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Quick takes: Three academic papers practitioners need to know about,

Amit Prakash (AIMco), chair

Christian Lundblad (U. of N. Carolina), Lisa Kramer (U. of Toronto),
Kathleen McGarry (UCLA)

Do Public Equities Span Private Equity Returns?

Eric Ghysels, Oleg Gredil, and Mirco Rubin

Investor framing

What is private equity buying you?

Two answers (not mutually exclusive):

- Alpha — better-than-fair risk-adjusted returns
- Diversification — lower overall portfolio risk



**Portfolio
benefit**

What this paper does?

Why hard in PE:

- No continuous prices
- NAV smoothing and reporting lags
- Cash flows arrive irregularly

Bring PE into a mature “spanning” framework by nowcasting weekly “unsmoothed” returns, then splitting what is common with publics versus PE-specific.

Method and evidence

What is spanned, and what is truly distinct

How the engine works

1. Data

MSCI-Burgiss cash flows + NAVs
Matched traded comparables



2. Nowcast returns

State-space model filters smoothing
Weekly “unsmoothed” PE returns



3. Spanning split

Common factors vs PE-specific factors
(what publics cannot replicate)

Decomposition of PE return

- Four common factors explain ~90+% of PE variation.
- PE-specific factors add ~2.5% explanatory power.
- PE-specific factors earn ~2–4% per year historically and improve Sharpe via both higher expected return and diversification.
- “Small residual” is still ~3.3%/year of distinct volatility.

Interpretation: PE is mostly public-equity-like exposure, plus a small but valuable distinct factor space.

Portfolio implications

What changes for an IC decision?

Optimal PE allocation

Liquidity-unconstrained investors:

Optimal PE weight is 11%–24% of the risky portfolio (95% confidence).



Sensitivity: if illiquidity costs are ~3%/year, confidence intervals often include a zero PE allocation.

Translation:

- “PE beta” \approx public equities.
- The decision is the PE-specific slice.
- That slice must clear fees, liquidity drag, and implementation constraints.

Takeaways

1. PE is not just levered public equity.
2. Diversification is real, even if modest.
3. Alpha dominates historically: PE-specific factors earn 2–4%/year in-sample.
4. Netting costs matters: a ~3%/year liquidity drag can erase the optimal allocation.

Bottom line: PE can expand the efficient frontier, but only net of liquidity and implementation costs.

BEYOND THE STATUS QUO: A CRITICAL ASSESSMENT OF LIFECYCLE INVESTMENT ADVICE

Aizhan Anarkulova*

Scott Cederburg[†]

Michael S. O'Doherty[‡]

July 10, 2025[§]

Discussion by Lisa Kramer

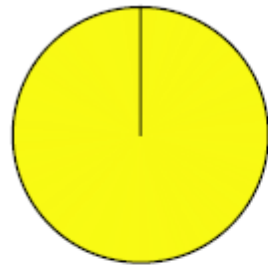
With thanks to Scott Cederburg

Why This Paper Matters for CIOs

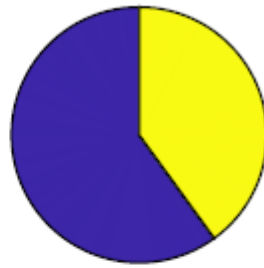
- Lifecycle investing assumptions are widely used across TDFs and DC plans:
 - Investors should diversify across stocks & bonds.
 - The young should hold more stocks than the old.
- The paper finds that approach is suboptimal.
 - Considers domestic stocks, international stocks (~40 countries), gov't securities, monthly data over 1890-2023
 - Uses data only for periods after which a country became developed.
- International diversification and all-equity allocations can materially improve outcomes, arguably without downside.

Potential Strategies

A. Bonds



B. Dom. 60/40



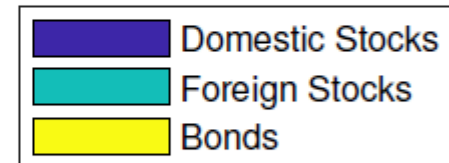
C. Dom. Stocks



D. Div. 60/40

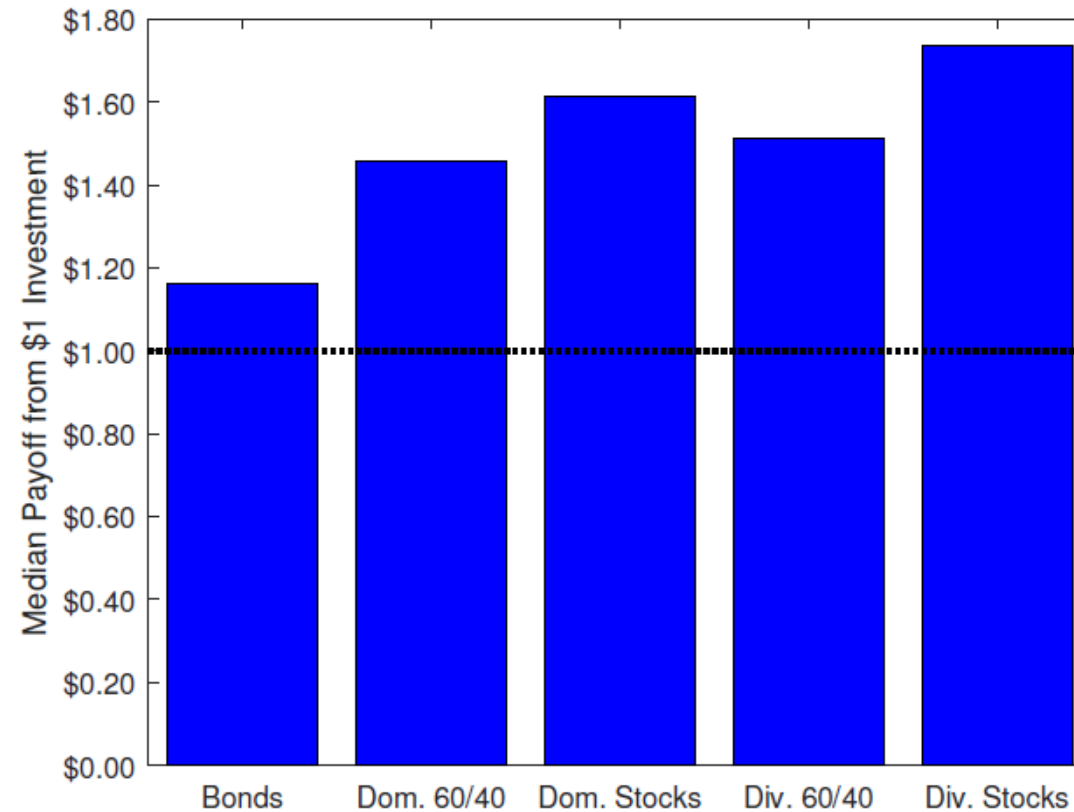


E. Div. Stocks



Median Wealth at Various Points Across Strategies

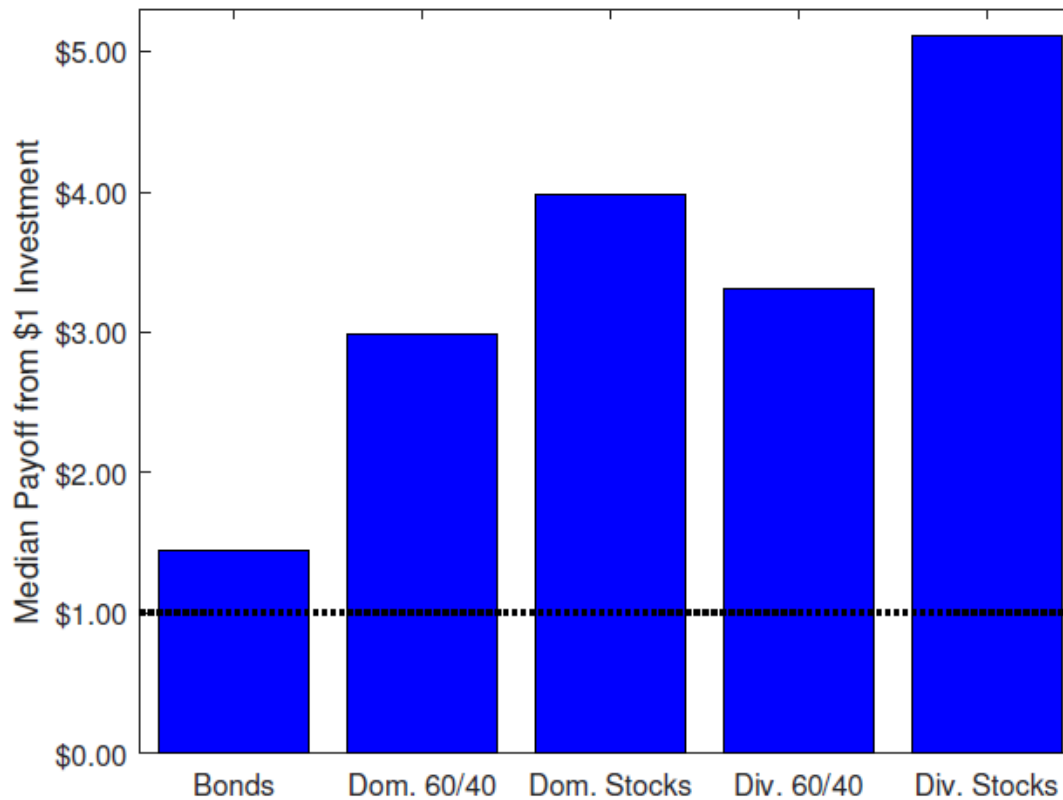
Median Wealth at 10 Years from a \$1 Investment



→ Internationally diversified stock portfolios do well in accumulating wealth.

