

ESG Non-Disclosure: A Risk Factor for Companies' Market Valuation?

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Background & Objectives

Background:

ESG Factors & Investor Focus:

- Environmental, Social, and Governance (ESG) factors have become critical for investors assessing the long-term sustainability and financial performance of companies (Gillan et al., 2021; Hawn & Ioannou, 2016).

Disclosure Variability Across Industries:

- ESG data disclosure practices vary significantly across industries, leading to information asymmetries that hinder the ability of investors to make informed decisions (Bams & van der Kroft, 2022).
- The voluntary nature of ESG reporting creates inconsistencies in how companies disclose ESG information, affecting the reliability and completeness of ESG ratings (Gillan et al., 2021).

Impact of Non-Disclosure:

- Limited research has focused on the impact of ESG non-disclosure on market valuation, despite its growing importance in investment decisions.
- Companies that fail to disclose ESG information may be perceived as having higher market risk, as investors are unable to evaluate the sustainability of corporate practices (Bond & Zeng, 2022).

Industry-Specific Dynamics:

- Different industries face varying degrees of regulatory pressure and public scrutiny related to ESG disclosure, with industries such as energy and manufacturing often under greater pressure to disclose ESG data compared to other sectors (Bothello et al., 2023).

Objectives:

Quantify ESG Non-Disclosure:

- Develop a comprehensive metric to assess the frequency and completeness of ESG non-disclosure across industries, focusing on key non-financial performance indicators (KPIs).

Assess Impact on Market Valuation:

- Investigate the relationship between ESG non-disclosure and market valuation, specifically examining whether companies with higher levels of non-disclosure experience a market disadvantage.
- Develop a new risk factor that quantifies the market implications of non-disclosure.

Methods & Data

Dataset Overview:

- Time Frame:** 2002 to 2022
- Scope:** 145 environmental metrics for U.S.-listed companies
- Source:** Refinitiv Eikon
- Classification:** GICS sectors, industry groups, and sub-industries
- Analysis:** based on 27,087 US company-years
- Exclusion:** Companies without ESG scores (no observable disclosure)

Binary Disclosure:

Purpose: To quantify whether a company disclosed a specific environmental metric in a given year.

Formula: For each company C , environmental metric i , and year t , the Binary Disclosure Score is assigned:

$$DS_{i,t}^C = \begin{cases} 1, & \text{if company } C \text{ disclosed metric } i \text{ in year } t \\ 0, & \text{if company } C \text{ did not disclose metric } i \text{ in year } t \end{cases}$$

Non-Disclosure Score (NDS):

Purpose: To quantify the extent of non-disclosure of environmental metrics at the firm level.

Formula: The Non-Disclosure Score is calculated for each company C in year t as:

$$NDS_{E,t}^C = 1 - \frac{1}{145} \sum_{i=1}^{145} DS_{i,t}^C$$

Results

The histogram (Fig. 1) compares the Non-Disclosure Score of U.S. companies in 2002 (red) and 2022 (green). The data show a notable leftward shift in the distribution over the two decades. In 2002 (red bars), the distribution centers around an NDS of 0.6, implying that the typical firm failed to disclose roughly 60% of environmental metrics. By 2022 (green bars), the distribution shifts to around 0.45, indicating significant improvements in transparency.

