Do Sustainability Ratings Induce ESG Window-Dressing in Mutual Funds?

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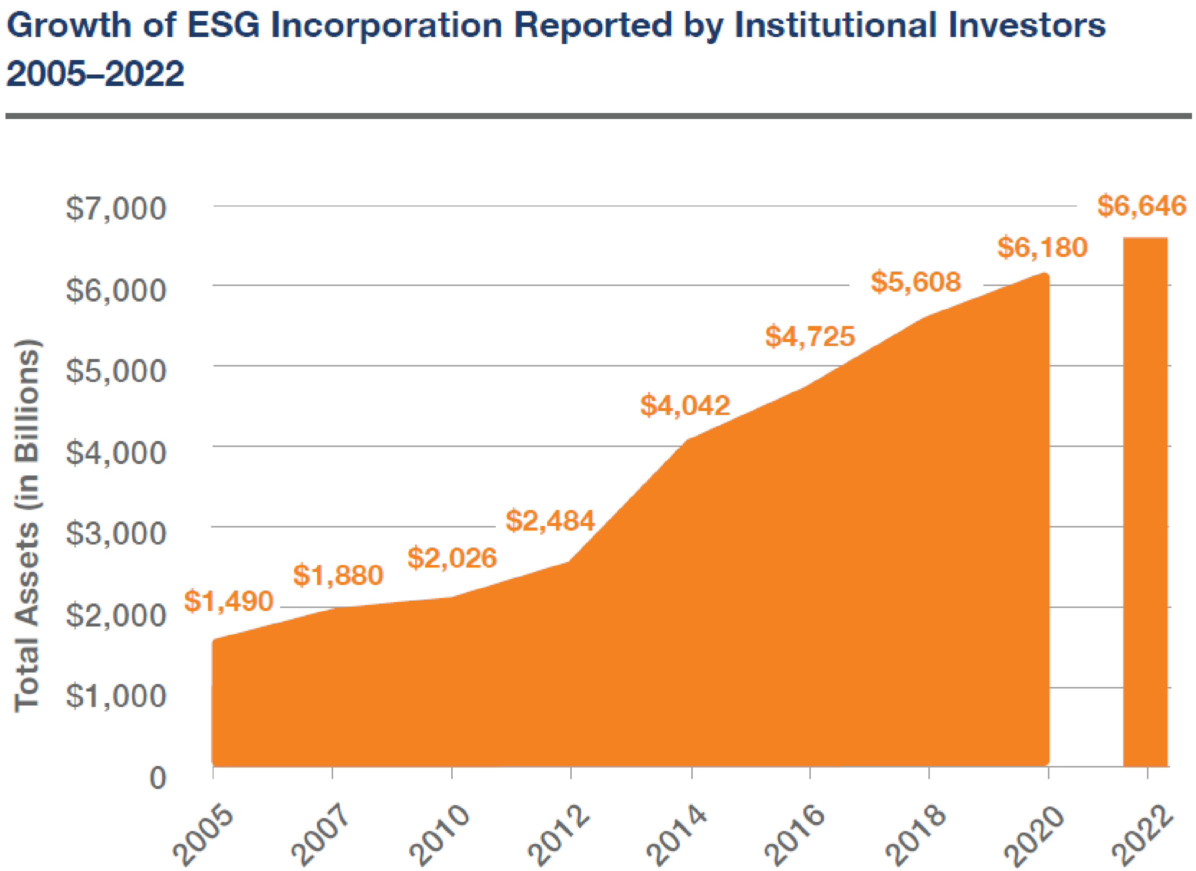
The Rise of ESG-themed Investing



SOURCE: US SIF Foundation

NOTE: Assets under management in 2022 represent US SIF's new modified methodology.

Rise in money managers using ESG criteria in investment decision making from 2005-2022.

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The Rise of ESG-themed Investing

Even traditional funds, those not labelled as ESG have increased commitment to ESG investing

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Principles for Responsible Investment

BlackRock has been a signatory to the United Nations supported Principles for Responsible Investment (PRI) since 2008. The PRI is an independent nonprofit that encourages investors to use responsible investment to enhance returns and better manage risks. For more information see the **About PRI** page of the organization's website.

As a signatory, BlackRock has committed to the annual effort of supporting PRI's aspirational and voluntary principles, where consistent with our fiduciary duties.

