

Discussion

Socially Responsible Divestment

by Alex Edmans, Doron Levit, and Jan Schneemeier

Eduardo Dávila

Yale and NBER

NBER Corporate Finance Fall Meeting
October 28, 2022

This Paper

- ▶ Motivation: responsible/ESG investment
 - ▶ What should investors do? \Rightarrow Portfolio choice/contracting

This Paper

- ▶ Motivation: responsible/ESG investment
 - ▶ What should investors do? \Rightarrow Portfolio choice/contracting
- ▶ Typical prescription for ESG-conscious investors: divestment
 - ▶ “Do not fund dirty firms”

This Paper

- ▶ Motivation: responsible/ESG investment
 - ▶ What should investors do? \Rightarrow Portfolio choice/contracting
- ▶ Typical prescription for ESG-conscious investors: divestment
 - ▶ “Do not fund dirty firms”
- ▶ **This paper:** stylized model of tilting
 - ▶ “Fund dirty firms but push them to be cleaner”
 - ▶ **Main result:** tilting may be optimal under some conditions

CULTURE

Yale Activists Want Divestment. David Swensen Isn't Budging.

The endowment chief defended the investment office's climate policy at a faculty meeting and in an open letter to the Yale community.

February 21, 2020

▶ Swensen's answer:

" (...) direct dialogue with its managers is the most effective means of addressing climate change risk in the portfolio."

Outline of Discussion

- ▶ Summarize model in the paper
 - ▶ Restate main result
- ▶ Revisit divestment/tilting ideas in alternative framework
- ▶ Final comments/remarks

Model in the Paper

1. **Blockholder:** seeks to minimize “externality” $\lambda \overbrace{(\theta + rI)}^{\text{payoff}}$
2. **Firm manager**
3. **Mean-variance investors**

Model in the Paper

1. **Blockholder:** seeks to minimize “externality” $\lambda \overbrace{(\theta + rI)}^{\text{payoff}}$
 - ▶ At $t = 0$, *commits* to investment strategy $0 \leq x(a) \leq 1 + q$
 - ▶ At $t = 2$, purchases committed amount of shares
2. **Firm manager**
3. **Mean-variance investors**

Model in the Paper

- 1. Blockholder:** seeks to minimize “externality” $\lambda \overbrace{(\theta + rI)}^{\text{payoff}}$
 - ▶ At $t = 0$, *commits* to investment strategy $0 \leq x(a) \leq 1 + q$
 - ▶ At $t = 2$, purchases committed amount of shares
- 2. Firm manager**
 - ▶ At $t = 1$, takes corrective action $a \in \{0, 1\}$
 - ▶ Benefit: reduces externality $\lambda (\theta + rI) (1 - \xi a)$
 - ▶ Cost: loss c
 - ▶ Manager's objective: $\omega p + (1 - \omega) v$ $\underbrace{\hspace{1.5em}}_{\text{externality reduction}}$
 - ▶ At $t = 2$, mechanically invests: $I = qp$, with q fixed
- 3. Mean-variance investors**

Model in the Paper

- 1. Blockholder:** seeks to minimize “externality” $\lambda \overbrace{(\theta + rI)}^{\text{payoff}}$
 - ▶ At $t = 0$, *commits* to investment strategy $0 \leq x(a) \leq 1 + q$
 - ▶ At $t = 2$, purchases committed amount of shares
- 2. Firm manager**
 - ▶ At $t = 1$, takes corrective action $a \in \{0, 1\}$
 - ▶ Benefit: reduces externality $\lambda (\theta + rI) (1 - \xi a)$
 - ▶ Cost: loss c
 - ▶ Manager's objective: $\omega p + (1 - \omega) v$ externality reduction
 - ▶ At $t = 2$, mechanically invests: $I = qp$, with q fixed
- 3. Mean-variance investors**
 - ▶ Buy residual shares at $t = 2$
 - ▶ Equilibrium price: $p = \mathbb{E}[v] - \gamma \sigma^2 (1 + q - \underbrace{x(a)}_{\text{blockholder}})$
 - ▶ If $x(a) \uparrow$, then $p \uparrow$

Main Result in the Paper

- ▶ Solve the model backwards
- ▶ **Main result:** blockholder's decision depends on ξ (effectiveness of action)
 - ▶ If $\xi \geq \bar{\xi}(\cdot) \Rightarrow$ tilting is optimal: $x(0) = 0, x(1) > 0$
 - ▶ If $\xi < \bar{\xi}(\cdot) \Rightarrow$ divestment is optimal: $x(0) = x(1) = 0$

