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Green Bonds and Greenium

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The climate crisis is upon us. Floods in Chennai, forest fires in Australia and droughts in South Africa, ice melting faster in Greenland, Ghoromara island disappearing due to rising water levels. All these are due to the rise of greenhouse gases. To mitigate the impact of climatic changes, governments worldwide came together in Paris in 2015 and agreed to limit global warming to 1.5 degrees Celsius. The recent IPCC report (IPCC, 2021) has painted a rather grim picture for the planet. The Glasgow Summit (UNFCCC, 2021) held in November 2021 has shown urgency is needed to tackle the climate crisis. Technology and finance are two essential weapons in this fight. Since a largescale transition to lower greenhouse gas emissions is required, large sums of money are needed to bring about this transition. This article looks at green bonds used to finance this transition. It also looks at greenium, a premium for green bonds that recently attracted significant interest.

Green bonds

A green bond is a type of a fixed income security. The objective of the bond is to raise money for predetermined projects that have climate or environmental benefits. This type of bond contrasts to a plain vanilla debt instrument where the end-use of the proceeds is not specified in the terms. Green bonds are issued for funding a variety of end uses (ICMA, 2021).¹

¹. ICMA provides a list of eligible activities for raising green bonds. These uses include “renewable energy, energy efficiency, pollution prevention and control, environmentally sustainable management of living natural resources and land use, terrestrial and aquatic biodiversity, clean transportation, sustainable water and wastewater management, climate change adaptation, circular economy adapted products, production technologies and processes, and green buildings.” (ICMA, 2021)

The first green bond came about in 2008. In 2007 a group of Swedish pension funds asked the World Bank how they could invest in projects that can help the climate. Unfortunately, they did not know how to find such projects. To meet this need, The World Bank had issued the world's first green bond in 2008. (The World Bank, 2019)

Green bonds help "internalize environmental externalities and adjust risk perceptions" (G20 Green Finance Study Group, 2016, p. 20). Compared to the baseline of investing in classical bonds, investing in green bonds provides information to investors on the use of their funds and the impact of their investments. This information also helps investors assess risks better and help understand the issuers' strategy and approach to environmental issues. Given that green bonds are plain vanilla bonds, they help investors extract and capture additional information without incurring additional costs. Green bonds also help build greater sustainability awareness and build capacity in the market.

Green bonds help institutional investors like insurance companies and pension funds to invest in low-carbon transition projects. By doing so, they can offset the long-term climate-related risks in their investment portfolio (Novethic, 2015). Green bonds also act as a signal to other firms who wish to undertake environmentally friendly projects. The green label on these bonds help institutional investors identify green investments and act as a discovery tool. The ability to identify green projects helps reduce friction in the investment process. (Climate Bonds Initiative, 2015). Green markets will expand as a result of both the imitation effect and competition among investors in the market and result in a greater understanding of issues around low carbon transition.

While most issues of green bonds are the plain vanilla use of proceeds bonds, there are several variations in green bonds (Shishlov et al., 2016; Weber & Saravade, 2019). The first type is *corporate bonds*, also called the use of proceeds bonds, and are backed by a corporation's balance sheet. Then there are *project bonds* that are backed by the earnings of project(s). Here the issue is made by the SPV² and disbursements are made out of the earnings of the SPV. Some bonds are collateralized by a group of projects and are called *asset-backed securities*. *Green covered bonds* are collateralized against green mortgages. They help the issuer buy a sustainable building or retrofit an existing building. *Green sukuk* are Shariah compliant green bonds. For short term funding, *green commercial papers* are available.

² SPV is Special Purpose Vehicle that is set up as a subsidiary to undertake a specific business purpose or activity. A typical infrastructure project is structured as a SPV.

Bonds can also be classified by the nature of the issuer. Green bonds issued by international financial institutions and development agencies are termed *Supranational, sub-sovereign, and agency (SSA) bonds*. Then, there are bonds issued by municipal governments, regions, or cities. These are called *municipal bonds*. Bonds issued by financial institutions are called *financial sector bonds*. These institutions use the funds for their ‘on balance-sheet lending.’

According to Climate Bonds Initiative (CBI) (*Climate Bonds Initiative, 2021*), USD 1.524 trillion of green bonds have been issued till November 2021. CBI also indicates that the principal end uses of green bonds are energy (35%), buildings (26%), transport (19%), and water (10%). A study by International Monetary Fund (International Monetary Fund, 2019) suggests that while green bond issues have been rising, the proportion high-quality papers (AAA to AA) has been gradually reducing over time – highlighting increasing risk in green bonds. While Europe has driven the global issuance of green bonds, China is fast emerging as an important issuer.

Let us look at some examples.

JSW Hydro Energy Ltd (JSWHEL), a company of the JSW Group, raised green bond financing recently (Sarkar, 2021). The lead structuring agent for the issue was Deutsche Bank. The company raised funding for its hydropower project. Through the issue of US dollar-denominated green bonds the company raised \$707 million. These bonds have a coupon rate of 4.125 percent per annum payable semi-annually and are due for repayment in 2031. These bonds are listed on the Singapore Exchange.