1. We will incorporate ESG issues into investment analysis and decision-making processes.
2. We will be active owners and incorporate ESG issues into our ownership policies and practices.
3. We will seek appropriate disclosure on ESG issues by the entities in which we invest.
4. We will promote acceptance and implementation of the Principles within the investment industry.
5. We will work together to enhance our effectiveness in implementing the Principles.
6. We will each report on our activities and progress towards implementing the Principles.

Fidelity INTERNATIONAL Sustainable investing Investment themes Funds Investment insights About Fidelity

Environmental

On the environmental side, this means the impact that companies have on their surroundings and anticipating how global themes such as climate change, water scarcity and the transition to a circular economy may impact their business models over the long-term. This is referred to as 'dual materiality' between the company and environment as they impact each other.

Social

Social issues are hugely important if companies are to ensure they are insulated against business risks. For example, companies must understand that their business relationships with suppliers and employees carry reputational and regulatory consequences. It is important that they comprehend the importance of having full oversight of their supply chain.

Governance

While governance issues have long been a focus of investors, today's clients expect investment managers to play a key role in ensuring that investee companies operate to the highest standards. This is achieved by educating organisations on the benefits of strict and transparent accounting practices, diverse and inclusive leadership teams, and remuneration and incentive plans that align the goals of the company with those of the board.

PRI Fidelity Score

We have been a signatory to the United Nations Principles for Responsible Investment (PRI) since 2012 and are proud of our ratings, having scored a mix of four and five stars in the categories below assessed by PRI in 2021.

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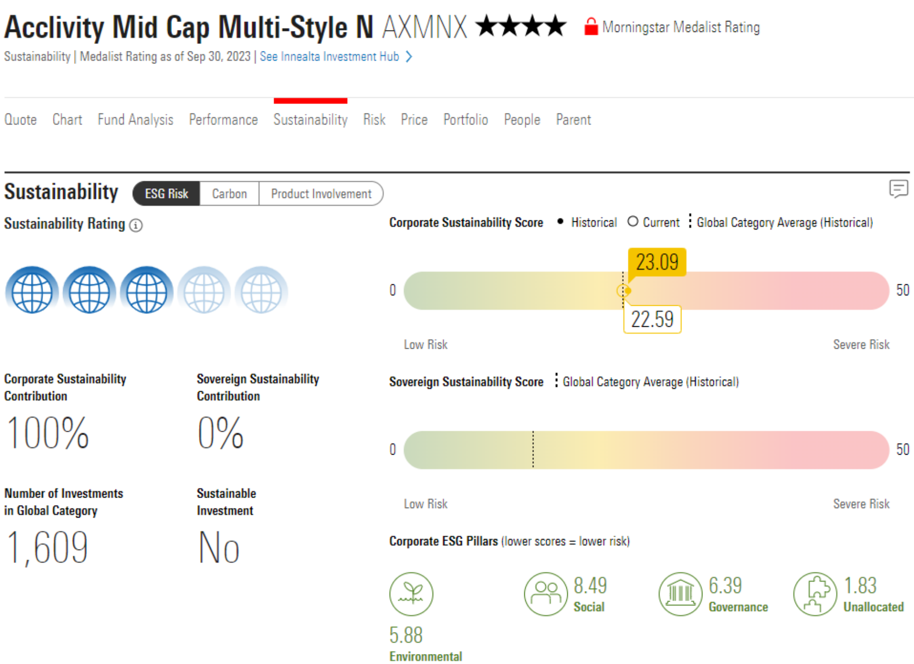
Growing use of ESG scores as ESG Investment Tools

- **At the same time, we're also see a growing number of ESG data providers that are providing fund-level ESG ratings**
    - Perhaps due to rising interest in ESG themed investing
- **Helps investors assess the ESG profile of a fund and investors react to it**
    - As it attracts fund-flows (Hartzmark and Sussman, 2019)
- **One of the main fund-level ESG raters is Morningstar which makes publicly available, their 5-globe ratings of funds' ESG performance**

Fund-Level ESG Ratings – Morningstar Sustainability Ratings



MORNINGSTAR RATINGS | MORNINGSTAR SUSTAINABILITY RATINGS

Morningstar Sustainability Ratings™

July 31, 2023

The Morningstar Sustainability Rating™ is intended to measure how well the companies of the securities within a fund's portfolio are managing their environmental, social and governance risks and opportunities relative to the fund's Morningstar category peers.

