Identifying Latent Corporate Strategies: Climate and Status Quo

AFA 2025 Paper

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Contribution: Roy Competitive Sorting

Classic Labor Model of Roy (1951)

- Optimal Competitive Sorting: individuals (or firms) self-select into tasks where their comparative advantage is highest.
- Best hunters hunt; best fishers fish

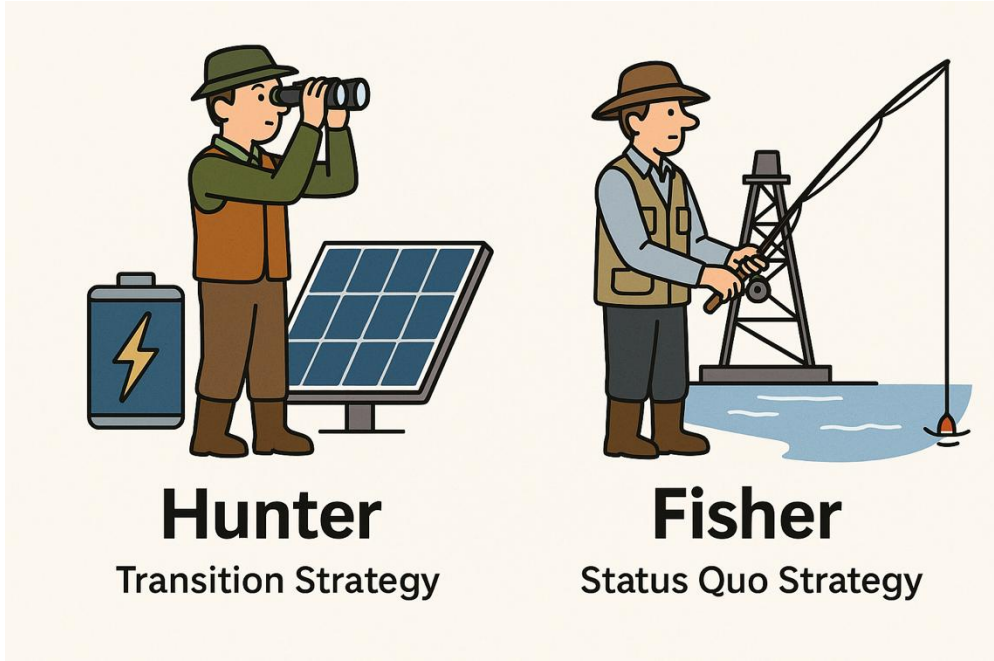
When a transition moment arrives

Roy sorting:

- Some firms optimally double down on status quo technologies to preserve market share.
- Others reallocate resources toward transition technologies and new markets.
- Sorting is value-enhancing if markets correctly reward those strategies.

Here: Transition moment = climate

- We test whether such sorting occurs in the industrial base of advanced economies.
- The same mechanism may hold in other technological transitions (e.g., AI).



Why Focus on the Industrial Base of Economy

- The industrial base — energy, mining & materials, and industrial products — represents the **frontline of the climate transition** as they supply businesses worldwide
- Firms in these sectors face the strongest trade-offs between maintaining status quo operations and investing in transition technologies.
- These sectors thus provide the **clearest setting to observe Roy sorting dynamics** — how firms "hunt or fish" when confronted with transition shocks.
- Later, we contrast the above business-oriented with **consumer-oriented sectors**

Setting: Value Relevance of How Firms Face Climate Transitions

Most literature is on the valuation of Green vs. Brown Firms

1. **Brown firms ≫ higher expected returns ≫ two channels**
   - Transition risk premium: brown firms face higher exposure to transition risks, driving excess returns
     - Bolton and Kacperczyk 2021; Giglio, Kelly, Stroebel 2021; Li, Shan, Tang, Yao 2023; Sautner, van Lent, Vilkov, Zhang 2023b; Huij, Laurs, Stork, Zwinkels 2021; Faccini, Matin, Skiadopoulos 2023; Gormsen-Huber-Oh 2024
   - Green preferences: green-preference investors accept lower returns for higher utility
     - Barber, Morse, Yasuda 2021, Pedersen, Fitzgibbons, Pomorski 2021; Goldstein, Kopytov, Shen, Xiang 2021. Dimson, Karakaş, Li 2015; Hoepner, Oikonomou, Sautner, Starks, Zhou 2024; Oemke and Opp 2024.

2. **Green preference ≫ increased demand ≫ short-term outperformance**
   - Disappears into a green-brown equilibrium
     - Pástor, Stambaugh, Taylor 2021; Cauthorn, Klein, Remme Zwergel 2023; De Angelis, Tankov, Zerbib 2023.

Our Contribution

- we study the firm's decision to choose a green (transition) or brown (status quo) path

Recent Literature on Green vs. Brown Actions

Green vs. Brown Innovation

- Brown firms do the green patenting (Cohen, Gurun, Nguyen 2023; Kwon, Lowry, Verardo 2024)
- Green innovation is increasingly done by within-sector lower emitting firms (Bolton, Kacperczyk, Wiedemann 2023)

Green Hiring

- Darendeli, Law, Shen 2022

Green Revenues and Products

- Kruse, Mohnen, Sato, Pope 2020; Chiu, Hsu, Li, Tong 2024; and Klausmann, Krueger, Matos 2024

Transition Investment

- Role of Short-termism hindering LT Value-optimizing investment: Blickle, Morse, Pari 2025
- Climate discount rates: Gormsen, Huber, Oh 2024

Our Contribution

- Value-relevance of **competitive strategy** around transition or status quo operations

Our Research Agenda

Objective 1 – Is Roy Sorting observable in the Climate Transition?

- Do firms in the industrial base (energy, mining & materials, industrial products) exhibit value-relevant Roy sorting?
- How do markets reward firms that strategically position toward transition (Hunters) or status quo technologies (Fishers)?

Objective 2 – Regulation and Policy Interaction

- To what extent do environmental regulations affect firms' ability to sort competitively?
- Does environmental policy stringency (measured via the OECD Environmental Policy Stringency index) attenuate or amplify the value relevance of competitive sorting?