Median Wealth at Various Points Across Strategies

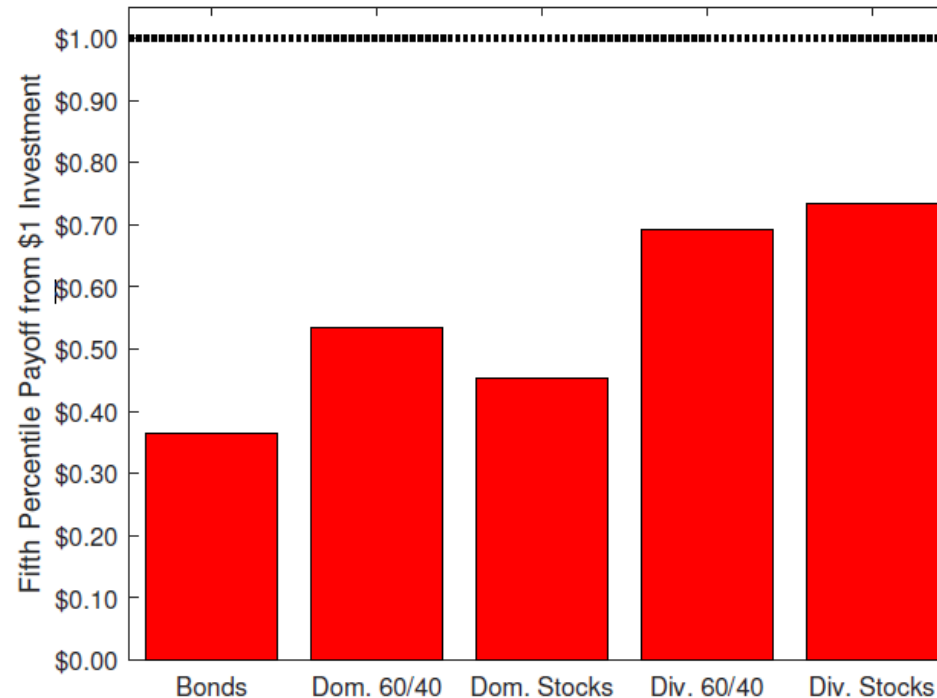
Median Wealth at 30 Years from a \$1 Investment



→ Wealth accumulation benefits grow with horizon.

Worst-Case Wealth at Various Points Across Strategies

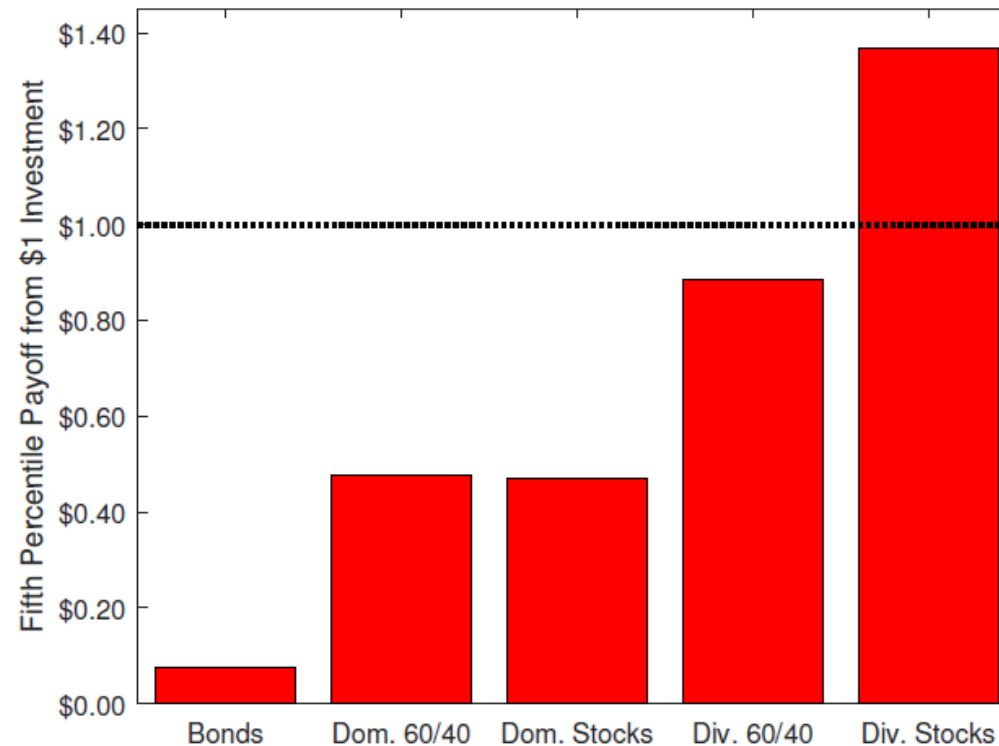
Worst-Case Wealth at 10 Years from a \$1 Investment



→ An all-equity, internationally diversified stock portfolio does the best at preserving wealth, even with a relatively short 10-year horizon.

Worst-Case Wealth at Various Points Across Strategies

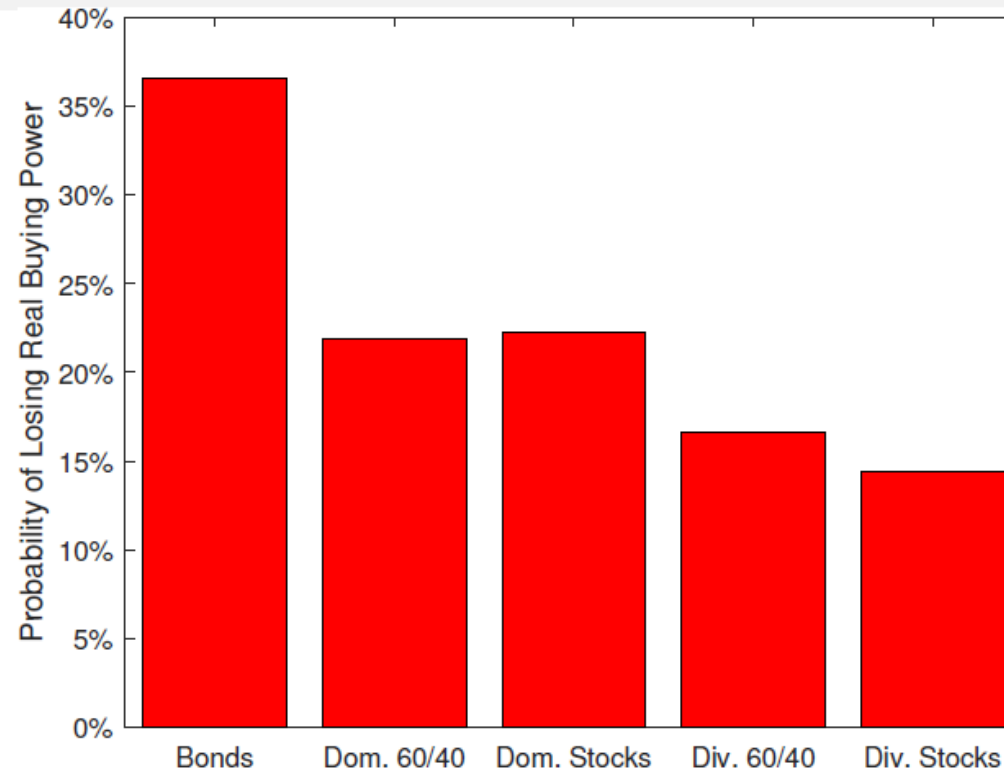
Worst-Case Wealth at 30 Years from a \$1 Investment



→ Over 30 years, the all-equity strategy dominates other strategies.

Prob. of Losing to Inflation at Various Points Across Strategies

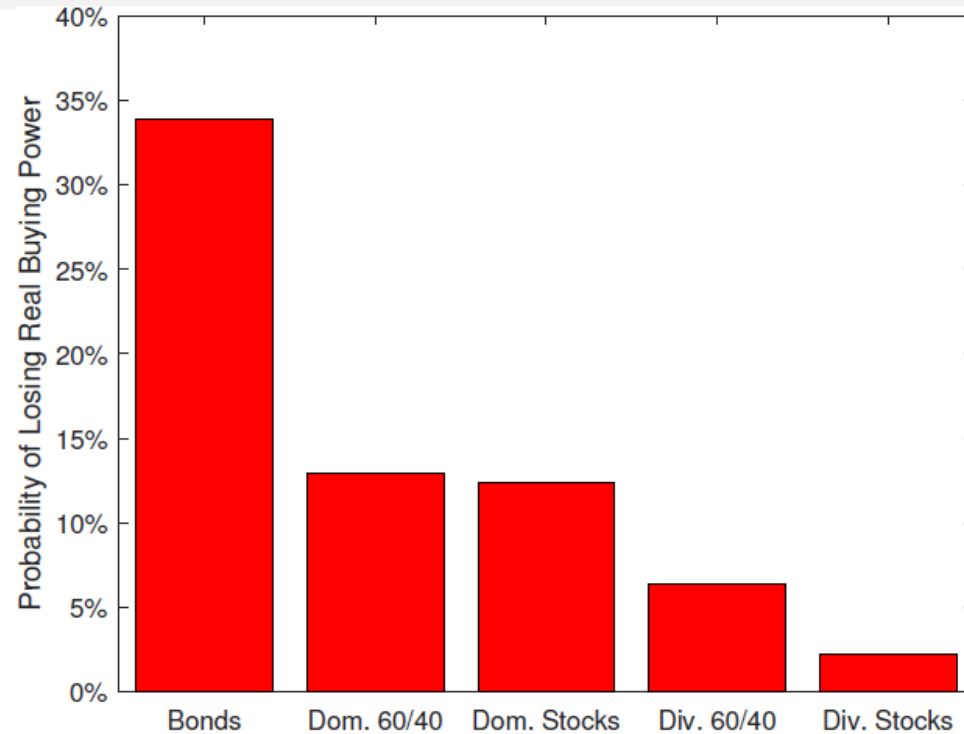
Probability of Losing to Inflation over 10 Years



→ The all-equity, internationally diversified stock portfolio proves the safest even with a horizon of only 10 years.

