



**HKU
BUSINESS
SCHOOL**
港大經管學院



HKU Jockey Club
Enterprise Sustainability Global
Research Institute

THE DEMAND, SUPPLY, AND MARKET RESPONSES OF CORPORATE ESG ACTIONS

Evidence from a Nationwide Experiment in China

Guojun He, Qinrui Xiahou

HKU Business School

July 2025



This Paper

- Implements a nationwide randomized control trial (RCT) on Chinese listed companies:
 - We create demand for improvement in ESG performance for a large number of randomly selected firms
 - We randomly emphasize specific E/S/G dimensions to mimic real-world heterogeneity
 - We follow the entire impact-generating process—from online to offline—and assess whether and how such demand affects firms, investors, and the stock market
- Three sets of findings:
 - Many firms provide high-quality responses, actively disclosing their ESG strategies, publishing more ESG reports, and promoting commitments to investors
 - E inquiries boost valuations, while G concerns trigger persistent skepticism.
 - Productive and opaque firms respond more positively to ESG demands and the results can be rationalized by a Spence-type signaling framework



Why China?

- Unique setting of online investor Q&A platforms (high visibility and high-stake)
 - Launched and overseen by Shenzhen & Shanghai Stock Exchanges
 - Extensive coverage of over 98% of A-share listed firms
 - Direct communication with management teams
- Limited public demand for ESG
 - ESG remains a relatively new concept in China
 - Minimal investor queries on ESG ratings before the experiment
 - Audience: exclusive to certain groups (e.g., major shareholders)
- Significant influence of retail investors in the stock market
 - 30% of the free-float market value, 60% of the trading volume
 - Over 88k active accounts on Q&A platforms

Setting: Online Investor Q&A Platforms

来, 与上市公司一起互动



互动问答

查看更多 →

- 问 我要提问
- IPO IPO招股书
- 公司公告
- 预 提问预征集

思 思特奇 [300608] · 刚刚

Target Firm and Stock Code

同意本公司在虚拟人方面,做的跟其他方公司的设置有什么不同? 电商平台的应用有多少?

Question

思特奇: 尊敬的投资者您好! 我司虚拟人产品处于研发阶段, 目前有少量客户应用, 暂无电商平台应用。

Firm's Answer

点赞 cninfo620944 · 来源 网站

User's ID

思 思特奇 [300608] · 刚刚

请问公司在数据训练方面有什么发展? 主要给哪些企业提供服务?

思特奇: 尊敬的投资者您好! 我司数据训练主要结合九思大模型同步研发, 目前运营商、政府、企业客户均有使用。

点赞 cninfo1046508 · 来源 网站

云访谈 全部 >

-  山东路桥2024年半年度业绩说明会
问题征集中 · 2024-09-20 15:00-16:00
-  南山控股2024年半年度业绩说明会
问题征集中 · 2024-09-19 15:00-16:00
-  东利机械2024年半年度业绩说明会
问题征集中 · 2024-09-13 15:30-16:30

调研活动

查看更多 >

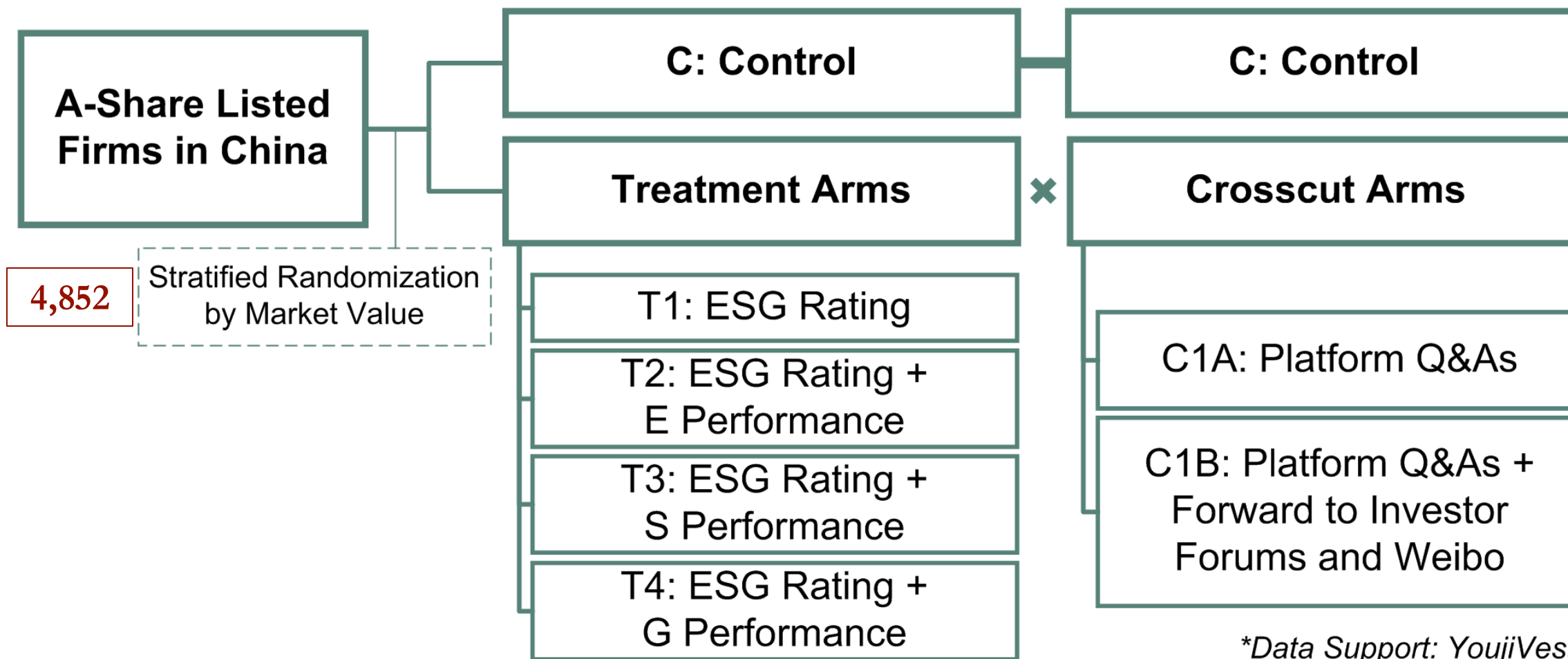
瑞 瑞木科技 [300372] · 刚刚



Summary Statistics (Jan-Nov 2023, Pre-Experiment)

Platform	Shenzhen (SZ)				Shanghai (SH)			
	Mean	Sd	Min	Max	Mean	Sd	Min	Max
Number of Firms	2753				2099			
Number of Questions Per Firm	105	109	1	1270	51	96	1	3587
Number of ESG Rating Questions	0.00	0.03	0.00	1.00	0.00	0.07	0.00	3.00
Reply Rate	93%	17%	0%	100%	82%	27%	0%	100%
Reply Time (Days)	9	16	0	281	14	18	0	210
Reply Length (Characters)	94	45	17	515	111	54	12	629

Experimental Design

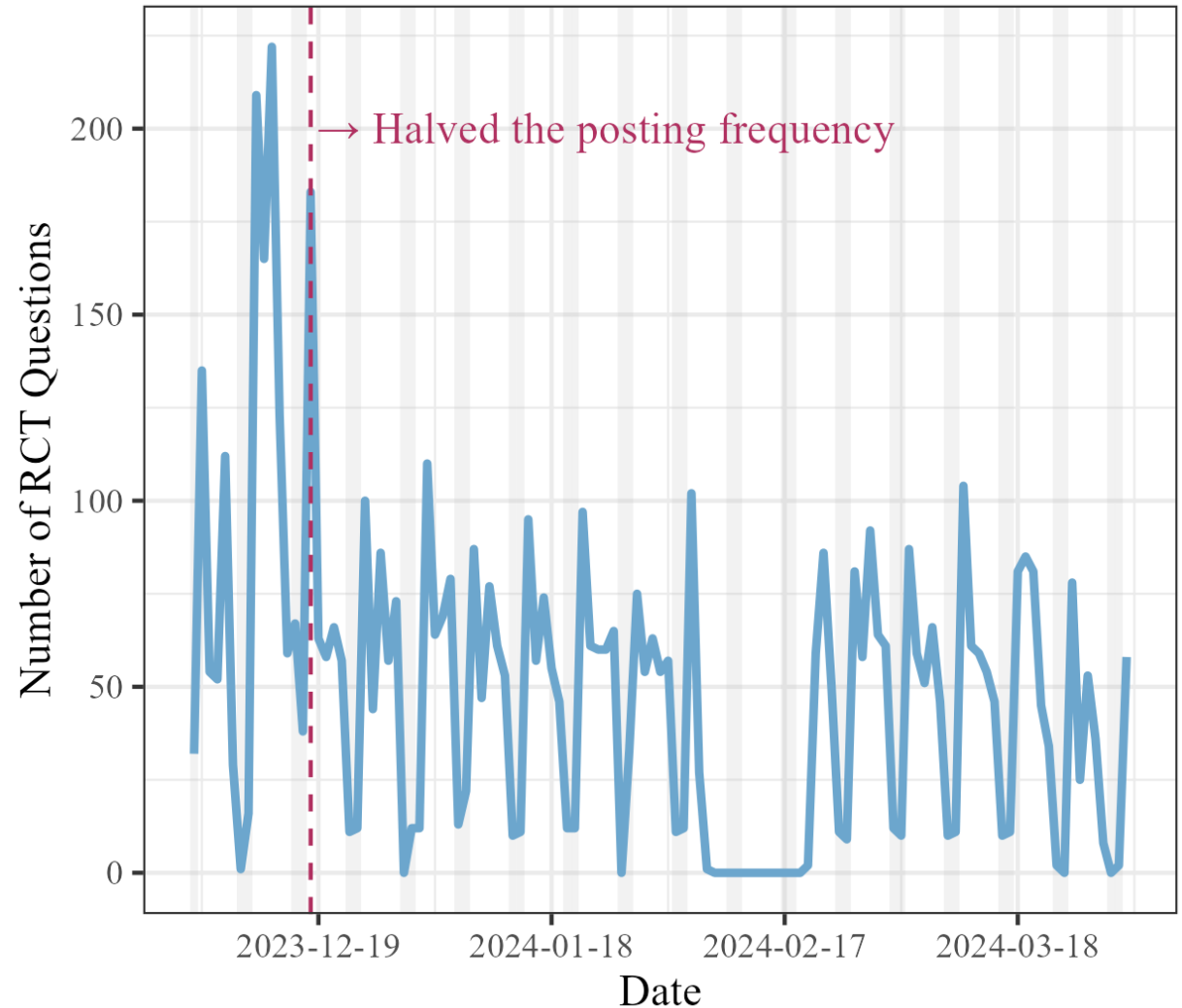


ESG Rating Agencies: Syntao, Wind, Sino-Securities Index, RKS, MSCI, FTSE, Bloomberg

