An Economic Analysis of ESG and Financial Disclosures in Capital and Product Markets

Daniel Fabisch

iwp-Wissenschaftsforum

June 2024

AGENDA

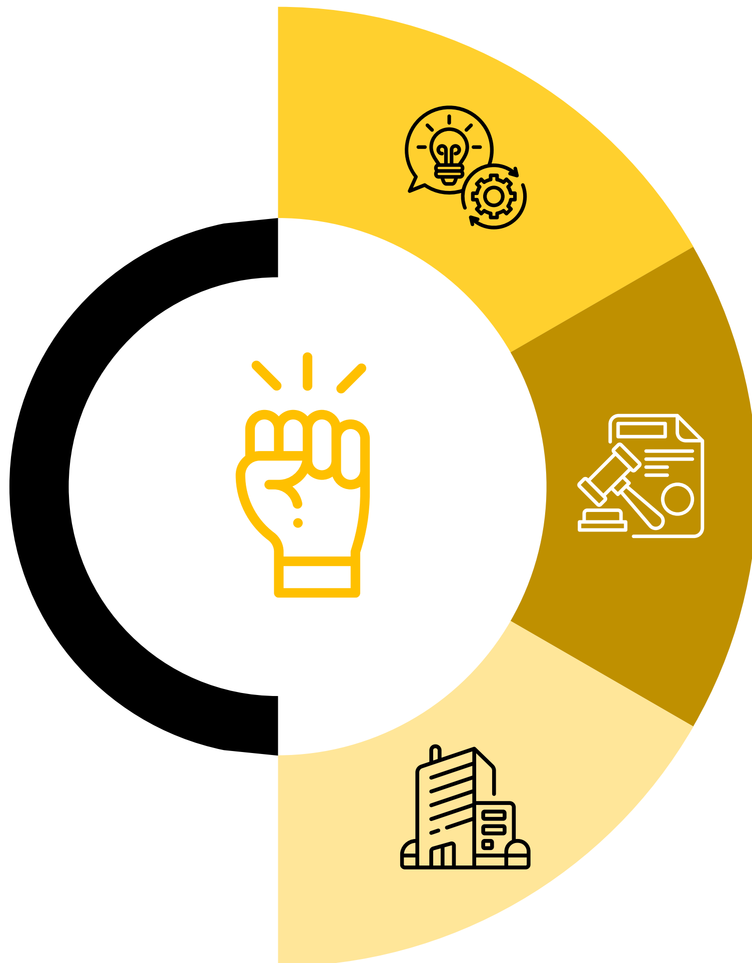
01 **Motivation for dissertation**

02 **Real effects of ESG disclosure**

03 **Disclosing ESG damages vs benefits**

04 **Public disclosure in the presence of a dual-purpose supplier**

Motivation



There are various **initiatives of accounting regulators to increase ESG transparency**

- EFRAG
- IFRS Foundation
- SEC, etc.

Regulators want to change corporate behaviour through corporate transparency: **targeted transparency regulation** (e.g., Hombach & Sellhorn 2019).

Companies increasingly (claim to) take decisions that improve their ESG performance (Christensen et al. 2021).

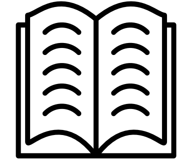
Real Effects of ESG Disclosure

Main Reseach Questions

How does environmental, social, and governance (ESG) disclosure affect management decisions?

How does environmental, social, and governance (ESG) disclosure affect financial and ESG performance?

Related Literature



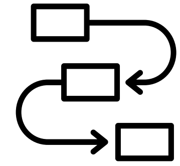
Method: The paper builds on the analytical real effects literature that follows Kanodia (1980) and Stein (1989).

Recent analytical papers on ESG disclosure: Aghamolla & An (2022), Bonham & Riggs-Cragun (2022), Friedman, Heinle & Luneva (2022).

Non-investor stakeholders: ESG disclosures are of interest to consumers (Tully & Winer 2014), suppliers (Darendeli et al. 2022), employees (Greening & Turban 2000), activists (Baron 2001), regulators (e.g., ETS, carbon taxes), etc.

Investors are interested in ESG performance because it affects financial performance: Amel-Zadeh & Serafeim (2018), Serafeim & Yoon (2022), Li, Watts & Zhu (2023).