Prob. of Losing to Inflation at Various Points Across Strategies

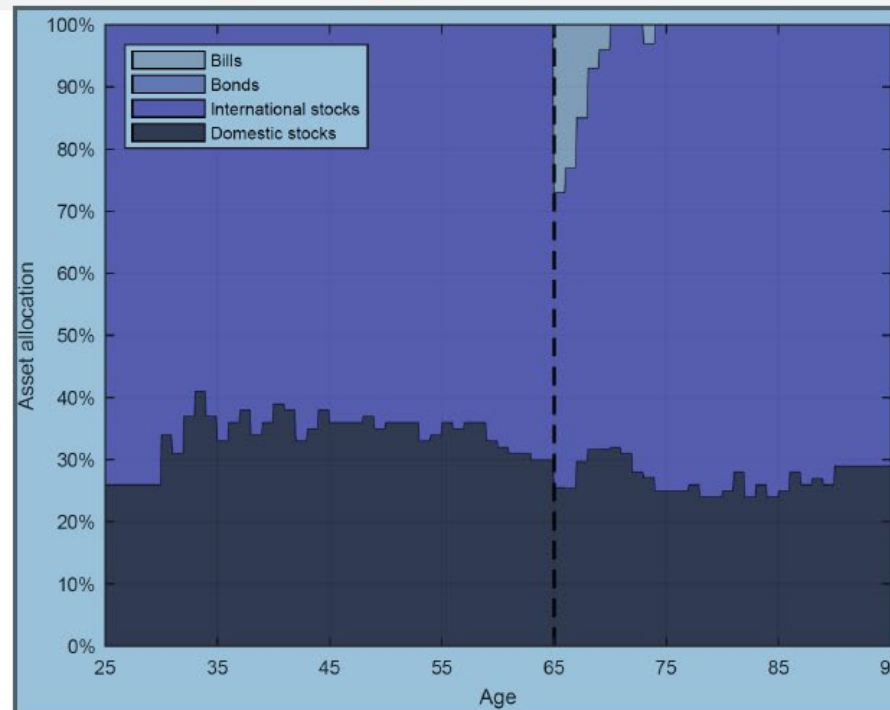
Probability of Losing to Inflation over 30 Years



→ The all-equity, internationally diversified stock portfolio is the safest haven for long-term investors.

Optimal Age-Based Investing

Optimal Age-Based Investing – Rigid Withdrawals

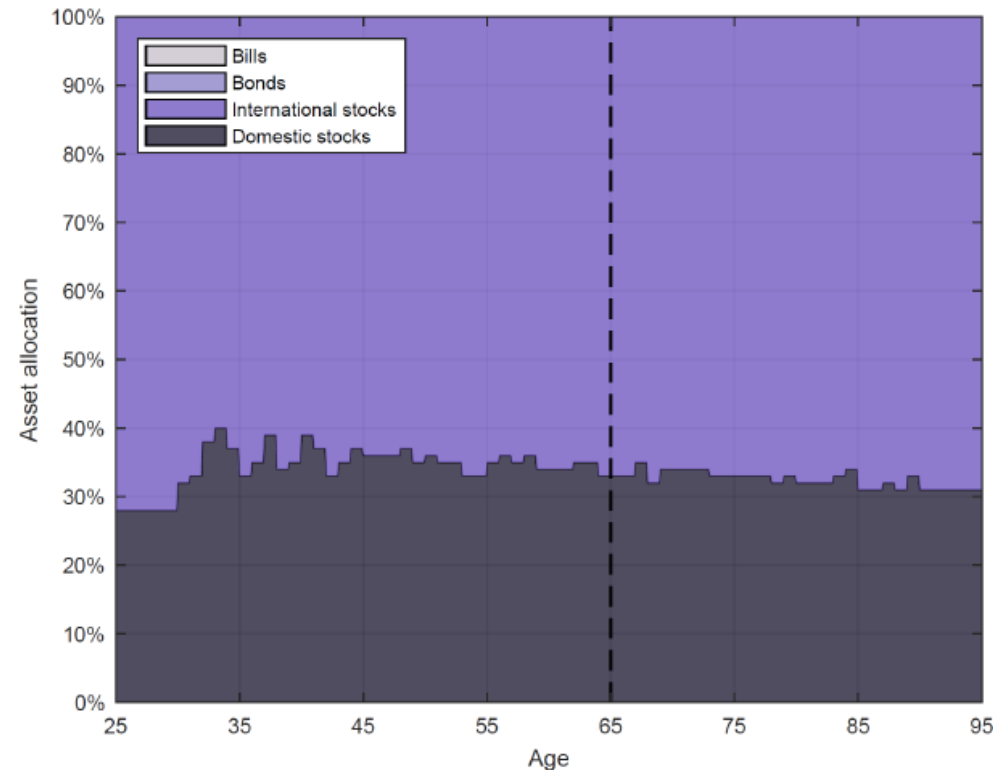


Rigid withdrawals: withdraw 4% of wealth at retirement date.

→ The optimal age-based strategy is *nearly* all equity, except for a brief allocation to bills at retirement due to “sequence of returns risk” using the 4% rule for withdrawals.

Optimal Age-Based Investing

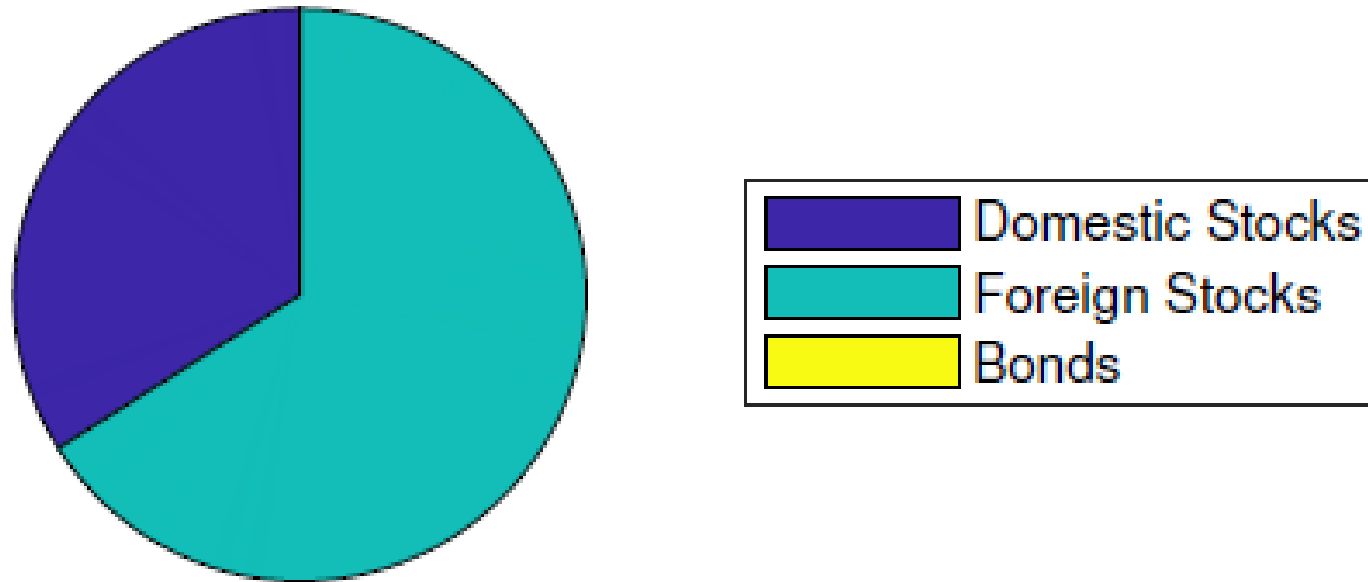
Optimal Age-Based Investing – Fluid Withdrawals



Fluid withdrawals: household withdraws 4% of *current retirement wealth rather than 4% of wealth at retirement date.*

→ The optimal age-based strategy is all equity, even in retirement, if the investor withdraws a fixed percentage of plan assets.

Optimal Allocation Structure



Implications for CIOs

- Bonds have undesirable long-term return properties and do not offer enough wealth accumulation potential.
- Long-term investors likely benefit from very heavy equity allocations, arguably all-equity.
- International equity exposure is essential to manage risk of an all-equity portfolio



By [Jason Zweig](#) [Follow](#)

Oct. 31, 2025 10:00 am ET



ALEX NABAUM

MARKETS & FINANCE | INVESTING | THE INTELLIGENT INVESTOR

Should You Just Buy Stocks Until You Die?

