

# Survey of Green Bond Pricing and Investment Performance: A Commentary

Thomas Liaw\*

Department of Finance and Economics, St. John's University, New York, USA

## Abstract

Green bonds are issued to raise money to finance climate or environmental projects. The green bond market started in 2007 with less than \$1 billion and has been growing fast to \$270 billion by 2020. The pricing of green bonds in the primary market has attracted much attention. The paper "Survey of Green Bond Pricing and Investment Performance." Surveyed the literature and showed that several publications provided evidence of green premium, some did not support such conclusion, and there is also evidence of mixed results. In addition, Liaw also examined investment returns from select green bond funds and green bond indexes. The paper provided clear summary of publications on green bond pricing at issuance but did not evaluate each of the theoretical models that produced the reported findings. The green bond market is expected to continue the impressive growth. The specific issue, the market environment, and investor demand will continue to impact on the pricing in the primary market and the trading in the secondary market.

**Keywords:** Green bonds • Green premium • Greenium • Pricing • Primary market • Secondary market

## Description

Green bonds aim to provide capital to meet the funding requirement to promote climate or other environmental sustainability purposes. The need to finance climate or environmental solutions in combination with growing investor demand will continue to lift green bond issuance. The market started in 2007 with \$0.8 billion and reached \$270 billion by 2020. It is still a small segment of the fixed-income market, and many observers expect fast growth in the coming years. Several factors contribute to the growth of the market. The first is strong government policy support. The Paris Climate Agreement requires large sums of funds to facilitate the transition towards a low-carbon economy.

Furthermore, private institutions have increased fundraising from the green bond market. For borrowers, issuing green bonds is consistent with corporate social responsibility and, in some cases, saves financing costs. The Green Bond Principles add clarity and increase demand for green bonds from investors. In addition, rating agencies track and provide assessment of green bond's adherence to the stated promises [1].

Since the first corporate green bond was issued in 2013, there have been anecdotes of green bonds pricing being tighter than similar conventional bonds. Many green bonds are similar to their conventional bond equivalents. Thus, we would not expect them to be more expensive than conventional vanilla bonds.

A green premium is therefore somewhat of an anomaly, might be due to unmet demand from investors for green debt. The demand is driven largely by investors with a green mandate but also by regular investors interested in green bonds as a way to gain exposure to the green theme

The paper "Survey of Green Bond pricing and Investment Performance" [1]. Surveyed the literature and documented evidence for mixed empirical observations on the green bond premium (called greenium). The green bond premium is calculated as the difference between the yield of a green bond and that of an equivalent conventional bond by the same issuer. Liaw 2020 reported there are three types of observations in the Literature: Evidence of greenium, no evidence of greenium, and mixed results. In the case of greenium, several publications showed empirical evidence of green bond premiums [2-6]. In such case, investors are willing to accept a lower yield to support bonds with environmental and climate benefits. However, several reports showed no evidence of green bond yield discount at issuance [7,8]. For the third type of observations of mixed results, Liaw reviewed all studies by Climate Bonds Initiative (CBI), from 2016 to 2019, and documented that some green bonds are priced below while some are priced on or above their own yield curve. This paper concluded that there is no guarantee that green bonds enjoy a lower cost. The conflicting results are likely explained by differences in sample selections, time periods, methodologies, ratings, currencies, and the properties of the respective issuing entity and the bond.

\*Address for Correspondence: Dr. Thomas Liaw, Department of Finance and Economics, St. John's University, New York, USA, Tel: +718-990-7308; E-mail: Liawk@stjohns.edu

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The paper surveyed the literature and provided a clear summary of pricing in the primary market. There is no conclusive evidence on whether the yield of a green bond is lower or higher than that of a similar conventional bond by the same issuer. The paper mentioned but did not evaluate the theoretical models that produced the results in those published reports. In addition, the paper examined returns from select green bond indexes and green bond funds. The sizes of those funds are still small, and their returns underperformed their benchmark indexes during the sample period.

The continued growth in green bonds will finance or refinance projects to support the environment. Recent report from Climate Bonds Initiative showed that, in 2020, the largest issuers included Fannie Mae (\$13 billion), Federal Republic of Germany (\$12.8 billion), Société du Grand Paris (\$12.2 billion), KfW (\$9.4 billion), Republic of France (\$6.9 billion), Republic of Chile (\$4 billion), New York MTA (\$4 billion), Volkswagen (\$2.2 billion), and China Development Bank (\$1.2 billion). This is clear evidence of continued strong support from sovereigns. Transport operators are now among the top issuers. Finance companies (including banks) are significant players in the green bond market [9-15].

## Conclusion

The cumulative issuance volume reached \$1 trillion in 2020. As the green bond market continues to grow, it is becoming a significant segment of the fixed-income market. There are numerous opportunities for research. Pricing of green bonds in the primary market is still a fruitful research area. Over time, more research projects are likely to focus on secondary market trading and investing.

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