by bounded rationality (Mullainathan & Thaler, 2000). The lack of objectivity in the decision making process of investors and issuers could result in a misallocation of capital and undermine the credibility and effectiveness of SLBs.

Herd behavior is especially prevalent in situations where there is a perceived risk or uncertainty, as individuals may believe there is safety in numbers. The financial market is characterized by risk, which extends to the GSS+ market as well. The interviewed actors in the GSS+ market seem to face several types of risks with SLBs that they do not perceive to be as prevalent in the green bond market. These risks include the potential for issuers to fall short on KPI targets, liquidity risks for investors and the threat of greenwashing. These risks mirror the observations of Ramel and Michaelsen (2020), who argue that SLBs struggle to gain legitimacy due to these inherent risks. Kölbel and Lambillon (2022) concur with this and further underscore the pressing concern of greenwashing with SLBs.

Findings from the study suggest that SLBs are perceived as the more risky alternative out of the two studied bonds, resulting in that the needed return for investing in SLBs should be higher as well. This implies, as discussed in the introduction, that the two bonds should have identical risk-to-return ratios and with identical such ratios, it seems *strange* that green bonds are so predominant. By placing this proposition in isolation, the prevalence of green bonds over SLBs,

despite their identical risk-to-return ratios, suggests the possibility of a *market failure* wherein factors beyond rational thinking and financial considerations may be driving the market dynamics. Where rational thinking lacks in describing why green bonds are heavily favored, prospect theory may offer a suitable lens through which to understand the prevailing market situation. As described in chapter 3.1, prospect theory proposes that people tend to be more sensitive to losses than to gains (Kahneman & Tversky, 1979). This proposition would lead investors to refrain from investing in risky bonds due to the potentially greater relative loss, despite the higher expected benefits with SLBs. This aligns with Maltais and Nykvist (2020) observation of green bonds offering lower risk, which further provides a possible contributor to the current market situation. The comparatively higher risk and yield of SLBs compared to green bonds, would, according to prospect theory, de-incentivize investors due to loss aversion (Kahneman & Tversky, 1979).

6.3 SLBs for Transitioning

As seen from the participants in this study, SLBs have a clear transitioning focus, which could perhaps be more suitable in certain companies and industries where the application of green bonds are limited to a certain extent. This also applies to certain markets, where participants pointed out emerging markets as venues where green bonds have not been established as the collective normative of sustainable finance. The proposition that SLBs apply better in certain markets align with the findings of Maino (2022) as well as Mohanty and Sarkar (2024), who emphasize the crucial role of SLBs in hard-to-abate sectors, who are largely excluded from the green bond market due to their carbon-intensive operations. SLBs could therefore, as expressed by the participants as well as Maino (2022) and Mohanty and Sarkar (2024), serve as an important financial instrument to certain industries and companies that are transitioning towards sustainable practices.

In addition, participants pointed towards SLBs being a suitable option, not only for companies engaging in carbon-intensive operations, but companies who do not possess the type of balance sheet that aligns with issuing green bonds. The issuer from Loomis underscores that their corporate activities do not align with the criteria typically associated with green bonds, as they are not involved in projects in accordance with the requirements of green bond issuance. Hence, consistent with signaling theory, the issuance of SLBs has provided Loomis with a pathway to participate in sustainable finance and signal to investors and other stakeholders that they are transitioning the company towards more environmentally friendly practices.

On the contrary, the SLB could also present itself as a controversial instrument. Linking back to the discussion on the fear of social rejection, behavioral economics could explain why SLBs serve as an opportunity for companies operating in hard-to-abate industries to take advantage of. Due to the fear of being socially rejected by the market if no development within sustainable measures are taken, their only option would be to issue an SLB. The fear of social rejection could lead companies into taking advantage of the flexibility of the instrument, which due to their non-environmentally friendly nature easily can be viewed as pure greenwashing.

6.4 International Opportunities and Challenges

Several participants highlighted that from a global standpoint, there are significant disparities in the engagement with sustainable finance across the world. This disparity suggests that there is a lot of room for expanding green bonds and SLBs in different parts of the world. In some markets, green bonds have not established a strong dominance as a sustainable financial instrument, and many participants pointed towards SLBs being a preferable option due to the transitioning nature of emerging markets.