Stocks are never a sure thing, especially when everybody seems to think they are

KKCFR / CAIA Conference
“Financial Presentation of Alzheimer
Disease and Related Dementias”

By Lauren Hersch Nicholas, Kenneth Langa, Julie Bynum and
Joanne Hsu

Presented by Kathleen McGarry
UCLA and NBER
February 4, 2026

Motivation

- “Academic papers practitioners should know about”
- Importance on a personal level
 - Decision-making can be hampered by cognitive issues
 - When do you turn over management to a child, spouse, or financial planner?
- Importance of defined benefit pension plans
 - Making investment decisions during work life
 - Making distribution decisions during retirement
 - Avoiding mistakes and fraud



Cognitive Decline

- Growing literature on effect of cognitive decline on financial outcomes
- Focus on the one paper but show some other results



“Financial Presentation of ADRD”

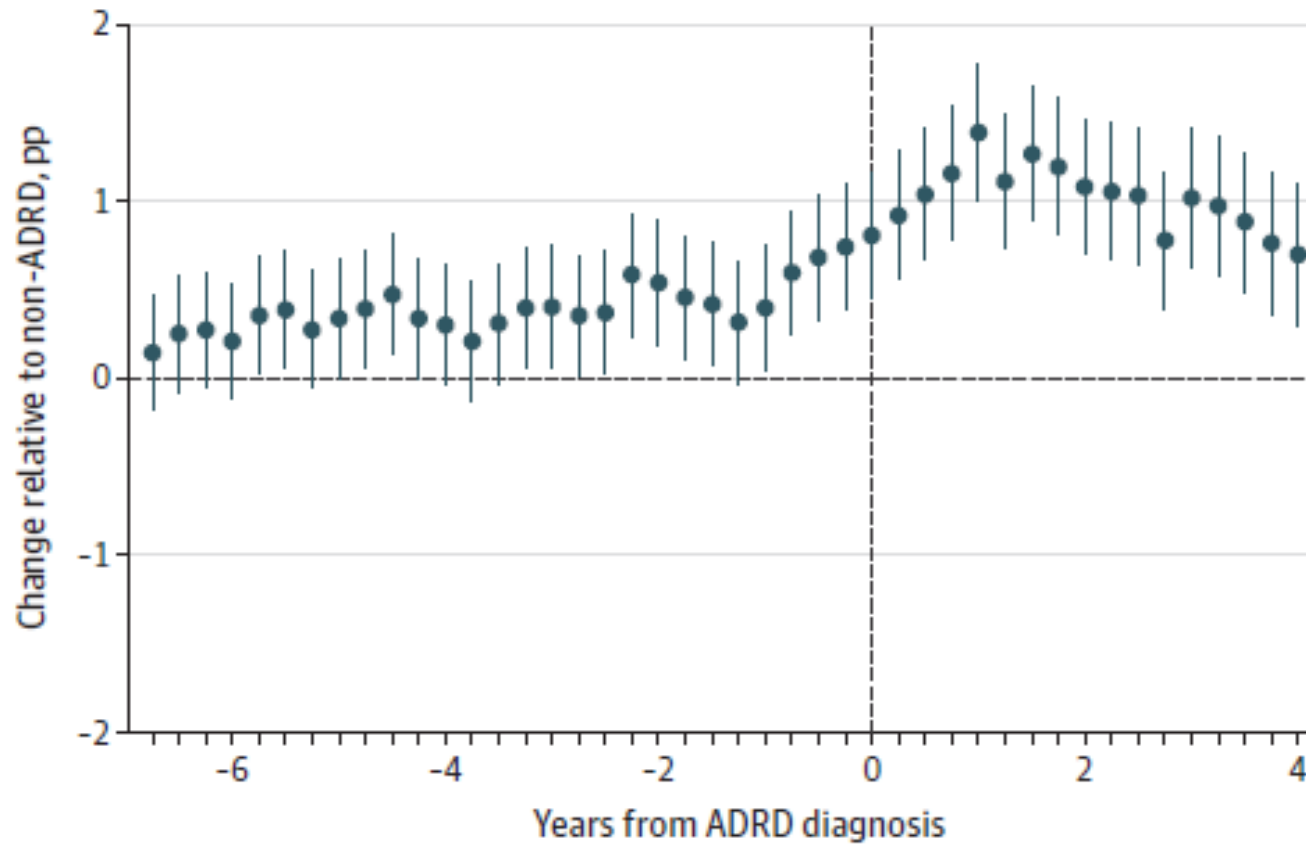
- Use Medicare records and Federal Reserve Bank / Equifax Consumer Credit Panel
 - Administrative data, survey data or individual reports
- Medicare data
 - 20% sample
 - Select down to 5.8 million unmarried elderly individuals
- Credit data:
 - 5% sample of credit reports
- Matched sample:
 - 81,300 people, 5+ million quarterly observations

Results

- Medicare beneficiaries who eventually were diagnosed with ADRD:
 - Had significantly more missed payments as early as 6 years prior to diagnosis.
 - Were significantly more likely to have a subprime credit score as early as 2.5 years prior to diagnosis
 - Earlier for those in lower education group
 - Later for those in higher education group



Figure 1. Change in Proportion With Missed Credit Payments Before and After Alzheimer Disease and Related Dementias (ADRD) Diagnosis Relative to Never Diagnosed, 1999 to 2018



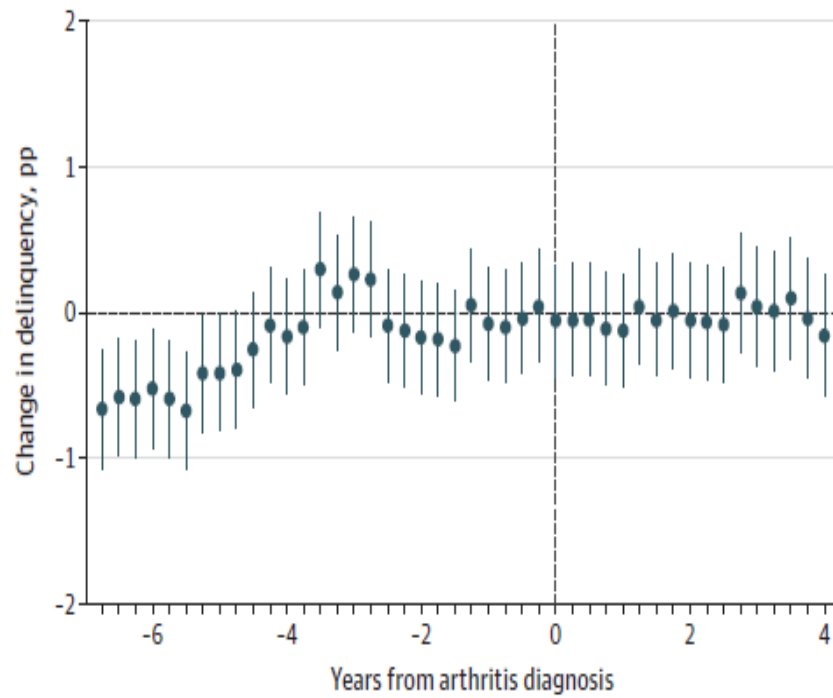
Results

- Is it just illness in general?
 - Repeated the study for other conditions:
 - Arthritis
 - Glaucoma
 - Heart attacks
 - Hip fractures
 - Result did not hold

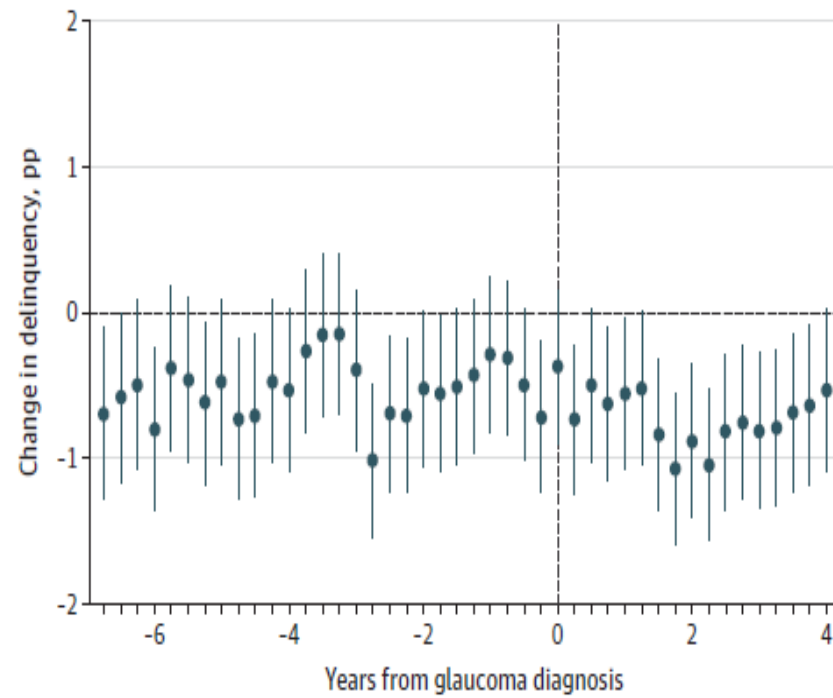


Figure 3. Change in Proportion With Missed Credit Payments Before and After Acute and Chronic Health Conditions Relative to Never-Diagnosed, 1999 to 2018