Climate Strategy Information: Impact on Returns

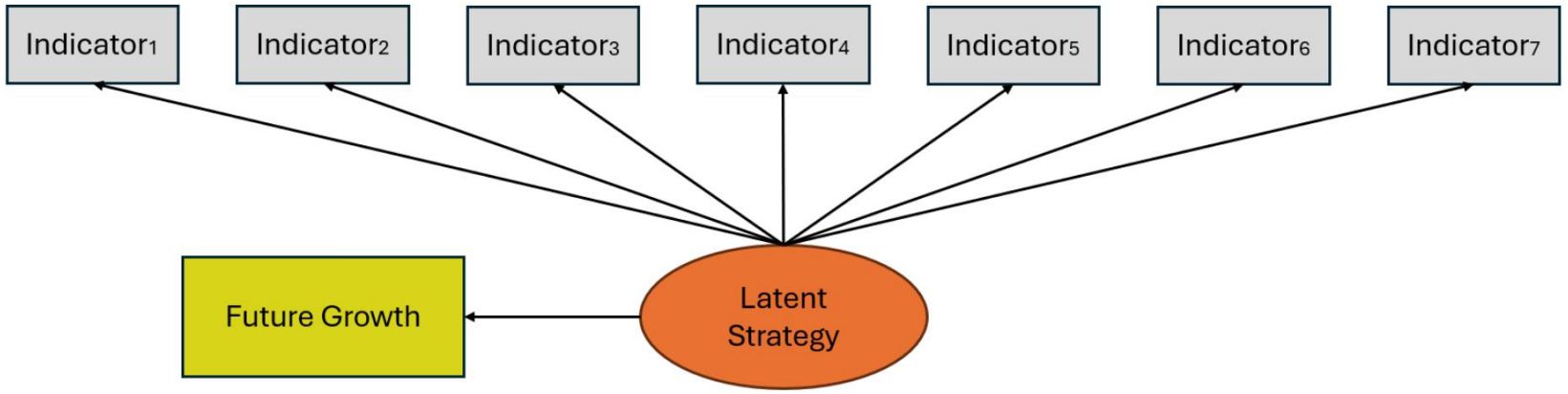
$$r_{it} - rf_t = \alpha + b(Mkt_t - Rf_t) + sSMB_t + hHML_t + rRMW_t + cCMA_t$$

$$+\gamma_1 I_{it}^{Transition} + \gamma_2 I_{it}^{StatusQuo} + \epsilon_{it}$$

- $I_t^{Transition}$ and $I_t^{StatusQuo}$ are indicators denoting an information arrival of firm i having undertaken a strategy to take advantage of a sorting into a transition (and/or status quo) market opportunity
- If these sorts reflect fishers fishing and hunters hunting, the information arrival to the market should imply that both γ_1 and γ_2 should be positive
- Problem:
  - Although our objective is not complex, estimating this objective is
  - Information arrivals are confounded by communication strategies (etc.)

Methodology: Latent Variable Technique (CFA / SEM)

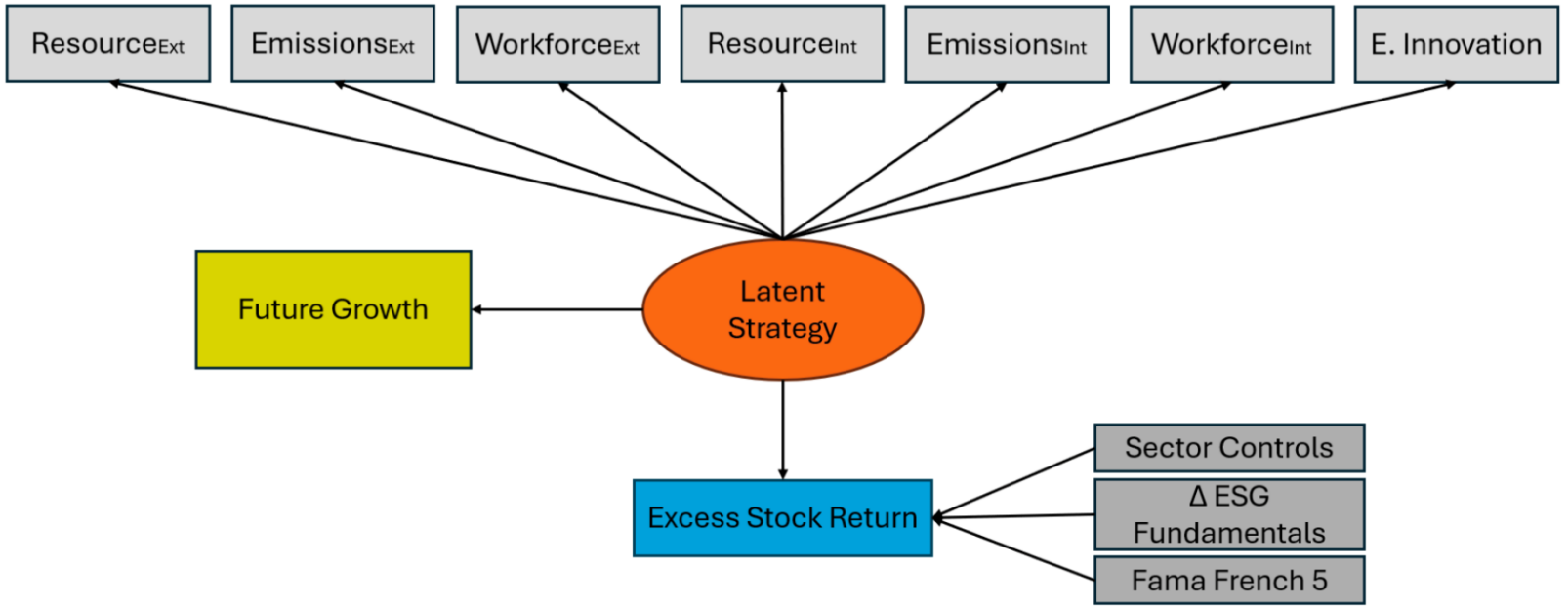
- Idea
  - The firm's strategic orientation toward transition or status quo expansion is latent – not directly observable.
  - In labor economics, ability is treated the same way: it can't be seen, but is inferred from observable performance measures.we apply a technique from labor economics
- Method
  - We use Confirmatory Factor Analysis (CFA) following Heckman, Stixrud & Urzua (2006).
  - CFA extracts the shared variance among several measurement variables that maximally correlates with a confirmatory variable theoretically tied to the latent concept.



