# Decoding Sustainable Investment Strategies: Bridging Intentions and Outcomes

(with Keer Yang)

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April 14, 2026

EDHEC Speaker Series

# Motivation

- Sustainable investing has grown rapidly, but the label pools financial, moral, and impact objectives.
- These objectives imply different predictions for portfolio holdings, stewardship, and real-world outcomes.
- To assess the promise and limits of sustainable investing, we need to know which objective funds actually pursue.
- Real-world impact through capital markets requires genuinely impact-oriented funds and investors willing to bear the tradeoffs (e.g., Barber, Morse, and Yasuda (2021)).
- Existing labels do not cleanly distinguish these goals.

# 3 Investor Types/Goals

Ellen:

"I sense a huge shift in the economy toward decarbonization and want to climate-proof my portfolio against stranded-asset risk."

*Financial objective: integrate sustainability when it is financially material for risk and return.*

Sam:

"I object to private prisons. It bothers me if a mutual fund I hold invests in a private prison operator."

*Moral objective: avoid holdings that conflict with the investor's values.*

Inger:

"I care deeply about expanding access to clean water and want to use my capital to back companies that can help make that happen."

*Impact objective: seek real-world environmental or social improvement through invested firms.*

# Why these goals imply different actions

The same brown firm may be unattractive under a financial objective but attractive under an impact objective.

Avoid ESG-related risks by holding firms already positioned for transition

(*financial objective*)

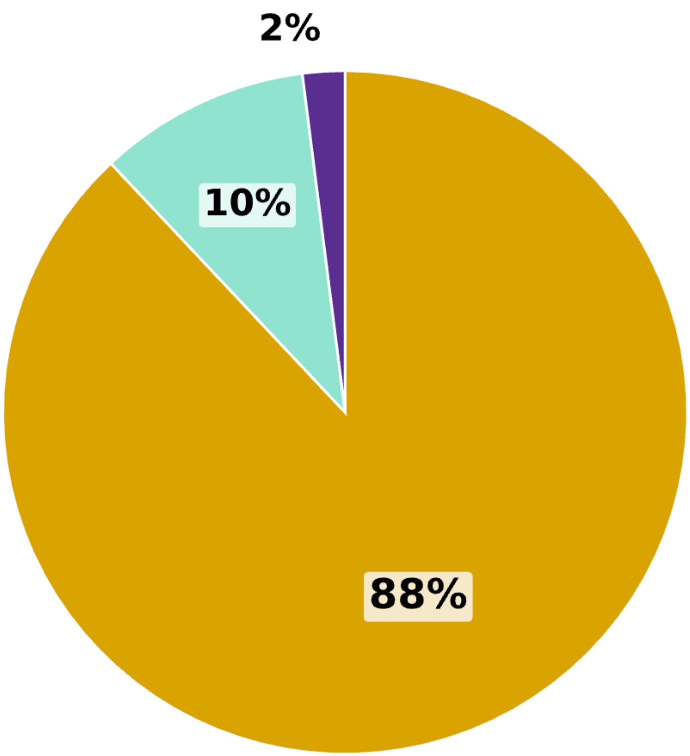
Hold firms with scope to improve and use ownership to influence outcomes (*impact objective*)

**Moral objective:**
exclude firms engaged in objectionable activities, regardless of financial upside or scope for improvement.

# Research Questions

1. How prevalent are financial, moral, and impact objectives among sustainable funds?
2. How do these objectives map into portfolio allocation and stewardship?
3. Are they associated with different real-economy outcomes?

# Preview of Main Findings




Financial funds (88%)

- Hold high-ESG, low-carbon portfolios
- Consistent with ESG integration for financially material risk
- Benchmark-like flow-performance sensitivity

Moral funds (10%)