Sustainability Ratings		Universe / % of AUM
Pioneer Balanced ESG Fund Moderate Allocation Category	4 globes	751 / 93.96%
Pioneer Bond Fund Intermediate Core-Plus Bond Category	4 globes	625 / 73.92%
Pioneer Core Equity Fund Large Blend Category	4 globes	1,447 / 100.00%
Pioneer Emerging Markets Equity Fund Diversified Emerging Markets Category	4 globes	832 / 99.66%
Pioneer Flexible Opportunities Fund Tactical Allocation Category	5 globes	248 / 98.16%

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Controversy over Greenwashing

The Big Read ESG investing + Add to myFT

How ESG investing came to a reckoning

With allegations of greenwashing at the highest levels, does it still make sense for funds to package together environmental, social and governance factors?

ETF Hub ESG investing + Add to myFT

Only 10% of German ESG funds shun controversial assets, activists claim

Campaign groups say more than 40% of ESG funds invest in defence companies

SEC prepares to crack down on misleading ESG investment claims

Pending rules come as funds repackage themselves for the $3tn ‘sustainable’ market

Research Question

RQ: Do Sustainability Ratings Induce ESG Window-Dressing?

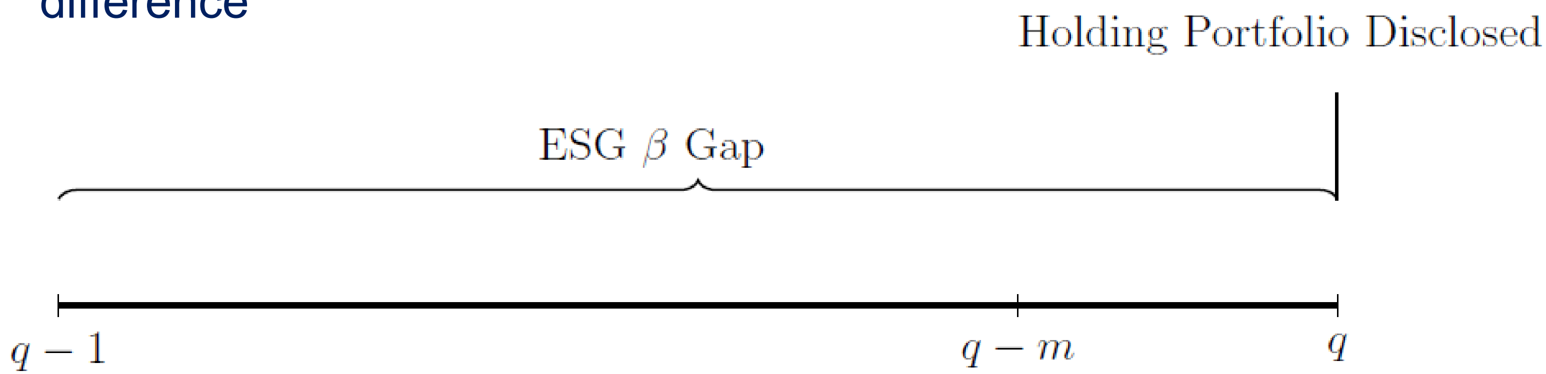
- Develop a measure of ESG window-dressing in mutual funds
- Study the relationship between fund-level ESG ratings and the extent of ESG window-dressing
- Examine the firm-level effects of ratings-induced mutual fund ESG window-dressing

Key tension of our study:

- Foregoing good investment opportunities when engaging in window-dressing
- Reputational and regulatory costs associated with window-dressing activities

Measuring ESG Window-Dressing – The ESG Beta Gap

- **Our ESG beta gap measures whether the implied exposure to an ESG factor is different compared to the actual exposure of the ESG factor**
  - If there is ESG window-dressing – we would expect to see a positive difference



Measure an actual ESG beta over the quarter based on fund returns

Measure a holding ESG Beta over the quarter based on implied returns from the disclosed portfolio at the end of the quarter

Measuring ESG Window-Dressing – The ESG Beta Gap

- To compute the ESG factor we form high and low ESG portfolios based on Sustainalytics and track returns

- Following the approach for creating the value factor we take the equal-weighted average over the small and large ESG portfolios to control firm size

$$ESG\ Factor_t = \frac{1}{2}\left(ESG_{H,S} + ESG_{H,B}\right) - \frac{1}{2}\left(ESG_{L,S} + ESG_{L,B}\right), \qquad (2)$$