Experiment Timeline

Our experiment started on 2023 Dec 2023 and ended on 2024 Apr 1:

- 20 RAs sent ~6,000 questions
- Accounted for <5% on the Q&A platforms
- Answer rate was 84.5%
- Median reply time was 4 days





“As an investor keenly aware of ESG trends, I am very curious about your company’s sustainability performance and have noted that your company received a C+ rating in the 2022 SynTao Green Finance ESG rating system, significantly below the industry average. I am particularly concerned about the company’s long-term environmental vision - do you have carbon reduction policies and plans? Does the company plan to improve this year’s sustainability report quality?”

 irm1883277 · 2024-03-19 (via website)

 Anker Innovation [300866] · 2024-03-21

“Hello, Anker Innovation places high importance on ESG. In June 2023, we disclosed our first bilingual ESG report since listing, demonstrating our progress in environmental, social, and governance aspects across multiple dimensions, including Green Industry and Product Innovation, Sustainable Operations, Responsible Governance, and Community Participation and Development. As of now, our latest SynTao Green Finance ESG rating is B+ (updated 2023-12-17, corresponding to lower ESG risk), Sino-Securities Index ESG rating is BBB (updated 2024-1-31), and Wind ESG rating is A (updated 2023-6-20). We consistently uphold sustainable development principles and are committed to addressing global climate change. We have implemented various measures in products and company operations, such as applying bio-based/recycled materials in product design, plastic reduction in packaging, paperless manuals, and green low-carbon operations, to promote energy conservation, emission reduction, plastic use reduction, and carbon neutrality. Our *2023 Sustainability Report* will soon be released, detailing the company’s ESG progress in 2023 - please stay tuned. Moving forward, we will continue to improve ESG governance and sustainability report quality to provide more comprehensive and accurate information, while continuously exploring the integration of technological innovation and sustainable development to contribute to environmental protection. Thanks for your attention.”

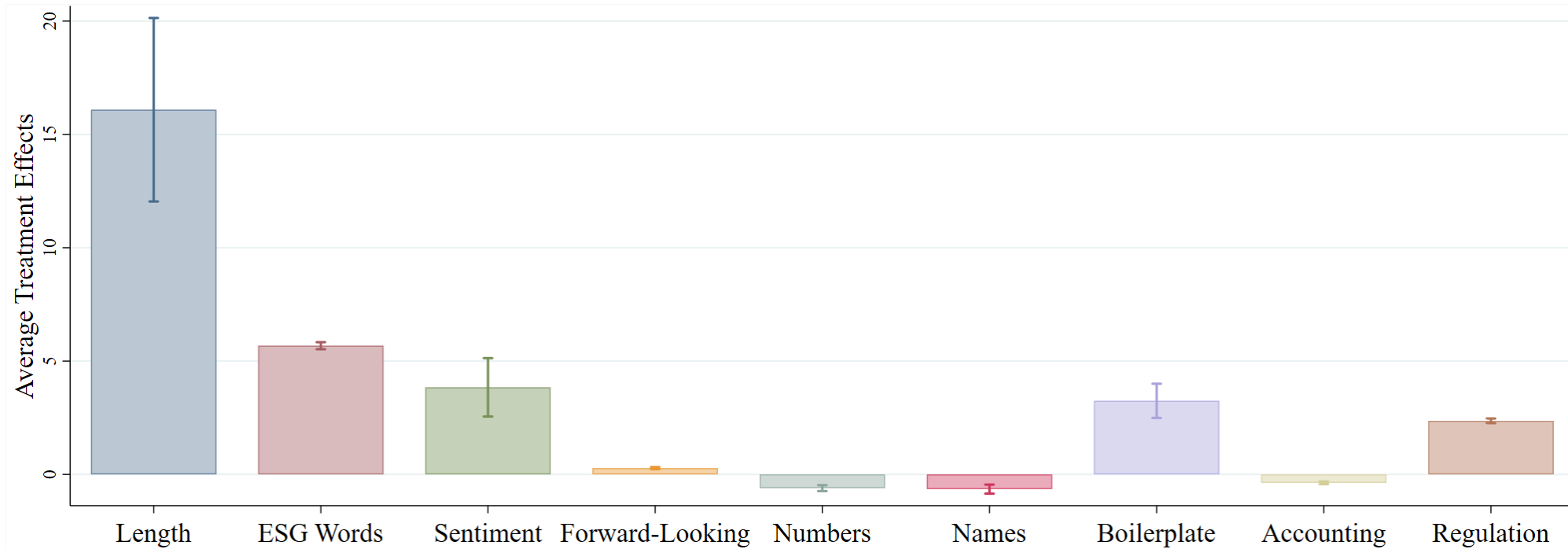


Like



Q1: What are the experiment's overall impacts?

Result 1: Online Behaviors – Answer Quality



Estimate	16.09***	5.68***	3.84***	0.28***	-0.60***	-0.65***	3.25***	-0.37***	2.37***
Control Mean	75.95	0.19	23.62	0.31	1.56	1.77	24.44	1.01	0.58

- Firms provide long and positive responses, rich in ESG keywords but less specific than answers to comparable questions

Result 1: Online Behaviors – Answer Spillover



Investor_
17096022
44000



BTG
HOMEI
NNS
Hotels
(Group)
Co., Ltd.



@BTG HOMEINNS Hotels (Group) Co., Ltd. (600258): “The company has issued a preliminary earnings announcement, but the stock price has noticeably diverged from the broader market’s steady upward trend. Does this indicate a discrepancy between the announcement and actual performance, leading to a lack of market confidence?”

March 5, 2024, at 13:05 (via website)



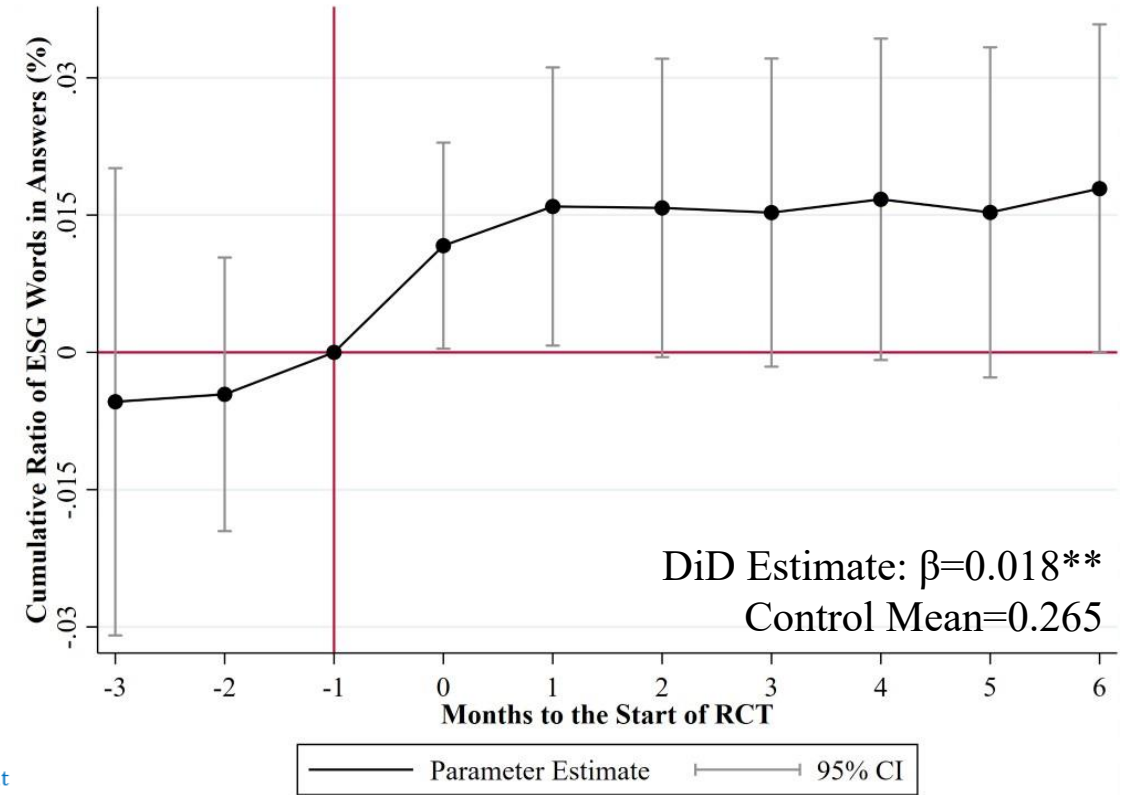
“The company has always prioritized strong business operations as the core of value creation, focusing on expanding and strengthening its main business. In 2023, we continued to advance our four core operational strategies: “development first, product focus, member-centric, and efficiency-driven.” We seized the opportunity of a robust recovery in the consumer market, achieving a significant year-on-year turnaround from losses to profitability. Additionally, we emphasize sustainable development and the long-term interests of shareholders, implementing high-quality development principles and pioneering ESG governance in the domestic industry. Simultaneously, the company has deepened its capital market presence by enhancing information disclosure and investor communication. We have improved interaction efficiency through channels such as phone calls, emails, the “Shanghai e-Interaction” platform, and shareholder meetings, promoting value investment principles. These efforts aim to consistently improve performance and deliver returns to investors. Thank you for your attention to the company!”