A Change in delinquency, arthritis

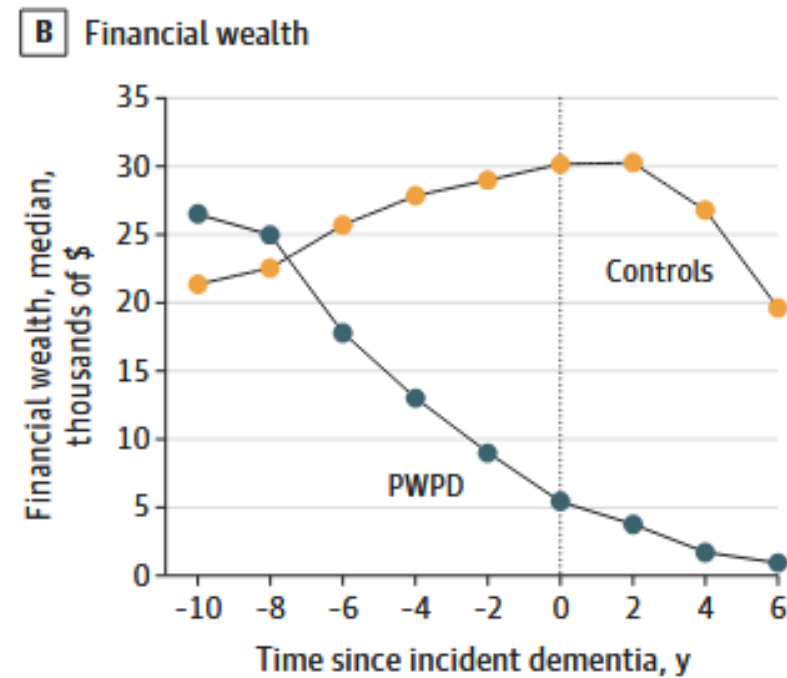
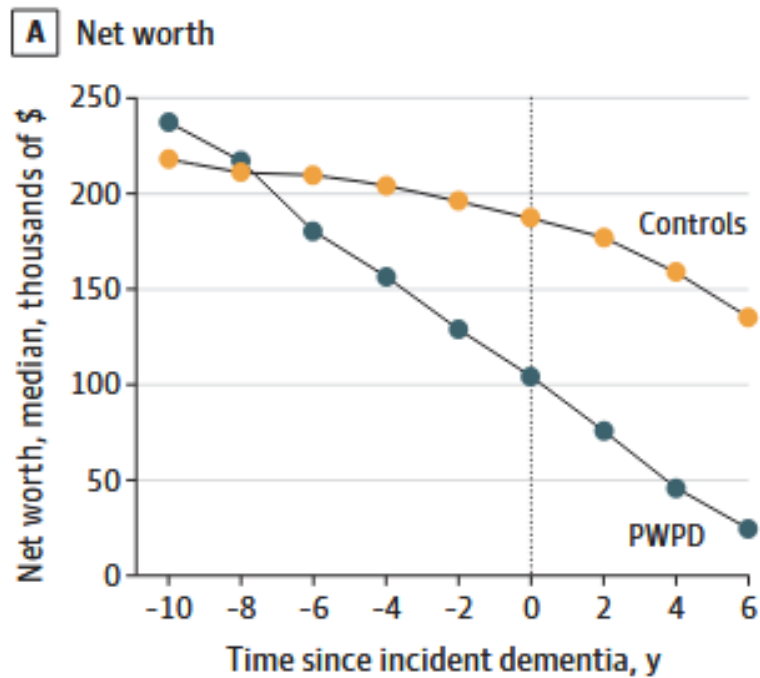


B Change in delinquency, glaucoma



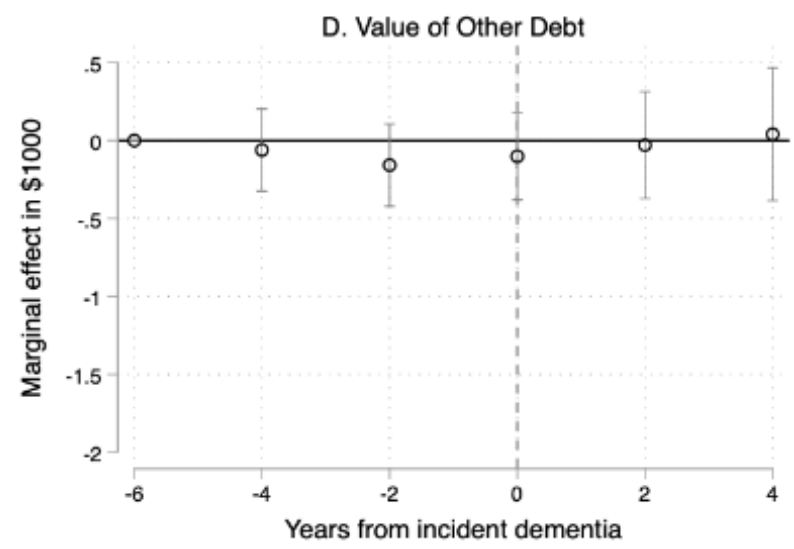
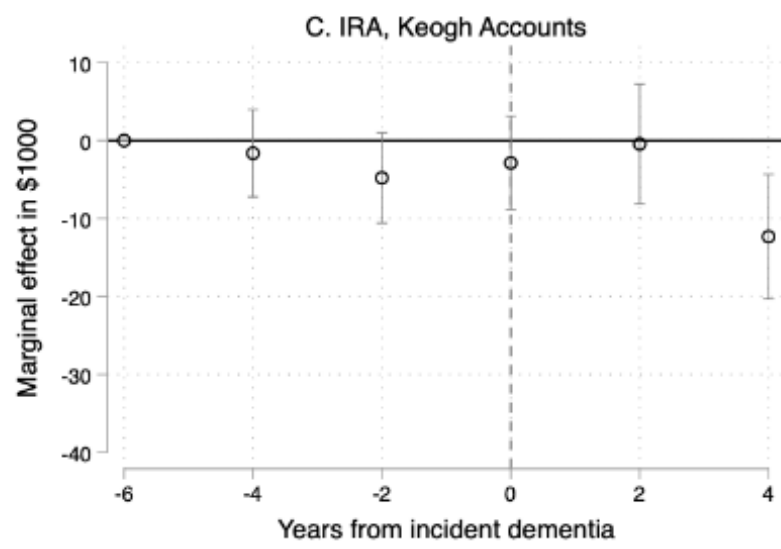
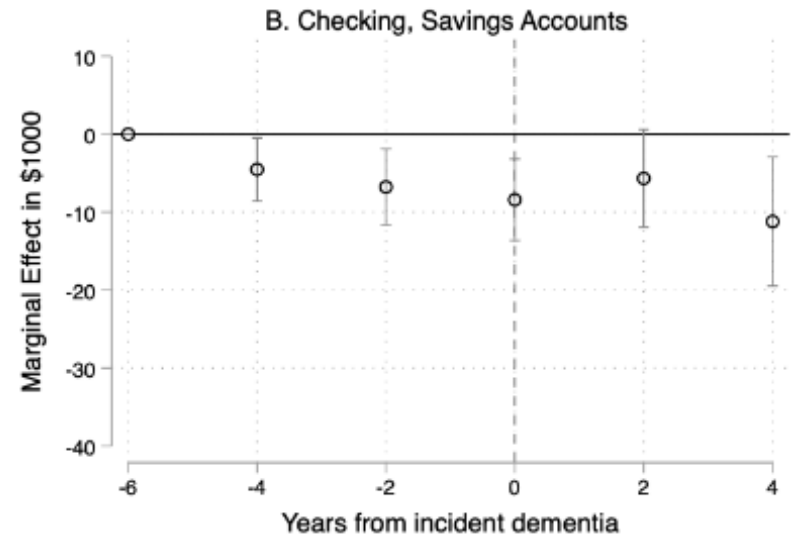
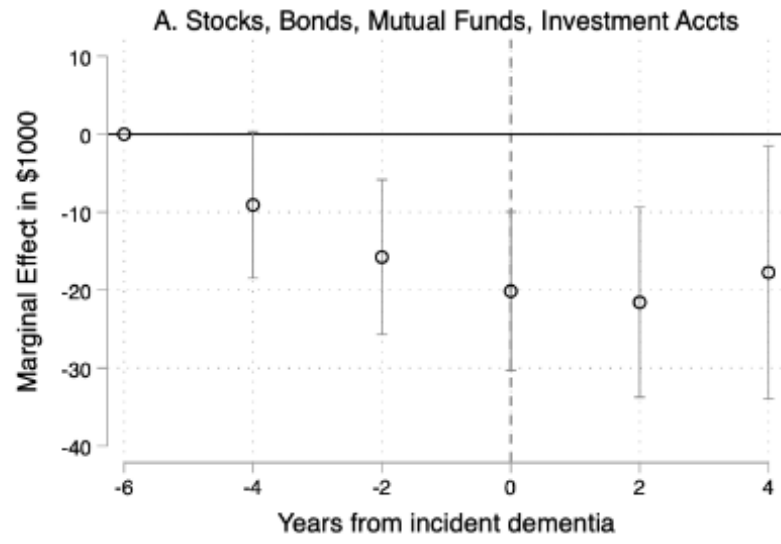
Other Studies

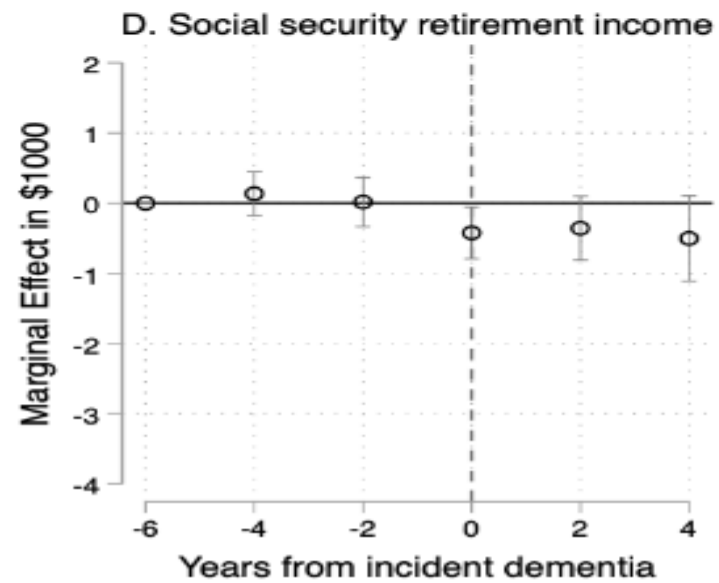
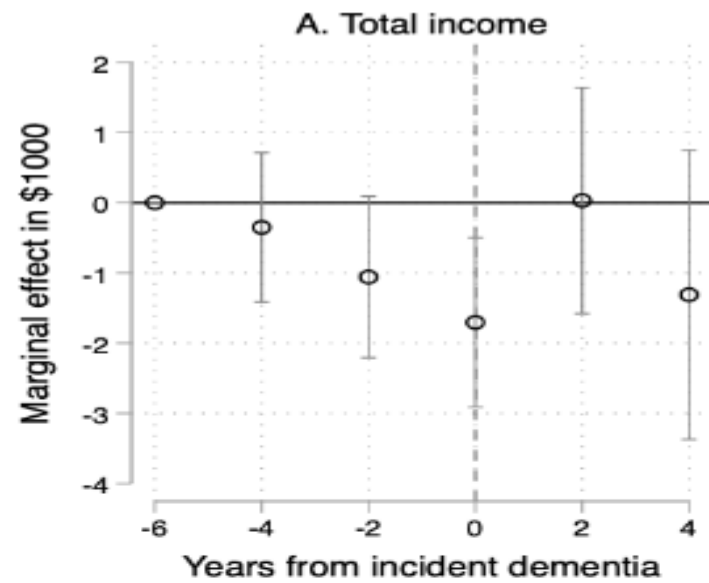
- Those who are likely to have dementia based on cognitive questions