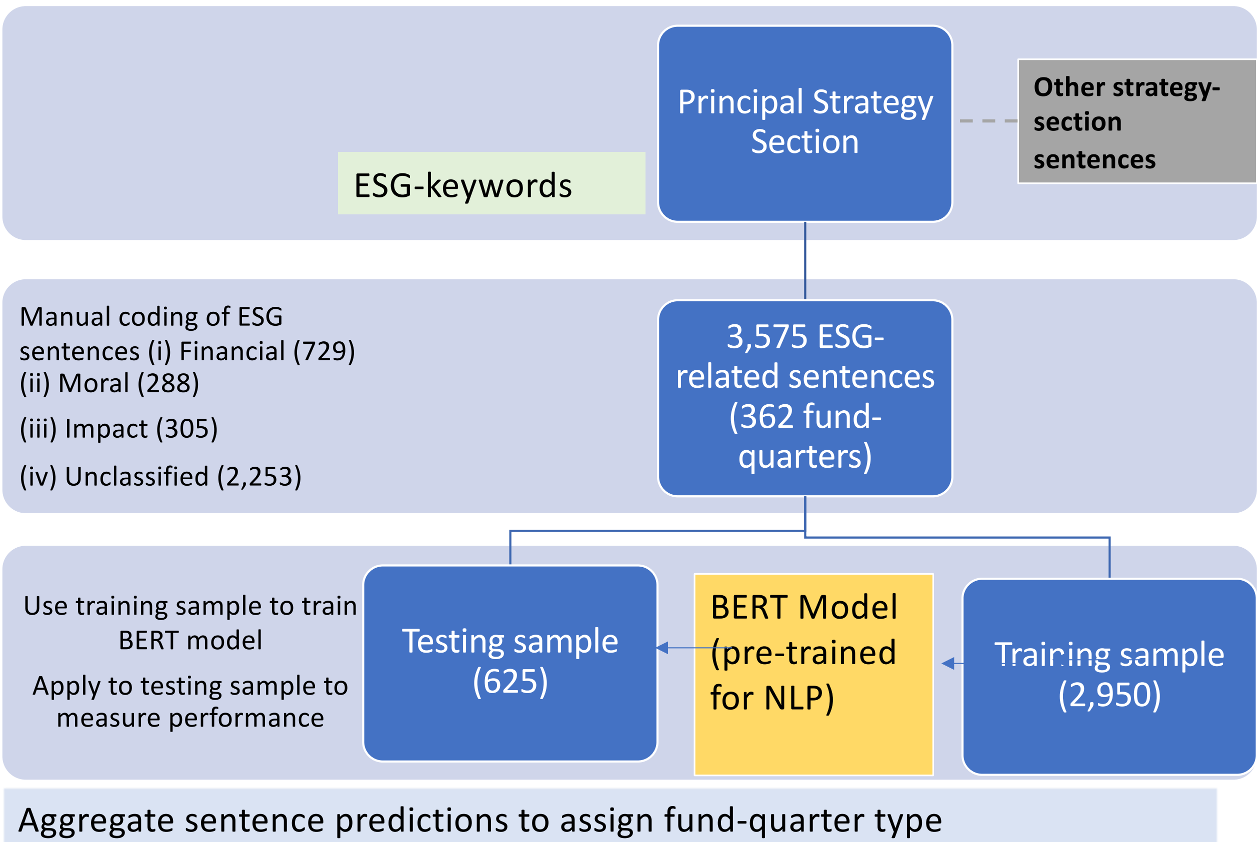
- Exclude sin and brown sectors
- Consistent with values-based screening
- Lower flow-performance sensitivity

Impact funds (2%)

- Hold browner firms and support outcome-oriented proposals
- The only category linked to emissions improvement
- Small in AUM, despite the prominence of impact rhetoric

~1,500 sustainable funds managing $1.7T in 2023

# Classifying Fund Intent from Prospectus Text




- 75,886 fund-quarters (2014–2023) from SEC prospectuses
- Fine-tuned BERT classifies ESG-related sentences as Financial, Moral, or Impact
- 90–98% accuracy in sentence-level validation

