

Do Banks Care About ESG? Firm Capital Structure in the Green Era

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Overview

- Bank CEOs emphasize their commitment to ‘stakeholders’
- For instance, JP Morgan claimed to provide \$280 bln toward sustainable businesses in 2021
- Question:** Relative to bond markets, are bank loans sensitive to ESG? If policymakers forced banks to internalize ESG preferences, how would lending outcomes change?
- Finding:** Higher ESG firms increasingly use bonds relative to bank loans
 - Bond yields are more sensitive than loan rates to ESG scores
- Importance:** I provide a benchmark externality adjustment and trace out the counterfactual effects on bank lending volumes

Higher ESG \Rightarrow Less Loan Usage

- I test the ESG-debt relationship using controls, including credit risk

$$Y_{it} = \beta \text{ESG Bin}_{it} + \gamma X_{it} + \alpha_{CR} + \alpha_i + \alpha_t + \epsilon_{it} \quad (1)$$

	(1)	(2)	(3)	(4)
	Loans/Debt	Loans/Debt	log(L)	log(B)
ESG Bucket	-1.524** (0.601)	-2.605*** (0.926)	-0.127* (0.069)	0.086** (0.042)
Controls	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Credit Rating FE		✓	✓	✓
Observations	7243	2336	2053	2326
R ²	0.740	0.748	0.721	0.926

- Simple OLS likely underestimates: **error-in-variables bias**
- Along lines of [Berg et al., 2022], I construct an IV that consists of firms’ competitors to de-noise firm-level estimates

	(1)	(2)	(3)
	ESG Bucket	Loans/Debt	Loans/Debt
ESG Bucket		-1.524** (0.601)	-13.220** (6.512)
Comp. ESG	0.081*** (0.017)		
Controls	✓	✓	✓
Firm FE	✓	✓	✓
Year FE	✓	✓	✓
Observations	6555	7243	6555
Method	First Stage	OLS	IV

- Magnitude:** A one σ \uparrow in ESG \Rightarrow 18 % \uparrow bond share

Higher ESG \Rightarrow Relatively Cheaper Bonds

- Match syndicated loan yields to secondary market bond yields
- Controlling for credit risk, how does ESG score relate to Loan-Bond spreads?

	(1)	(2)	(3)
	L-B Spread	L-B Spread	L-B Spread
ESG Score	1.952** (0.867)	1.046** (0.508)	1.244** (0.603)
Maturity Diff.		72.964*** (5.542)	27.552** (13.590)
Controls	✓	✓	✓
Firm FE	✓	✓	✓
Credit Rating FE		✓	✓
Year FE			✓
Year-Month FE	✓	✓	
Observations	2572	2563	282
R ²	0.432	0.650	0.859
Sample	All	All	Closest Mat.