CFA Measurement Model

Methodology: Latent Variable Technique (SEM)

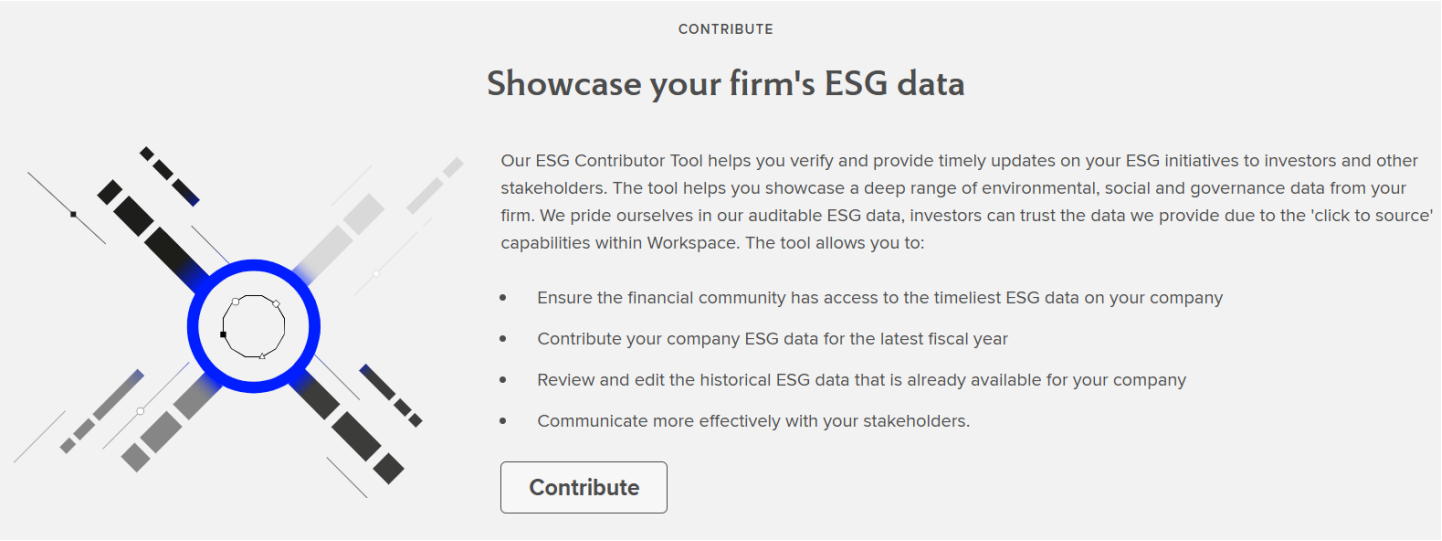
- The CFA-derived latent strategy enters as a right-hand-side variable in stock return estimation.
- We control for the Fama–French five factors and other firm-level covariates.
- Estimation follows a variance-based SEM (PLS-SEM) framework linking latent strategy → future growth → valuation response.



Indicator Variable: Active Managerial Edits

Data Source

- London Stock Exchange Group (LSEG) ESG Contributor Tool (Refinitiv 2023)
- Allows firms to manually update raw ESG input data between official scoring cycles.
- Updates can make firms appear more or less environmental or workforce friendly relative to prior fundamentals.
- This editing functionality is unique to LSEG. Outcomes of these edits were first documented by Berg, Fabisik, Sautner 2021 and Cohen, Rouen, Sachdeva 2025.



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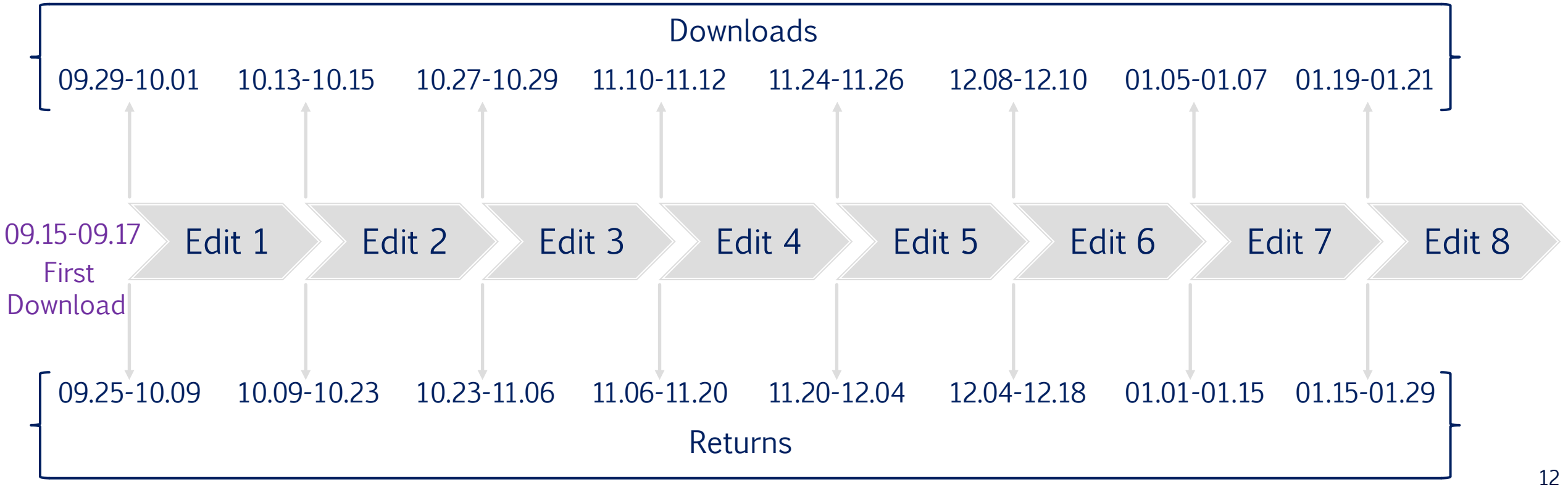
Our Interpretation

- We interpret these voluntary, manual edits as managerial signals of strategic intent, indicating orientation toward transition or status-quo projects.
- While the tool permits edits across all ESG dimensions, our analysis focuses on environmental- and workforce-related edits.

Edit and Return Timeline

- Edits were downloaded 9 times from September 15th, 2020 to January 21st, 2021
- The returns were lined up to capture our identification of the edit and continue to the next edit identification.



Indicator Variable: Active Managerial Edits

Example of Editing in the Contributor Tool

"Edit better" vs. "Edit worse"

(Editing Inputs, not ESG Scores)

	Environmental R&D Expenditures	Environment Management Training
Current Value	$10 Million	N/A
Updated Value	$10.5 Million	Yes
Margin	Intensive	Extensive

https://www.impulsphase.de/wp-content/uploads/2023/08/computer.jpg

Alternative Motives

- Edits may also reflect other motives (compensation-linked incentives, compliance, reputational management…)
- Such motives predict zero or negative market reactions.
- Hence, our Roy-sorting interpretation of these edits as strategic signals is conservative.