# Illustrative Examples of Sentence Labels

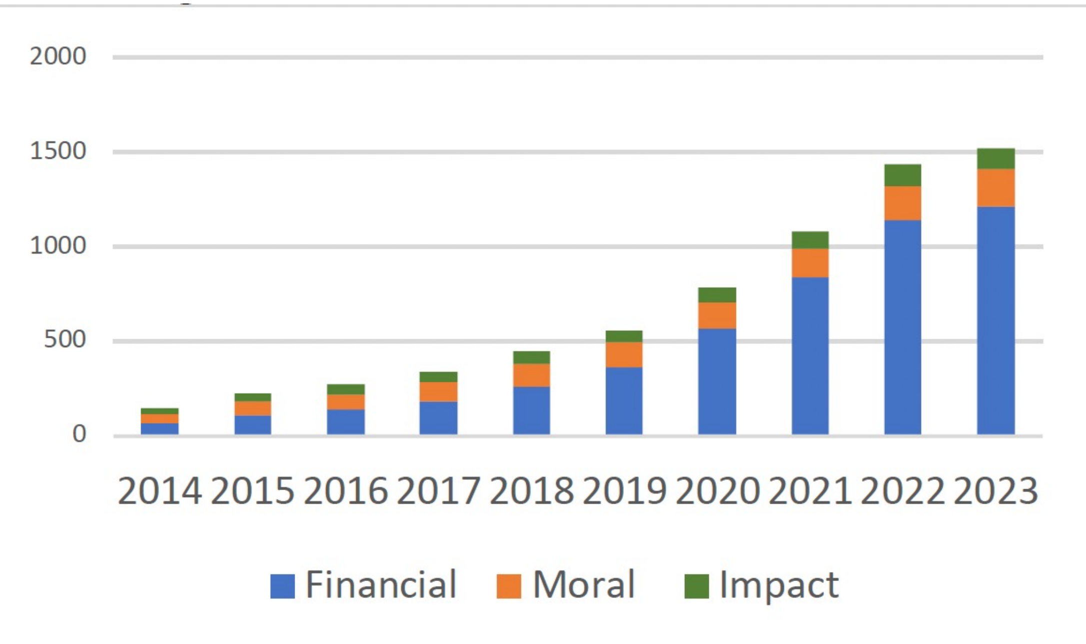
- **Financial** - "The Adviser evaluates financially material environmental, social, and governance (ESG) factors as part of the investment decision-making process for the Fund."
- **Moral** – "The Index excludes companies involved with weapons, tobacco, gambling, alcohol, adult entertainment, and nuclear power."
- **Impact** – "Under normal market conditions, the Fund will invest at least 80% of its net assets … in the equity securities of companies identified by the Fund's investment sub-advisor, … as having or seeking to have a positive carbon impact."
- **Unclassified** – "The Fund seeks to achieve its investment objective while applying an environmental, social and governance ( ESG methodology developed by the Fund's subadviser in the selection of portfolio investments.)"

# Why not use GenAI for the main classifier?

| Category | ChatGPT-5 | BERT |
|---|---|---|
| Financial | 0.47 | 0.85 |
| Moral | 0.62 | 0.85 |
| Impact | 0.61 | 0.83 |

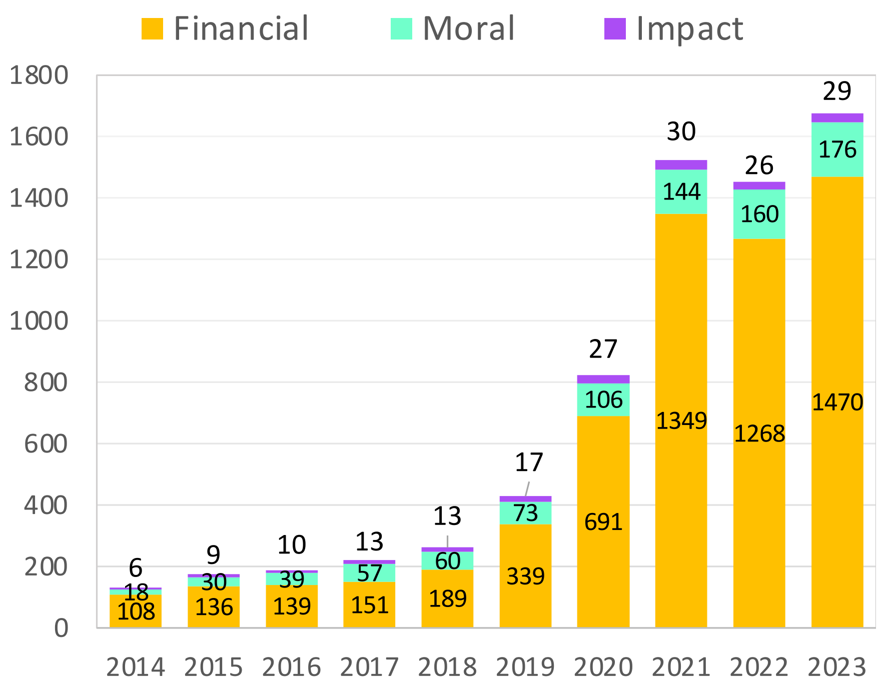
- We compare ChatGPT-5 with prompt instructions to fine-tuned BERT on the same sentence-labeling task.
- BERT has much higher precision in all three categories, implying fewer false positives.
- Possible reason: GenAI may inherit the fuzzier goal distinctions present in public discourse on sustainable investing *(Hartzmark and Sussman (2019); Gantchev, Giannetti, and Li (2024); Heeb, Kölbel, and Weder (2025); Bini et al. (2026)).*

