European Commission

ANNUAL RESEARCH CONFERENCE 2022

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Pricing of Green Bonds – Drivers and Dynamics of the Greenium

INTRODUCTION

The green bond market has increased rapidly in recent years amid growing concerns about climate change and wider environmental issues. However, whether green bonds provide cheaper funding to issuers is still an open discussion. This paper provides evidence that a key factor explaining the greenium consists of the credibility of a green bond itself or that of its issuer.

Motivation:

- Green bonds are similar to conventional bonds except that they are ear-marked to finance exclusively green projects
- The green bond market has grown rapidly in recent years
- Green bonds can help finance the transition if green bonds benefit from cheaper funding

Research question: Do green bonds trade at a greenium, i.e., tighter spreads, compared to conventional bonds?

Our analysis:

- Compares the pricing of green and conventional bonds cross sectionally and over time
- Evaluates the effect of bond and issuer credibility on the greenium
- Analyses which types of investors are willing to pay a greenium

Study design:

- Uses a matching algorithm to pair green bonds with similar conventional bonds of the same issuer
- Panel regression (bond-day-level) of option-adjusted spread (OAS) on green bonds dummy variable and controls

RESULTS

Result 1: Green bonds trade at a greenium => Estimated Greenium of 4 bps for the entire matched sample and period

Result 2: Only credible green bonds exhibit a greenium

- Green bonds need to be verified by third-party to trade at lower spreads
- Only bonds of credible issuers exhibit a greenium

  Bonds which are issued by greener firms are rewarded with a greenium (alternative energy sector, banks signed up for the United Nations Environment Finance Initiative- UNEPFI)

Result 3: The greenium evolves over time

- The greenium is only present and statistically significant in Q2 2020
- This trend is driven by retail investors' demand in green bonds
- Bonds that are mostly held by retail investors trade at tighter spreads, suggesting that retail investors are willing to pay more for green bonds than conventional bonds

Figure 1: Greenium estimates in euro area secondary bond markets by category (Basis points, difference between in OAS)

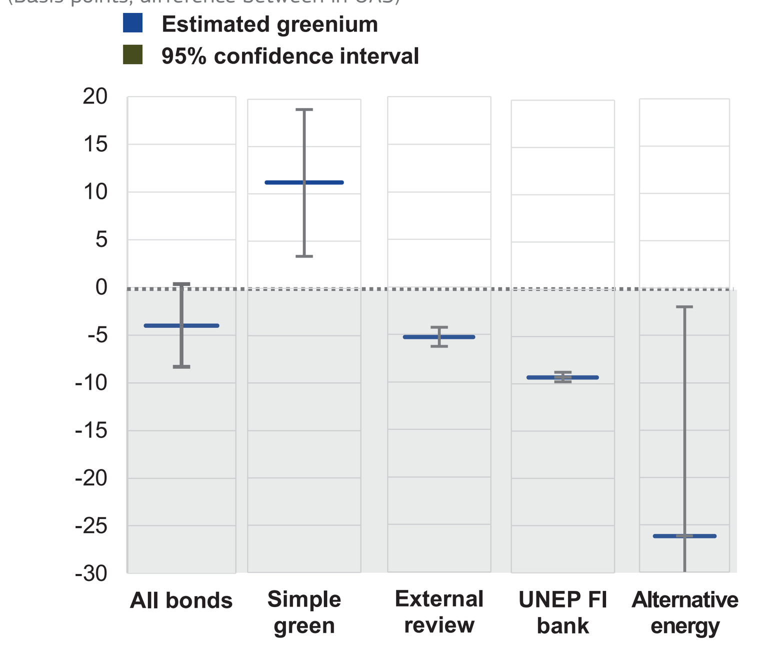
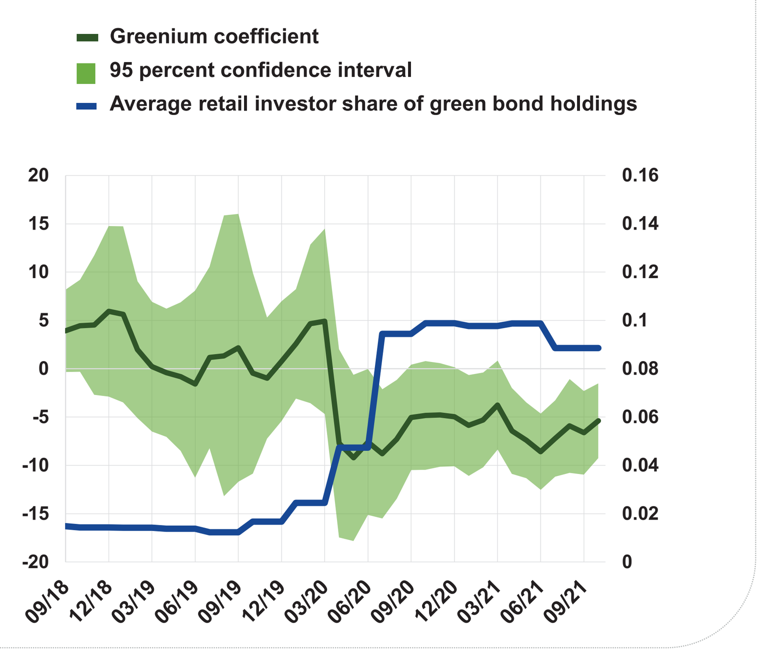


Figure 2: Greenium estimates in euro area secondary bond markets by category (lhs: Basis points, rhs: share of amt. outstanding)



CONCLUSIONS

Our paper presents three main findings:

- First, on the full sample, we find **a greenium of about 4bps**, though significant only at 10%.
- **Second, greenium is fully explained by green bonds with higher greenness.** We conclude that credibility does matter, both at a bond and an issuer level. Green bonds with external review have a highly statistically significant greenium of 5.5bps. Green bonds issued by green firms and by UNEP FI banks also trade at a more economically and statistically significant greenium of 27bps and 16.5 bps, respectively.
- **Third, greenium indeed evolves over time and becomes more economically and statistically significant**, however, only for green bonds issued by banks. Green bonds of green firms trade at a greenium over the entire period. Finally, we show that the greenium on green bonds issued by banks is driven by an increased demand from retail investors.

This paper contributes to an important policy debate about the European Union Green Bond Standard (EUGBS).

- it exposes the justification for a regulatory standard that will provide a clear definition of green bonds and requirements to assure that proceeds raised from the issuance of green bonds positively contribute to the transition. Institutional investors may not have strong incentives to monitor environmental performance of green bonds while retail investors may not have the capacity and knowledge to so. Thus a regulatory standard is key to channel investments into projects fostering the transition.
- The standard has the potential to foster growth in green bonds and encourage cheaper funding to green bonds' issuers.
- Only a unique standard can help avoid investors' confusion, loss of confidence and potential runs even on highly credible green bonds.

ACKOWLEDGEMENTS

The authors are grateful to Simon Kordel, Olimpia Carradori and Angelica Ghiselli for their support on the data and to Tomislav Dzaja for his help with the matching algorithm. We thank Sara Balitzky, Linda Fache-Rousova, Falko Fecht, Sujit Kapadia, Claudia Lambert, Julien Mazzacurati, Paul Reiche and an anonymous referee for helpful discussions and comments, as well as participants at multiple meetings, conferences and seminars for comments and suggestions.

Disclaimer: The views expressed in this paper are those of the authors only and do not necessarily reflect the views of the European Central Bank or the Eurosystem.

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