Dataset Summary and Descriptive Overview

- Nine ESG data snapshots between September 2020 and January 2021.
- 8,085 voluntary managerial edits identified across the full LSEG ESG universe.
- Edits classified by direction (edit better / edit worse) and category (Resource Use, Emissions, Workforce and Innovation).
- Each edit aligned with two-week stock return windows, capturing short-term valuation effects.
- Sample covers ~2,000 firms across sectors and countries (focus: industrial base).

Panel B: Edits by Margin

	Combined	Intensive	Extensive
Edit Better	5,001 (62%)	2,407 (30%)	2,594 (32%)
Edit Worse	3,084 (38%)	2,269 (28%)	815 (10%)
Total Edits	8,085 (100%)	4,676 (58%)	3,409 (32%)

Panel C: Within Industry Distribution of Firms

	Editing Firms		None Editing Firms		Total	
Industrial Products	203	27.2%	543	72.8%	746	100%
Industrial Services	658	28.9%	1,621	71.1%	2,279	100%
Energy	151	53.7%	130	46.3%	281	100%
Mining & Materials	270	47.0%	305	53.0%	575	100%
Consumer Products	73	26.3%	205	73.7%	278	100%
Consumer Services	351	27.8%	910	72.2%	1,261	100%
Consumer Discretionary	473	31.7%	1,021	68.3%	1,494	100%

Essential ESG Categories for Climate Strategy

Edits are in 4 ESG main categories (essentially skipping G)

- **Resource Use:** "performance and capacity to reduce the use of materials, energy or water, and to find more eco-efficient solutions by improving supply chain management."

- **Emissions:** "commitment and effectiveness towards reducing environmental emission in the production and operational processes."

- **Workforce:** "effectiveness towards job satisfaction, healthy and safe workplace, maintaining diversity and equal opportunities, and development opportunities for its workforce."

- **Environmental Innovation:** "capacity to reduce the environmental costs and burdens for its customers, thereby creating new market opportunities through new environmental technologies and processes, or eco-designed products."

Growth Confirmatory Variables

Confirmatory Growth Variables

Make 1 for each transition, or status quo,

1) Overall Growth
2) Organic Growth +IRA
3) Growth by Acquisition +IRA
4) Dropping IRA reaction

Future Realizations of Organic Growth & Growth by Acquisition '21-'23

		Mean	SD
% of firms with an event	Status Quo Vertical M&A	0.0202	0.1405
	Status Quo Horizontal M&A	0.0247	0.1552
	Transition Vertical M&A	0.0704	0.2558
	Transition Horizontal M&A	0.1215	0.3267
Ave % of revenues	Status Quo Revenue	0.0555	0.2096
	Transition Revenue	0.0730	0.1981

Measures of Status Quo M&A: 'Dirty industry' words from Greenstone (2002) and Cui and Moschini (2020), extended to fossil fuel SIC codes

Measures of Transition M&A: SIC codes from IRA summary

Transition Revenue: FTSE Green Revenue (Kruse-Mohnen-Sato-Pope (2020), Chiu-Hsu-Li-Tong (2024), and Klausmann-Krueger-Matos (2024))

Returns Summary Statistics

Two-week Returns

	Mean	SD	25th	Median	75th
All Firms	0.0280	0.0928	-0.0242	0.0185	0.0702
Industrial Products	0.0356	0.0882	-0.0172	0.0274	0.0798
Industrial Services	0.0250	0.0828	-0.0236	0.0166	0.0650
Energy	0.0457	0.1362	-0.0407	0.0285	0.1195
Mining & Materials	0.0303	0.0955	-0.0219	0.0230	0.0755
Consumer Products	0.0265	0.0875	-0.0250	0.0175	0.0682
Consumer Services	0.0242	0.0987	-0.0268	0.0155	0.0661
Consumer Discretionary	0.0282	0.0938	-0.0246	0.0176	0.0700

- Data is from LSEG Workspace
- The eight two-week log returns from 09/2020 to 01/2021 are lined up like in an event study capturing the return from the closing price from the last trading day prior to a download to the closing price two weeks later.

Transition – Measurement Models and Results (CFA Stage 1)

Panel A – Scoring Parameters that Construct the Latent Transition Strategy

Estimation Method: Constrained to optimize correlation of measurement variables linear combination with ex-post transition growth realization

Dependent Variable:	Resource Use		Emissions		Workforce		Env. Innovation
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Edit Better Margin:	Intensive	Extensive	Intensive	Extensive	Intensive	Extensive	Combined
Strategy	0.7397***	0.6057***	0.7073***	0.7028***	0.5898***	0.5624***	0.6133***
	(0.0029)	(0.0034)	(0.0030)	(0.0031)	(0.0035)	(0.0035)	(0.0034)
Observations	54,333	54,333	54,333	54,333	54,333	54,333	54,333
Dillon–Goldstein's ρ:	0.8346		Cronbach's α:	0.7866			

Latent Transition Strategy

$$= 0.7397 * Resource\ Use_{Intensive} + 0.6057 * Resource\ Use_{Extensive} + 0.7073 * Emissions_{Intensive} + 0.7028 * Emisions_{Extensive} + 0.5898 * Workforce_{Intensive} + 0.5624 * Workforce_{Extensive} + 0.6133 * Environmental\ Innovation_{Intensive\ \&\ Extensive}$$

Status Quo – Measurement Models and Results (CFA Stage 1)

Panel B – Scoring Parameters that Construct the Latent Status Quo Strategy

Estimation Method: Constrained to optimize correlation of measurement variables linear combination with ex-post status quo growth realization

Dependent Variable:	Resource Use		Emissions		Workforce		Env. Innovation
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Edit Worse Margin:	Intensive	Extensive	Intensive	Extensive	Intensive	Extensive	Combined
Strategy	0.6058***	-0.0045	0.5815***	0.0799***	0.5422***	0.0814***	0.8111***
	(0.0034)	(0.0043)	(0.0035)	(0.0043)	(0.0036)	(0.0043)	(0.0025)
Observations	54,333	54,333	54,333	54,333	54,333	54,333	54,333
Dillon–Goldstein's ρ:	0.5772		Cronbach's α:	0.5548			

Latent Status Quo Strategy

$$= 0.6058 * Resource\ Use_{Intensive} - 0.0045 * Resource\ Use_{Extensive} + 0.5815 * Emissions_{Intensive} + 0.0799 * Emisions_{Extensive} + 0.5422 * Workforce_{Intensive} + 0.0814 * Workforce_{Extensive} + 0.8111 * Environmental\ Innovation_{Intensive\ \&\ Extensive}$$

Structural Model of Return

Hunting:
Industrial Products and Energy firms with a transition climate strategy are rewarded with a positive market revaluation.