March 6, 2024, at 11:39 (via website)



Like

Comment



- Answer Spillover: Treated firms incorporate more ESG info under non-ESG questions

Model

Result 1: Online Behaviors – Question Spillover

Treated Firm

Q @Sinopec (600028): “When seeking partners or strategic alliances, does your company consider the ESG performance of potential partners? Would you still cooperate if a potential partner has controversial ESG ratings?”
Investor_172 9606044880 October 23, 2024, at 09:38 (via website)

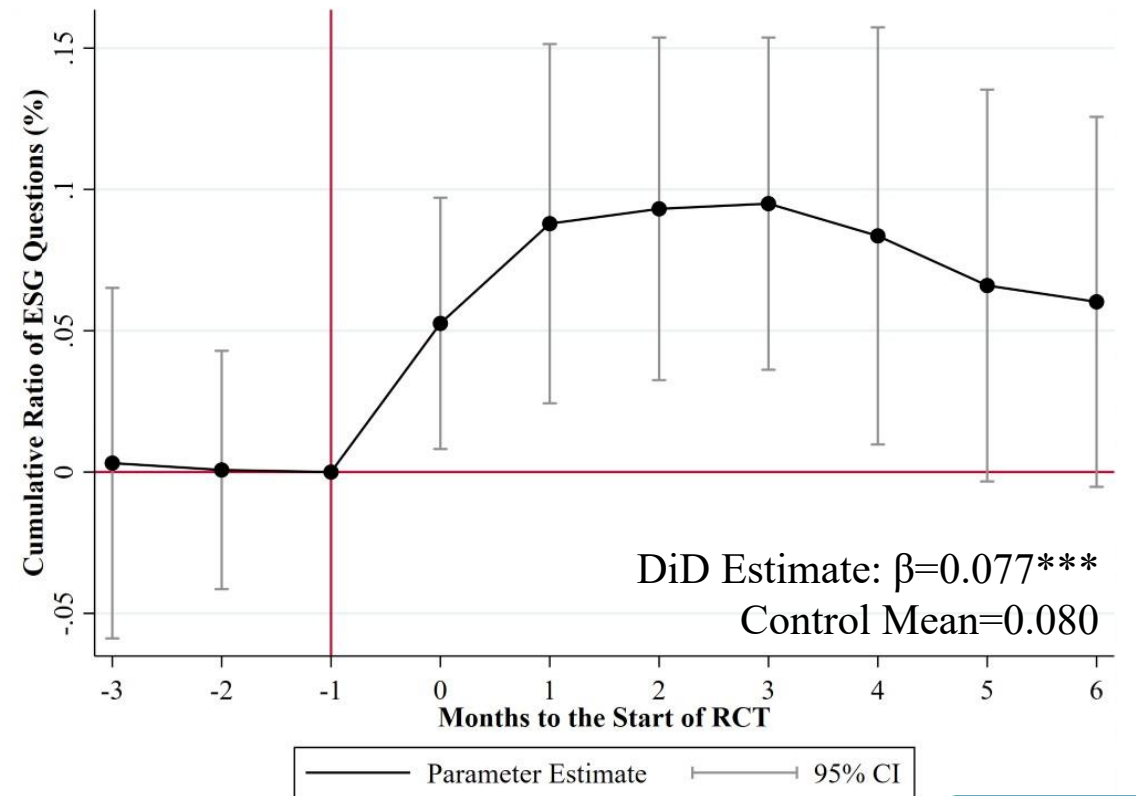
A “Hello, thank you for your interest in Sinopec. Our company consistently emphasizes our own ESG development and hopes to promote improvement throughout our industry chain. We aim to strengthen cooperation with more companies that demonstrate strong ESG performance.”
Sinopec December 9, 2024, at 14:30 (via website) Like Comment

Control Firm

irm1933980 · 2024-04-20 · (via website)

Huasu Holdings [000509] · 2024-03-21

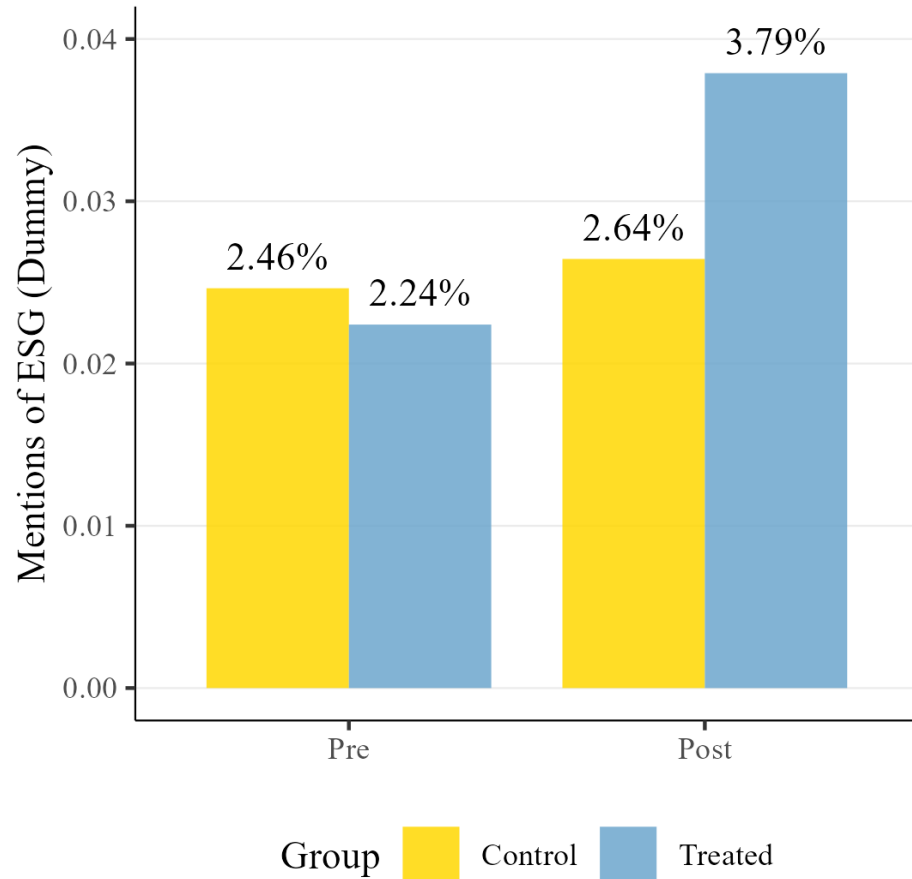
“Dear Investor, our company has not received inquiries from investors regarding our CSR rating results. We place high importance on environmental protection, social responsibility and corporate governance, and are actively exploring and advancing ESG-related initiatives to promote high-quality development of the company. Thank you for your attention.”



Model

- Question Spillover: Our experiment prompts an increased number of ESG inquiries on the platforms

Result 2: Offline Behaviors – Discussing ESG with Institutional Investors



(1)	
Mention ESG	
Post * Treat	1.948*** (0.735)
Control Mean	1.504
Observations	11,458
R-Squared	0.660
Firm FE	Yes
Industry-Day FE	Yes