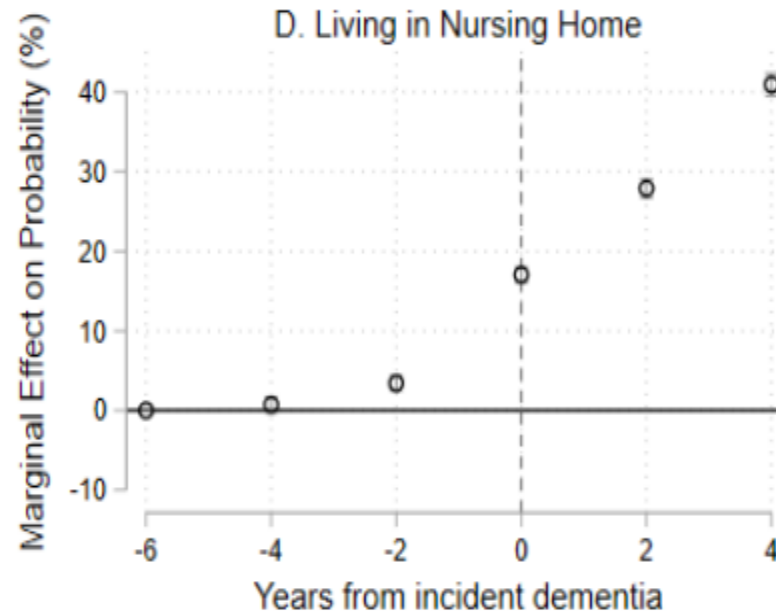
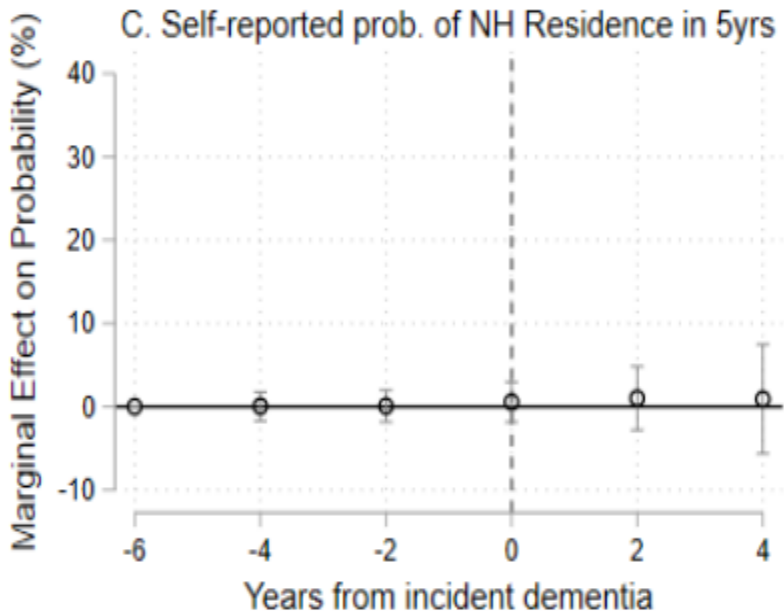


Li et al., *JAMA* 2023







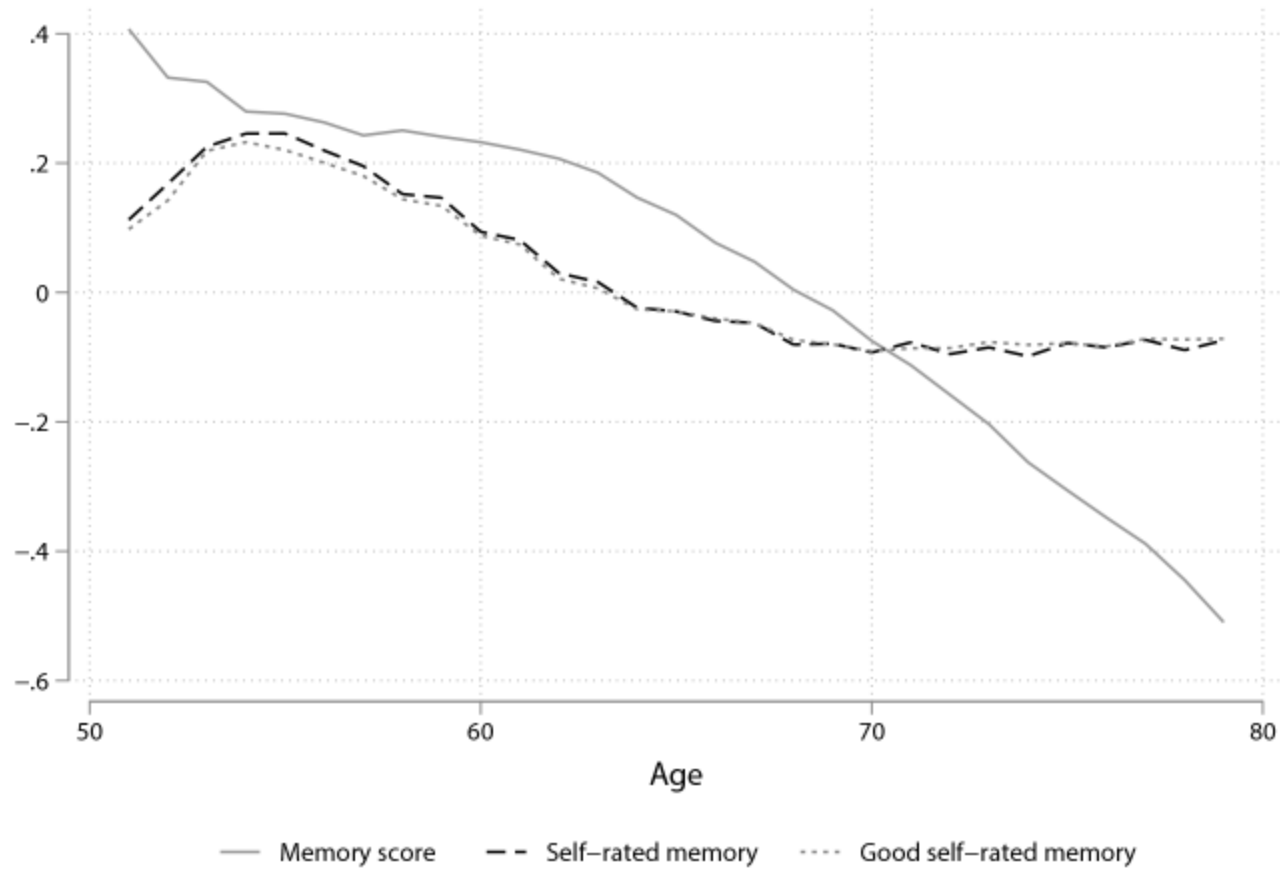


Awareness

- Read 10 words, repeat immediately and with a delay of a few minutes
 - Repeated every two years
- Respondents asked if their memory was better, worse, or about the same as prior interview
- 77% with a decline in memory score of 20% or more reported memory was the same or better
- When looking at declines in wealth, those who were unaware had significantly larger declines

COGNITIVE DECLINE AND FINANCIAL DECISIONS

1807



Mazzonna and Peracchi, *JPE*, 2024.



Thank You



Research panel: Is sustainability a cost or a benefit? Why it matters what you measure; Steve Sexauer (SDCERA), chair

Real Effects of Environmental Activist Investing, Lakshmi Naaraayanan (London Business School)

Designing ESG Benchmarks, Natalia Kovrijnykh (Arizona State U.)

ESG and the Conditional Price of Risk, Seth Pruitt (Arizona State U.)

The Real Effects of Environmental Activist Investing

S.Lakshmi Naaraayanan (London Business School)

Kunal Sachdeva (University of Michigan)

Varun Sharma (Indiana University)

February 2026

KKCFR-CAIA Conference, UC San Diego

What is it and why is it important?

- Shareholders engaging with the board to improve corporate environmental behaviors
- Driven by non-pecuniary benefits, differs from investor activism that aims to improve financial and operational performance
- Alternative to disinvestment campaigns, which are increasing in popularity and may come at lower future expected returns

Question: Does environmental activism have any real effects? What are the externalities? And, how do firms respond?