The lesser discrepancy in the presence of green bonds and SLBs seen in these markets could imply that herd behavior is not sufficient for explaining the preferences in those instances, as

there is not a majority to align with in order to seek psychological comfort. This implication aligns with the findings as several participants pointed towards SLB having a somewhat stronger market presence in emerging markets. Since the proportion of green bonds is low, the risk assessment of stakeholders in emerging markets are not skewed or influenced by herd behavior, cognitive bias and societal factors to the same extent. Therefore issuers and investors can appreciate SLBs as a prominent tool for sustainable financing and the beneficial characteristics it entails. Conversely, this appreciation can be experienced without biases and fear of social rejection leading them to suboptimal investment choices (Mullainathan and Thaler, 2000).

As evidenced by prior studies by ICMA (2023) and Murphy (2022), SLBs offer significant advantages. Unlike green bonds, SLBs do not restrict issuers from maintaining control over their budgets and expenditures. Moreover, SLBs are accessible to a broader range of issuers as they do not necessitate substantial investments and capital expenditure in green projects. These types of advantages could be appealing to issuers and investors in emerging markets as they are not faced with the same societal pressure or the established norm of issuing and/or investing in green bonds. Affolter et al. (2024), Bracking et al. (2023), Haq and Doumbia (2022) and Vulturis et al. (2022) all concur on the fact that SLBs can incentivize issuers towards sustainable development.

6.5 Regulations and Market Failure

As noted in the analysis, SLBs could be a viable and useful financial instrument in several markets. Identified by several participants, this holds especially true when companies and/or countries are in the initial stages of developing sustainable initiatives, as well as when green bonds are not suitable for a specific company or industry as a whole. Linking back to the discussion above about the possibility of market failure playing a role in the relative popularity of green bonds, this might serve as an explanation for the less successful implementation of SLBs in the market for sustainable finance.

The ineffectiveness of solely relying on a presumably well-functioning market rather than incorporating regulations to incentivize engagement in sustainability is noted by several scholars; Chiu et al. (2022) as well as Lumley and Armstrong (2004). The lack of a clear and consistent regulatory framework across markets for SLBs poses uncertainty and could hence serve as a contributing factor to green bonds being the preferred bond option. Many participants from various cases expressed the demand for developing the regulatory framework of SLBs. Nevertheless, as noted by participants, the flexible structure of SLBs makes it more difficult to establish adequate regulations and evaluations as the KPI targets are often industry-and company specific. However, participants from various cases emphasize that the current regulatory environment allows for exploitation of the flexible nature of SLBs and the ability to work around technicalities that enable issuers to be portrayed as more sustainable than they actually are. This type of behavior from the issuer side is further encouraged due to the fact that issuers are better off issuing SLBs despite them not meeting the KPIs (Kölbel & Lambillon, 2022). Furthermore, due to the inconsistent regulatory environment between different countries, SLBs may offer issuers in countries with less developed bond markets opportunities to present themselves as sustainable, without contributing to the sustainable development to the same extent they allude to.

Due to the novelty of SLBs, regulations have not been established to the same extent as those in place for green bonds, possibly increasing the risk for greenwashing. The lack of regulatory establishment aligns with several of the participants' views on SLBs, as well as the findings of Kölbel and Lambillon (2022). Furthermore, Zhang and Du (2020) and Bhutta et al. (2022) emphasize the importance of well-designed regulatory environments in explaining the growth of the green bond market. It could therefore be argued that such well-designed policies and regulations are deliberately not in place for SLBs, in order to make it a favorable environment to issue SLBs in, compared to the green bond market. Issuers might therefore be de-incentivized to issue SLBs, since despite meeting their KPIs, the issuer are at risk of greenwashing accusations by the public and scrutiny about their real intentions.

Discussion Endnote

As evident by the findings of this study, many participants initially predicted that SLBs would gain greater traction than it has due to the favorable characteristics of the bond. On the one hand, the ability of green bonds to engender feelings of safety is seemingly prioritized higher than the inherent flexibility of SLBs as well as the bonds' ability to create a pathway to transition towards more sustainable practices. In order for SLBs to gain the traction they were initially expected to gain, participants highlighted the need for standardization in regulatory frameworks that would increase trust among the actors and incentivize the usage of the instrument. Something that is already established to a greater extent in green bonds. As SLBs account for the focus on transitioning for companies that are not equipped to issue green bonds, they play a crucial role in sustainable development.

Taken together, all of these factors are therefore seen to be influencing the much greater popularity of green bonds, as the market is not yet adapted to SLBs. On the other hand, several participants point towards the familiarity and maturity of green bonds to be one of the greatest factors influencing the preference of green bonds over SLBs. Market maturity being the most crucial factor is something only time will either validate or challenge.