# How many sustainable funds do we identify?



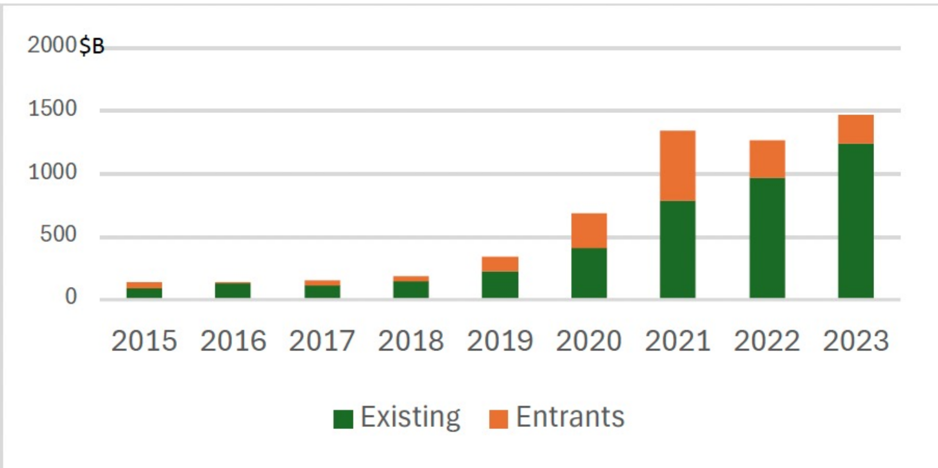

- We classify fund-quarters as sustainable when the dominant prospectus objective is financial, moral, or impact.
- In 2023, this identifies 1,523 sustainable mutual funds managing $1.7T.
- Sustainable AUM is overwhelmingly financial: 88% financial, 10% moral, 2% impact.

# Impact is small under the dominant-objective measure

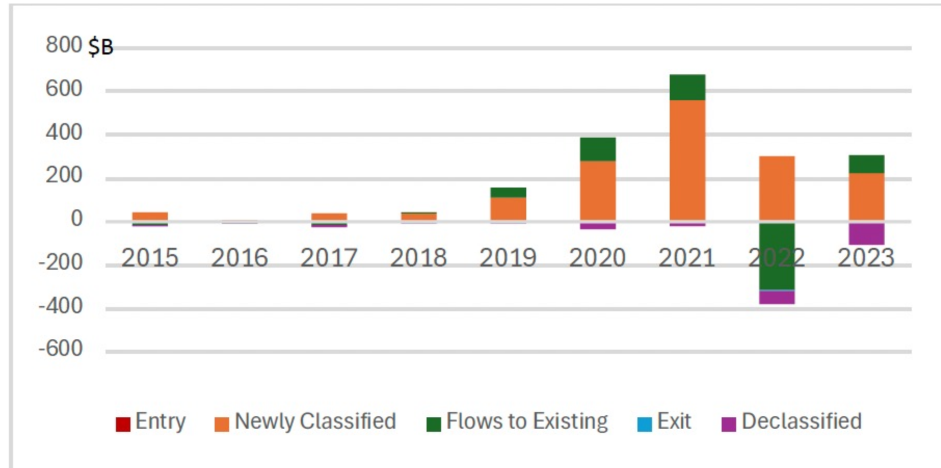



- Under the baseline dominant-objective classification, impact funds account for only $29B in 2023.
- As an upper bound, counting any fund-quarter with *at least* one impact sentence raises impact AUM to about $86B (5%).
- Even under this broader definition, impact remains a small share of sustainable AUM.

