Discussion of
Primary Corporate Bond Markets and Social Responsibility
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2022 EBA Policy Research Workshop

"Technological Innovation, Climate Finance and Banking Regulation"

Plan of the presentation

01. Research concept

02. Structure of the paper

03. Data and methodology

04. Results

05. Questions to the Authors

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Michael Halling[†]   Jin Yu[‡]   Josef Zechner[§]

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Research concept

- Very important topic, interesting design of the study, findings <u>with potential policy implications</u>

Research concept

This paper presents the first comprehensive analysis of the effects of different ESG dimensions on corporate bond issue spreads and the supply-side consequences.

- a theoretical framework that identifies the three possible channels, via which ES may affect issue spreads
- main research questions:
  - are E and S scores correlated with corporate bond spreads in the primary market, when controlling for bond ratings and other firm characteristics?
  - are there differences in the importance of ES-scores for issue spreads across the various E and S dimensions, rating classes and industries?
  - is there time-variation in the relative supply of bonds issued by firms with good ES-scores in response to shifting investor preferences, as our model suggests, and what is the interaction between bond supply dynamics and the pricing effects of E and S in primary bond markets?

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Structure of the paper

- 1. Introduction – very long: 6 pages
- 2. Bond IPO Pricing and ES-scores
  - A simple equilibrium model of a primary market for corporate bonds

> In this section we derive a simple equilibrium model of a primary market for corporate bonds where firms differ in their ES performance and some investors have non-pecuniary preferences for holding bonds issued by firms with good ES ratings. A distinguishing feature of the model is that firms are allowed to react to investor preferences and can improve their ES performance, as in Heinkel et al. (2001). We then use the propositions derived from the model to guide and focus our subsequent empirical strategy.

  - …and to certain extend a summary of results and a literature review
- 3. Data Description and Empirical Methodology
- 4. Empirical Findings
- 5. Conclusion
- Appendices

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Structure of the paper

- You might consider:
  - shortening the introduction (significance of the issue, motivations for the research, goals and research questions, and structure of the paper)
  - adding a separate "Literature review" section (in relation to the key objectives/research questions and research methods)
  - limitting of repetition in the text
  - in conclusions - highlighting policy implications and pointing to limitations

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Data and methodology

- Period 2002-2020 (with limitations)
- New bond issues: Mergent FISD database
  - + all past issuance activities covered in the Mergent FISD database since 1984
- Issuer-/firm-level data:
  - the MSCI ESG KLD database - ESG scores covering seven categories: Community, Diversity, Employee Relations, Environment, Product, Human Rights, and Corporate Governance
  - Compustat balance sheet variables - key firm characteristics that are likely to be related to bond spreads
- A panel regression model similar to that in Halling et al. (2020)

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Results, findings

- A robust, negative relation between corporate environmental and social (ES) performance and corporate bond issue spreads, even after controlling for ratings and other firm characteristics
  - this relation is due to bonds rated BBB or below, with spread-reductions of up to 98 basis points
  - these effects are predominantly related to product and employee scores
  - strong supply effects, as the share of issuers with good ES ratings has increased substantially
- Evidence for a negative ES-credit-risk link

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Results, findings

- Very important findings:
    - „We provide evidence for a **negative ES-credit-risk link**"
    - **„**We also provide **novel evidence that corporate E and S performances may reflect credit risk differences not fully captured by ratings and other firm characteristics**"
    - (...) in addition to preference-based demand for bonds from high ES issuers, **ES-contained information about** bonds' expected cash flows and **their riskiness** is responsible for the **relation between ES-scores and issue spreads**. This interpretation is also supported by our analysis of the **link between ES-scores and credit risk**, which finds that <u>good ES-performance results in a significant reduction in credit risk for risky, high-yield bonds.</u>
- **Policy implications!**

Results, findings

- Very important findings
- **Policy implications!**

  - Evidence for a negative ES-credit-risk link
  - ➤ Market discipline for ESG issues

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Questions to the Authors and comments

- **2. Bond IPO Pricing and ES-scores**
  - **2.1. Production technologies and bond cash flows**

*The total number of firms is __**fixed**__ and given by $N = N_G + N_P$ where N_G is the number of green firms and N_P the number of polluting firms.*

? Consequences of this assumption? Can it be abandoned?

➤ Potential limitation of the study

  - **2.2. Bond investors and their portfolio choice**

We consider two types of bond investors: __green__ investors (g) are pollution averse and only buy bonds issued by firms with green technology (G-Bonds).

? Do you consider not only green bonds, but also social, sustainability and sustainability-linked?