Fishing:
Industrial Products, Energy, and Mining & Metals Firms (to a varying degree) with a status quo strategy are rewarded with a positive market revaluation.

For Consumer Products and Consumer Service see next table

Dependent Variable:	2-Week Returns	
Latent Strategy defined as:	(1) Transition	(2) Status Quo
Strategy [Level Effect]	-0.0142**	-0.0035
	(0.0061)	(0.0044)
* Industrial Products	0.0089*	0.0140***
	(0.0046)	(0.0041)
* Industrial Services	0.0023	0.0041
	(0.0047)	(0.0040)
* Energy	0.0139***	0.0111***
	(0.0040)	(0.0041)
* Mining & Metals	-0.0017	0.0077*
	(0.0048)	(0.0040)
* Consumer Products	0.0076*	-0.0068*
	(0.0041)	(0.0040)
* Consumer Services	0.0105**	-0.0070*
	(0.0042)	(0.0042)
Industrial Products	0.0255***	0.0254***
	(0.0046)	(0.0046)
Industrial Services	-0.0169***	-0.0168***
	(0.0052)	(0.0052)
Energy	0.0358***	0.0353***
	(0.0043)	(0.0043)
Mining & Metals	0.0072	0.0067
	(0.0045)	(0.0045)
Consumer Products	-0.0043	-0.0032
	(0.0043)	(0.0043)
Consumer Services	-0.0171***	-0.0159***
	(0.0049)	(0.0049)
Δ ESG Fundamentals	-0.0037	-0.0037
	(0.0040)	(0.0040)
5 Fama-French Factors	Yes	Yes
Observations	54,333	54,333
Adjusted R^2	0.1398	0.1399

Structural Model of Return

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5 Fama-French Factors	Yes	Yes
Observations	54,333	54,333
Adjusted R^2	0.1398	0.1399

Economic Magnitudes - Overview

	Coefficient		1 St Dev Marginal Effect	
	(1)	(2)	(3)	(4)
Latent Strategy defined as:	Transition	Status Quo	Transition	Status Quo
Strategy * Industrial Products	0.0089* (0.0046)	0.0140*** (0.0041)	+8.4bps	+13.2bps
Strategy + Industrial Products + Strategy * Industrial Products	0.0202** (0.0089)	0.0358*** (0.0076)	+19.0bps	+33.7bps
Strategy * Industrial Services	not significant	not significant	…	…
Strategy + Industrial Services + Strategy * Industrial Services	…	…	…	…
Strategy * Energy	0.0139*** (0.0040)	0.0111*** (0.0041)	+13.1bps	+10.4bps
Strategy + Energy + Strategy * Energy	0.0355*** (0.0085)	0.0429*** (0.0073)	+33.4bps	+40.3bps
Strategy * Mining & Metals	not significant	0.0077* (0.0040)	…	+7.2bps
Strategy + Mining & Metals + Strategy * Mining & Metals	…	0.0109 (0.0074)	…	…
Strategy * Consumer Products	0.0076* (0.0041)	-0.0068* (0.0040)	+7.2bps	-6.4bps
Strategy + Consumer Products + Strategy * Consumer Products	-0.0109 (0.0085)	-0.0136* (0.0073)	…	-12.8bps
Strategy * Consumer Services	0.0105** (0.0042)	-0.0070* (0.0042)	+9.9bps	-6.6bps
Strategy + Consumer Services + Strategy * Consumer Services	-0.0208**	-0.0264***	-19.6bps	-24.8bps

Our second objective:

- Does regulation unwind the valuation effect of competitive sorting of hunters hunting and fishers fishing?

- Data from the 2020 OECD country-level environmental policy stringency (EnvPS) index.

OECD-Environmental Policy Stringency Index

Higher Group		Lower Group	
Country	*Index*	*Country*	*Index*
France	4.89	Canada	3.03
Switzerland	4.50	United States	3.03
Finland	4.11	Ireland	3.00
Norway	3.94	Czechia	2.94
Sweden	3.83	Australia	2.92
Japan	3.78	Greece	2.89
Denmark	3.72	Türkiye	2.89
Italy	3.72	India	2.83
United Kingdom	3.61	Hungary	2.81
Germany	3.47	Portugal	2.78
Netherlands	3.47	Slovak Republic	2.50
Poland	3.47	Spain	2.50
Belgium	3.44	Indonesia	1.64
Austria	3.31	Russia	1.17
Slovenia	3.22	South Africa	0.92
South Korea	3.17	Brazil	0.89
China	3.14		

Environmental Policy Stringency — Measurement Model (CFA Stage 1)

Dependent Variable:	Resource Use		Emissions		Workforce		Env. Innovation
Edit Margin:	(1) Intensive	(2) Extensive	(3) Intensive	(4) Extensive	(5) Intensive	(6) Extensive	(7) Combined
A. Low Environmental Policy Stringency: Transition (edit better)							
Strategy	0.7338***	0.7077***	0.6575***	0.7304***	0.5507***	0.6108***	0.5120***
	(0.0040)	(0.0042)	(0.0045)	(0.0040)	(0.0049)	(0.0047)	(0.0051)
B. Low Environmental Policy Stringency: Status Quo (edit worse)							
Strategy	0.6682***	0.0547***	0.7154***	0.2226***	0.5875***	0.2695***	0.6530***
	(0.0044)	(0.0059)	(0.0041)	(0.0058)	(0.0048)	(0.0057)	(0.0045)
C. High Environmental Policy Stringency: Transition (edit better)							
Strategy	0.7714***	0.5476***	0.7886***	0.6957***	0.6471***	0.5573***	0.6133***
	(0.0046)	(0.0061)	(0.0045)	(0.0052)	(0.0055)	(0.0060)	(0.0057)
D. High Environmental Policy Stringency: Status Quo (edit worse)							
Strategy	0.2614***	-0.2070***	0.0480***	-0.0746***	0.1966***	-0.2377***	0.9271***
	(0.0070)	(0.0071)	(0.0072)	(0.0072)	(0.0071)	(0.0070)	(0.0027)