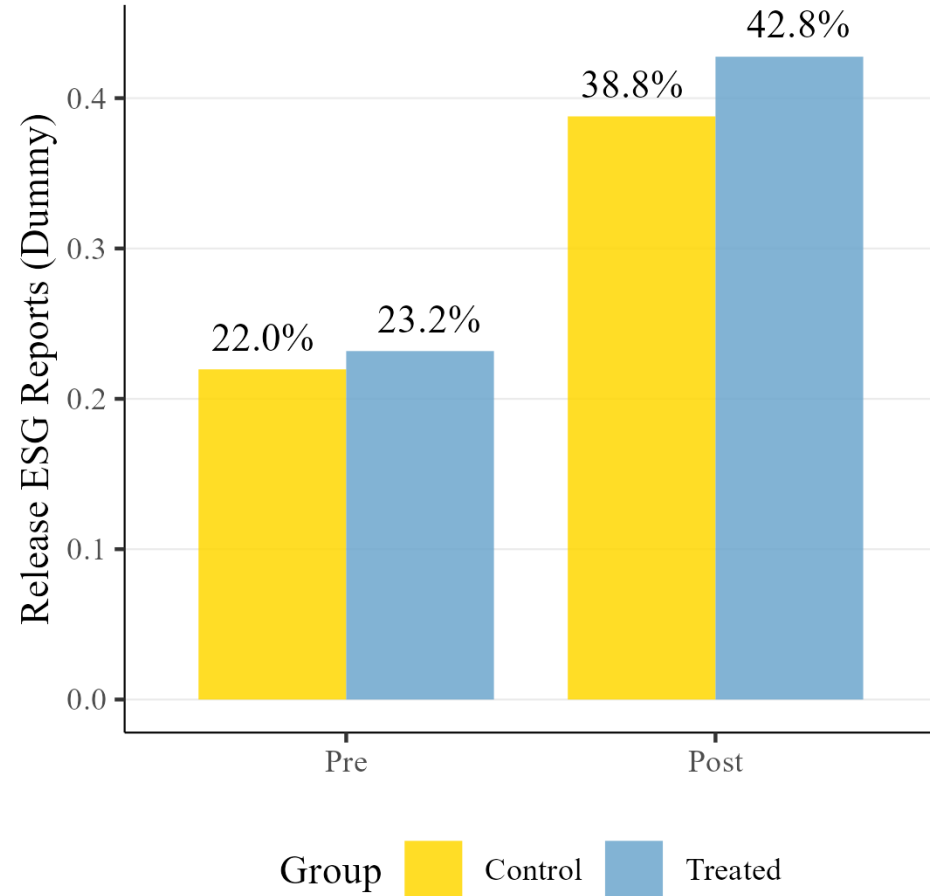
- Mentions of ESG during Institutional Investor Investigations

Model

Balance

Investor or Firm

Result 2: Offline Behaviors – ESG/CSR/Sustainability Reports



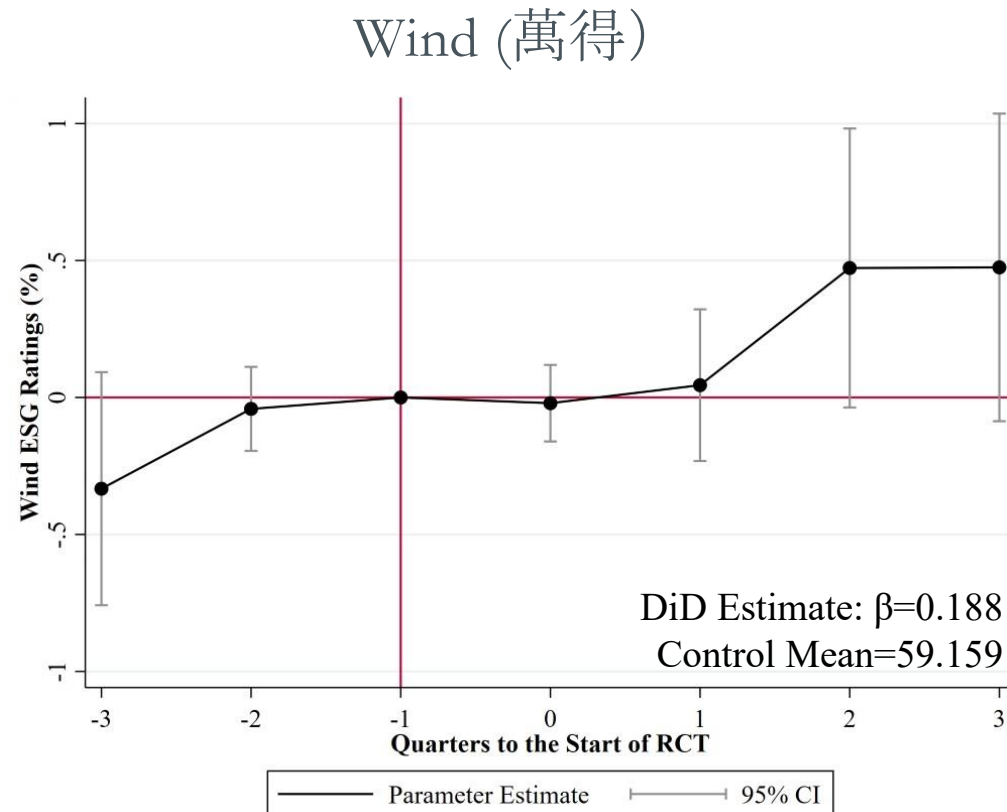
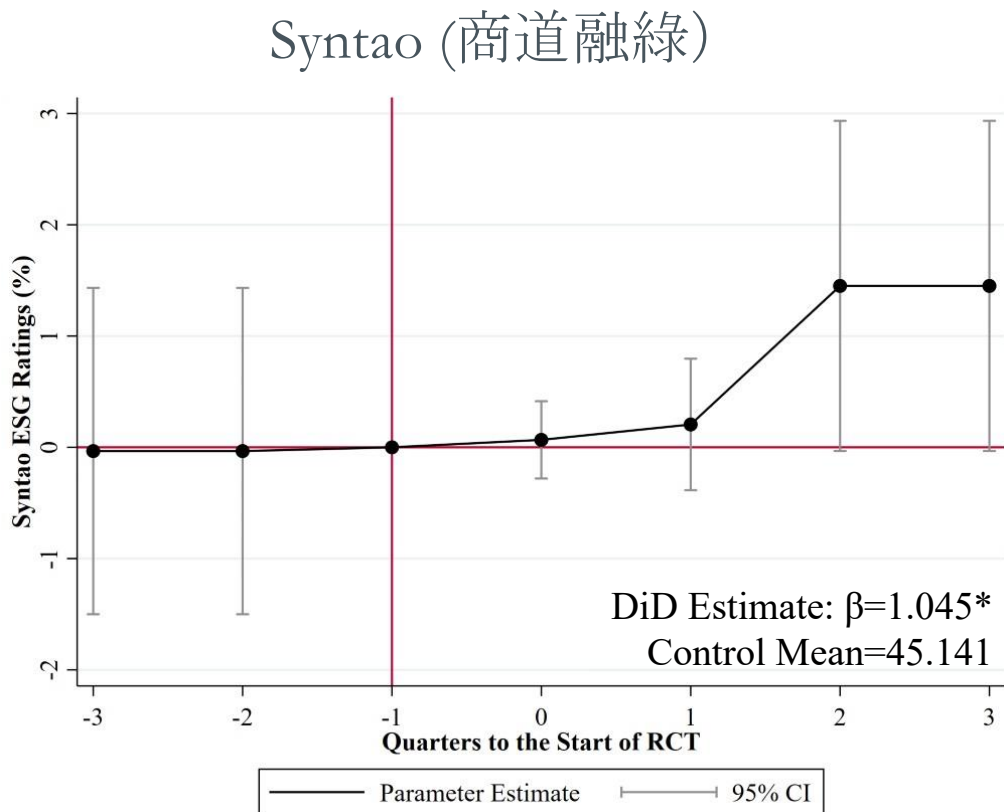
(1)	
ESG Report	
Post * Treat	2.754*** (1.017)
Control Mean	25.104
Observations	33,894
R-Squared	0.754
Firm FE	Yes
Year FE	Yes