Questions to the Authors and comments

- 3. Data description and empirical methodology
    - 3.1. Data sources and variable definitions

*ESG scores covering seven categories: Community, Diversity, Employee Relations, Environment, Product, Human Rights, and Corporate Governance. Each category includes individual indicators (**zero-one-dummies**) representing strengths or concerns regarding a firm's performance with respect to a specific ESG-dimension.*

? Does not include differences in scores (only „bad" or „good" and nothing in between)?

? Potential limitation of the study

*Following Albuquerque et al. (2020), we use the first six categories to **construct our ES-score**.*

? Could you describe the score in the text and not appendix? (methodology!)

*we use Compustat **balance sheet variables** to construct key firm characteristics*

➤ Financial statement variables

Questions to the Authors and comments

- 4. Empirical findings
  - 4.1. Summary statistics

We also split the sample into "**good**" and "**bad**" firms based on the aggregate ES-score. More precisely, the ES-good dummy is set to one (zero) if the ES-score is greater than or equal to zero (is less than zero), which means that **ES-good firms have <u>more</u> strengths than weaknesses**.

? Does not differenciate the levels of scores in different categories?

(a consequence of 0-1 dummies)

➢ Potential limitation of the study

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Questions to the Authors and comments

- 4. Empirical findings
  - 4.2. ES-Scores and bond spreads

One limitation of our ES data is that the latest scores are from 2018. As we do not want to lose the most recent bond issuance observations, **we forward fill the ES data from 2018 until 2020**, assuming that variation in firms' ES-performance is small over a short period such as two years.

➢ A limitation of the study (esp. the year 2020 might be different due to the pandemic)

? Can you add 2019-2020 data?

Questions to the Authors and comments

- 4. Empirical findings
  - 4.2.1 Non-crisis and crisis periods

We find, however, substantial variation in coefficients across the remaining individual ES-dimensions: good employee-related scores are highly rewarded in crises periods via large drops in spreads (the coefficient estimates are more than ten times as large as during normal times) while good scores in community and environment lead to significant and very substantial increases in spreads. These results challenge some of the conventional wisdom which suggests that sustainable firms do better during crises. (…) **It is important to note, however, that the number of observations during recessions is small**

> Potential explanation: different areas of responsibility: employees relations – economic and legal responsibility, relations with communities and environment – mainly area of ethical and discretionary responsibility
>> perhaps during crisis ethical and discretionary responsibilities are perceived as too costly (and since not obligatory and adding to core value - are considered unnecessary and possible to suspend)?

See: Caroll, A.B. 'A three-dimensional conceptual model of corporate performance' (1979) 4 *Academy of Management Review* 4, 497-505; Caroll, A.B. 'The pyramid of corporate social responsibility: toward the Moral Management of Organisational Stakeholders' (1991) 34 *Business Horizons*, 4, 39-48

Questions to the Authors and comments

- 4. Empirical findings
  - 4.2.2 Results by industry group

Our discussion of the summary statistics has already pointed out **strong industry effects**. We have therefore controlled for industry fixed effects across all regressions discussed up to now. To better understand this cross-industry variation, we now split the sample of bond issues into the five sub-samples based on groups of industries introduced before

? Do you include the classification from the green taxonomy/taxonomies?

  - 4.2.3 Time-series dynamics of the relevance of ES-scores

(…) these patterns suggest that there was a structural break in the importance of the employment-related ES-dimension for credit spreads around 2012. One **possible interpretation of this break is that investor preferences for firms that consider their employees as important stakeholders have become more important over time**

? Greater awareness (public information campaigns), but also higher demands (standards, regulations)?

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- 4. Empirical findings
  - 4.3 ES-scores and credit risk

Given that the test setup also requires that we observe issuers either for at least 3 or 5 years, **sample sizes are relatively small**. Further more, the **number of defaults that we actually see in the data is small** (e.g., we only have 28 defaults at the 3-year horizon).

  ➤ Limitation of the study

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Questions to the Authors and comments

- 5. Conclusion

ES aggregate scores only have a significantly negative effect on issue spreads during expansions, somewhat **contradicting conventional wisdom** that ES effects are stronger in recessions or crises. In our analysis, the effect of aggregate ES-scores is insignificant during recessions.

? See Caroll's pyramid of corporate responsibility?

- ➢ During recession only economic and legal responsibilities (core to value creation), while ethical and discretionary

? Perhaps different groups of investors?

- ➢ investors attached to principals vs. investors who are willing to invest in ESG, but only when it gives good results

Questions to the Authors and comments

- Appendix
  - A1 Variable definitions

We use S&P rating as our primary source and supplement it with Moody's rating. When neither is available, we take Fitch's rating as the last resort.

? Why this order? What if the S&P and Moody's rating differ?

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Thank you for your attention!

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