7. Conclusion

In the final section of this thesis, the key factors explaining why green bonds are more popular than SLBs are highlighted, connecting to the research aim and objective of this study. Furthermore, the conclusion entails the practical and theoretical implications of these findings within the field of sustainable findings and in broader social contexts. Lastly, the limitations of the study are evaluated, suggesting future research in the field, especially with additional actors and in other contexts.

7.1 Key Findings

As indicated by the analysis and discussion sections, one of the prominent reasons why green bonds are preferred over SLBs regards the maturity of the green bond market. The study identifies tensions between the feeling of comfort with what is known and the benefits associated with SLBs. While the financial landscape is characterized by innovation, development and change, both issuers and investors are seemingly more favorable towards the attributes of security, and hesitant to take on the additional risk that SLBs bring. Conversely, the relatively less standardized nature of SLBs introduces complexities and uncertainties that deter market participants. The green bond market's established frameworks, regulatory support and investor familiarity create a sense of stability and trust, which contrasts with the perceived ambiguities and uncertainty associated with SLBs. Thus, while SLBs present unique opportunities for aligning financial performance with sustainability goals, their adoption is hindered by the market's inherent risk aversion and the preference for more established instruments.

The theoretical lenses of behavioral economics and prospect theory, as well as signaling theory provide further understanding of these phenomena, including cognitive biases, social factors, risk aversion and incentivization. Drawing upon these phenomena, investors and issuers are more

likely to engage in mature and comfortable bonds, even though SLBs present significant opportunities for sustainable development. In line with this, our findings suggest that the SLB market could potentially experience significant growth in the case that a few prominent actors in the market decide to break the herd behavioristic status quo by engaging in the SLB market.

An intriguing viewpoint is introduced with the identification of SLBs offering potential in emerging markets as well as the significance of SLBs in transitioning markets and industries where the structure of green bonds fall short. The viewpoint suggests opportunities for SLBs to evolve and establish a larger market presence in the future. While there are shortcomings in the structure of SLBs that contribute to the resistance of issuers and investors to engage with SLBs compared to green bonds, the directives from the stakeholders are clear; increase the trustworthiness of SLBs by strengthening the cooperation and trust with SPO-providers and develop the regulatory framework to account for the existing loopholes. The field of sustainable finance is constantly evolving and the demand for sustainable development is increasing, placing SLBs and green bonds in a central position for future financial innovation, development and global environmental management.

7.2 Research Aim and Objectives

The study pursued to understand the underlying factors that contribute to the greater popularity of green bonds compared to SLBs in the bond market, and how these factors influence investor preferences and issuers' choices in sustainable financing instruments. In line with previous literature, the novelty and complexity of SLBs compared to green bonds served as a focal point provided by the empirical data of this study. However, previous research presented limited explanations for the significant disparity in preferences for these two bond types considering psychological factors and societal implications.

Due to the lack of such explanations, theories such as behavioral economics and the related prospect theory, as well as signaling theory were used to understand the underlying factors that influence preferences for green bonds in the financial market. These theories were used as a theoretical lens to the semi-structured interviews with participants from different cases involved in the bond transaction process, ultimately informing the study on the different factors that shape market behaviors and decisions regarding green bond investments.

From the semi-constructed interviews with participants from four different cases, several themes emerged that allowed for an understanding of the factors influencing the popularity of green bonds over SLBs. The multiple-case approach enabled us to gain deeper understanding and insights of various perspectives explaining the discrepancy in preference between green bonds and SLBs. The themes that emerged from the thematic analysis of the empirical data enabled us to answer the research question and contribute to the research field of sustainable finance. With additional insights from active market participants from four cases consisting of various Swedish companies, the question why green bonds are more popular than SLBs was addressed.

7.3 Implications

The practical implications of this study are of relevance to parties involved in the bond transaction process as the empirical evidence highlights the benefits and the risks of green bonds and SLBs respectively. The flexible nature of SLBs aid companies that do not have the means necessary to issue green bonds in their transition journey. On the one hand, the issuer must be aware of the inherent risks associated with SLBs; the risk of being accused of greenwashing, failing to meet the KPI targets as well as the added reputational risk if that occurs. On the other hand, investors, who play a significant role in impacting companies' transition by investing in SLBs, need to be aware of the liquidity risk and the risk of greenwashing. Whereas green bonds are not constrained by the liquidity risk and greenwashing to the same extent, green bonds entail the risk of project saturation as well as a greater concern of the political risk. In addition, due to

the maturity of green bonds and their dominant position in the GSS+ market, issuing SLBs could bring publicity for companies wishing to showcase a more innovative stance within sustainable finance. Furthermore, all of these factors are important for underwriters and SPO-providers to account for when evaluating the SLBs. All actors involved in the bond transaction process benefit from learning about these factors in order to make informed decisions that are not constrained by limited knowledge about the GSS+ market and the instruments available on the market.