The Ghaziabad Nagar Nigam (GNN) launched India’s first Green Municipal Bond issue (*The Hindu Businessline, 2021*). In April 2021, GNN announced that it had successfully raised Rs 150 crores at a cost of 8.1 percent. The issue attracted forty investors who were prepared to invest Rs 401 crores. This indicated a good demand for similar projects. The proceeds of issue will be used for setting up a territory water treatment plant. It would also be used install water meters and provide piped water to Sahibabad.

The green bond market developed out of voluntary action by issuers without any governmental or regulatory intervention. There has been little regulation. Companies have defined what constitutes a "green" project and have

their own procedures for the utilization of funds. International Capital Markets Association (ICMA) has been at the forefront of defining and regulating green bonds. To provide a structure to the green bond market, The Green Bond Principles (ICMA, 2021) were launched in 2014. Some of the leading financial institutions such as Citi, JP Morgan, Credit Agricole and Bank of America Merrill Lynch were behind the Principles. ICMA was given the responsibility to manage them. According to the Principles document, "The Principles outline best practices when issuing bonds serving social and/or environmental purposes through global guidelines and recommendations that promote transparency and disclosure, thereby underpinning the integrity of the market." The GBP outlines four components for alignment:

1. **Use of proceeds:** The use of the proceeds should be clearly described in the documentation of the bond. The documentation should provide clear environmental benefits. These benefits should preferably be measurable and should be assessed periodically.
2. **Process for Project Evaluation and Selection:** The documentation should clearly list the environmental sustainability objectives of the project. It should also indicate how the project meets the green project categorisation. Supplementary information pertaining to social and environmental risks of the project may be provided.
3. **Management of Proceeds:** The net proceeds of the issue should be credited to a specific account and tracked by the issuer towards allocation to green projects.
4. **Reporting:** The issuer should keep track of all use of proceeds annually till the time all the money raised is utilized.

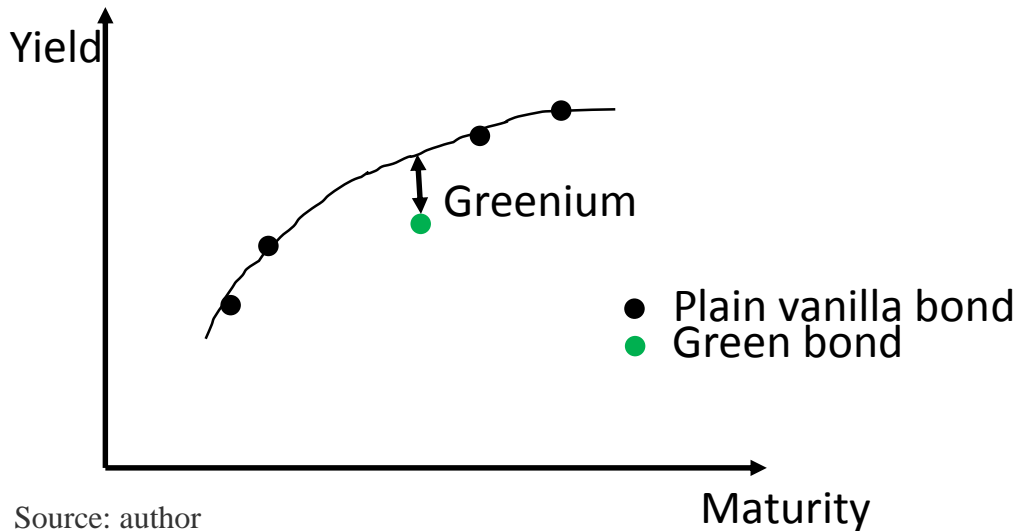
We now look at an interesting regularity seen in green bonds – greenium.

Greenium

For a long time green bonds have attracted a premium – investors have been willing to pay more for these bonds. Thus, they reward companies or governments that have environmental or sustainability issues at heart. This reward comes in the form of lower borrowing costs. The premium that investors are willing to pay for green bonds is called *greenium*.

Greenium can be conceptually understood from the diagram below.