# What drives annual changes in sustainable AUM?




Financial funds: levels

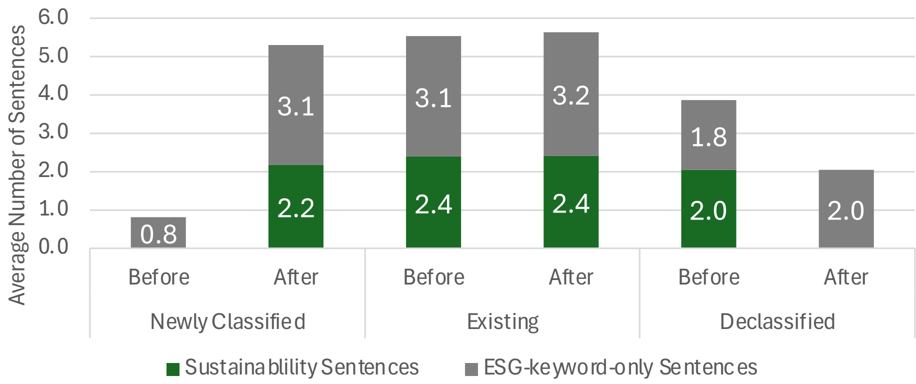



Financial funds: annual change decomposition

- Newly classified funds contribute meaningfully to AUM growth, especially among financial funds.
- Growth therefore reflects more than the expansion of longstanding sustainable funds.
- Do these classification shifts reflect real changes in stated objectives?

# Reclassification coincides with more substantive sustainability language

Most new “entry” reflects **reclassification of existing funds**, not the launch of brand-new funds.




- Newly classified funds move from 0.8 ESG-related sentences before classification to 2.2 classified sustainability sentences plus 3.1 additional ESG-related sentences in the classification year.
- Existing sustainable funds remain stable, while declassified funds lose substantive sustainability language.

Reclassification appears to reflect real changes in stated objectives.

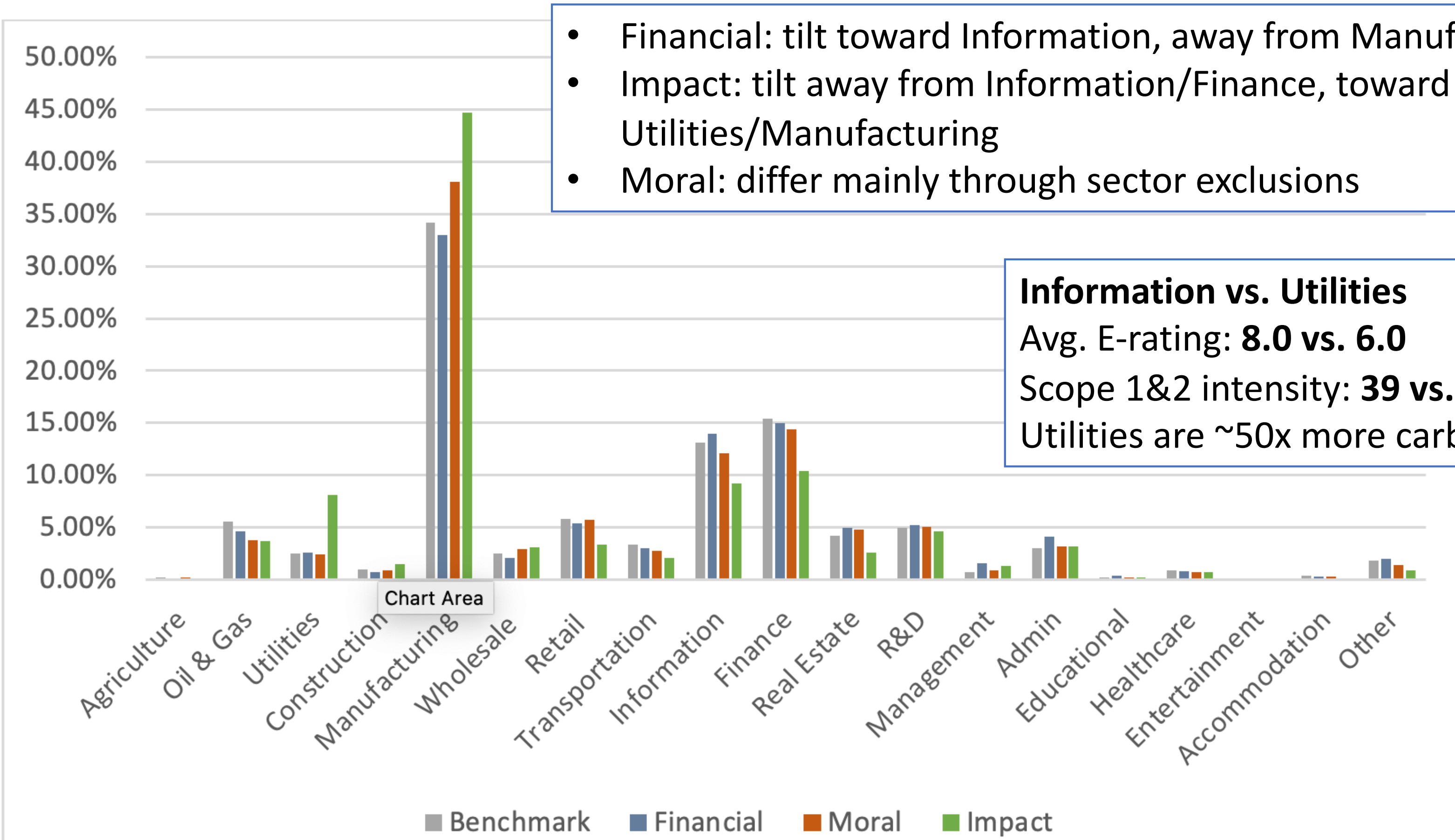
# Why build our own classification?