- Magnitude:** A one σ \uparrow in ESG \Rightarrow 18-20 bps \uparrow L-B spread

Mechanism Discussion

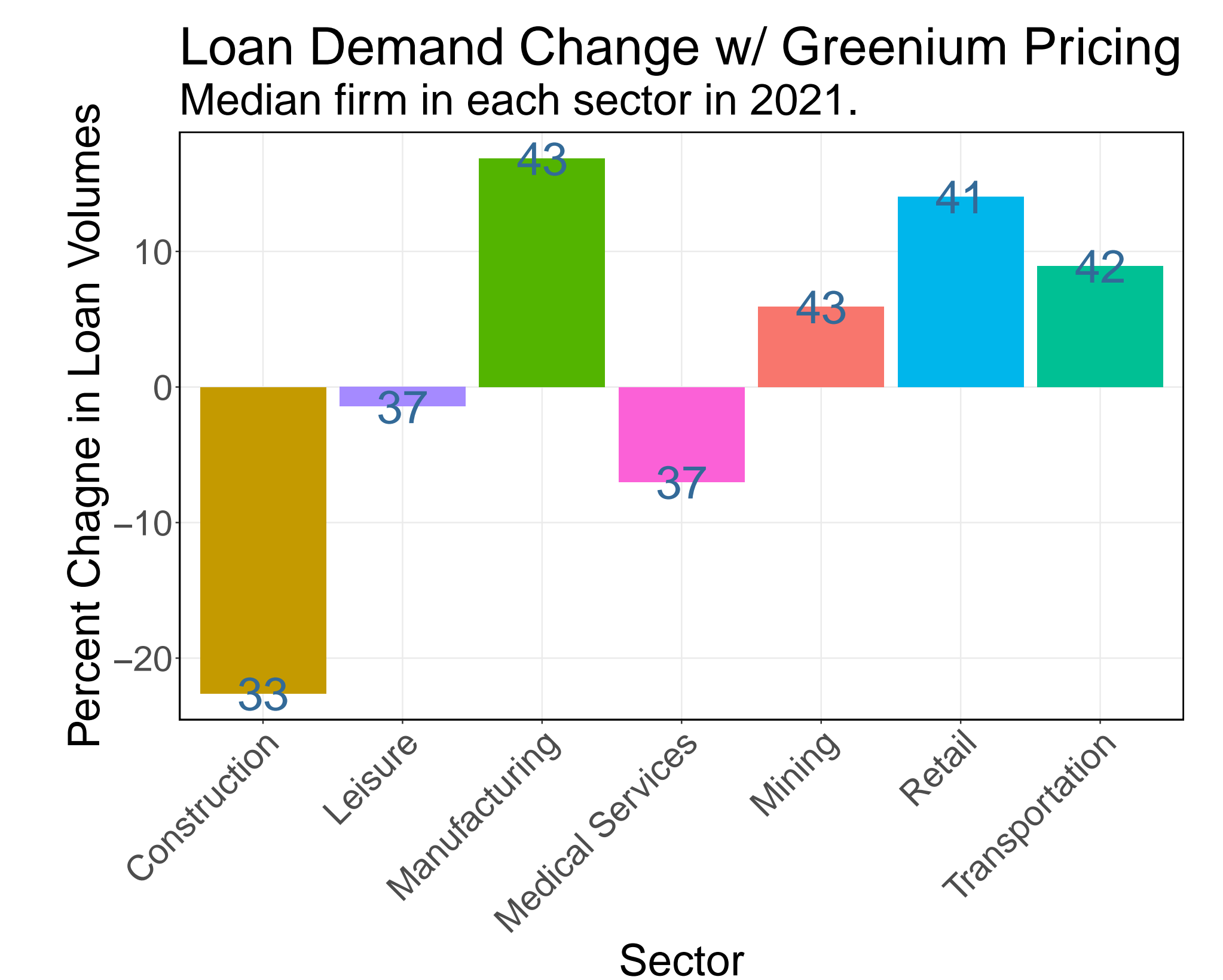
What drives the higher elasticity for bond markets?

- Bank deposits are information insensitive \Rightarrow banks are ESG ‘arbitrageurs’
- Bond markets better price ESG growth options at firms
- High ESG firms have lower willingness to pay for financing continuity, but effect remains after controlling for credit risk

Approximating Counterfactual Loan Volumes

- Assuming policymakers had the perfect tool to force banks to internalize the greenium, how would credit flows change?
 - Assume regulators optimally set capital requirements κ_{ESG} to offer $r_{ft}^*(ESG_{ft}) = r_{ft} + \text{Greenium}_{ft}(ESG_{ft})$
 - Assume for simplicity banks respond inelastically
 - I calibrate firm price elasticity of demand externally using [Diamond et al., 2020]: $\epsilon_l = -519$
 - Use greenium estimates at firm level (median firm gets 0)

$$\% \text{ Change}_s = \epsilon_l \times \text{Greenium}_{s,2021}(ESG_{s,2021}) \times \text{Loan Share}_{s,2021} \quad (2)$$



- Loan volumes would decline by 22% for construction firms (lower ESG) and increase by 16% for manufacturing firms (high ESG)

Conclusion

- Higher ESG firms utilize bond markets more than banks to finance their projects
- One SD increase in ESG scores leads to around 18-20 bps cheaper bonds relative to loans, controlling for credit ratings
- The Loan-Bond Greenium provides a benchmark for regulators when considering the design of enhanced capital requirements
- The greenium regulatory cost could introduce potentially distortionary effects and are sensitive to ESG rating stability

Literature Backdrop

- ESG and the ‘greenium’ ([Hong and Kacperczyk, 2009], [Bolton and Kacperczyk, 2021])
 - Isolate a bank-bond greenium
- Capital Structure ([Petersen and Rajan, 1994])
 - Study capital structure trade-offs once financiers care about ESG
- ESG-based capital requirements ([Oehmke and Opp, 2022])
 - Provide an estimate of loan flows under ESG capital requirements

Data

- Refinitiv ESG scores (2011 - 2021)
- Compustat financial statements
- Mergent FISD bond / Dealscan syndicated loan issuance
- Key variables for firms:**

$$\text{Loan Share}_{it} = \frac{\text{Loans}_{it}}{\text{Debt}_{it}} \quad \text{Loan-Bond Spread}_{it} = Y_{\text{loan},i,t} - Y_{\text{bond},i,t}$$

Facts about ESG and Debt Capital Structure

- Fact 1:** Higher ESG firms use relatively less bank debt
- Fact 2:** Higher ESG firms obtain cheaper bonds v. loans