Figure 1: Greenium illustrated



Source: author

As one can see from the diagram, the green bond offers a lower yield than a plain vanilla bond of the same maturity. Because of the inverse relationship between yields and price, the lower yield translates into a higher bond price. The difference between the prices of green bond and plain vanilla is the premium for the green bond or the greenium. Greenium is usually computed as

$$\text{Greenium} = \text{Yield of a green bond} - \text{Yield of a plain vanilla bond}$$

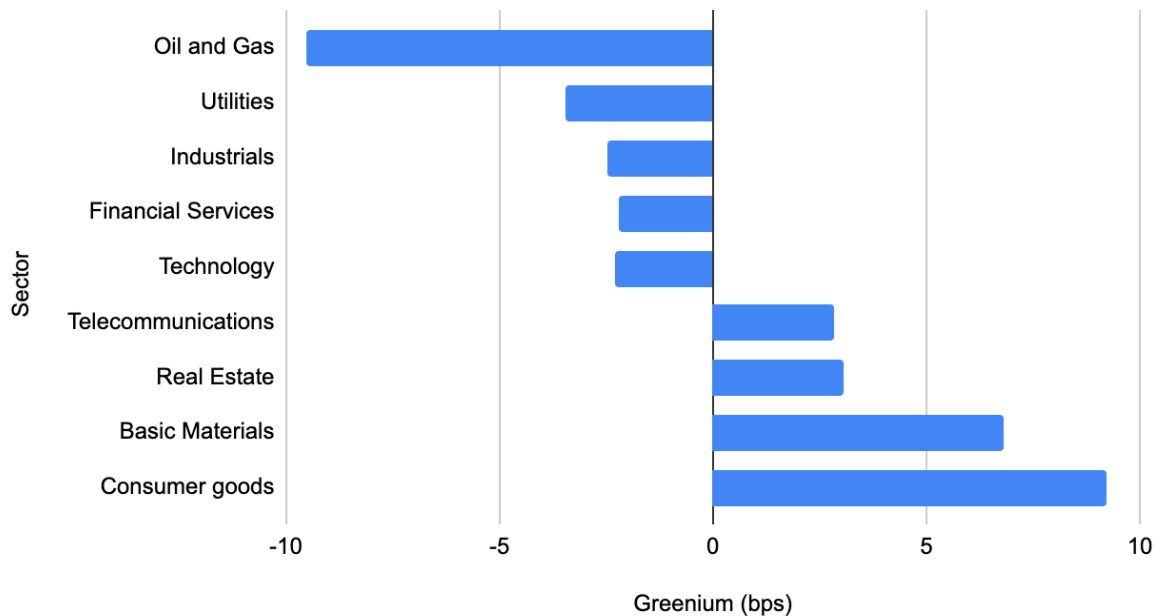
While calculating care should be taken that both the bonds are of the same maturity.

Greenium is believed to range from two to nine basis points (bps) for government bonds (Prala, 2021). In the corporate bond market, greenium varies in a wider range of 0 to 25 bps, with an average of 5 bps (Prala, 2021). Relative to that for government bonds, greenium for corporate bonds increases with maturity. It is also seen that higher-yielding (and hence lower-rated bonds) tend to have significantly higher premiums. These premiums are often in excess of 10 bps (Prala, 2021). Interestingly the euro area exhibits lower premiums (Stubington, 2021).

Greeniums also differ across industries. According to a study by HIS Markit, the greeniums for different industries were:

Figure 2: Greenium for various sectors

Greenium for Various Sectors



Source: Based on Sebastian Meyer and Karim Henide, Searching for Greenium, HIS Markit, [\(Novethic, 2015\)](#)

Figure 2 indicates that the greenium tends to be high for industries that have high greenhouse gas emissions and where greenhouse has abatement is difficult.

Recent studies have shown that the greenium has shrunk mainly due to a glut in green bond issues (Bachel, 2021). However, the German green bond has consistently lower yields than its plain vanilla twins (Jones, 2021).

So, what explains greenium. There is no theoretical explanation for greenium. Ideally, if there is an arbitrage available between a green and a plain vanilla bond, actions by investors will wipe out the greenium. The persistence of greenium indicates a relative lack of trading in the green bond market. The investor is simply compensating for the lack of liquidity. Alternatively, the greenium could merely reflect the higher utility (doing something good for the society or the environment) that an investor expects from a green bond.

The future of green bonds

Issues of green bonds are not likely to slow down anytime soon. There are several reasons for this:

- a. Green bonds are a great marketing tool. They are also a way to signal to the green credentials of the issuer. Green bonds create trust in the eyes of the investors and consumers that the company cares about the environment and trying to be sustainable. This is true for institutional investors too as they are seen as holding green portfolios and are thus less susceptible to environmental risks.
- b. There has been rising pressure from activist investors that companies need to clean up their act. Recently an activist investor wrested three seats on the board of Royal Dutch Shell company. The issue of green bonds acts as insurance against shareholder activism. Thus, more companies are likely to make preemptive moves. Take the case of PepsiCo (Deschryver & de Mariz, 2020) that issued green bonds where there was little difference between the green bond yield and a hypothetical senior unsecured note. Yet, the green bond issue was seen as critical to the company's sustainability strategy.
- c. The issuance of green bonds also affects employee interest and morale. Companies with superior sustainability credentials attract and retain employees by increasing their interest in sustainability. Thus, the issue of green bonds leads to increased pride and commitment among the employees.

Concerns remain on the use of proceeds, diversion of funds, and greenwashing by companies. Still, increased regulation and investor scrutiny would deter companies from cheating. The future of the green bond market looks bright and cheerful!

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