- Commonly used classifications can treat similar financial sustainability language inconsistently.
- For example, two Morgan Stanley funds use similarly clear financial sustainability language; Morningstar lists one as sustainable but not the other.
- Our text-based method classifies both as sustainable because it reads the underlying prospectus objective directly.
- At the same time, PRI signatory assets can substantially overstate sustainable AUM. For example, of BlackRock's $2.2T in CRSP equity fund AUM in 2023, only about $52B is classified as sustainable under our method.

## Industry tilts already suggest different sustainability logics

- Financial: tilt toward Information, away from Manufacturing
- Impact: tilt away from Information/Finance, toward Utilities/Manufacturing
- Moral: differ mainly through sector exclusions

**Information vs. Utilities**
Avg. E-rating: **8.0 vs. 6.0**
Scope 1&2 intensity: **39 vs. 1,879**
Utilities are ~50x more carbon intensive



# Carbon Emission Intensity of Fund Portfolios

| | (1) Sector-Average Scope 1&2 | (3) Within-sector-ranked Scope 1&2 |
|---|---|---|
| Financial Fund | -15.534*** | 0.043 |
| | (-2.784) | (1.039) |
| Observations | 72704 | 72696 |
| Adjusted $R^2$ | 0.024 | 0.018 |

| | (1) Sector-Average Scope 1&2 | (3) Within-Sector-ranked Scope 1&2 |
|---|---|---|
| Impact Fund | 106.620*** | -0.257** |
| | (3.146) | (-2.344) |
| Observations | 14090 | 14087 |
| Adjusted $R^2$ | 0.058 | 0.010 |

- Financial funds hold lower-carbon portfolios than benchmark funds, driven mainly by tilts toward cleaner sectors.
- Impact funds hold more carbon-intensive portfolios than financial funds because they tilt toward dirtier sectors.
- Within those sectors, however, impact funds hold relatively cleaner firms, consistent with targeting firms with scope to improve rather than simply maximizing static greenness.

# Flow Performance Sensitivity

| | Financial Flow Rate | Moral Flow Rate | Impact Flow Rate |
|---|---|---|---|
| Alpha*Fund Type | -0.276 | -0.268** | -0.230 |

- Benchmark-fund flows respond positively and significantly to alpha.
- The alpha × moral fund interaction is negative and significant.
- The corresponding impact and financial interactions are also negative, but not statistically significant.
- The clearest evidence of attenuated flow-performance sensitivity is for **moral funds**.

# Voting on E/S proposals: broad patterns

- Proxy voting is one channel through which funds may influence firm behavior on environmental and social issues.
- All sustainable fund types support E/S proposals more than benchmark funds.
- Impact funds are the strongest supporters overall (≈59%), followed by moral (≈47%) and financial (≈41%) funds; benchmark funds support only ≈25%.
- This broad pattern motivates a closer look at which kinds of proposals each fund type supports.