The Real Effects of Environmental Activist Investing

[A] Improve Firm's Environmental Impact

- Toxic Chemical Releases, Stack-air Emissions, Greenhouse Gas

[B] Generate Positive Externalities on Local Economies

- Cancer-causing pollution, Improvements in Air Quality, Reduce Intensity

[C] Firms Taking Steps to Achieve These Changes

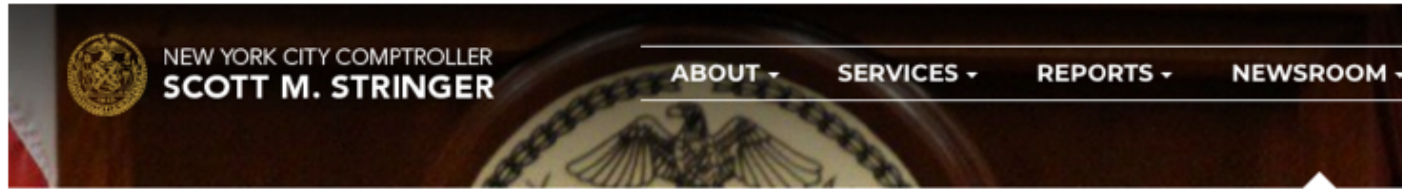
- Waste Management, Abatement Initiatives, Capital Expenditures

[D] Decrease in Financial Performance

- Lower Operational Efficiency and Profitability

» *Investors delegate their pro-social preferences onto firms*

Boardroom Accountability Project



[Newsroom](#) / [Press Releases & Statements](#) / [Comptroller Stringer, NYC Pension Funds Launch Nation...](#)

Comptroller Stringer, NYC Pension Funds Launch National Campaign To Give Shareowners A True Voice In How Corporate Boards Are Elected

NOVEMBER 6, 2014

New York City Pension Funds File [75 Proxy Access Shareowner Proposals](#) to Kick Off the Boardroom Accountability Project

NEW YORK, NY – On Thursday, New York City Comptroller Scott M. Stringer, on behalf of the [\\$160 billion](#) New York City Pension Funds, announced a [groundbreaking initiative](#) to give shareowners the right to nominate directors at U.S. companies using the corporate ballot. By submitting proxy access shareowner proposals to [75 companies at once](#), the New York City Pension Funds [are taking a major first step to roll out proxy access across the market](#). The resolutions, known collectively as the Boardroom Accountability Project, seek to give shareowners a choice in the election of directors of publicly held companies.

The New York Times

Effort Begins for More Say on Directors

By Gretchen Morgenson

Nov. 5, 2014



“Resolutions were filed at companies where we see risks associated with climate change, board diversity and excessive CEO pay. **Especially when it comes to the environment, business as usual is no longer an option.** To effect true change, you need the ability to hold entrenched and unresponsive boards accountable and that is what we are seeking to do”

-Scott M. Stringer, New York City Comptroller

Voice vs. Exit

Previous literature has focused on negative-selection (divestment campaigns). However, environmental activist investing may play an important tool to change corporate environmental behaviors:

- Reduction in cancer-causing pollution and greenhouse gas emissions through preventative efforts
- Important positive effects on local economies
- Abatement initiatives, capital expenditures, no change to production
- Suggestive that investors can delegate pro-social preferences

Engagement is an important tool in addressing climate change risks!

Your Support Has Been Vital

Your support has been vital in the development of this paper

- Media Coverage
 - Financial Times
 - International Pensions Europe
- Recent Awards
 - Moskowitz Prize, Best Paper on Socially Responsible Investing
 - European Investment Forum, Research Award for Best Paper
 - Best Paper in Corporate Finance and Financial Institutions at the FMA European Conference
 - Semi-finalist, John L. Weinberg/IRRCI Research Paper Award

Designing Sustainable Benchmarks

Anil Kashyap
Chicago Booth

Natalia Kovrijnykh
Arizona State University


Anna Pavlova
London Business School

KKCFR-CAIA Conference, February 2026

Overview

- How should fund investors concerned with climate change incentivize fund managers to invest according to environmental principles?
 - What should a benchmark for asset managers in a sustainable fund look like?
- What does “concerned with climate change” mean exactly and what do ESG ratings really measure?
 - There are two considerations—Earth to Firm and Firm to Earth—that differ conceptually and empirically
 - What investors care about matters for the investment strategy and compensation structure of the fund managers

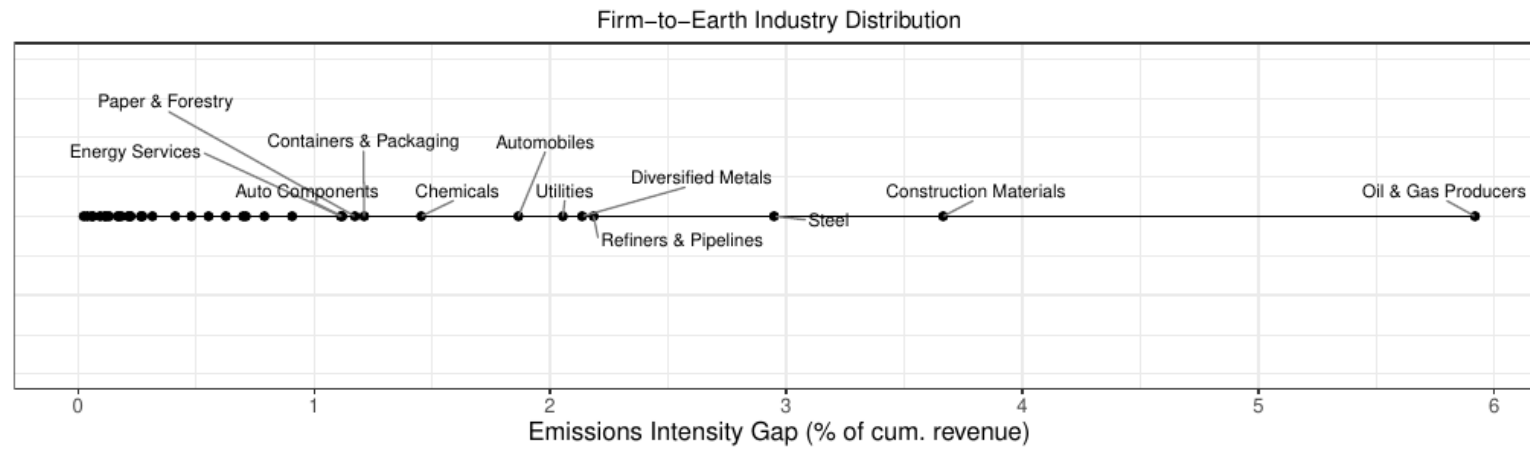
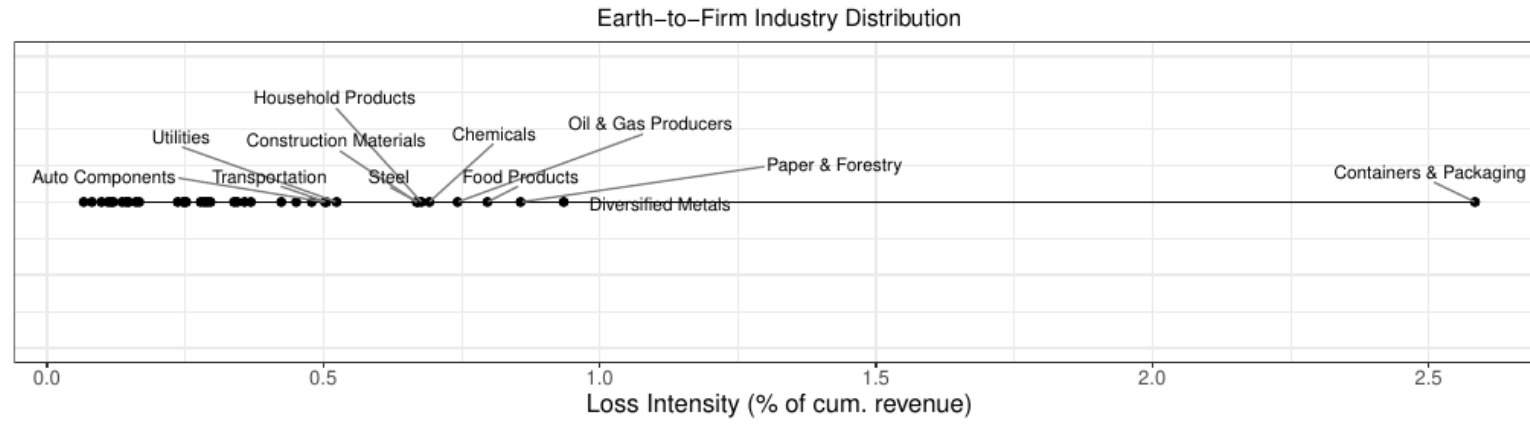
Earth to Firm vs. Firm to Earth

- **Earth to Firm (EtoF)**: Climate change poses a business risk (“financial materiality”)
 - E.g., overall temperature rise, changes in transportation and energy costs, imposition of carbon taxes that affect suppliers, etc.
- **Firm to Earth (FtoE)**: Some investors may have an ethical concern about climate change and are willing to sacrifice returns in order to support companies working to avert it (“impact focus”)
- We measure **EtoF** as “loss intensity” and **FtoE** as “emissions intensity” using Morningstar data 

Summary of Empirical Results

- EtoF and FtoE measures identify different firms Rankings
 - rankings of industries (based on the median scores of firms within an industry) are different
- Industries with higher emissions have more within-industry dispersion of EtoF and FtoE measures
- Mutual fund prospectuses indicate that sustainable funds differ with respect to their objectives Classification Results
- Mutual funds that we classify as FtoE are more likely to exclude firms from their portfolios than EtoF funds Exclusions

EtoF vs. FtoE



Fund Classifications Based on Prospectuses

- Classifications: (1) EtoF, (2) FtoE, (3) Hybrid/Both, (4) Neither Classification Results
- Example: **Parnassus Core Equity Fund** (largest US ESG fund, AUM ~\$26B Dec 2025)

2025 Prospectus: *Sustainable business risk refers to the risk stemming from investing in companies with sustainable business practices. The Fund seeks to invest in quality companies with sustainable business practices and to avoid investments in companies that do not meet its quality expectations. The Adviser evaluates sustainable business factors primarily based on sector relevance and business conduct. Examples of factors the Adviser may consider in evaluating companies include but are not limited to: climate related risk, product safety and quality, human capital management, environmental impacts of operations and products, community and stakeholder impacts, supply chain practices and corporate governance. This may affect the Fund's exposure to certain companies or industries and cause the Fund to forego certain investment opportunities.*

Added “The Fund is fossil-fuel free” in September 2019 and removed in May 2024, but the fund has continued to exclude fossil-fuel stocks.