Main Result in the Paper

- ▶ Solve the model backwards
- ▶ **Main result:** blockholder's decision depends on ξ (effectiveness of action)
 - ▶ If $\xi \geq \bar{\xi}(\cdot) \Rightarrow$ tilting is optimal: $x(0) = 0, x(1) > 0$
 - ▶ If $\xi < \bar{\xi}(\cdot) \Rightarrow$ divestment is optimal: $x(0) = x(1) = 0$
- ▶ Tilting is more likely if
 - ▶ c is low
 - ▶ μ is high or $\gamma\sigma^2$ is low (high prices means higher value to reduce externality)
- ▶ Tradeoff:
 - ▶ Tilting reduces externality per unit of investment: $1 - \xi a$
 - ▶ ... but increases investment: $I = p(a)q$

Main Result in the Paper

- ▶ Solve the model backwards
- ▶ **Main result:** blockholder's decision depends on ξ (effectiveness of action)
 - ▶ If $\xi \geq \bar{\xi}(\cdot) \Rightarrow$ tilting is optimal: $x(0) = 0, x(1) > 0$
 - ▶ If $\xi < \bar{\xi}(\cdot) \Rightarrow$ divestment is optimal: $x(0) = x(1) = 0$
- ▶ Tilting is more likely if
 - ▶ c is low
 - ▶ μ is high or $\gamma\sigma^2$ is low (high prices means higher value to reduce externality)
- ▶ Tradeoff:
 - ▶ Tilting reduces externality per unit of investment: $1 - \xi a$
 - ▶ ... but increases investment: $I = p(a)q$
 - ▶ Ambiguous impact on externality

$$\lambda(\theta + rI)(1 - \xi a)$$

Main Result in the Paper

- ▶ Solve the model backwards
- ▶ **Main result:** blockholder's decision depends on ξ (effectiveness of action)
 - ▶ If $\xi \geq \bar{\xi}(\cdot) \Rightarrow$ tilting is optimal: $x(0) = 0, x(1) > 0$
 - ▶ If $\xi < \bar{\xi}(\cdot) \Rightarrow$ divestment is optimal: $x(0) = x(1) = 0$
- ▶ Tilting is more likely if
 - ▶ c is low
 - ▶ μ is high or $\gamma\sigma^2$ is low (high prices means higher value to reduce externality)
- ▶ Tradeoff:
 - ▶ Tilting reduces externality per unit of investment: $1 - \xi a$
 - ▶ ... but increases investment: $I = p(a)q$
 - ▶ Ambiguous impact on externality

$$\lambda(\theta + rI)(1 - \xi a)$$

- ▶ Extensions: imperfect information, lack of commitment, etc.

Alternative (neoclassical) model

- ▶ No uncertainty + two types of investment:
 - ▶ $k_1 = \theta k$ (dirty) and $k_2 = (1 - \theta) k$ (clean)

Alternative (neoclassical) model

- ▶ No uncertainty + two types of investment:
 - ▶ $k_1 = \theta k$ (dirty) and $k_2 = (1 - \theta) k$ (clean)
- ▶ Firm chooses
 1. **Scale** of investment: $k = k_1 + k_2 \geq 0$
 2. **Composition** of investment: $\theta \in [0, 1]$

Alternative (neoclassical) model

- ▶ No uncertainty + two types of investment:
 - ▶ $k_1 = \theta k$ (dirty) and $k_2 = (1 - \theta) k$ (clean)
- ▶ Firm chooses
 1. **Scale** of investment: $k = k_1 + k_2 \geq 0$
 2. **Composition** of investment: $\theta \in [0, 1]$
- ▶ Social objective

$$\Pi = \frac{1}{R} \left[\underbrace{d_1 \theta}_{\substack{\text{dirty} \\ \text{investment}}} + \underbrace{d_2 (1 - \theta)}_{\substack{\text{clean} \\ \text{investment}}} \right] k$$

Alternative (neoclassical) model

- ▶ No uncertainty + two types of investment:
 - ▶ $k_1 = \theta k$ (dirty) and $k_2 = (1 - \theta) k$ (clean)
- ▶ Firm chooses
 1. **Scale** of investment: $k = k_1 + k_2 \geq 0$
 2. **Composition** of investment: $\theta \in [0, 1]$
- ▶ Social objective

$$\Pi = \frac{1}{R} \left[\underbrace{d_1 \theta}_{\substack{\text{dirty} \\ \text{investment}}} + \underbrace{d_2 (1 - \theta)}_{\substack{\text{clean} \\ \text{investment}}} \right] k - \underbrace{\Omega(\theta) k}_{\substack{\text{composition} \\ \text{adj. cost}}} - \underbrace{\Upsilon(k)}_{\substack{\text{scale} \\ \text{adj. cost}}}$$

