

A Theory of Socially Responsible Investment

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Motivation

ESG: Most **important trend in asset management** industry

- AUM have grown by factor of 10 since 2000

Most **existing research** focuses on **asset pricing implications**

- Do ESG investments outperform or underperform?

However, **real impact** requires that ESG affects firms' **production choices**

⇒ Requires corporate finance perspective

Paper is part of a **growing corporate finance literature on ESG**

- See also Broccardo, Hart, and Zingales (2020), Landier and Lovo (2020)

Questions

Under which conditions can ESG investors **affect production decisions**?

What is the **optimal way of achieving impact**?

How should ESG capital be **allocated across firms**? Only clean firms?

Would **welfare** be higher if **all capital** had **ESG** mandate?

Model Summary

Entrepreneur chooses between **clean and dirty technology**

- dirty technology more profitable
- clean socially preferable due to lower emissions

Firm scale limited by **financing friction** (Holmström and Tirole, 1997)

Benchmark: Investors care only about financial returns

- entrepreneur may choose dirty technology (investors offer larger scale)

Question: Can socially responsible investors change this? \Rightarrow **“impact”**

When is Impact Possible?

Condition for Impact: Jointly, SR investors and entrepreneur care sufficiently about externality

How to optimally achieve impact? Via increase in funded clean scale

Financial investors would not fund this scale increase

- implies **financial loss for SR investors** (negative alpha)
- but outweighed by **reduced externality**

Implementation in practice:

- **Regular bond** and **green bond** (issued at premium)
- **Dual-class share structure** (with and without voting rights)

What Does it Mean to Be Socially Responsible?

Analysis highlights **importance of SR funds' mandate:**

Broad mandate: internalize social cost independent of own investment

- reduction in counterfactual pollution relaxes SR breakeven constraint
- impact achieved (through better financing terms)

Narrow mandate: care only about social costs of own investment

- reduction in pollution generates no extra willingness to pay
- dirty firms simply funded by financial investors
- impact only possible through divestment (likely small given leakage)

Complementarity between SR and Financial Investors

Presence of **both types of capital** increases **surplus**

- Equilibrium **clean scale** \hat{K} **higher** when **both investors present**

$$\hat{K} > \max [K^F, K^{SR}]$$

$\hat{K} > K^F$: **Impact requires increase in clean scale** (as seen before)

- K^F could be financed from financial investors
- but at scale K^F entrepreneur prefers dirty production

$\hat{K} > K^{SR}$: **Threat of dirty production unlocks SR capital**

- presence of financial investors creates “pollution threat”
- relaxes SR investors’ participation constraint, increasing clean scale

Multi-Firm Economy

There are **many heterogeneous firms**

How should scarce socially responsible capital κ be allocated?

Follow **Social Profitability Index**: Invest in firms with $SPI_j > SPI^*(\kappa)$

$$SPI_j = \frac{\text{financial loss} + \text{reduction in externality}}{\text{required investment}}$$

- Not level of pollution matters, but avoided pollution
 - ⇒ e.g., investment in oil companies can be socially valuable
 - ⇒ never invest in firms that are already clean

Conclusion

Model of **socially responsible investment**

Interaction of **financing constraints** and **production externalities**

Results:

- Impact requires **broad mandate** (and, hence, financial loss)
- Impact investing occurs optimally via **increase in clean scale**
- Financial and SR capital are **complementary** (\Rightarrow balance needed)
- Optimal capital allocation via **social profitability index (SPI)**