- Release of 2024 ESG Reports by Treatment Status

Model

Balance

Result 2: Offline Behaviors – ESG Ratings

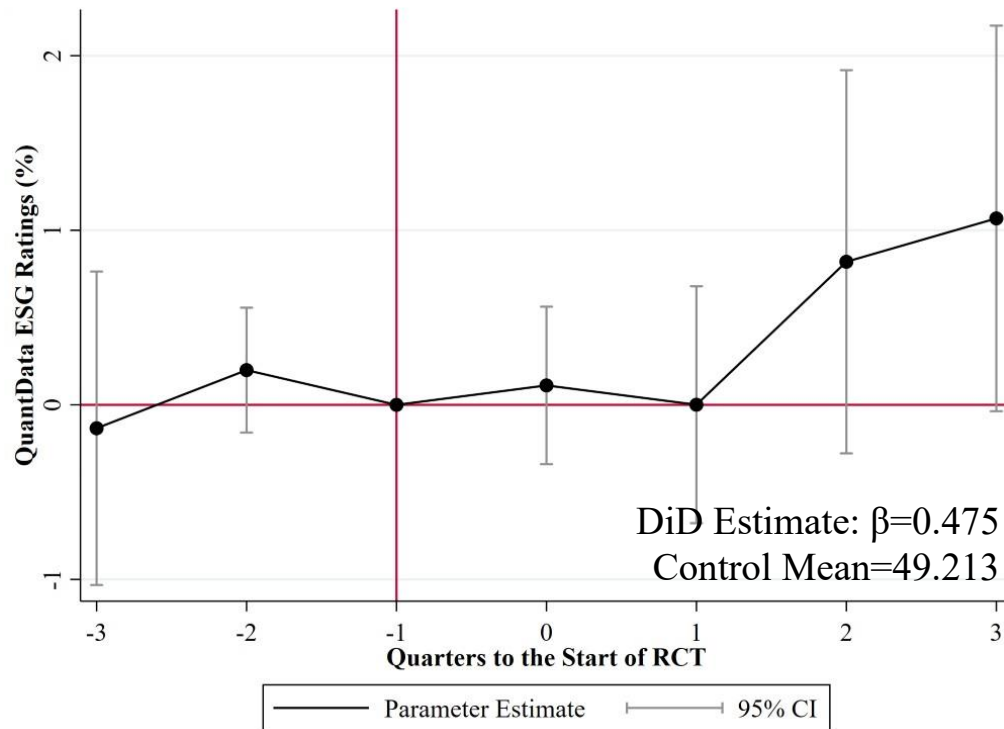


- Evolution of ESG Ratings from Cited Agencies

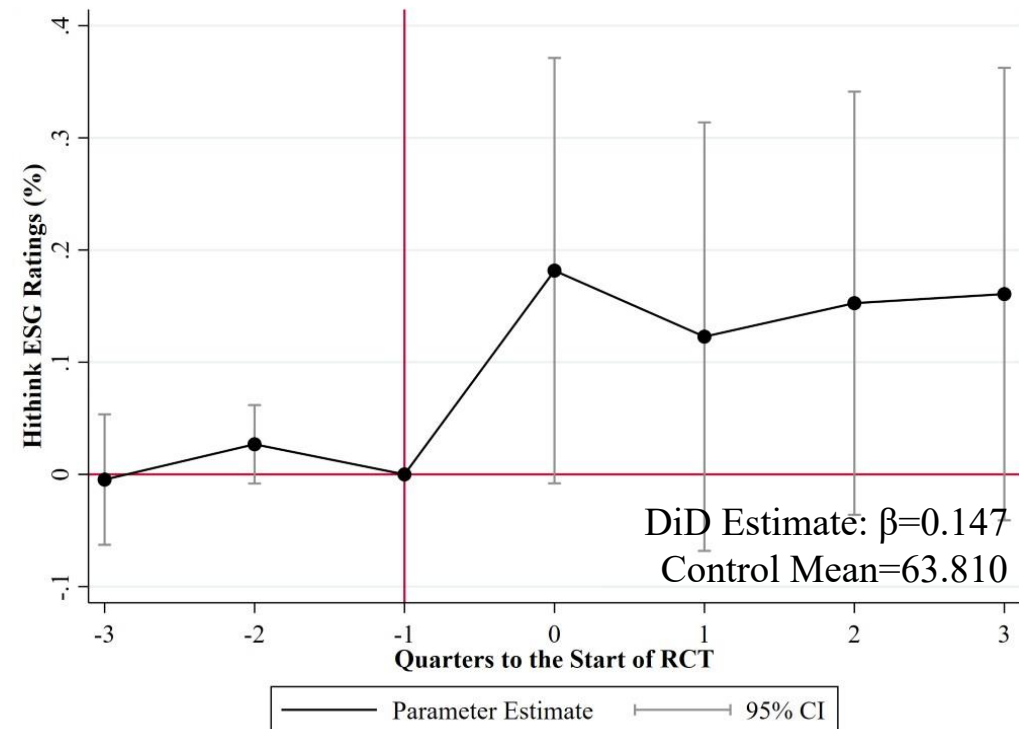
Update Frequency

Result 2: Offline Behaviors – ESG Ratings

QuantData (秩鼎)



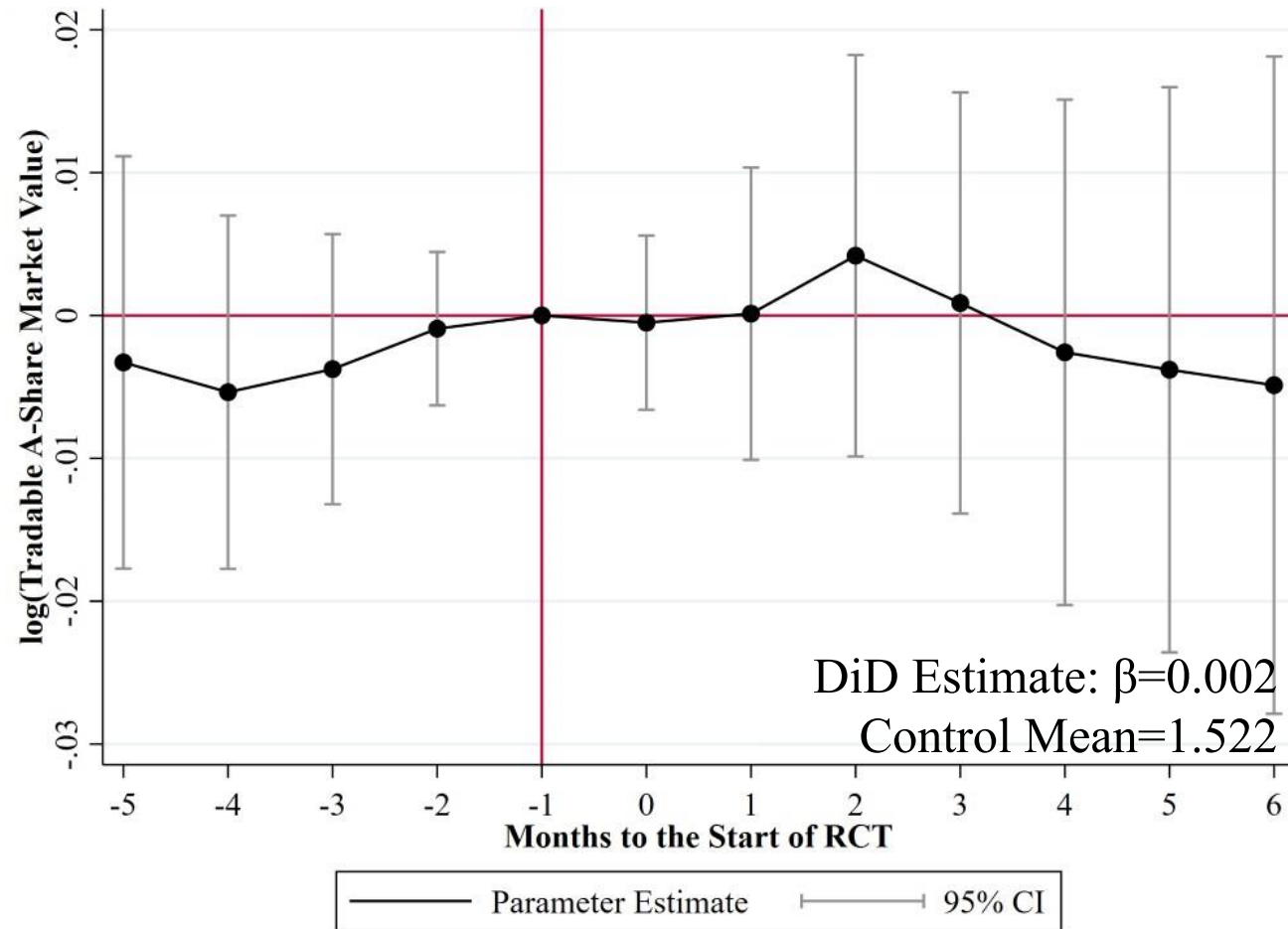
Hithink RoyalFlush (同花順)



- Evolution of ESG Ratings from Uncited Agencies

Update Frequency

Result 3: Stock Market Responses – Corporate Valuation

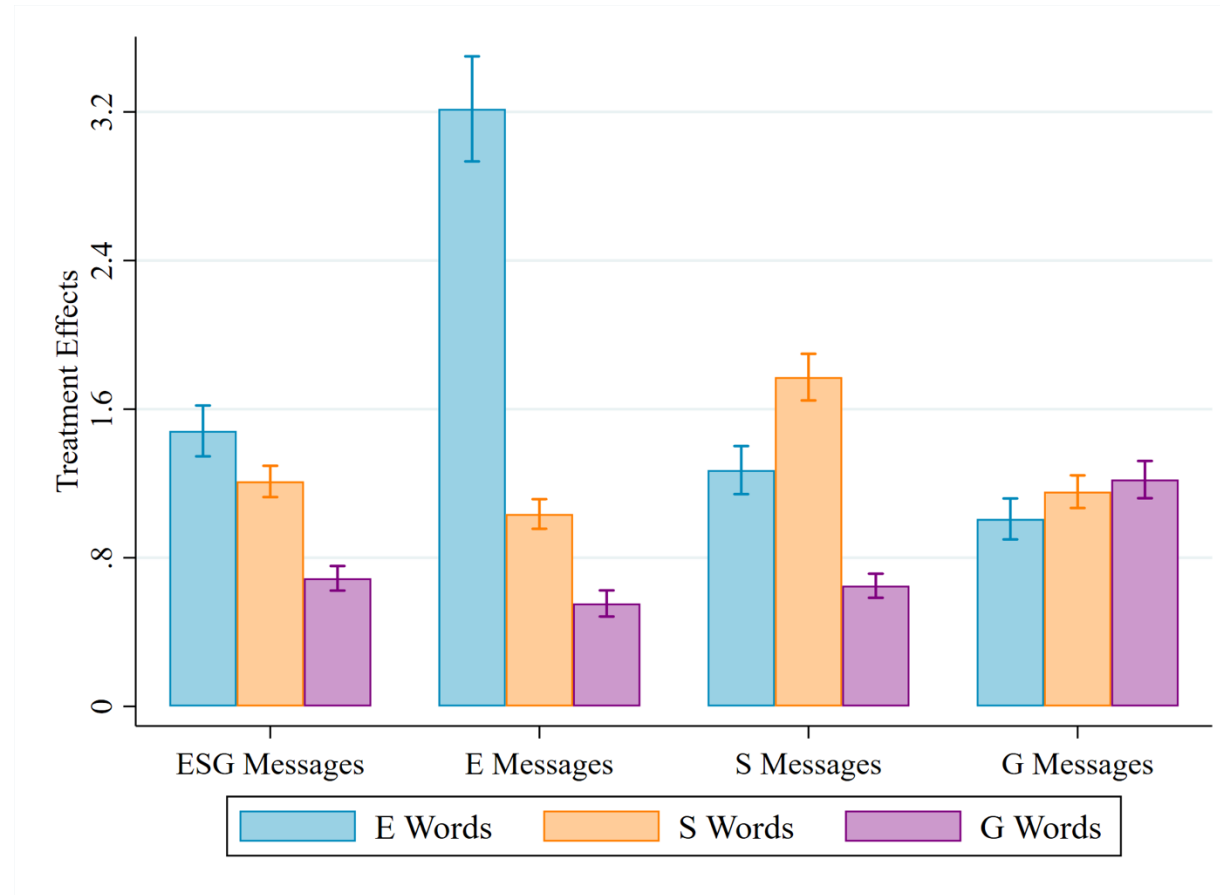


- Overall, improving ESG does not lead to higher corporate valuation

Q1: What are the experiment's overall impacts?