Sequence of Events



Manager decides q_o and q_s

Stakeholders form $E\ [\widetilde{I}|\ \Phi_{0.5}^{ST}]$

$\tilde{X}_1$ and $\tilde{I}$ realize and are disclosed

Investors form $\tilde{P}_1 = E\ [\widetilde{X_2}\ |\Phi_1^I]$, stakeholders revise $E\ [\widetilde{I}|\ \Phi_1^{ST}]$

$\tilde{X}_2$ realizes

time

How does disclosure of the environmental impact ($\tilde{I}$) affect ordiniary (q_o) and sustainable (q_s) investments?

Model

Manager

Financial Performance

Investors

ESG Impact

ESG-interested Stakeholders

Stock Price

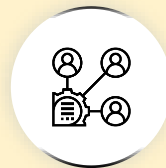
Model

Manager chooses q_o and q_s to maximize:

$$U = \tilde{x}_1 + \alpha \tilde{P}_1 + (1-\alpha)\tilde{x}_2,$$

where:

- $\tilde{x}_1 = \tilde{R}_o - \tilde{C} + \tilde{S}_1$
- $\tilde{x}_2 = \tilde{R}_o + \tilde{R}_s + \tilde{S}_2$
- $\tilde{P}_1 = E[\tilde{x}_2 | \Phi_1^I]$.



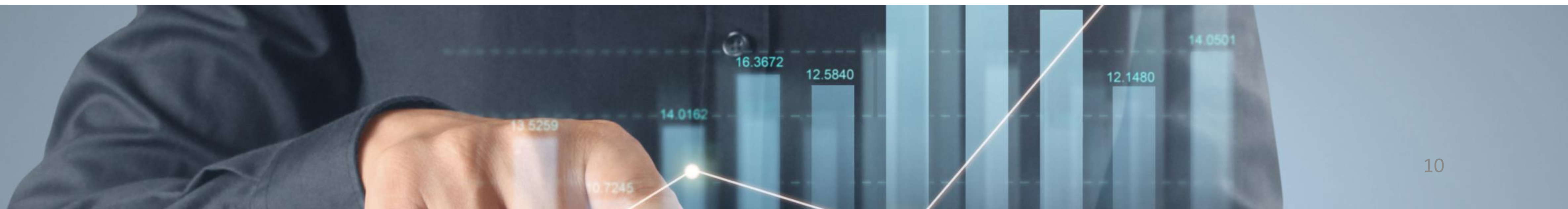
$\tilde{S}_1$ and $\tilde{S}_2$ are earnings that depend on the ESG-expectations of stakeholders, i.e., $\tilde{S}_t = pE[\tilde{I}|\Phi_t^{ST}]$,

where:

- $\tilde{I} = \xi_s q_s - \xi_o q_o + \tilde{\gamma}$.

Key Findings

- ESG disclosure makes the firm more sensitive to consequences imposed by stakeholders that care about ESG.
- This greater sensitivity is internalized in the stock price: the stock price reacts more strongly to ESG performance following ESG disclosure.
- ESG disclosure changes the market valuation of financial performance: the stock price sensitivity to short-run financial performance declines.
  - If stakeholder pressure for strong ESG performance is sufficiently low and an environmentally harmful investment is highly financially beneficicial, ESG disclosure harms ESG performance.

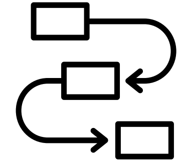


Disclosing ESG Damages vs Benefits

Main Reseach Question

Should accounting standardsetters require the same level of transparency for unfavorable and favorable ESG information?

Sequence of Events



Manager chooses q_b and q_g

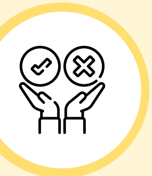
ESG reports are disclosed

Activism occurs, investors form

$\tilde{P} = E\,[\tilde{V}\Phi_I]$

ESG impacts realize

time



If the goal is to maximize green investments (q_g) and minimize brown (q_b) investements, should we have the same level of precision of the ESG reports of green and brown investments?

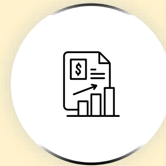
Model

Manager chooses q_g and q_b to maximize the stock price

$$\tilde{P} = E[\tilde{V}|\Phi^I],$$

where:

- $\tilde{V} = \tilde{V}(q_g\theta_g, q_b\theta_b, \tilde{C}, \tilde{C}_A, \tilde{B}_A)$.

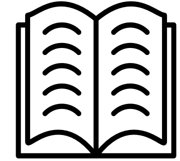


$\tilde{C}_A$ and $\tilde{B}_A$ are costs and financial benefits which depend on activists‘ expectations of ESG damages $E[\tilde{D}|\Phi^{ST}]$ and ESG benefits $E[\tilde{I}|\Phi^{ST}]$, respectively.