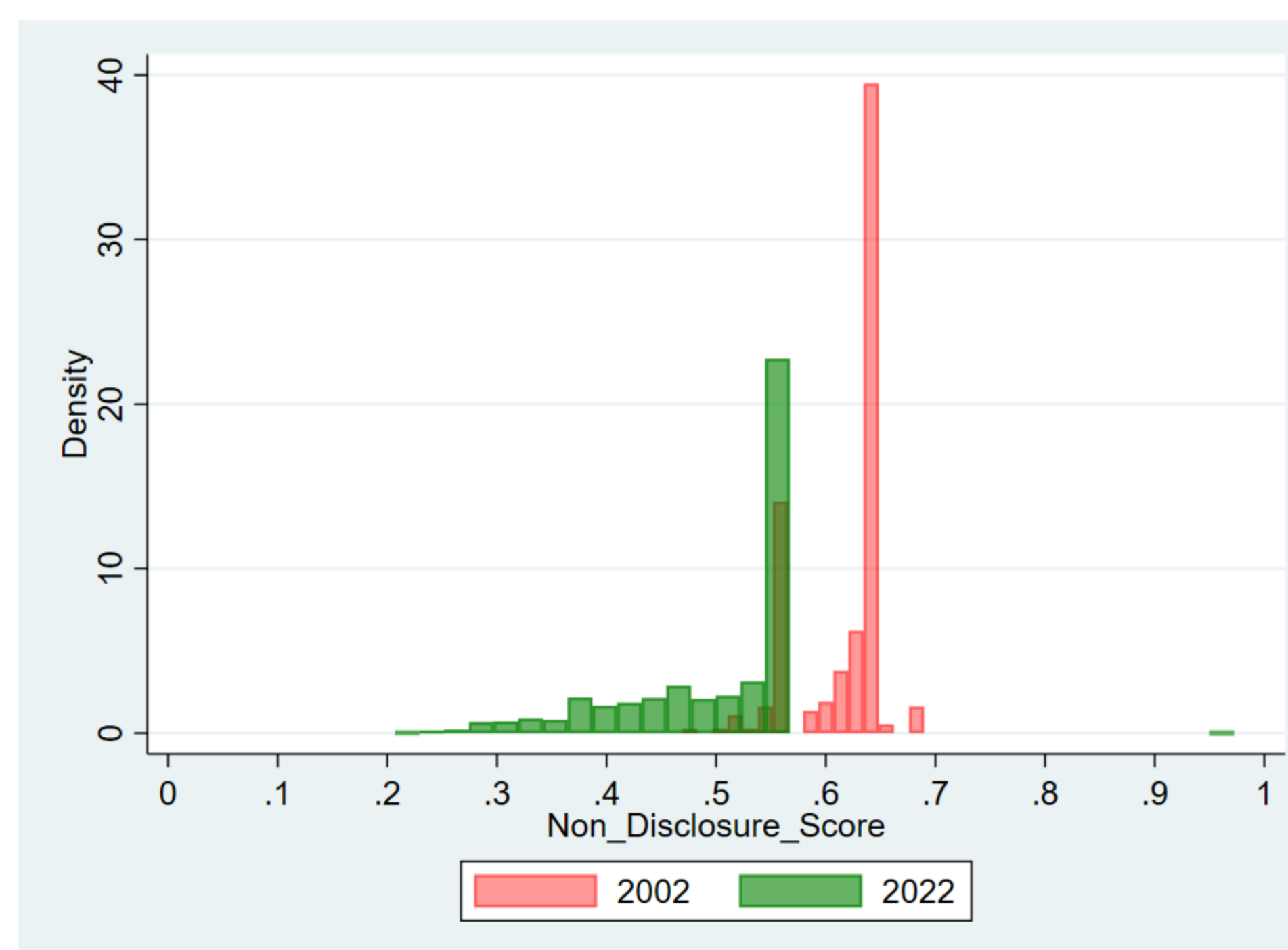


Fig.1: Non-Disclosure Score comparison 2002 and 2022

The average Non-Disclosure Score for U.S. firms from 2002 to 2022 is illustrated in (Fig. 2). The average NDS fell from 62% in the early 2000s to around 49% in 2022. The sharp decline between 2017 and 2020 coincides with heightened regulatory scrutiny and increasing investor and stakeholder pressure for sustainability disclosures. The trend highlights a growing emphasis on environmental transparency in corporate reporting.