Environmental Policy Stringency — Structural Model of Returns

Dependent Variable:	2-Week Returns			
Environmental Policy Stringency:	Low		High	
Latent Strategy defined as:	(1) Transition	(3) Status Quo	(2) Transition	(4) Status Quo
Strategy [Level Effect]	-0.0060	-0.0073	-0.0108	-0.0016
* Industrial Products & Energy	0.0120**	0.0119**	0.0120	0.0087
* Industrial Services	-0.0023	0.0104*	-0.0114*	0.0112
* Mining & Metals	-0.0080	-0.0173***	-0.0183***	0.0093
* Consumer Products & Services	-0.0055	-0.0054	0.0356***	0.0126*
Industrial Products & Energy	0.0375***	0.0372***	0.0410***	0.0409***
Industrial Services	-0.0153**	-0.0156**	-0.0287***	-0.0293***
Mining & Metals	-0.0042	-0.0037	0.0230***	0.0215***
Consumer Products & Services	-0.0087	-0.0088	-0.0351***	-0.0324***
Δ ESG Fundamentals	-0.0065	-0.0069	0.0057	0.0053
5 Fama-French Factors	Yes	Yes	Yes	Yes
Observations	28,561	28,561	19,054	19,054
Adjusted R^2	0.1595	0.1597	0.1598	0.1260

Environmental Policy Stringency — Structural Model of Returns

Dependent Variable:	2-Week Returns			
Environmental Policy Stringency:	Low		High	
Latent Strategy defined as:	(1) Transition	(3) Status Quo	(2) Transition	(4) Status Quo
Strategy [Level Effect]	-0.0060	-0.0073	-0.0108	-0.0016
* Industrial Products & Energy	0.0120**	0.0119**	0.0120	0.0087
* Industrial Services	-0.0023	0.0104*	-0.0114*	0.0112
* Mining & Metals	-0.0080	-0.0173***	-0.0183***	0.0093
* Consumer Products & Services	-0.0055	-0.0054	0.0356***	0.0126*
Industrial Products & Energy	0.0375***	0.0372***	0.0410***	0.0409***
Industrial Services	-0.0153**	-0.0156**	-0.0287***	-0.0293***
Mining & Metals	-0.0042	-0.0037	0.0230***	0.0215***
Consumer Products & Services	-0.0087	-0.0088	-0.0351***	-0.0324***
Δ ESG Fundamentals	-0.0065	-0.0069	0.0057	0.0053
5 Fama-French Factors	Yes	Yes	Yes	Yes
Observations	28,561	28,561	19,054	19,054
Adjusted R^2	0.1595	0.1597	0.1598	0.1260

Robustness

- **Exogeneity Conditions: A Placebo Test**:
  - ➢ We show that using 'not editing' as a placebo signal eliminates the return effects.
- **Alternative Motives for Editing**
  - ESG score changes being priced:
    - ➢ We show that changes in ESG fundamentals—whether or not they affect ESG scores—do not explain the return effects.
  - ESG compensation management:
    - ➢ We find no evidence that executive ESG-linked compensation leads managers to edit ESG fundamentals in a way that could confound our results.
- **Data Choices Robustness**
  - ➢ Our findings are unchanged when varying the growth measure or excluding Workforce edits
- **Country Fixed Effects**
  - ➢ Including country fixed effects does not alter our results

Robustness: A Placebo Test

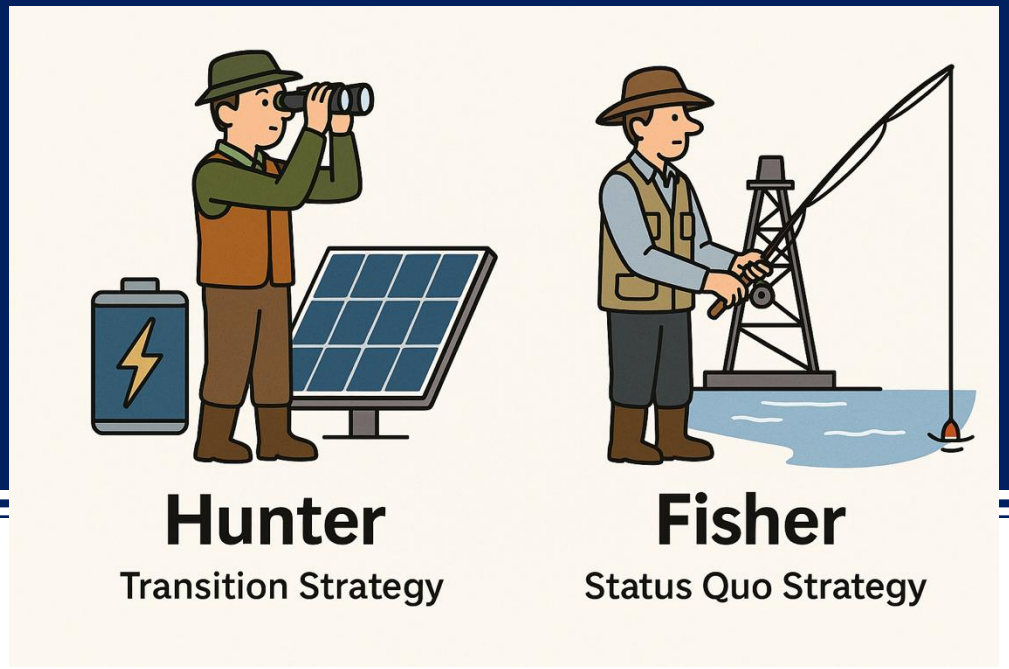
Table 9: Non-Editing Firms Placebo Test — Structural Model of Returns

Dependent Variable:	2-Week Returns	
Ex-Post Growth defined as:	Transition	Status Quo
	(1)	(2)
Strategy [Level Effect]	0.0053 (0.0066)	0.0116 (0.0073)
* Industrial Products	-0.1622 (0.1138)	-0.2124* (0.1171)
* Industrial Services	0.0494 (0.1151)	-0.0183 (0.1212)
* Energy	0.0791 (0.0808)	0.0463 (0.0828)
* Mining & Materials	0.1334 (0.0858)	0.0893 (0.0898)
* Consumer Products	-0.0211 (0.1039)	-0.0539 (0.1060)
* Consumer Services	-0.0572 (0.1102)	-0.1242 (0.1172)

Conclusion

- 👉🏻 Evidence of competitive Roy Sorting in the climate transition
  - Firms are rewarded when sorting into transition (hunting) or status quo (fishing) strategies.
- 👉🏻 Both transition and status quo strategies create value
  - +8 to +34 bps across industrial base sectors.
- 👉🏻 Regulation can inhibit competitive sorting by inducing pooling of firm strategies
  - High environmental policy stringency reduces variation and limits value-relevant differentiation.
- 👉🏻 Methodological contribution: CFA–SEM to uncover latent climate strategies

THANK YOU!