Alternative (neoclassical) model

- ▶ No uncertainty + two types of investment:
 - ▶ $k_1 = \theta k$ (dirty) and $k_2 = (1 - \theta) k$ (clean)
- ▶ Firm chooses
 1. **Scale** of investment: $k = k_1 + k_2 \geq 0$
 2. **Composition** of investment: $\theta \in [0, 1]$
- ▶ Social objective

$$\Pi = \frac{1}{R} \left[\underbrace{d_1 \theta}_{\text{dirty investment}} + \underbrace{d_2 (1 - \theta)}_{\text{clean investment}} \right] k - \underbrace{\Omega(\theta) k}_{\text{composition adj. cost}} - \underbrace{\Upsilon(k)}_{\text{scale adj. cost}} - \underbrace{\Psi(\theta) k}_{\text{externality}}$$

- ▶ Externality: $\Psi(\theta) > 0$ and $\Psi'(\theta) > 0$ (1 is dirty)

Alternative (neoclassical) model

- ▶ No uncertainty + two types of investment:
 - ▶ $k_1 = \theta k$ (dirty) and $k_2 = (1 - \theta) k$ (clean)
- ▶ Firm chooses
 1. **Scale** of investment: $k = k_1 + k_2 \geq 0$
 2. **Composition** of investment: $\theta \in [0, 1]$
- ▶ Social objective

$$\Pi = \frac{1}{R} \left[\underbrace{d_1 \theta}_{\text{dirty investment}} + \underbrace{d_2 (1 - \theta)}_{\text{clean investment}} \right] k - \underbrace{\Omega(\theta) k}_{\text{composition adj. cost}} - \underbrace{\Upsilon(k)}_{\text{scale adj. cost}} - \underbrace{\Psi(\theta) k}_{\text{externality}}$$

- ▶ Externality: $\Psi(\theta) > 0$ and $\Psi'(\theta) > 0$ (1 is dirty)
- ▶ Social FOC's:

$$\frac{d\Pi}{dk} = \overbrace{\frac{1}{R} [d_1 \theta + d_2 (1 - \theta)] - \Omega(\theta) - \Upsilon'(k) - \Psi(\theta)}^{=0}$$

$$\frac{d\Pi}{d\theta} = \overbrace{\frac{1}{R} [d_1 - d_2] k - \Omega'(\theta) k - \Psi'(\theta) k}^{=0}$$

Alternative (neoclassical) model

- ▶ No uncertainty + two types of investment:
 - ▶ $k_1 = \theta k$ (dirty) and $k_2 = (1 - \theta) k$ (clean)
- ▶ Firm chooses
 1. **Scale** of investment: $k = k_1 + k_2 \geq 0$
 2. **Composition** of investment: $\theta \in [0, 1]$
- ▶ Social objective

$$\Pi = \frac{1}{R} \left[\underbrace{d_1 \theta}_{\text{dirty investment}} + \underbrace{d_2 (1 - \theta)}_{\text{clean investment}} \right] k - \underbrace{\Omega(\theta) k}_{\text{composition adj. cost}} - \underbrace{\Upsilon(k)}_{\text{scale adj. cost}} - \underbrace{\Psi(\theta) k}_{\text{externality}}$$

- ▶ Externality: $\Psi(\theta) > 0$ and $\Psi'(\theta) > 0$ (1 is dirty)
- ▶ Social FOC's:

$$\frac{d\Pi}{dk} = -\Psi(\theta^*) < 0 \Rightarrow \boxed{\text{Divestment}}$$

$$\frac{d\Pi}{d\theta} = -\Psi'(\theta^*) k^* < 0 \Rightarrow \boxed{\text{Tilting}}$$

Alternative (neoclassical) model

- ▶ How to address the externality?
- 1. **First-best regulation:** Pigouvian correction
 - ▶ Regulate both dimensions (principle of targeting)
 - ▶ $\tau_k = \Psi(\theta) > 0$
 - ▶ $\tau_\theta = \Psi'(\theta)k > 0$
 - ▶ Useful benchmark

Alternative (neoclassical) model

- ▶ How to address the externality?