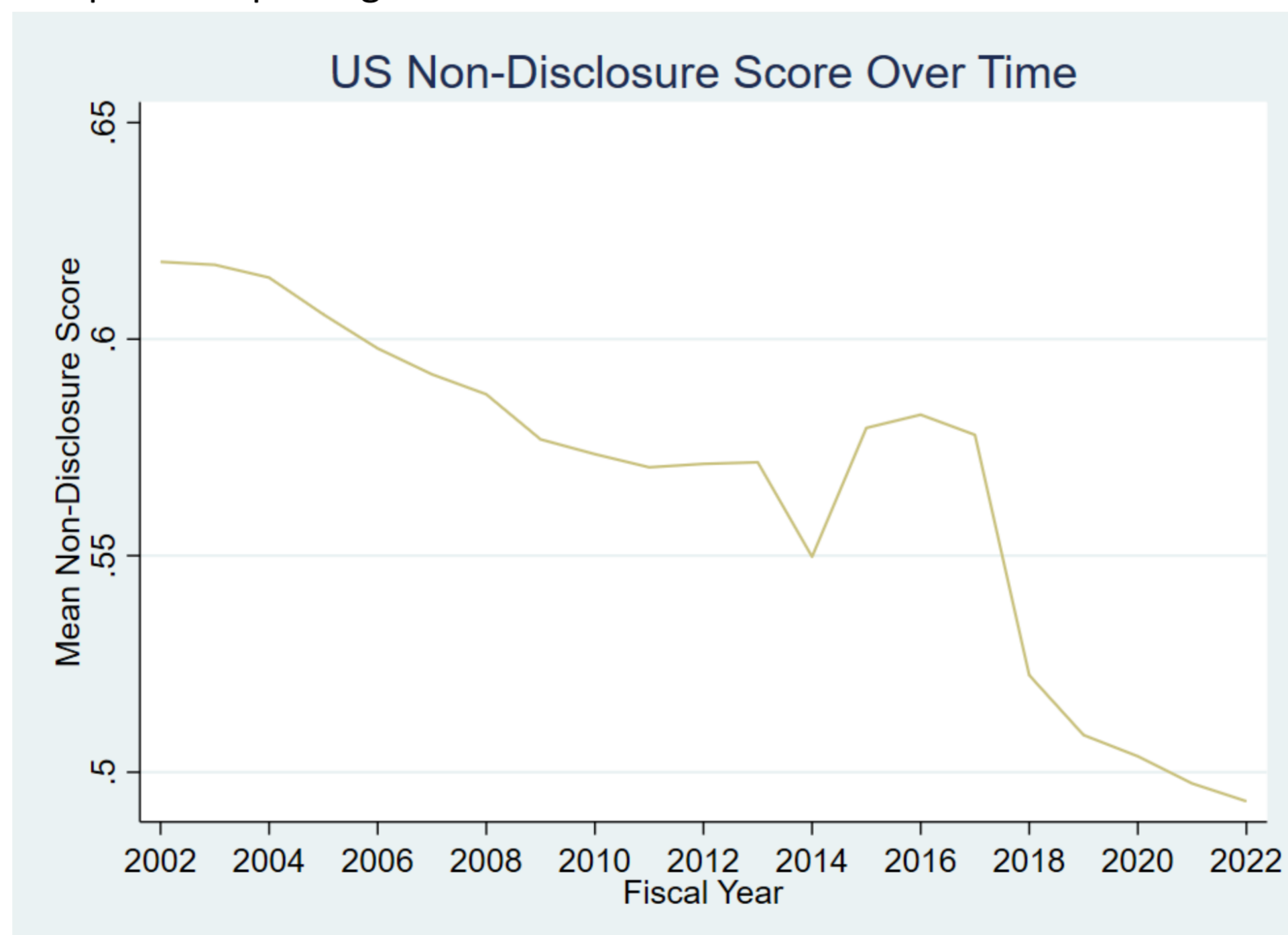


Fig.2: Development Non-Disclosure Score from 2002-2022

The chart below (Fig. 3) displays U.S. industries with the highest number of environmental metrics that are consistently not reported.

