

Motivation

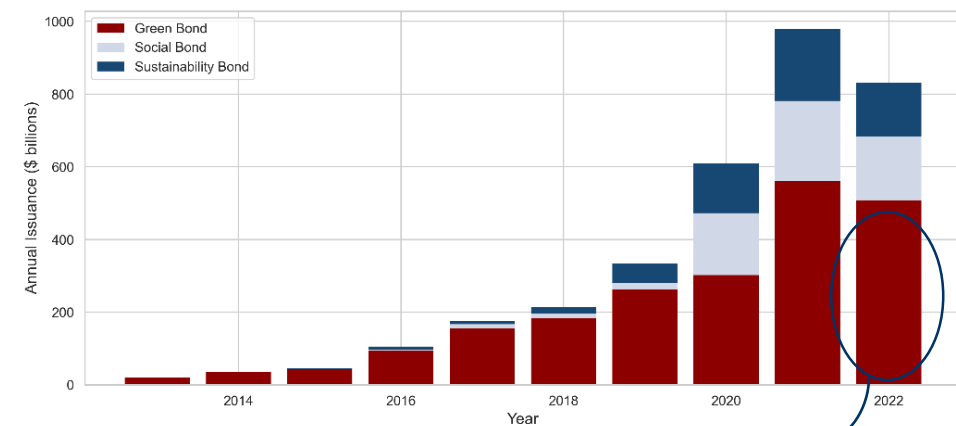


Figure 1. The growth of the green debt market.

GB do not require ex-post verification and their payment is independent from green outcome

Bond prospectus:

"There can be no assurance that use of proceeds from the sale of the green bonds to finance Eligible Projects will be suitable for the investment criteria of an investor."

Question:

How to identify companies with true intentions to reduce emissions?

Methodology

I identify prior relationships of companies with major green bond underwriters:

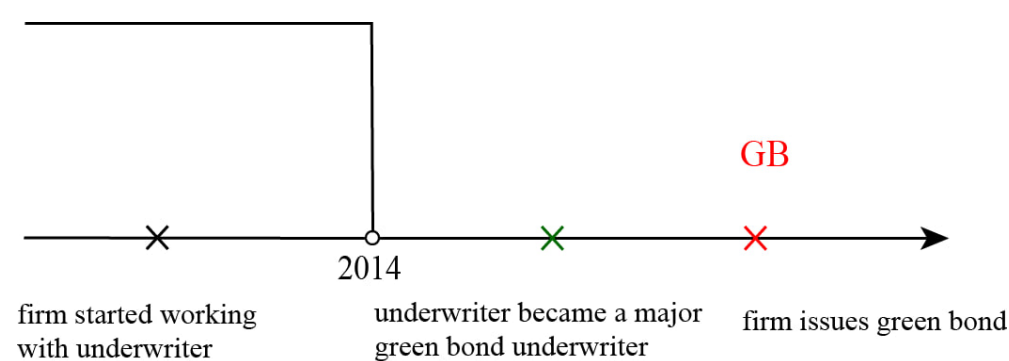


Figure 2. Prior relationships with major green bond underwriters.

$$\text{Emission intensity} = \beta_1 * \text{GB without prior relationships} + \beta_2 * \text{GB with prior relationships} + \text{fixed effects}$$

How companies **without** established relationships change emissions post green bonds

How companies **with** established relationships change emissions post green bonds

I further estimate an IV regression to show the causal effect of green bond financing on firm's emissions in general.

$$\text{Emission intensity} = \beta_1 * \widehat{\text{GB issuance}} + \text{fixed effects}$$

$$\widehat{\text{GB issuance}} = \alpha_1 * \text{Prior relationships} + \text{fixed effects}$$

Relationships of companies with underwriters can help identify genuine intentions to improve emissions:

- Green bond issuers **without** prior relationships with green bond underwriters **significantly reduce** emissions
- Companies **with** prior relationships with green bond underwriters can **increase** emissions after green bond issuance