- $\tilde{D} = q_b(\tilde{\xi}_b + \tilde{\gamma}_b)$
- $\tilde{I} = q_g(\tilde{\xi}_g + \tilde{\gamma}_g)$

The manager privately observes the realizations of $\tilde{\xi}_b$ and $\tilde{\xi}_g$, and signals private information with investment decisions and ESG reports.

Related Literature



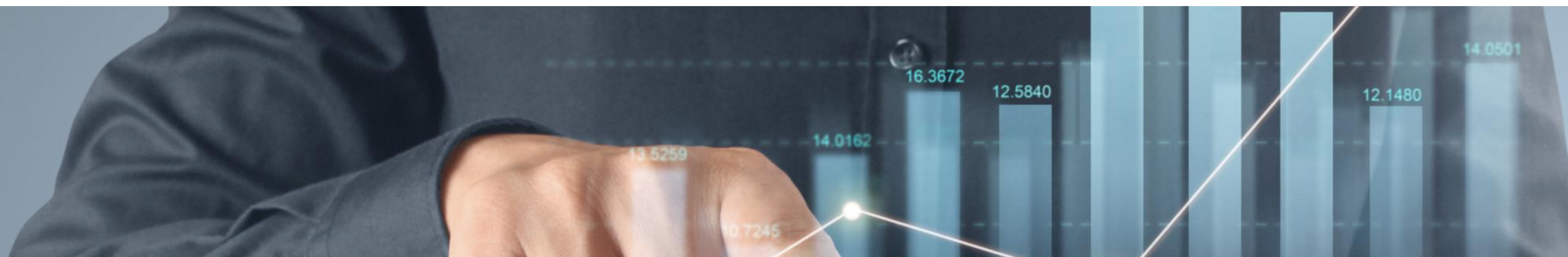
Same analytical ESG disclosure reasearch as for Paper 1 relevelant.

Standardsetters: EFRAG (2022) proposes ESG disclosures should be: “balanced, so as to cover favorable/positive and unfavorable/negative aspects: both negative and positive material impacts”.

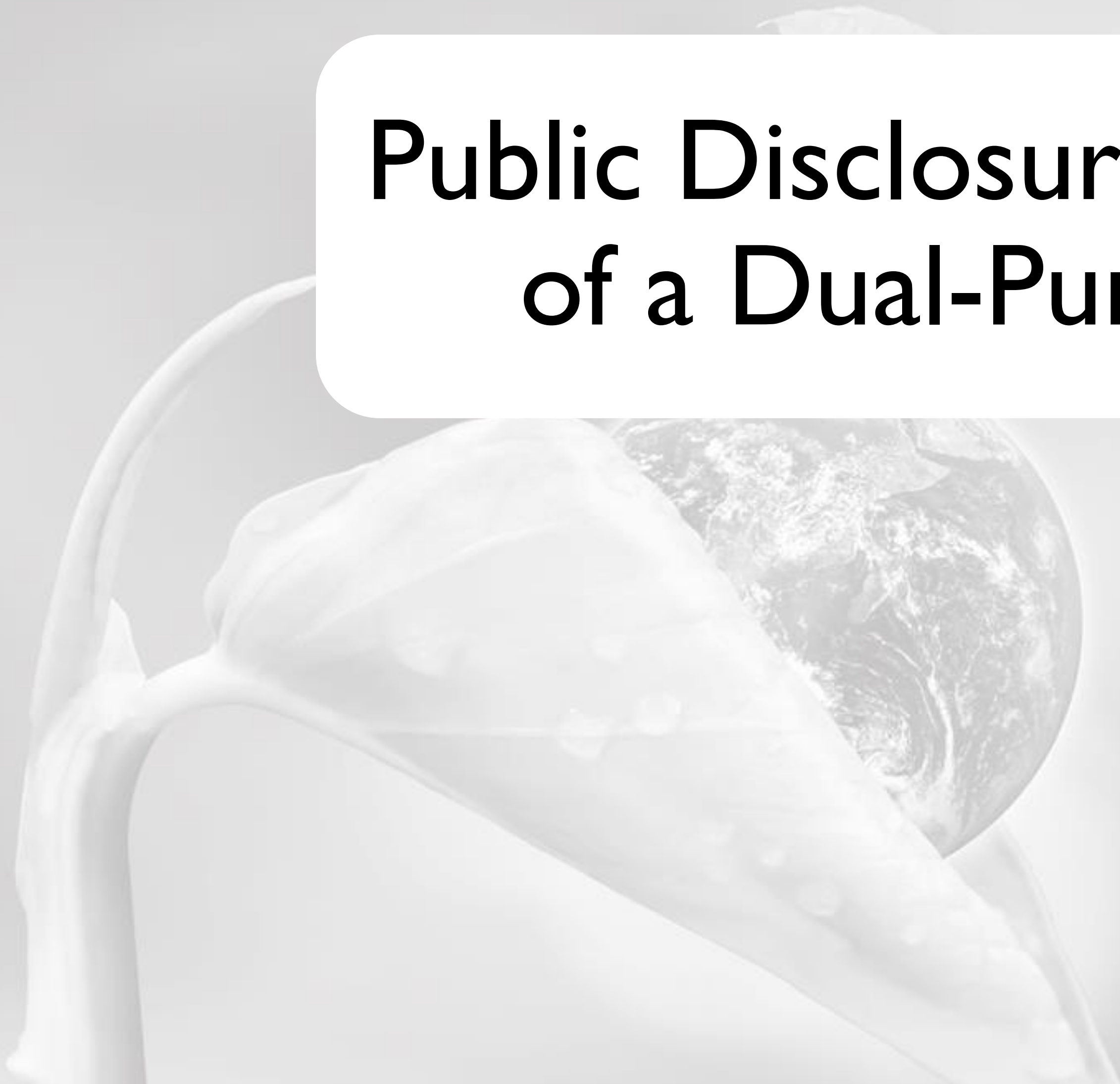
The paper builds on literature that suggests **observable decisions** (Spence 1974) **and disclosure requirements** (Kanodia & Lee 1998) **are credible signals** for private information.