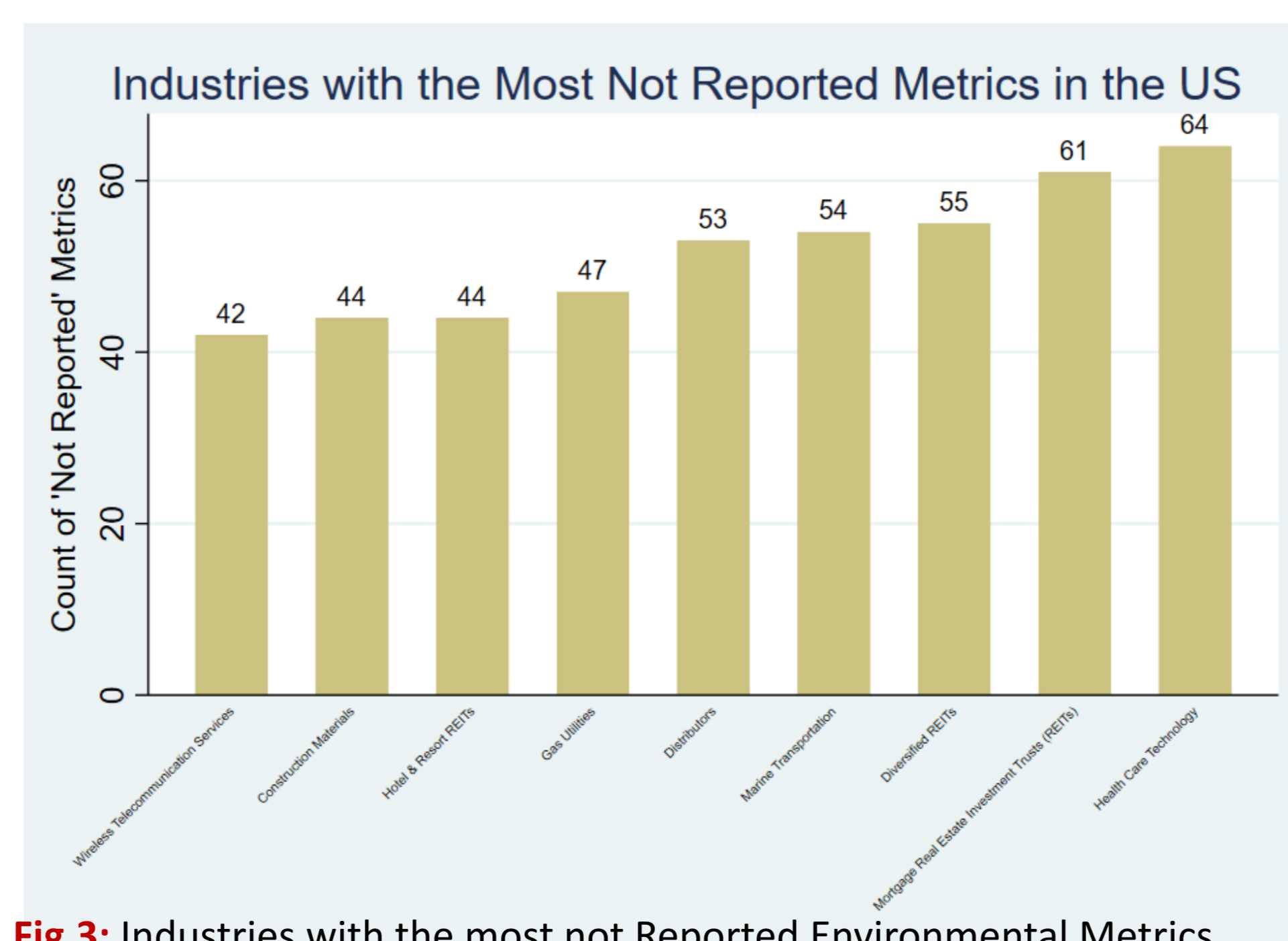


Fig.3: Industries with the most not Reported Environmental Metrics

Regression Model for Market Valuation

- Examine the relationship between non-disclosure and firm market valuation.
- Dependent Variable:** Tobin's Q
- Independent Variable:** Lagged Non-Disclosure Score (NDS)

The regression model is specified as:

$$Tobin's\ Q_{i,t} = \beta_0 + \beta_1 NDS_{i,t-1} + \beta_2 TimeTrend_t + \varepsilon_{i,t}$$

Results:

- Lagged Non-Disclosure Score (NDS): Coefficient = -0.542 (p-value = 0.000)
- A negative association exists between non-disclosure of environmental metrics and firm market valuation (Tobin's Q).
- For each additional non-disclosed environmental metric from the prior year, Tobin's Q decreases by 0.542 units.
- T-statistic = -4.67 ($p < 0.01$) confirms statistical significance.

Robustness:

- Results hold across multiple fixed-effects specifications (firm, industry, year).
- The negative relationship remains consistent, confirming the robustness of the findings.

Interpretation:

- Capital markets penalize firms for withholding environmental information, suggesting that transparency in environmental metrics is increasingly valued by investors.

Conclusion

Our analysis demonstrates a clear negative relationship between the non-disclosure of environmental metrics and firm valuation, as measured by Tobin's Q. Specifically, we found that each additional undisclosed environmental metric results in a decrease of 0.523 in Tobin's Q.

Our robustness checks across various fixed-effects models confirm that this relationship is statistically significant and robust, even after accounting for firm, industry, and year-specific factors. This trend is consistent with the broader shift towards greater transparency in ESG reporting, where companies that disclose more comprehensive environmental data are rewarded with higher market valuations.

Kontakt

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