Q2: What would happen when we randomly emphasize E, S, or G concerns?

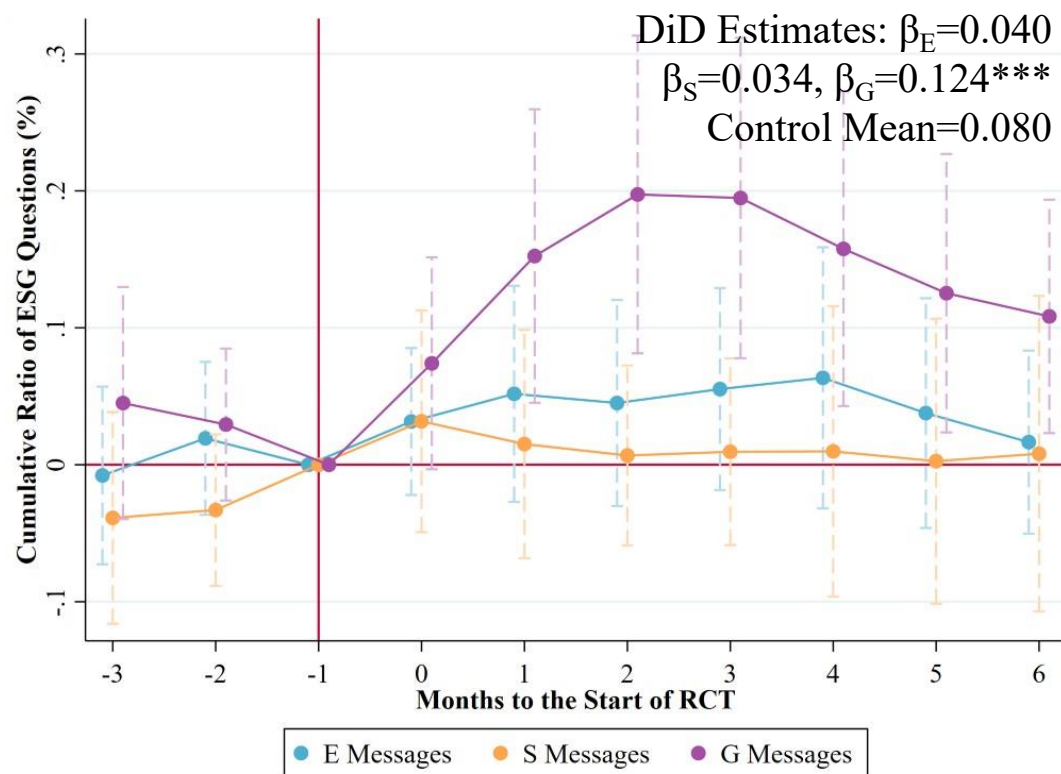
Result 4: Firms' Heterogenous Responses (Supply of ESG)



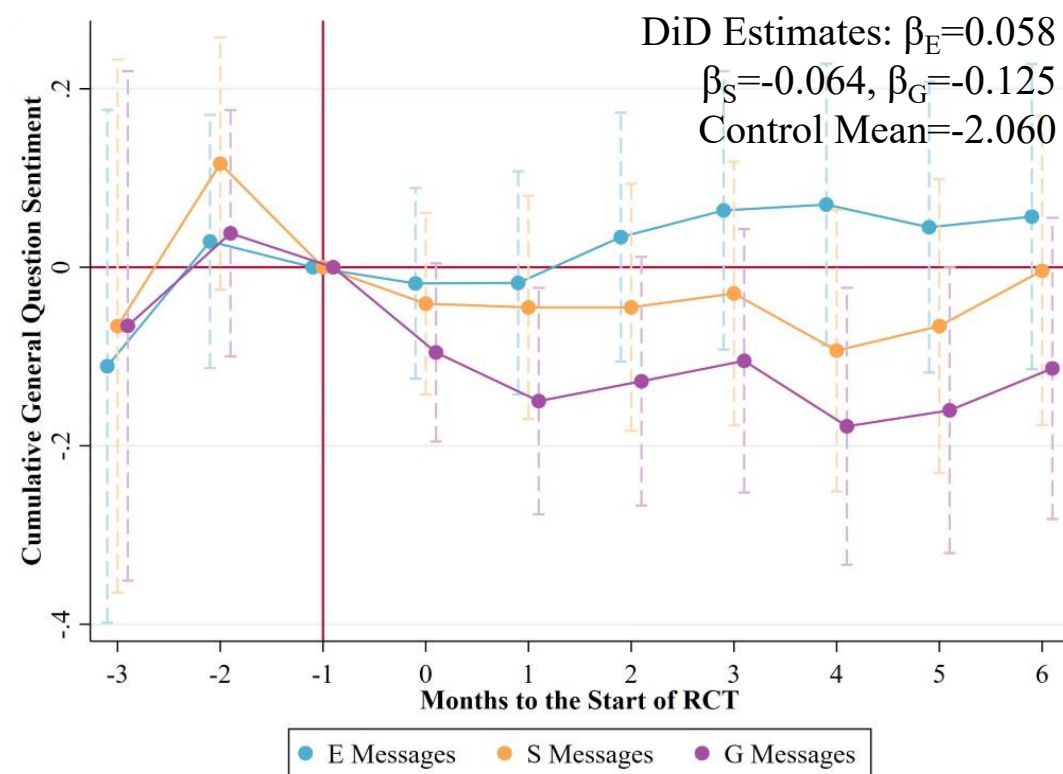
- E/S/G-specific questions elicit targeted disclosures, revealing firms' capacity to distinguish ESG subtopics and adapt their responses to stakeholder concerns

Result 5: Investors' Heterogeneous Responses (Demand of ESG)

ESG Question Spillovers

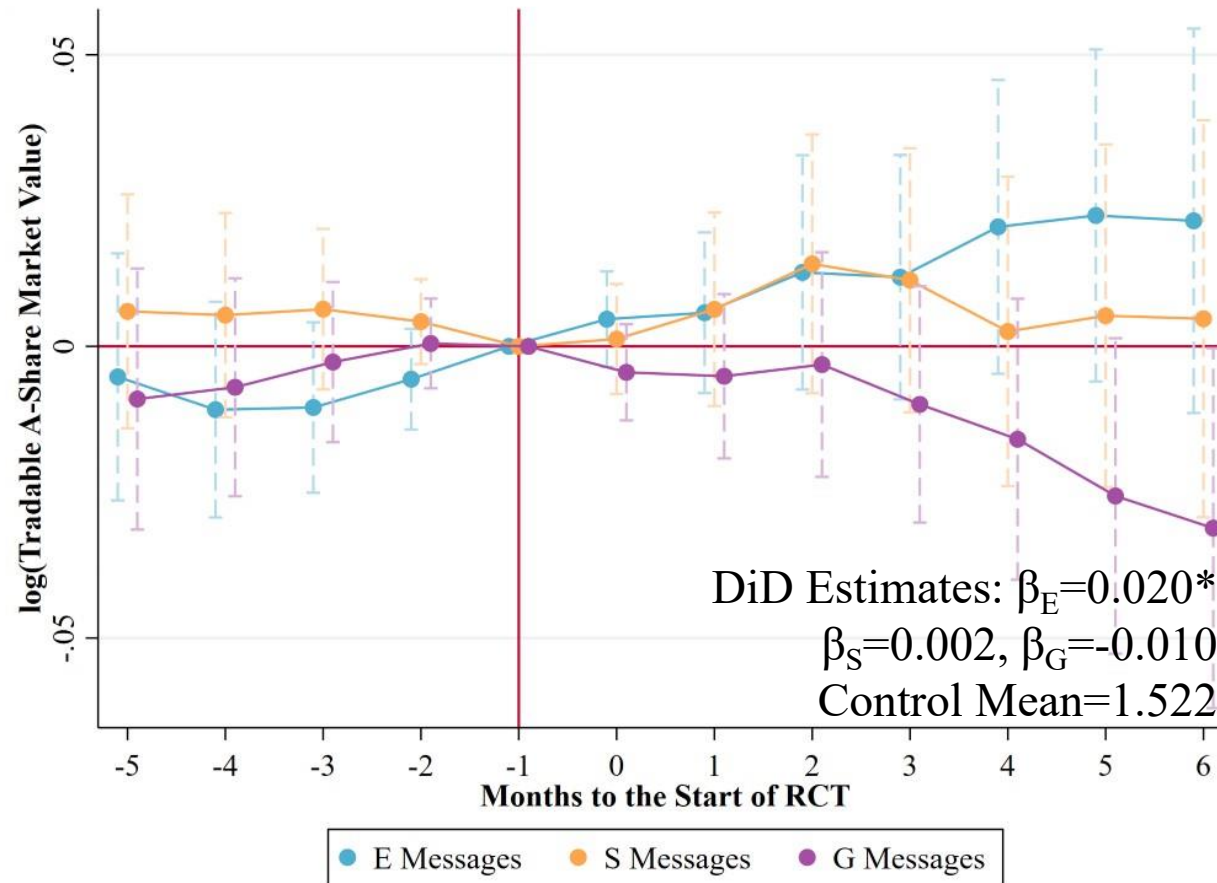


General Question Sentiment



- G inquiries lead to more follow-up questions and induce more negative sentiments online.