- The ESG factor is the portfolio returns of the high ESG portfolio minus portfolio returns of the low ESG portfolio

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Measuring ESG Window-Dressing – The ESG Beta Gap

- **We then compute the ESG Betas from firm-quarter regression of actual daily returns or holdings-implied daily returns on the ESG factor portfolio returns**

  - To control for the standard risk factors, we include the portfolio returns of the market, size, value, profitability, and investment, following Fama and French (2015)

$$Actual\ Ret_{p,t}\ or\ Hold\ Ret_{p,t} = \alpha_p + \beta_1 MKTRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 RMW_t + \beta_5 CMA_t + \beta_{AESG}\ or\ \beta_{HESG}\ ESG_t + \varepsilon_{p,t}, \quad (3)$$

- **With the actual and holding ESG betas – we compute the ESG beta gap as the difference between the holding and actual ESG betas**

Morningstar Sustainability Ratings and ESG Beta Gap

- **Our first hypothesis examines the relationship between fund-level ESG ratings and window-dressing incentives.**

- **Due to potential fund inflows of achieving higher ESG ratings, we argue that fund-level ESG ratings will increase incentives to window-dressing ESG performance**

  - While ESG stocks could attract fund flows, these stocks don't always yield higher expected future returns (Cornell, 2021; DiGiuli and Kostovetsky, 2014; Pastor et al, 2022)

  - Moreover, investors may not be willing to sacrifice return performance for sustainability goals (Larcker and Watts, 2020, Renneboog et al, 2008)

- **We focus on the Morningstar sustainability ratings as these are publicly available and widely used by investors; thus, we predict:**

P1(a): The average ESG β gap of mutual funds will increase after the initiation of the Morningstar sustainability ratings.

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Does Sustainability Ratings Increase ESG Window Dressing? (Table 3)

$$ESG\ Beta_{p,q}\ or\ Beta\ Gap_{p,q} = \alpha_p + \beta 1_{2016} + \varepsilon_{p,q}, \quad (4)$$

Panel A: Actual ESG β

Risk Model	3 Factor Model		5 Factor Model	
$\text{Post}_{q=2016Q1}$	0.065***	0.054***	0.060***	0.051***
	(0.003)	(0.003)	(0.003)	(0.004)
Fund FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Observations	81,273	81,273	81,273	81,273
Adj. R^2	0.2861	0.2926	0.1201	0.1293

Roughly 0.05 increase in the ESG beta following the introduction of the globe ratings

Panel C: ESG β Gap (Holding - Actual)

Risk Model	3 Factor Model		5 Factor Model	
$\text{Post}_{q=2016Q1}$	0.006***	0.008***	0.007***	0.008***
	(0.001)	(0.001)	(0.001)	(0.001)
Fund FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Observations	81,273	81,273	81,273	81,273
Adj. R^2	0.0772	0.0786	0.0506	0.0518

Roughly 15% increase in the ESG beta relative to the increase of actual ESG beta

Morningstar Sustainability Ratings and ESG Beta Gap

- MSCI also rolled out a similar rating in 2016. Yet, these ratings are likely less salient compared to Morningstar as their ratings were only available to paid subscribers.

- As the salience of the ratings plays an important role in attracting fund flow, particularly retail fund flows, we argue that the incentives of the window-dressing based on Morningstar's ESG scores would be higher than those of the MSCI ESG scores:

P1(b): The ESG β gap increase after the initiation of the Morningstar sustainability ratings would be larger for ESG factors based on Sustainalytics scores than MSCI ESG scores.

Does the Sustainalytics ESG Beta Gap Increase More than the MSCI Beta Gap (Table 4)

We compute the difference in the ESG beta gap based on Sustainalytics ESG scores and the ESG beta gap based on the MSCI ESG scores

Panel C: ESG β Gap (Holding - Actual)				
Risk Model	3 Factor Model		5 Factor Model	
$\text{Post}_{q=2016Q1}$	0.006***	0.008***	0.007***	0.008***
	(0.001)	(0.001)	(0.001)	(0.001)
Fund FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Observations	81,273	81,273	81,273	81,273
Adj. R^2	0.0772	0.0786	0.0506	0.0518

Consistent across all specification – we find that the ESG beta gap increases more if based on the Sustainalytics scores compared to those based on the MSCI scores

Why do Funds Engage in ESG Window-Dressing?