Key Findings

- Overinvestment increases in the imprecision of ESG reports.
- ESG-interested standardsetters would prefer full discloure of ESG damages, but no disclosure of ESG benefits to maximize incentives to signal strong ESG performance with high green investment.
- Activism is higher when there is asymmetric information.
- Common shocks that affect ever business activity lead to trade-offs; simultanously maximizing green and mimimizing brown investment is no longer possible.



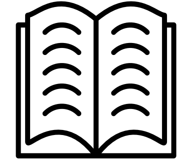
Public Disclosure in the Presence of a Dual-Purpose Supplier



Main Reseach Question

How does a supplier‘s concern for consumer welfare affect disclosure decisions in the supply chain?

Related Literature



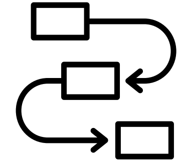
Paper relates to literature on **ex ante information sharing in competitive markets** (Gal-Or 1986, Shapiro 1986, Darrough 1993) **and in supply chains** (Guo 2009, Arya et al. 2019).

- Type of competition matters for disclosure (Cournot vs Bertrand).
- Type of information matters for disclosure (firm-specific vs industry-wide).
- The presence of a supplier matters for disclosure.

Paper relates to literature on **disclosure of dual-purpose retailers** (Matsui 2016, Bova & Yang 2018, Arya, Mittendorf & Ramanan 2019).

- An organization that values not only the profits it creates but also the surpluses generated for end-consumers is called dual-purpose organization (Arya et al. 2019).
- Competition models without suppliers frequently produce different results from competition models with suppliers (Bagnoli & Watts, 2020).

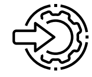
Sequence of Events



β is determined	Retailers commit to disclose or not	Retailers privately observe demand info.	Retailers disclose or not	Supplier chooses ω	Retailers choose quantities	Outputs are sold and profits realize

How does a supplier‘s concern for end-consumer welfare (β) influence a retailers‘ disclosure decision?

Model



Dual-purpose supplier chooses the input price ω to maximize

$$U = \pi_s + \beta CS,$$

where:

- $\pi_s = (q_i + q_j)\omega.$

Retailers choose whether to disclose private demand information and the ouput to maximize