| | (1) Benchmark | (2) Financial | (3) Moral | (4) Impact |
|---|---|---|---|---|
| Vote "For" ES | 25.1% | 40.7% | 47.0% | 58.5% |
| Vote "Against" ES | 63.7% | 53.1% | 47.2% | 34.1% |
| Abstain ES Vote | 7.0% | 2.3% | 2.4% | 2.8% |
| Do not vote | 2.8% | 2.1% | 2.0% | 1.1% |
| Observations | 20440 | 4317 | 1164 | 564 |

| | (1) Vote "For" | (2) Vote "Against" | (3) Abstain | (4) Do not Vote |
|---|---|---|---|---|
| Impact Fund | 19.809*** | -20.837*** | -0.147 | -1.102** |
| | (5.265) | (-5.341) | (-0.164) | (-2.293) |
| Year-quarter FE | Yes | Yes | Yes | Yes |
| Clustering at Fund | Yes | Yes | Yes | Yes |
| Observations | 5591 | 5591 | 5591 | 5591 |
| Adjusted $R^2$ | 0.115 | 0.129 | 0.018 | 0.042 |

# Voting on Outcome-focused Proposals

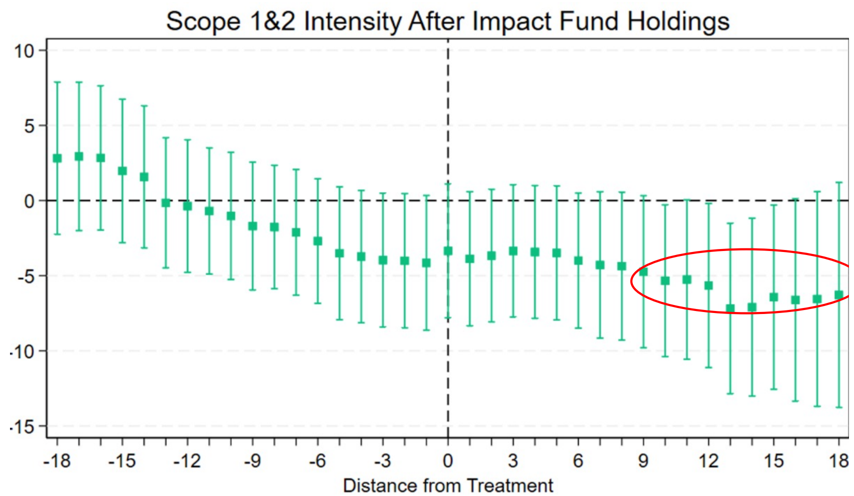
- Outcome-focused proposals aim to change real outcomes, for example by:
  - Eliminating harmful products and fossil fuels from operations
  - Implementing policies that promote worker welfare and human rights standards
- Outcome-focused proposals receive lower average support, consistent with higher implementation costs
- Impact funds disproportionately support proposals aimed at achieving real outcomes

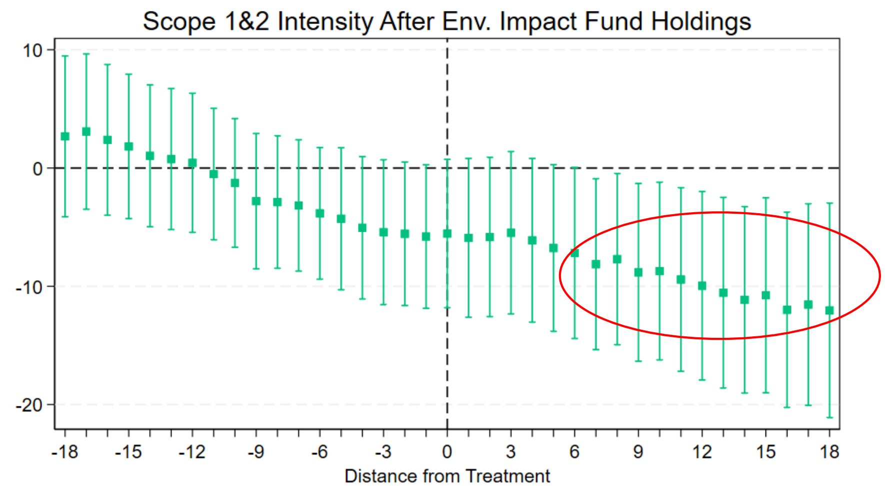
| | (1) | (2) |
|---|---|---|
| | Vote "For" | Vote "For" |
| Impact Fund*Outcome Proposal | 0.181*** | 0.212*** |
| | (3.326) | (3.317) |
| Outcome Proposal | -0.061** | -0.070*** |
| | (-2.242) | (-3.186) |
| Impact Fund | 0.201*** | 0.349*** |
| | (19.218) | (33.393) |
| Sample | All Sustainable Funds | Impact and Benchmark Funds |
| Firm FE | Yes | Yes |
| Clustering at Proposal | Yes | Yes |
| Observations | 71651 | 251183 |
| Adjusted $R^2$ | 0.113 | 0.136 |

# Difference-in-differences design

- Treatment occurs when a firm is first purchased by an impact, financial, or moral fund.
- Control firms are never-treated firms in the stacked event-study design.
- We estimate dynamic effects relative to the treatment date and test for pre-trends.
- If impact funds influence real outcomes, carbon intensity should decline after purchase, not before.