- **To provide more color into incentives of ESG window-dressing we examine the determinants of the ESG beta gap:**
  - Fund Returns and fund flows → to offset negative implications of poor performance
  - ESG-labelled funds → Investors may pay extra attention on ESG performance
  - ESG portfolio returns → Following periods of high ESG performance, ESG ratings may serve as a signal of fund performance
  - Proximity to the 5 ratings breakpoint → If attracting fund flow is an objective of window-dressing, incentives to window-dressing likely higher at the highest ratings
- **We perform this analysis from 2018-2021**

Determinant Analysis of ESG Beta Gap (Table 5)

Dependent Variable	ESG β Gap	ESG β Gap
$\text{Returns}_{i,q-1}$	-0.037***	-0.036***
	(0.003)	(0.003)
$\text{Net Flow}_{i,q-1}$	-0.010	-0.008
	(0.007)	(0.008)
ESG Fund_i	0.006***	
	(0.002)	
ESG Return_{q-1}	0.089***	0.086***
	(0.008)	(0.008)
$\text{Near Breakpoint}_{i,q-m}$	0.031**	0.029**
	(0.015)	(0.014)
$\text{Log(NAV)}_{i,q_1}$	0.000	-0.004***
	(0.000)	(0.002)
$\text{Management Fee}_{i,q-1}$	-0.002	0.009
	(0.003)	(0.010)
$\text{Expense Ratio}_{i,q-1}$	-0.188	-1.989*
	(0.301)	(1.142)
$\text{Portfolio Concentration}_{i,q-1}$	-0.002	-0.008
	(0.008)	(0.007)
Fund FE	No	Yes
Observations	23,282	23,282
Adj. R^2	0.0100	0.0637

Fund Flow Incentive of ESG Window-Dressing

- **One of the key incentives of ESG window-dressing is the potential attract future fund flows through ESG window-dressing**

- **Thus, we examine whether ESG window-dressing drives higher ratings, and whether higher ratings drive higher fund flows**

ESG Beta Gap and ESG Ratings (Table 6)

Panel A: ESG β Gap and ESG Ratings	
Dependent Variable	ESG Rating
ESG Beta Gap$_{i,q}$	0.362**
	(0.158)
Returns$_{i,q-1}$	0.033
	(0.059)
Log(NAV)$_{i,q1}$	-0.041***
	(0.015)
Management Fee$_{i,q-1}$	0.477***
	(0.130)
Expense Ratio$_{i,q-1}$	-61.024***
	(12.996)
Portfolio Concentration$_{i,q-1}$	0.325
	(0.267)
Quarter FE	Yes
Observations	23,282
Adj. R^2	0.0091

We show that the ESG beta gap is associated with higher ESG ratings after controlling for various controls and quarter fixed effects

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ESG Beta Gap and ESG Ratings (Table 6)

Panel B: ESG Ratings and Fund Flows				
Fund Flow Horizon	1 Quarter Ahead	2 Quarter Ahead	3 Quarter Ahead	4 Quarter Ahead
ESG Rating$_{i,q}$	0.002***	0.002***	0.003***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)
Returns$_{i,q-1}$	0.067***	0.049***	0.003	0.023***
	(0.005)	(0.005)	(0.006)	(0.005)
Log(NAV)$_{i,q_1}$	-0.005***	-0.005***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)
Management Fee$_{i,q-1}$	-0.012**	-0.019***	-0.022***	-0.023***
	(0.005)	(0.005)	(0.005)	(0.005)
Expense Ratio$_{i,q-1}$	-1.622***	-1.031**	-0.628	-0.442
	(0.474)	(0.487)	(0.489)	(0.476)
Portfolio Concentration$_{i,q-1}$	-0.008	0.003	0.005	0.007
	(0.007)	(0.008)	(0.008)	(0.009)
Quarter FE	Yes	Yes	Yes	Yes
Observations	22,400	20,661	18,955	17,283
Adj. R^2	0.0474	0.0458	0.0452	0.0484

ESG ratings are associated with higher fund flows over the 1-4 quarters ahead.