APPENDIX

Robustness

- **Exogeneity Conditions: A Placebo Test**:
  - ➢ We show that using 'not editing' as a placebo signal eliminates the return effects.
- **Alternative Motives for Editing**
  - ESG score changes being priced:
    - ➢ We show that changes in ESG fundamentals—whether or not they affect ESG scores—do not explain the return effects.
  - ESG compensation management:
    - ➢ We find no evidence that executive ESG-linked compensation leads managers to edit ESG fundamentals in a way that could confound our results.
- **Data Choices Robustness**
  - ➢ Our findings are unchanged when varying the growth measure or excluding Workforce edits
- **Country Fixed Effects**
  - ➢ Including country fixed effects does not alter our results

Robustness: A Placebo Test

Table 8: Non-Editing Firms Placebo Test — Measurement Model

Panel A – Scoring Parameters that Construct the Latent Transition Strategy

Estimation Method: Constrained to optimize correlation of measurement variables linear combination with ex-post transition growth realization

Dependent Variable:	Resource Use		Emissions		Workforce		Env. Innovation
No Edit Margin:	Intensive	Extensive	Intensive	Extensive	Intensive	Extensive	Combined
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Strategy	0.6738***	0.5584***	0.5891***	0.4009***	0.2850***	0.4099***	0.5466***
	(0.0032)	(0.0036)	(0.0035)	(0.0039)	(0.0041)	(0.0039)	(0.0036)
Observations	54,333	54,333	54,333	54,333	54,333	54,333	54,333
	Dillon–Goldstein's ρ:		0.6985	Cronbach's α:		0.5511	

Panel B – Scoring Parameters that Construct the Latent Status Quo Strategy

Estimation Method: Constrained to optimize correlation of measurement variables linear combination with ex-post status quo growth realization

Dependent Variable:	Resource Use		Emissions		Workforce		Env. Innovation
No Edit Margin:	Intensive	Extensive	Intensive	Extensive	Intensive	Extensive	Combined
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Strategy	0.6828***	0.3326***	0.6293***	0.5239***	0.4870***	0.3006***	0.5450***
	(0.0031)	(0.0040)	(0.0033)	(0.0037)	(0.0037)	(0.0041)	(0.0036)
Observations	54,333	54,333	54,333	54,333	54,333	54,333	54,333
	Dillon–Goldstein's ρ:		0.7051	Cronbach's α:		0.5511	

Robustness: Data Choices Robustness and ESG Scores changes

Table 11: Robustness Checks — Status Quo Strategy Measurement Model

Dependent Variable:	Resource Use		Emissions		Workforce		Env. Innovation
Edit Worse Margin:	Intensive	Extensive	Intensive	Extensive	Intensive	Extensive	Combined
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. Return Estimation: Including Δ ESG Fundamentals * Sector							
Strategy	0.6058***	-0.0045	0.5815***	0.0799***	0.5422***	0.0814***	0.8111***
	(0.0034)	(0.0043)	(0.0035)	(0.0043)	(0.0036)	(0.0043)	(0.0025)
B. Ex-Post Strategy Realization: Organic Growth							
Strategy	-0.1595***	0.5168***	-0.3580***	0.1845***	0.0991***	0.3288***	-0.6458***
	(0.0042)	(0.0037)	(0.0040)	(0.0042)	(0.0043)	(0.0041)	(0.0033)
C. Ex-Post Strategy Realization: Growth without the IRA Growth Perception							
Strategy	0.6058***	-0.0045	0.5815***	0.0799***	0.5422***	0.0814***	0.8111***
	(0.0034)	(0.0043)	(0.0035)	(0.0043)	(0.0036)	(0.0043)	(0.0025)
D. Ex-Post Strategy Realization: Growth by Acquisition							
Strategy	0.6291***	0.0715***	0.5636***	0.1553***	0.5974***	0.1793***	0.7916***
	(0.0033)	(0.0043)	(0.0035)	(0.0042)	(0.0034)	(0.0042)	(0.0026)
E. Measurement Variables: Excluding Workforce							
Strategy	0.5904***	-0.0304***	0.5785***	0.0918***	…	…	0.8487***
	(0.0035)	(0.0043)	(0.0035)	(0.0043)	…	…	(0.0023)
F. Return Estimation: Including Country Fixed Effects							
Strategy	0.6058***	-0.0045	0.5815***	0.0799***	0.5422***	0.0814***	0.8111***
	(0.0034)	(0.0043)	(0.0035)	(0.0043)	(0.0036)	(0.0043)	(0.0025)

This table reports the estimated measurement (outer) loadings from the Partial Least Squares Structural Equation Models (PLS-SEMs) used to construct the latent status quo strategy. Reported coefficients are standardized loadings with standard errors in parentheses. All coefficients are standardized path coefficients estimated using the PLS algorithm. *p < 0.10; **p < 0.05; ***p < 0.01.

Table 10: Robustness Checks — Transition Strategy Measurement Model

Dependent Variable:	Resource Use		Emissions		Workforce		Env. Innovation
Edit Better Margin:	Intensive	Extensive	Intensive	Extensive	Intensive	Extensive	Combined
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. Return Estimation: Including Δ ESG Fundamentals * Sector							
Strategy	0.7397***	0.6057***	0.7073***	0.7028***	0.5898***	0.5624***	0.6133***
	(0.0029)	(0.0034)	(0.0030)	(0.0031)	(0.0035)	(0.0035)	(0.0034)
B. Ex-Post Strategy Realization: Organic Growth							
Strategy	0.7084***	0.6061***	0.6840***	0.6625***	0.5921***	0.5398***	0.6811***
	(0.0030)	(0.0034)	(0.0031)	(0.0032)	(0.0035)	(0.0036)	(0.0031)
C. Ex-Post Strategy Realization: Growth without the IRA Growth Perception							
Strategy	0.7397***	0.6057***	0.7073***	0.7028***	0.5898***	0.5624***	0.6133***
	(0.0029)	(0.0034)	(0.0030)	(0.0031)	(0.0035)	(0.0035)	(0.0034)
D. Ex-Post Strategy Realization: Growth by Acquisition							
Strategy	0.7483***	0.5916***	0.7153***	0.7138***	0.5962***	0.5736***	0.5919***
	(0.0028)	(0.0035)	(0.0030)	(0.0030)	(0.0034)	(0.0035)	(0.0035)
E. Measurement Variables: Excluding Workforce							
Strategy	0.7473***	0.5903***	0.7111***	0.6887***	…	…	0.6443***
	(0.0029)	(0.0035)	(0.0030)	(0.0031)	…	…	(0.0033)
F. Return Estimation: Including Country Fixed Effects							
Strategy	0.7397***	0.6057***	0.7073***	0.7028***	0.5898***	0.5624***	0.6133***
	(0.0029)	(0.0034)	(0.0030)	(0.0031)	(0.0035)	(0.0035)	(0.0034)

This table reports standardized outer loadings (λ) from the Partial Least Squares Structural Equation Models used to construct the latent transition strategy. Reported coefficients are standardized loadings with standard errors in parentheses. All coefficients are standardized path coefficients estimated using the PLS algorithm. *p < 0.10; **p < 0.05; ***p < 0.01.