Result 6: Stock Market's Heterogeneous Responses (Equilibrium)



- Stock markets react positively to E messages and negatively to G messages.

Long-Term Convergence



Why Different Impacts (Under Development)?

- Asymmetric Information and ESG Quality as Signals
 - Investors don't know if a firm is “high” or “low” quality; firms answer ESG questions from investors; high-quality responses cost effort
 - Environmental responses: High-quality firms can signal with strong answers
 - Governance responses: Firms (even good ones) struggle to credibly promise improvements
- Environmental (Separating Equilibrium):
 - High-quality firms give strong signals; investors respond positively
 - Weak responses mean low quality; market separates the types
- Governance (Pooling Equilibrium):
 - Most firms give vague/cautious answers—signals blend together
 - Investors cannot tell types apart, interpret responses pessimistically; broader stock declines

Q1: What are the experiment's overall impacts?

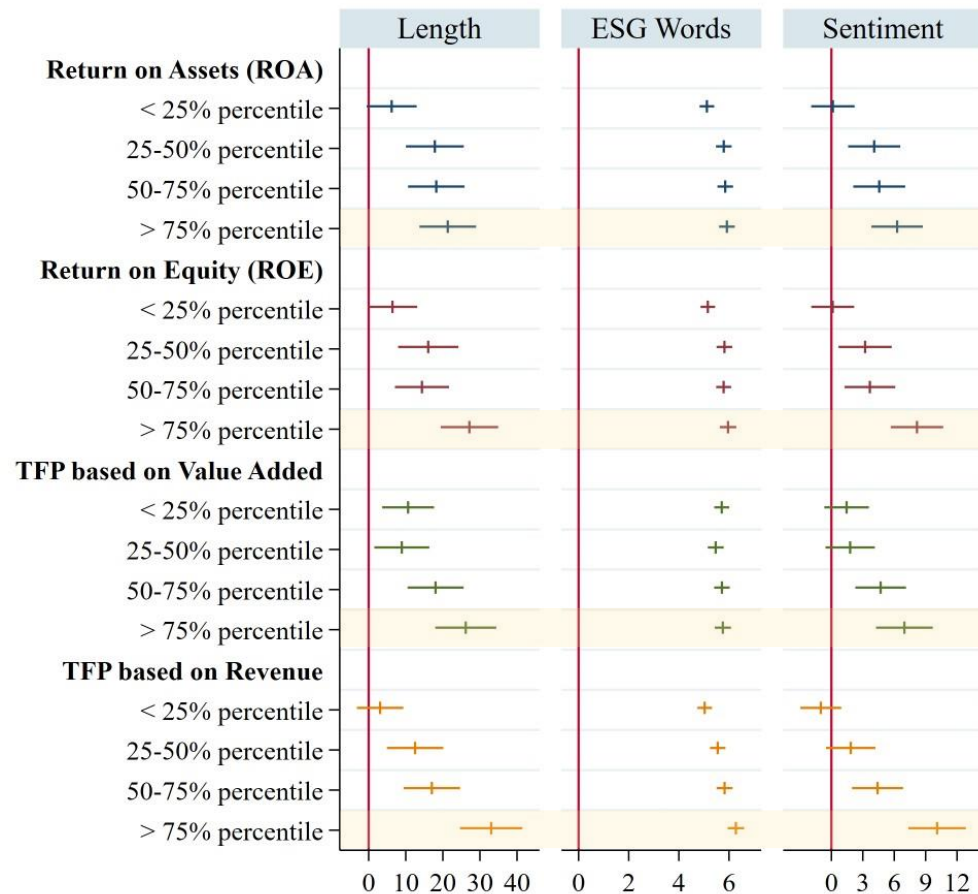
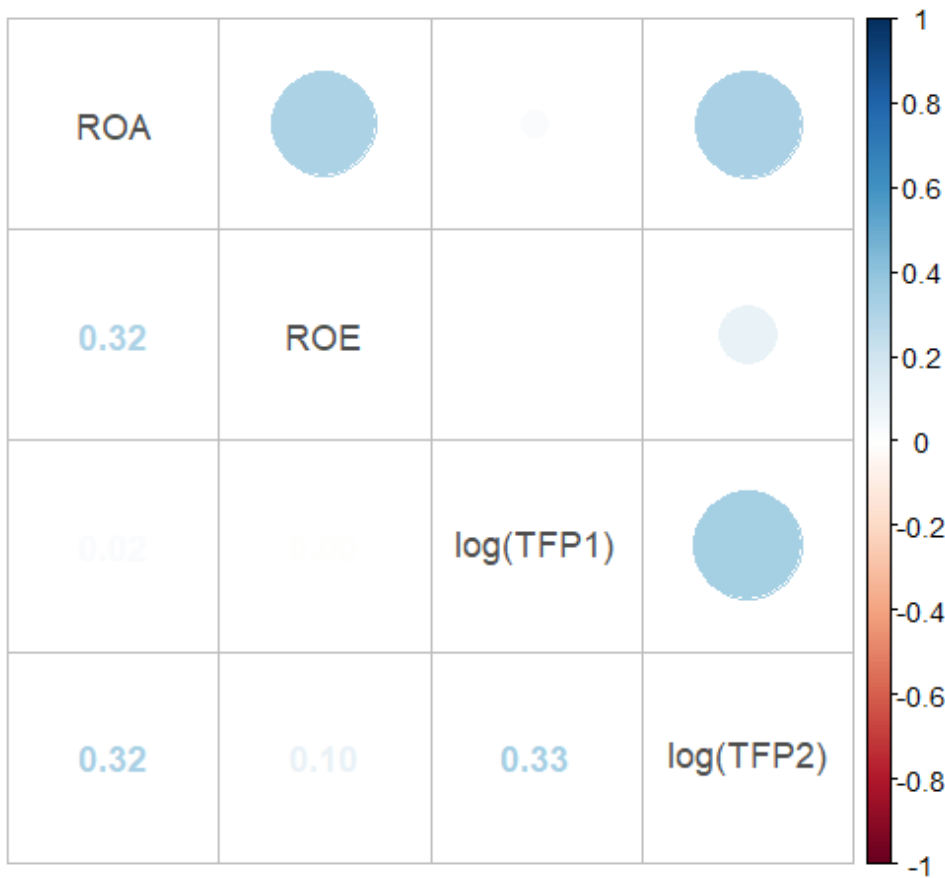
Q2: What would happen when we randomly emphasize E, S, or G concerns?

Q3: Why do firms respond to the public demand for ESG improvements?