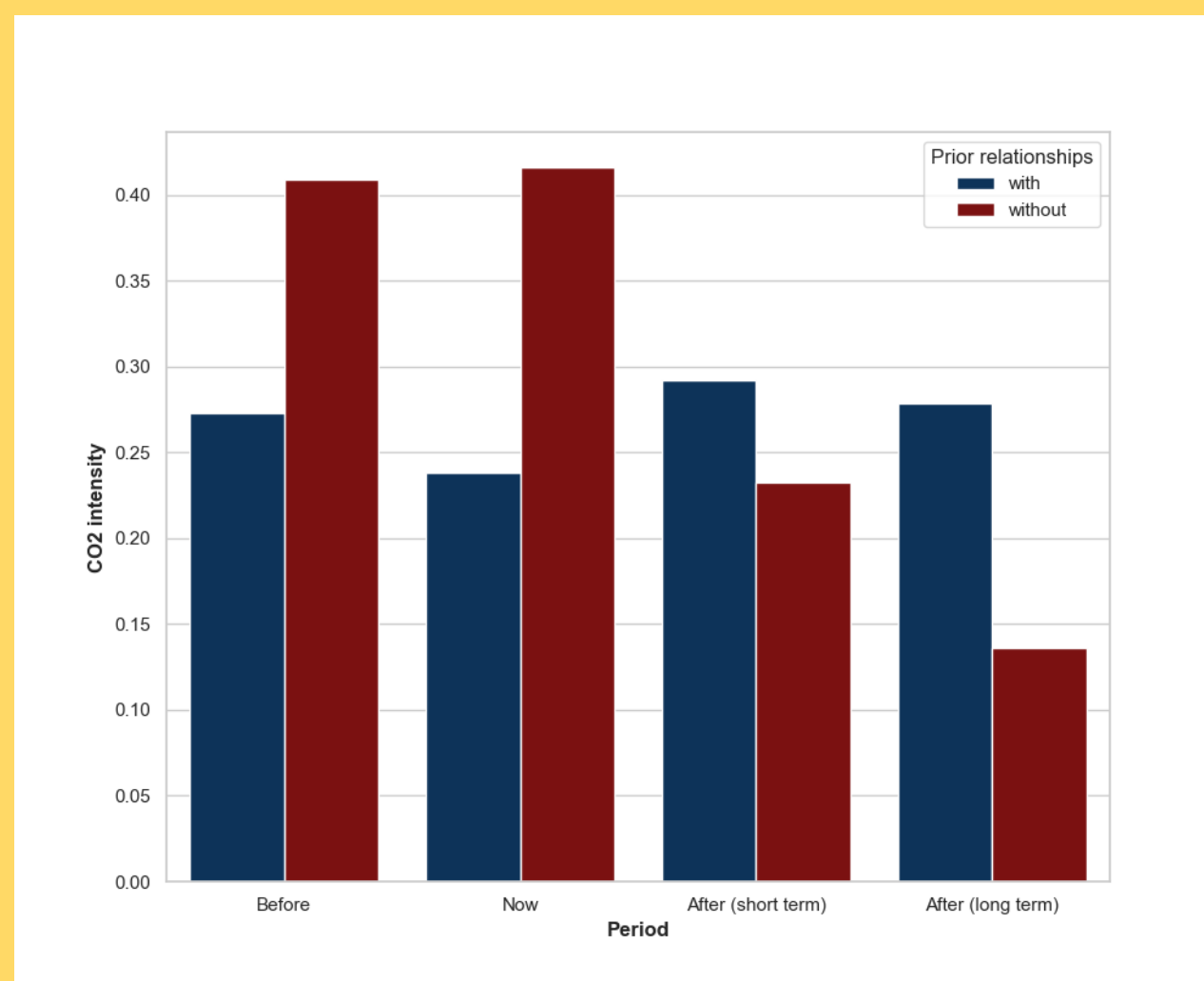


Figure 3. The effect of prior relationships of green bond issuers with major green bond underwriters on emission intensity.

Results

- Companies **with prior relationships** either don't change or increase carbon emissions (by 25%).
- Companies **without established relationships** significantly decrease carbon emissions (by 20%).

	Effect on emission intensity	
GB w/o relationships (short term)	-0.08	
GB with relationships (short term)	0.23**	
GB w/o relationships (2 and more years after)		-0.27**
GB with relationships (2 and more years after)		0.35**
N	20,603	20,603
Industry, Year, Country FE	YES	YES

- Cost of capital can be lower for 'good' companies.

	Yield	Green	Conventional	Difference	T-stat
Full sample		2.95	3.15	-0.19***	-3.23
Firms with prior relationships		4.85	5.13	-0.28*	1.7
Firms without prior relationships		2.26	2.42	-0.16***	2.91

- Green bonds per se do not affect emission intensity.

	OLS Regression		IV Regression	
	CO2 emissions		CO2 emissions	
GB issuance (short term)	-0.088		0.24	
Post GB issuance (long term)		-0.22**		0.23
F-stats			66.82	86.19
N	20,603	20,603	20,603	20,603
Year, Country FE	Yes	Yes	Yes	Yes

Conclusion

- Companies **without established relationships** significantly decrease carbon emissions, whereas companies **with prior relationships** can increase emissions.
- Investors provide 'better quality' companies with a significantly lower cost of capital.
- Green bond financing per se does not bring real effects.



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