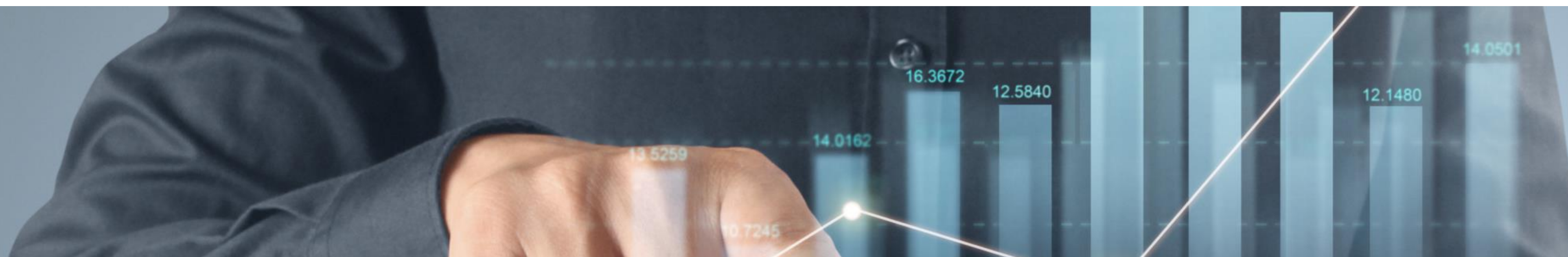
$$\pi_i = (\tilde{p}_i - \omega)\, q_i,$$

where:

- $\tilde{p}_i = \tilde{\alpha}_i - q_i - tq_j$ with $\tilde{\alpha}_i = a + \tilde{a}_i + r\tilde{a}_j$ and $i \neq j \in \{1,2\}.$

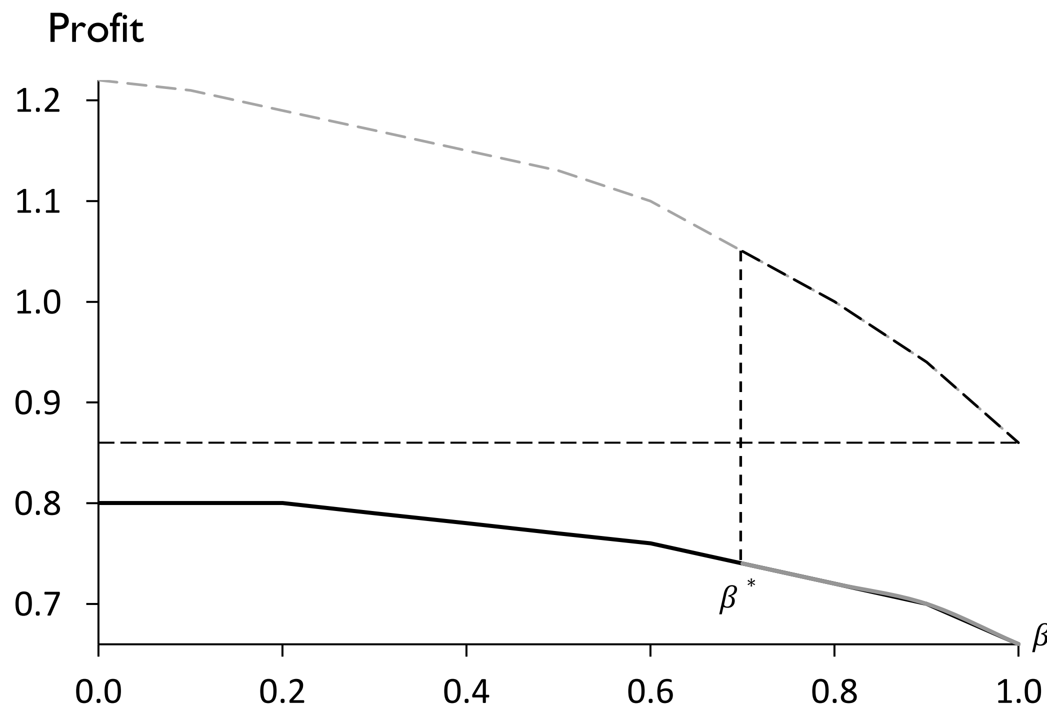
Key Findings

- An increase in the supplier‘s concern for end-consumer welfare makes the supplier less exploitative of disclosed demand information.
- An increase in the supplier‘s concern for end-consumer welfare increases disclosure incentives for retailers.
- Becoming a dual-purpose supplier is a profit maximizing strategy if demand uncertainty is sufficiently high.
- Disclosure mandates are detrimental for social welfare if they eliminate incentives of supplier‘s to become dual-purpose organizations.



‘Profitable‘ concern for end-consumers

Supplier’s profit as a function of their concern for end-consumer welfare



Remarks

- Holding the retailers’ disclosure incentives constant, the supplier’s profit declines with the supplier‘s concern for end-consumer welfare.
- An increase in the supplier‘s concern for end-consumer welfare increases disclosure incentives for retailers.
- The supplier‘s profits are higher when retailers disclose more.

Thank you for listening!