1. **First-best regulation:** Pigouvian correction

- ▶ Regulate both dimensions (principle of targeting)

- ▶ $\tau_k = \Psi(\theta) > 0$

- ▶ $\tau_\theta = \Psi'(\theta)k > 0$

- ▶ Useful benchmark

2. **ESG-conscious investment** (this paper)

- ▶ Private divestment/tilting seek to implement τ_k and τ_θ

- ▶ Details matter

- Funding vs. control
- Are firms financially constrained?
- What is the objective of the firm?

Alternative (neoclassical) model

- ▶ How to address the externality?
 1. **First-best regulation:** Pigouvian correction
 - ▶ Regulate both dimensions (principle of targeting)
 - ▶ $\tau_k = \Psi(\theta) > 0$
 - ▶ $\tau_\theta = \Psi'(\theta)k > 0$
 - ▶ Useful benchmark
 2. **ESG-conscious investment** (this paper)
 - ▶ Private divestment/tilting seek to implement τ_k and τ_θ
 - ▶ Details matter
 - i. Funding vs. control
 - ii. Are firms financially constrained?
 - iii. What is the objective of the firm?
- ▶ Broader point
 - ▶ Optimal portfolio/contracting vs. regulation

Alternative (neoclassical) model

- ▶ How to address the externality?
 1. **First-best regulation:** Pigouvian correction
 - ▶ Regulate both dimensions (principle of targeting)
 - ▶ $\tau_k = \Psi(\theta) > 0$
 - ▶ $\tau_\theta = \Psi'(\theta)k > 0$
 - ▶ Useful benchmark
 2. **ESG-conscious investment** (this paper)
 - ▶ Private divestment/tilting seek to implement τ_k and τ_θ
 - ▶ Details matter
 - i. Funding vs. control
 - ii. Are firms financially constrained?
 - iii. What is the objective of the firm?
- ▶ Broader point
 - ▶ Optimal portfolio/contracting vs. regulation
- ▶ *Corrective Regulation with Imperfect Instruments* (w/ Ansgar Walther)
 - ▶ General study of second-best regulation (leakage elasticities)
 - ▶ Application: Financial Regulation with Environmental Externalities

Final Comments/Remarks

1. Does it matter that the model consider externalities?

- ▶ In the paper, there are no third parties bearing losses
- ▶ Externalities typically justify regulation
- ▶ Perhaps blockholder simply doesn't like what the firm does

“Yale and Harvard are invested in fossil fuels, Puerto Rican debt, and private prisons. (...) these investments are simply and unequivocally unacceptable.”

Final Comments/Remarks

2. Role of competition

- ▶ With perfect competition: large losses from tilting ($c \rightarrow \infty$)
 - ▶ Dirty technology is chosen because it is more efficient
- ▶ In the limit, divestment/tilting implies shutting firms down
 - ▶ What if a new dirty firm appears?

2. Role of competition

- ▶ With perfect competition: large losses from tilting ($c \rightarrow \infty$)
 - ▶ Dirty technology is chosen because it is more efficient
- ▶ In the limit, divestment/tilting implies shutting firms down
 - ▶ What if a new dirty firm appears?
- ▶ Why not invest in developing *competitive green* technologies?
 - ▶ Change technology $\Omega(\theta)$ or reduce externality $\Psi(\theta)$
 - ▶ Only sustainable approach in competitive environments (besides regulation)

Final Comments/Remarks

2. Role of competition

- ▶ With perfect competition: large losses from tilting ($c \rightarrow \infty$)
 - ▶ Dirty technology is chosen because it is more efficient
- ▶ In the limit, divestment/tilting implies shutting firms down
 - ▶ What if a new dirty firm appears?
- ▶ Why not invest in developing *competitive green* technologies?
 - ▶ Change technology $\Omega(\theta)$ or reduce externality $\Psi(\theta)$
 - ▶ Only sustainable approach in competitive environments (besides regulation)

3. Role of funding constraints

- ▶ The model assumes that external funding is needed
- ▶ Many dirty firms are likely to be financially unconstrained

Conclusion

- ▶ *Tilting* and *divestment* are valid ESG-conscious strategies
 - ▶ But their effectiveness depends on the environment considered

Conclusion

- ▶ *Tilting* and *divestment* are valid ESG-conscious strategies
 - ▶ But their effectiveness depends on the environment considered
- ▶ This paper shows which strategy is better in a particular setup

Conclusion

- ▶ *Tilting* and *divestment* are valid ESG-conscious strategies
 - ▶ But their effectiveness depends on the environment considered
- ▶ This paper shows which strategy is better in a particular setup
- ▶ Work remains to be done showing effectiveness of each strategy
 - ▶ Theoretically and empirically