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Firm-Level Effects of ESG Beta Gap

- If mutual funds engage in ESG window-dressing to a large enough extent, we should observe predictable trading return patterns near quarter-end

- Similarly, we should also see predictable return patterns based on the purchase (sales) of stocks with high (low) ESG scores before quarter-end, and a reversed pattern as fund managers unwind these trades:

P2(a): After the initiation of the Morningstar sustainability rating, stocks with high (low) ESG scores would exhibit more positive (negative) abnormal returns right before quarter-ends and more negative (positive) abnormal returns right after quarter-ends.

Firm-Level Analysis of the ESG Window-Dressing (Table 7)

We examine the quarter-end returns of high and low ESG firms (top and bottom decile by ESG score) after the introduction of the globe-ratings

Panel B: Post-Globe Ratings (2016-2022)				
Return Inteval	BHAR(-4,0)		BHAR(1,5)	
Sample	High ESG	Low ESG	High ESG	Low ESG
Estimate	0.085*	-0.176*	-0.197***	0.169*
	(0.048)	(0.094)	(0.049)	(0.095)
Observations	6,778	6,746	6,778	6,746
Difference High - Low ESG	0.261**		-0.366***	
	(0.106)		(0.106)	
Observations	13524		13524	

Positive (negative) returns for high (low) ESG firms before the quarter-end

Negative (positive) returns for high (low) ESG firms after the quarter-end

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Firm-Level Analysis of the ESG Window-Dressing (Table 7)

Before the introduction of the globe ratings, we find no significant return patterns

Panel C: Pre-Globe Ratings (2011-2015)				
Return Inteval	BHAR(-4,0)		BHAR(1,5)	
Sample	High ESG	Low ESG	High ESG	Low ESG
Estimate	-0.018	0.028	-0.022	0.184*
	(0.080)	(0.085)	(0.088)	(0.103)
Observations	1,738	1,718	1,738	1,718
Difference High - Low ESG	-0.046		-0.207	
	(0.115)		(0.134)	
Observations	3456		3456	

Firm-Level Analysis of the ESG Window-Dressing (Table 8)

We perform a similar analysis by regressing quarter-end returns with the percentile rank of ESG scores in the period after the introduction of the globe ratings

Panel B: Post-Globe Ratings (2016-2022)								
BHAR Window	(-4,0)	(-4,0)	(-4,0)	(-4,0)	(1,5)	(1,5)	(1,5)	(1,5)
ESG $\%_{i,q}$	0.179**	0.249***	0.253**	0.248**	-0.260***	0.109	-0.247**	-0.263***
	(0.085)	(0.084)	(0.098)	(0.099)	(0.083)	(0.080)	(0.099)	(0.099)
$\text{Size}_{i,q-1}$			-0.011	-0.016			0.132***	0.136***
			(0.019)	(0.019)			(0.020)	(0.020)
$\text{BM}_{i,q-1}$			-0.221***	-0.216***			0.135*	0.129*
			(0.060)	(0.060)			(0.070)	(0.070)
$\text{Inv}_{i,q-1}$				0.252				-0.753**
				(0.328)				(0.364)
$\text{OP}_{i,q-1}$				0.283				-0.041
				(0.235)				(0.066)
Quarter FE	Yes	No	No	No	Yes	No	No	No
GICS4-Quarter FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Observations	67,550	67,550	67,550	67,550	67,550	67,550	67,550	67,550
Adj. R^2	0.0184	0.1248	0.1252	0.1253	0.0650	0.1906	0.1913	0.1914

Positive (negative) returns for high (low) ESG firms before the quarter-end

Negative (positive) returns for high (low) ESG firms before the quarter-end

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Firm-Level Analysis of the ESG Window-Dressing (Table 8)

We perform the regression analysis for the pre-globe rating period and we do not find significant return patterns.

Panel C: Pre-Globe Ratings (2011-2015)								
BHAR Window	(-4,0)	(-4,0)	(-4,0)	(-4,0)	(1,5)	(1,5)	(1,5)	(1,5)
ESG $\%_{i,q}$	-0.060	-0.071	-0.056	-0.049	-0.019	-0.076	-0.100	-0.108
	(0.088)	(0.083)	(0.084)	(0.084)	(0.097)	(0.086)	(0.090)	(0.090)
$\text{Size}_{i,q-1}$			-0.009	-0.011			0.016	0.019
			(0.025)	(0.025)			(0.025)	(0.025)
$\text{BM}_{i,q-1}$			-0.317***	-0.332***			0.253**	0.275***
			(0.087)	(0.087)			(0.103)	(0.105)
$\text{Inv}_{i,q-1}$				0.188				-0.223
				(0.461)				(0.529)
$\text{OP}_{i,q-1}$				-0.146				0.214**
				(0.095)				(0.088)
Quarter FE	Yes	No	No	No	Yes	No	No	No
GICS4-Quarter FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Observations	16,809	16,809	16,809	16,809	16,809	16,809	16,809	16,809
Adj. R^2	0.0108	0.1318	0.1330	0.1330	0.0158	0.2467	0.2471	0.2472