Theory: Signaling Under Information Asymmetry

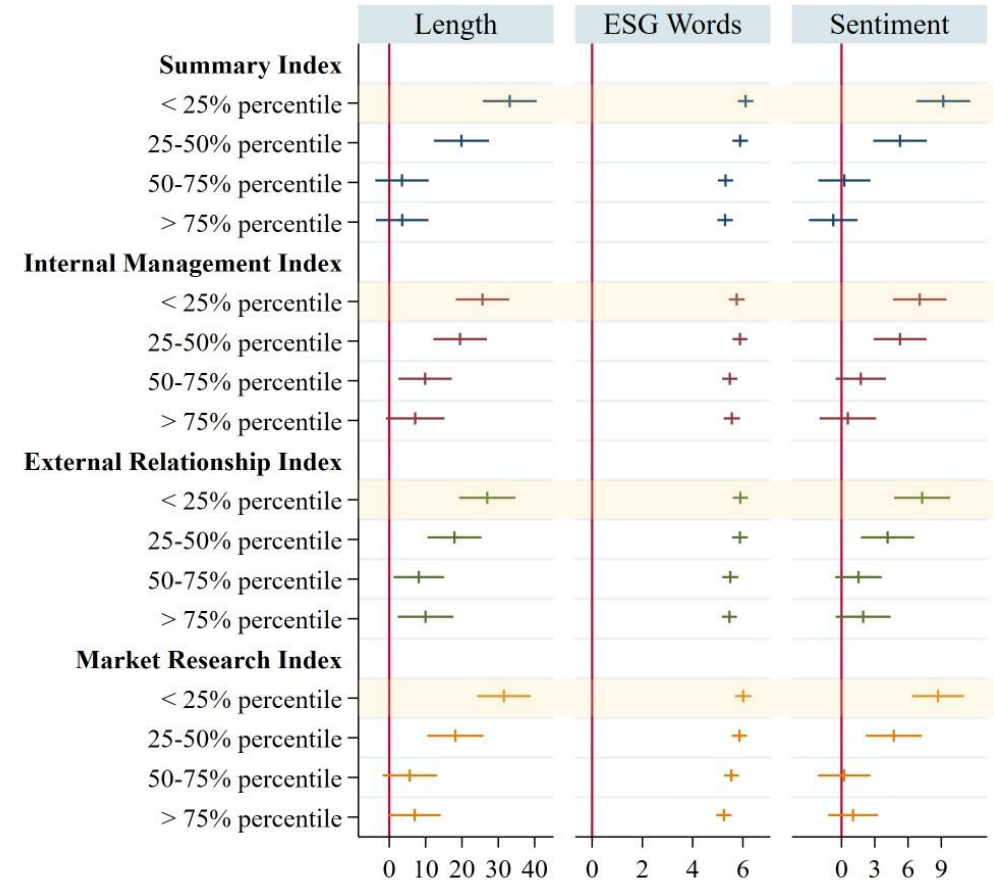
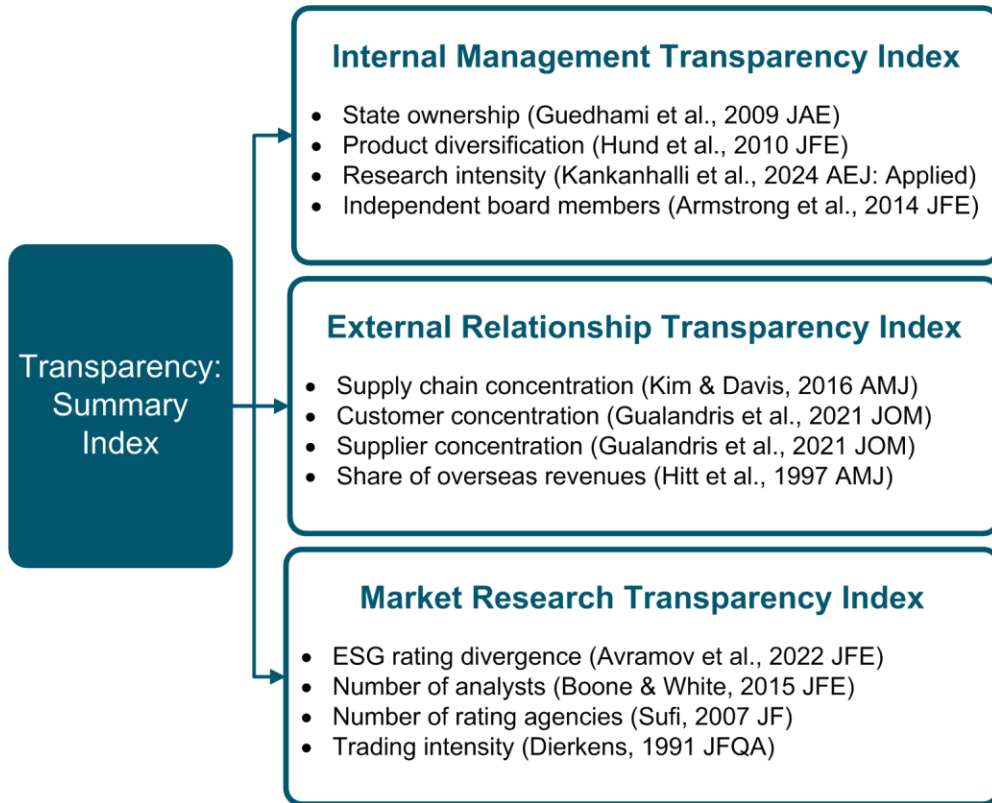
- Setting: heterogeneous firms and uninformed investors
 - Unobservable firm productivity (value/quality) due to the nature of businesses
 - A fraction of ESG-conscious investors
- ESG signals firm value to certain investors and boosts firm reputation without revealing trade secrets
 - Assumption: higher-value firms can signal at lower marginal costs (capable personnel & available resources)
- Predictions
 - Firms with higher value/quality send more ESG signals/actions
 - Firms with lower transparency send more ESG signals/actions
 - Firms with more ESG-conscious investors send more ESG signals/actions
 - Market responds to firms' ESG signals/actions in valuation.

Prediction 1: Higher Firm Quality, Better ESG



- Firms with higher value/quality (imperfectly measured) send more/higher-quality ESG signals

Prediction 2: Lower Transparency, Better ESG








- Firms with lower transparency send more/higher-quality ESG signals

Indicator Results

Control for ROA

Prediction 3: More ESG-Conscious Investors, Better ESG

Investors' Negative Comments

	<i>No Chasing Highs is My Bottom Line</i> (username) 2024-03-23 09:20:33 (from Shandong) These ratings are meaningless - too subjective. Just another tool created by European/American capital to manipulate stock prices. Companies shouldn't bother with them.
	<i>LeftCompass.com</i> (username) 12-06 14:11 (on Xueqiu) ESG is all flashy nonsense 😊. Any management system that ignores financial metrics is just bullshit 😊
	<i>grandtour0401</i> (username) 12-13 09:49 (on Xueqiu) The company can barely survive right now, yet they focus on this stuff? Just go through the motions, don't take it too seriously.
	<i>Ramada Regular</i> (username) 2024-04-08 09:20:03 (from Shanghai) ESG is completely useless - just paying money to fool people
	<i>Do Whatever You Want</i> (username) 2024-01-14 14:40:05 (from Shanghai) The more you invest in this garbage rating system, the worse your profits get!

	(1) Length	(2) ESG Words	(3) Sentiment
No Neg Comments	14.340*** (3.798)	5.777*** (0.146)	3.500*** (1.233)
Neg Comments	9.453** (4.544)	5.359*** (0.193)	2.347 (1.543)
Control Mean	75.938	0.193	23.613
Observations	144,872	144,872	144,872
R-Squared	0.309	0.557	0.301
Firm FE	Yes	Yes	Yes
Industry-Day FE	Yes	Yes	Yes

- Firms with more ESG-conscious investors send more ESG signals

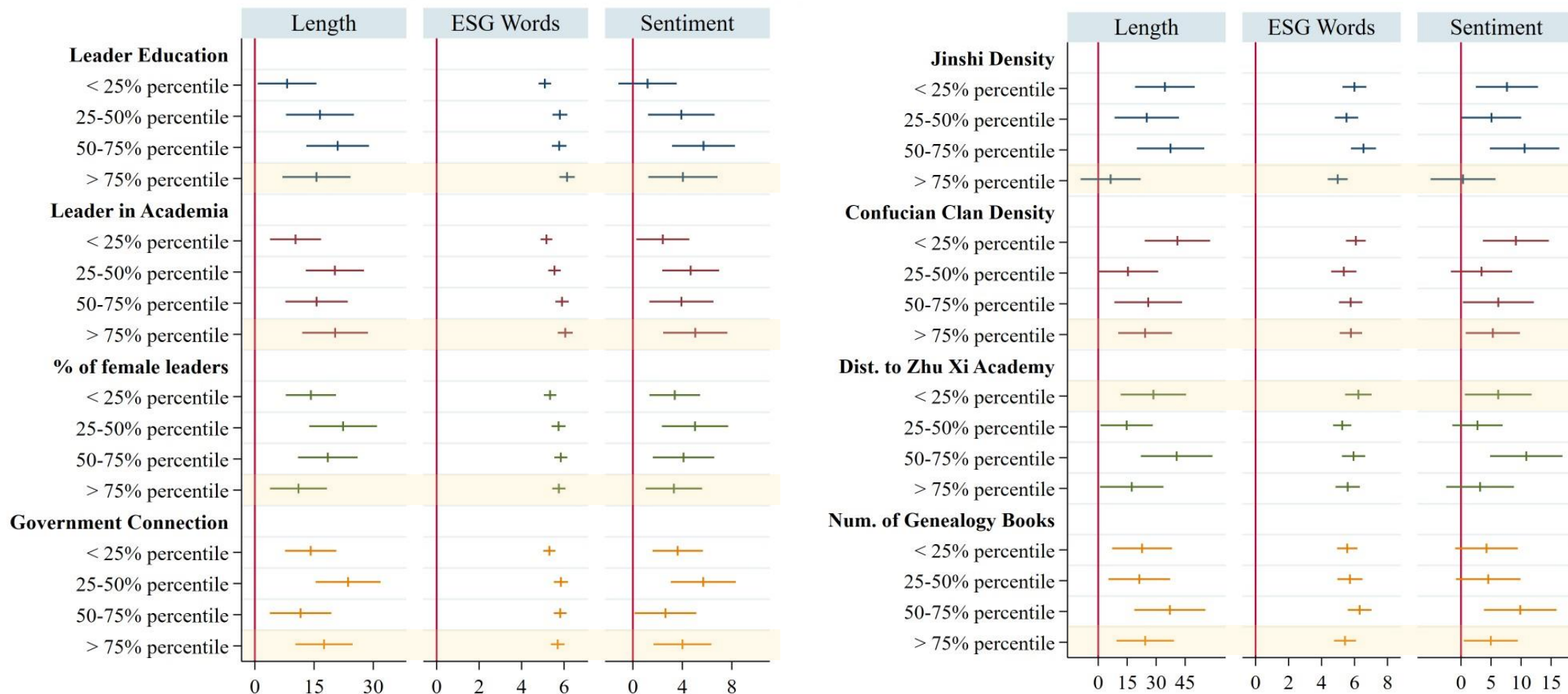


Prediction 4: Stock Market Responses to ESG Signals

	Log(Tradable A-Share Market Value)		
	(1)	(2)	(3)
Post * Treat	-0.004 (0.008)	0.002 (0.008)	0.003 (0.008)
Post * Treat * ROA	0.222** (0.099)		
Post * Treat * Transparency		-0.016* (0.010)	
Post * Treat * (No Neg Comments)			0.005 (0.010)
Post * Treat * (Neg Comments)			-0.023* (0.013)
Observations	1,164,510	1,164,510	1,164,510
R-Squared	0.973	0.973	0.973
Firm FE	Yes	Yes	Yes
Industry-Day FE	Yes	Yes	Yes

- Firms with higher value/quality, lower transparency, and more ESG-conscious investors experienced an increase in market valuation

Alternative Explanations: Leader Characteristics and Cultures



- *Value*, not *Values* (Starks, 2023)