In line with this, the practical implications are of concern for policymakers as this study highlights the need for developments in the regulatory framework as well as the significant role politicians play in sustainable development. The perceptions of the participants in this study have brought light to several challenges and changes that policymakers face in encouraging further development of sustainable finance. For instance, the political risk associated with green bonds can lead to hesitancy towards the bond, especially during times of uncertainty in the political landscape. In addition, in order to combat the several risks associated with SLBs, consistent and standardized frameworks need to be implemented in order to minimize existing loopholes. By doing so, policymakers can increase the trust in a proactive manner and incentivize investors and issuers towards the instrument.

The practical implications of this study reveal that the popularity of green bonds over SLBs does not necessarily stem from green bonds being inherently superior. Rather, it suggests that factors limiting rational decision-making play a significant role in this preference. Regarding the theoretical contributions of this paper, our research adds to the field of sustainable finance by elaborating on the factors contributing to the difference in popularity between green bonds and SLBs. By utilizing signaling theory and behavioral economics as theoretical lenses, our study advances the understanding of market preferences and behaviors in the context of GSS+ bonds.

Firstly, our research uses signaling theory to demonstrate how the established market presence and perceived lower risk of green bonds effectively signal stability and reliability to investors. In

this paper, signaling is showcased in a new context, especially seeing as signaling theory seems to offer possible explanations for favoring the use of both green bonds and SLBs. Green bonds, with their clear and quantifiable environmental impact, provide a more straightforward signaling mechanism compared to the more complex and varied KPIs associated with SLBs that instead provide signaling mechanisms connected to boldness, innovation and risk-taking. The study contributes to the current literature by illustrating how the clarity and standardization of signals can influence investor confidence in green bonds, while also showing how signaling can function in favor of SLBs.

Secondly, our research delves into herd behavior within behavioral economics by applying it to the GSS+ market. Our findings suggest that investors prefer green bonds due to their established track record and widespread acceptance, perceiving them as safer and validated by the market. The fear of social rejection further amplifies this behavior, as investors face pressure to conform to industry norms. The pressure discourages investment in less familiar instruments like SLBs, despite their potential benefits, as investors seek to avoid reputational risks and scrutiny associated with unconventional choices.

By using herd behavior and social conformity as means for understanding phenomena, our research contributes to the theoretical understanding of sustainable finance. It highlights how social dynamics and psychological factors interplay with economic decisions, reinforcing the dominance of green bonds in the market. This perspective adds a new dimension to the literature on investment behavior, emphasizing the importance of social influences and market perceptions in shaping sustainable financial development.

7.4 Limitations and Future Research

The conducted study entails limitations as a result of the chosen cases, the nature of qualitative research, language-related limitations, which limit the transferability of our findings. The

methodological limitations were described under chapter 4.6 and the following chapter will consider other relevant limitations that could be addressed in future research.

As this study prioritized depth and richness in exploring human experiences, perceptions and behaviors, the purpose was not to make the findings transferable to a large extent. However, with the chosen approach with various cases including several participants in the bond transaction process, we argue for a high degree of interest as well as applicability to other market participants. Nevertheless, since Sweden is very progressive in terms of sustainable development, the actors interviewed possess great awareness for the GSS+ market, which may not be true considering actors in other countries. Therefore, the findings may not be applicable outside of the Swedish market as their awareness for sustainable finance might be limited.

The study faces limitations concerning the impact of regulations and variations within different countries. Diverse market conditions, regulatory frameworks and socio-economic contexts across countries and regions can influence the issuance and adoption of sustainable financial instruments such as green bonds and SLBs. Differences in incentive mechanisms, market maturity and investor preferences may affect the relative popularity of these instruments in different regions and as a result, the study's findings may not fully capture the nuanced dynamics of sustainable finance across the globe and across entire markets.

Furthermore, focusing solely on issuers, underwriters, investors and SPO-providers as our cases in the study may limit the breadth and depth of our analysis on the popularity of green bonds versus SLBs. This approach overlooks the perspectives of other relevant stakeholders in the bond market and may lead to a lack of diversity in viewpoints and experiences. Additionally, excluding these stakeholders restricts our ability to explore interconnected relationships and dynamics within the entire bond market ecosystem. While providing valuable insights, this narrower focus presents limitations in terms of scope, diversity and contextual understanding, which should be acknowledged to ensure the credibility of our study.