Firm-Level Effects of ESG Beta Gap

- Not all mutual funds engage in manipulative window-dressing due to the difference in culture, ethics and cost-benefit trade-offs that they face.

- So, we also expect heterogeneity in the trading/return patterns amongst firms with extreme ESG scores that is driven by the extent of ownership by mutual funds that are more likely to engage in ESG window-dressing:

P2(b): The predictable abnormal returns as in P2(a) will be more pronounced for stocks with higher ownership by mutual funds with high ESG β gaps.

High ESG Beta Gap Mutual Fund Ownership and Firm-Level Returns (Table 9)

Return patterns before the quarter-end are concentrated in the sub-sample of firms followed by mutual funds with a high ESG beta gap

Panel B: Post-Globe Ratings (2016-2022)

BHAR Window	(-4,0)	(-4,0)	(1,5)	(1,5)
Cross-Section	Below Median ESG β Gap	Above Median ESG β Gap	Below Median ESG β Gap	Above Median ESG β Gap
ESG $\%_{i,q}$	-0.128	0.617***	0.036	-0.591***
	(0.124)	(0.155)	(0.138)	(0.150)
Controls	Yes	Yes	Yes	Yes
GICS4-Quarter FE	Yes	Yes	Yes	Yes
Observations	34,643	32,907	34,643	32,907
Adj. R^2	0.1444	0.1116	0.1966	0.1916
Difference in β	0.745***		-0.627***	
	(0.196)		(0.205)	
Controls	Yes		Yes	
GICS4-Quarter FE	Yes		Yes	
Observations	67,550		67,550	
Adj. R^2	0.1272		0.1943	

Return patterns after the quarter-end are also concentrated in the sub-sample of firms followed by mutual funds with a high ESG beta gap

Carbon Beta Gap

- **Lastly, we examine whether our results hold with the more recent introduction of the low carbon designation by Sustainalytics**

  - In these set of analyses, we compute the carbon beta gap using the carbon factor returns – a short-side portfolio of industries classified by Sustainalytics as fossil fuel industries

  - We conduct the analyses from 2016-2022, using the introduction of the carbon rating in the second quarter of 2018 as the post variable

Carbon Beta Gap (Table 10)

Panel C: Carbon β Gap (Holding - Actual)				
Risk Model	3 Factor Model		5 Factor Model	
$\text{Post}_{q=2018Q2}$	0.002***	0.003***	0.002***	0.003***
	(0.000)	(0.001)	(0.001)	(0.001)
Fund FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Observations	46,417	46,417	46,417	46,417
Adj. R^2	0.1644	0.1680	0.1171	0.1179

Consistent with the introduction of the carbon ratings increasing carbon window-dressing, we find that the carbon beta gap increases after 2018Q2.

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Contributions

- **Institutional Investor Window-Dressing:** We contribute to this literature (e.g. Agarwal et al, 2014; Haugen and Lakonishok, 1988) which showed some evidence of fund window-dressing to mask fund performance. We contribute to these studies by providing evidence on window-dressing along the ESG performance dimension

- **Limitation of ESG Ratings for Sustainability Investing:** A group of studies have shown that there is significant disagreement in ESG ratings of different raters which suggests limited usefulness and reliability in these ratings (e.g. Berg et al., 2022; Chatterji et al., 2016; Serafeim and Yoon, 2022). We extend this literation by showing another limitation – that the ratings might induce funds to mask and window-dress their ESG performance.

- **Policy Implication of ESG Disclosures:** Regulators such as the SEC have pushed for greater ESG disclosures of late. For instance, the SEC has proposed rules to mandate the disclosure of greenhouse gas emissions (GHG) in certain environmentally-focused funds. Our study points a distinct possibility that, if implemented, funds could window-dress their quarter-end portfolios to suit their GHG reporting needs.

THANK YOU!