Robustness: Data Choices Robustness and ESG Scores changes

Table 13: Robustness Checks — Status Quo Strategy Structural Model Structural Model of Returns

Dependent Variable:	2-Week Returns					
	(1)	(2)	(3)	(4)	(5)	(6)
	*Sector * Δ ESG Fundamentals*	*Organic Growth*	*W/o IRA Growth Perception*	*Growth by Acquisition*	*Excluding Workforce*	*Country Fixed Effects*
Strategy [Level Effect]	-0.0035	0.0032	-0.0035	-0.0036	-0.0029	-0.0028
	(0.0044)	(0.0046)	(0.0044)	(0.0043)	(0.0047)	(0.0043)
* Industrial Products	0.0140***	0.0138***	0.0140***	0.0140***	0.0134***	0.0128***
	(0.0041)	(0.0041)	(0.0041)	(0.0041)	(0.0041)	(0.0041)
* Industrial Services	0.0041	0.0029	0.0041	0.0043	0.0037	0.0047
	(0.004)	(0.0044)	(0.0040)	(0.0040)	(0.0041)	(0.0040)
* Energy	0.0111***	0.0107***	0.0111***	0.0112***	0.0105**	0.0118***
	(0.0041)	(0.0040)	(0.0041)	(0.0041)	(0.0041)	(0.0040)
* Mining & Materials	0.0077*	0.0077*	0.0077*	0.0076*	0.0025	0.0070*
	(0.004)	(0.0040)	(0.0040)	(0.0040)	(0.0040)	(0.0040)
* Consumer Products	-0.0069*	-0.0069*	-0.0068*	-0.0068*	-0.0071*	-0.0063
	(0.004)	(0.0040)	(0.0040)	(0.0040)	(0.0040)	(0.0040)
* Consumer Services	-0.0070*	-0.0073*	-0.0070*	-0.0070*	-0.0072*	-0.0064
	(0.0042)	(0.0041)	(0.0042)	(0.0042)	(0.0043)	(0.0042)

ecks — Transition Strategy Structural Model of Returns

	2-Week Returns					
	(1)	(2)	(3)	(4)	(5)	(6)
	*Sector * Δ ESG Fundamentals*	*Organic Growth*	*W/o IRA Growth Perception*	*Growth by Acquisition*	*Excluding Workforce*	*Country Fixed Effects*
Effect]	-0.0141**	-0.0135**	-0.0142**	-0.0143**	-0.0146**	-0.0121**
	(0.0061)	(0.0059)	(0.0061)	(0.0061)	(0.0063)	(0.0061)
* Industrial Products	0.0089*	0.0087*	0.0089*	0.0089*	0.0094**	0.0079*
	(0.0046)	(0.0046)	(0.0046)	(0.0046)	(0.0046)	(0.0046)
* Industrial Services	0.0023	0.0020	0.0023	0.0024	0.0031	0.0018
	(0.0047)	(0.0046)	(0.0047)	(0.0047)	(0.0049)	(0.0047)
* Energy	0.0139***	0.0135***	0.0139***	0.0141***	0.0147***	0.0137***
	(0.004)	(0.0040)	(0.0040)	(0.0041)	(0.0040)	(0.0040)
* Mining & Materials	-0.0019	-0.0022	-0.0017	-0.0016	0.0003	-0.0027
	(0.0048)	(0.0047)	(0.0048)	(0.0048)	(0.0049)	(0.0048)
* Consumer Products	0.0073*	0.0074*	0.0076*	0.0076*	0.0085**	0.0067*
	(0.0041)	(0.0041)	(0.0041)	(0.0041)	(0.0041)	(0.0041)
* Consumer Services	0.0106**	0.0101**	0.0105**	0.0106**	0.0073*	0.0097**
	(0.0042)	(0.0042)	(0.0042)	(0.0042)	(0.0042)	(0.0042)

Robustness: ESG compensation management

Table 14: Agency and Edit Better Management

	Resource Use		Emissions		Workforce		Env. Innovation
	(1)	(2)	(3)	(3)	(5)	(6)	(7)
Edit Better Margin:	Intensive	Extensive	Intensive	Extensive	Intensive	Extensive	Combined
Dependent Variable:	Log Total Executive Compensation in 2021						
Edit Coefficient	0.3784**	-0.1108	0.4158**	-0.6678	-0.2332	0.1279	-0.5934
	(0.1237)	(0.3528)	(0.1477)	(0.5440)	(0.7168)	(0.1767)	(1.0841)
ESG Compensation Plan	0.3624***	0.3445***	0.3616***	0.3503**	0.3642***	0.3449**	0.3426***
	(0.0827)	(0.0860)	(0.0857)	(0.0962)	(0.0799)	(0.1019)	(0.0877)
Edit * ESG Compensation Plan	-0.3269**	0.2461	-0.3630	0.3579	-0.2626	0.0681	0.8841
	(0.1327)	(0.3052)	(0.1992)	(0.8051)	(0.2539)	(0.2540)	(1.0895)
Market Capitalization	0.3195***	0.3219***	0.3195***	0.3259***	0.3247***	0.3208***	0.3241***
	(0.0398)	(0.0416)	(0.0404)	(0.0387)	(0.0414)	(0.0411)	(0.0387)
Revenue	0.1301	0.1320*	0.1303*	0.1329*	0.1323*	0.1261	0.1297*
	(0.0670)	(0.0667)	(0.0670)	(0.0673)	(0.0669)	(0.0666)	(0.0651)
Leverage	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003
	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0003)	(0.0003)	(0.0003)
Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,406	2,406	2,406	2,406	2,406	2,406	2,406
Adjusted R^2	0.0981	0.0978	0.0981	0.0987	0.0983	0.0980	0.0981