The limitations put forward above, especially regarding the scope of this study, has opened up for questions regarding the viability of SLBs in certain markets. Since the empirical data was provided by participants from four different cases operating in the bond transaction process in established Swedish companies, the findings may not envision a future for the SLB to the same extent as in other contexts. Therefore, questions such as; will SLBs reach the same status as green bonds in other markets, will new instruments take precedence over green bonds and/or SLBs, and if there is a potential for combining green bonds and SLBs in certain markets remain unrevealed. These intriguing questions could have been answered by utilizing other means in this study, which draws upon the quest for future research in other areas.

One suggestion for future research therefore lies in conducting a broader study comprising a different context, especially including emerging markets. As was evident from the findings, many saw an opportunity for SLBs to become a suitable tool in emerging markets. Furthermore, expanding the scope of future research to include big markets where sustainable financing is not as established to the same extent, for example the US market, could extend the analysis by looking at whether preferences of green bonds exceed those of SLBs or not. By examining this, researchers could gain interesting insights into whether the popularity of green bonds is due primarily to the relative novelty of SLBs.

Additionally, future research could benefit from including more market actors that are present in the bond transaction process, for instance bond market regulators, legal advisors, certification bodies and policymakers. By doing so, findings could become more consistent by capturing the full dynamics of a bond transaction process.

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Appendix

Interview Questions

Background

1. What is your position within your company?
2. What is your knowledge about green bonds?
3. What is your knowledge about sustainability-linked bonds?
4. How does your company work with green and/or sustainability-linked bonds?
5. How many years of experience do you have working for your company and particularly with green bonds and SLBs?

SLBs versus Green Bonds

6. How do you perceive the market demand for green bonds versus sustainability-linked bonds, and what factors do you believe influence this demand?
7. From our findings, green bonds are more popular and significantly more common in the market. Why do you think that is?
8. Which instrument is easier to issue/ invest in/ work with? Why?
9. Which instrument do you prefer to issue/ invest in/ work with? Why?
10. Is any of these bond types more efficient and have a greater potential to promote the transition towards becoming carbon neutral?
11. What are the pros and cons of SLBs and green bonds?
12. What factors do you consider when evaluating the attractiveness of green bonds or sustainability-linked bonds as issuing options/investment options?
13. How does external pressure affect your issuing/investment decisions in green and sustainability-linked bonds?
14. In your opinion, what role do green bonds and sustainability-linked bonds play in promoting sustainability and addressing environmental concerns?

Future Outlook

15. From your perspective, what changes need to occur in order for SLBs to challenge green bonds in terms of market popularity?
16. From your perspective, what do you envision as the future direction of green bonds and sustainability-linked bonds in the financial markets? What opportunities or challenges do you anticipate?

17. What challenges or barriers do you see in the widespread adoption of green bonds and sustainability-linked bonds, both from an issuer and investor perspective?
18. Do you think SLBs will reach the same global status as green bonds in the future? Why/ Why not?

Authorship Statement

This study deliberately demonstrates independent work of the authors of the group, namely, Ebba Bengtsson, Julia Darlin, and Lucas Holmström. Initially, some parts of the thesis were written separately, especially the literature review, analysis and discussion. In the literature review, Bengtsson accounted for the part on sustainable finance, Darlin for the part on green bonds, and Holmström for the part on SLBs. In the analysis and discussion sections, Bengtsson accounted for the themes regarding associated risks with SLBs and international opportunities, Darlin for the parts for clear outcome and SLBs for transitioning, and Holmström for the parts regarding market maturity and assessing ambitiousness. This allowed for efficient work and sufficient time towards the end of the project allocated for proof-reading and discussions regarding the content of each other's parts as well as adding and/or removing text as we saw fit. However, the text is ascribed to all authors as this setup allowed each member to contribute to every part. The other segments of the paper were written as a collective, where each author contributed equally for each segment.

AI Usage Statement

Firstly, AI was applied in this study with the tool Riverside that enabled the transcription of the conducted interviews. The transcript is not included explicitly in the thesis. However, the quotes found in the analysis are derived from Riverside. Secondly, the AI tools ChatGPT and Thesaurus were used to find synonyms for words throughout the text in order to avoid unnecessary repetition and increase the flow of the text for the reader. Examples of this include linking words

such as “furthermore, moreover, in addition” et cetera as well as prompts such as “can you improve this sentence structure” and “can you make this sentence more clear”. AI was therefore primarily used in the purpose of text editing and rephrasing of sentences, and not in the purpose of finding inspiration or generating text. This allowed us to stay away from the apparent risks with AI, more specifically, the risks of AI hallucination and various biases.