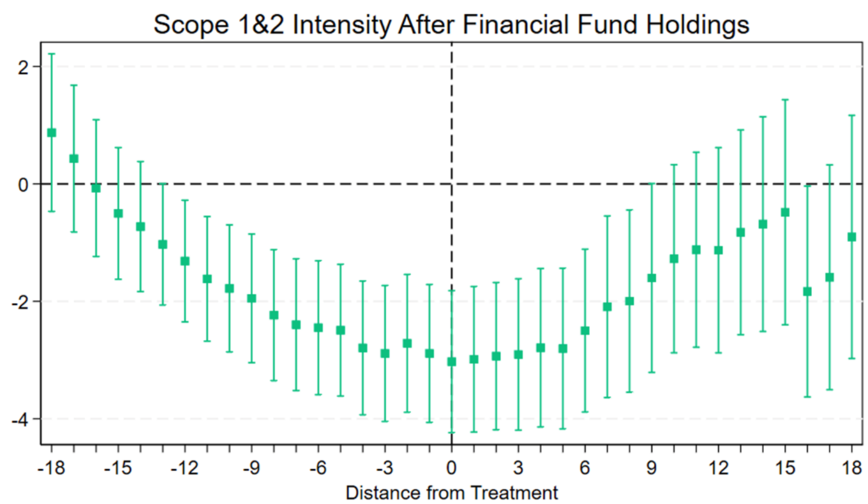
# Carbon intensity falls after impact-fund purchases

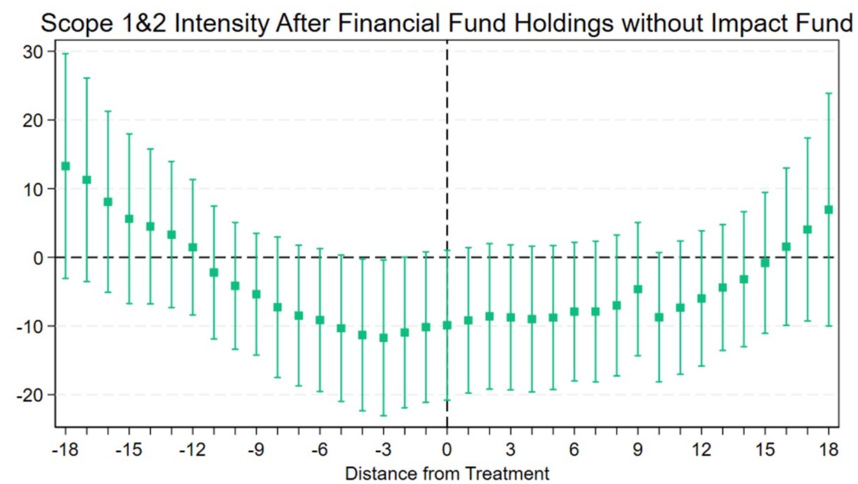



- Stacked event-study DiD with never-treated firms as controls.
- No clear pre-trend violation.
- Scope 1&2 intensity declines after impact-fund purchase, with effects emerging around month +7 to +10.
- The result is stronger for environmentally focused impact funds.

# Financial-fund purchases do not show the same post-purchase pattern




- Financial funds appear to select firms already reducing emissions before purchase.
- Once simultaneous impact-fund holdings are removed, the **post-purchase improvement disappears**.
- This strengthens the interpretation that the impact-fund result is not just selection.

# Conclusion

- We use machine learning on prospectus text to classify sustainable mutual funds by stated objective: financial, moral, or impact.
- Most sustainable fund AUM reflects financial intent, while impact-oriented funds remain a small share of sustainable AUM.
- Fund behavior lines up with stated objectives: moral funds show lower flow-performance sensitivity, while impact funds are the strongest supporters of outcome-focused E/S proposals.
- Financial funds hold greener portfolios, but only impact funds show evidence of changing firm outcomes.