Insights from the Model

- The benchmark is optimal because it
 - allows investors to finetune the manager's incentives asset by asset
 - helps to align the manager's decisions with the investor's tastes
 - pushes the manager to tilt towards green assets even if they do not value greenness
- Green tilts
 - Benchmarks overweight greener firms, and more so in more brown industries
 - this leads to a larger reduction in the cost of capital (for new investments) for green firms in such industries
 - incentives to invest in green technologies are arguably most important in highly polluting industries
 - as our empirics suggests, there might be more scope for mitigation in more brown industries
- Exclusions can be optimal for FtoE funds, but not for EtoF funds
 - This contrasts with our empirical findings that some EtoF funds use exclusions

ADDITIONAL SLIDES

Data

- Firms' EtoF and FtoE measures:
 - **EtoF**: use Morningstar's *Low Carbon Transition Value at Risk* (LCT VaR) and *Physical Climate Risk Metrics* (PCRM)
 - LCT VaR (Transition Risk) – policy risk model that forecasts policy costs associated with the expected emissions projection
 - PCRM (Physical Risk) – expected direct and indirect damages to a company due to physical impacts of extreme climate events
 - Use the sum of the two divided by cumulative revenue as our EtoF measure (**loss intensity**)
 - **FtoE**: use Morningstar's *Greenhouse Gas (GHG) Emission Projections*
 - Budgeted emissions gap – difference between a firm's cumulative expected emissions projection (through 2050) for scope 1, 2 and 3 upstream GHG emissions and its cumulative budgeted emissions (under IPR Net Zero assumptions)
 - Use the gap divided by cumulative revenues as our FtoE measure (**emissions intensity gap**)
- Mutual funds:
 - U.S. funds that satisfy Morningstar's *Sustainable Investment Overall* criteria (307 funds)
 - European Union Sustainable Financial Disclosure Regulation (SFDR) Article 9 funds —“dark green” or impact-related (316 funds)

EtoF vs. FtoE Rankings

- Construct EtoF/FtoE ranks based on industry median scores
- Industries with highest ranks are different:

GICS Industry	EtoF Rank	FtoE Rank	GICS Industry	FtoE Rank	EtoF Rank
Containers & Packaging	1	9	Oil & Gas Producers	1	5
Diversified Metals	2	5	Construction Materials	2	8
Paper & Forestry	3	10	Steel	3	6
Food Products	4	15	Refiners & Pipelines	4	35
Oil & Gas Producers	5	1	Diversified Metals	5	2
Steel	6	3	Utilities	6	10
Chemicals	7	8	Automobiles	7	22
Construction Materials	8	2	Chemicals	8	7
Household Products	9	18	Containers and Packaging	9	1
Gas Utilities	10	6	Paper & Forestry	10	3

- Correlation between FtoE and EtoF scores: 0.64
 - Between FtoE and Transition Risk: 0.65
 - Between FtoE and Physical Risk: 0.35

Back

Classification Results

	United States		European Union	
	Count	Size (bn USD)	Count	Size (bn USD)
EtoF	67	85.26	40	22.30
FtoE	85	66.03	200	115.59
Hybrid	142	87.06	67	30.54
Neither	13	4.07	9	0.41

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Exclusions

- 21% of US funds use exclusions
 - of these funds, 69% are FtoE, 22% are Hybrid, 9% are EtoF
- 10% of EU funds use exclusions
 - of these funds, 42% are FtoE, 33% are Hybrid, 25% are EtoF

Back

ESG and the Conditional Pricing of Risk

Laura Lindsey¹ Seth Pruitt¹ Christoph Schiller²

¹Arizona State University
W.P. Carey School of Business

²The Ohio State University
Fisher College of Business

Executive Summary: Reframing ESG as Risk Information, Not Return Generation

THE ALPHA MIRAGE

0

ESG characteristics do not define a new priced factor. Confidence intervals for ESG-specific factors cross zero across all providers (Asset4, KLD, MSCI, RepRisk, Sustainalytics).

THE BETA REALITY

$p < 0.01$

ESG does refine estimates of exposure to existing risks. Highly significant F-tests show ESG explains variation in conditional betas (Value, Size, Profitability).

THE DISAGREEMENT PARADOX



Raters agree on rankings (positive correlation) but disagree on risk signals. Positively correlated E-scores can imply opposite economic loadings.

THE SCREENING OPPORTUNITY



Negative screening improves ESG scores without hurting Sharpe ratios. The “ESG-efficient frontier” is effectively flat.

Methodology: Moving Beyond Static Regressions to Conditional Beta

The Framework

Instrumented Principal Component Analysis (IPCA)

Unlike standard models (Static Beta), IPCA allows risk exposure to vary over time based on firm characteristics.

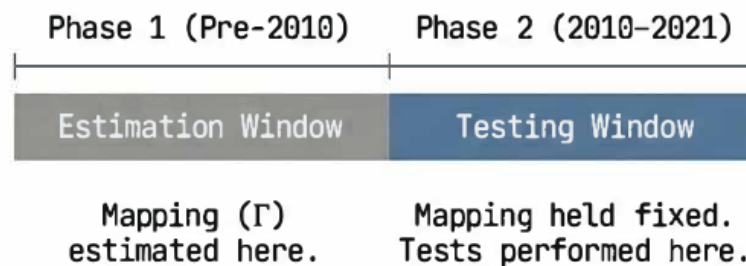
$$r_{n,t+1} = \beta'_{n,t} f_{t+1} + \epsilon_{n,t+1}$$

$$\text{where } \beta_{n,t} = \Gamma' z_{n,t}$$

↖
Firm Characteristics
(inc. ESG)

Rigorous Design

Out-of-Sample Estimation (OOS)



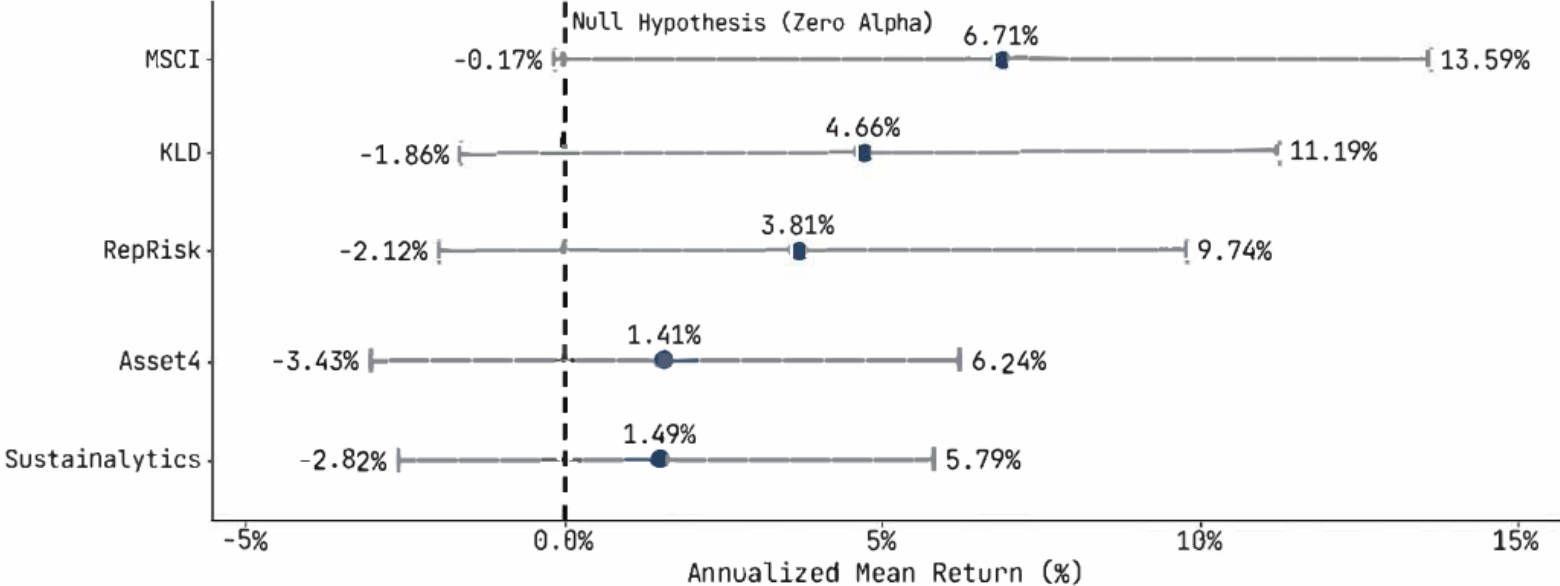
Data Universe

7 Providers: MSCI, Asset4, KLD, RepRisk, Sustainalytics, S&P, Trucost

50 Non-ESG Characteristics (Jensen et al., 2023)

The Search for Alpha: ESG Does Not Define a Priced Factor

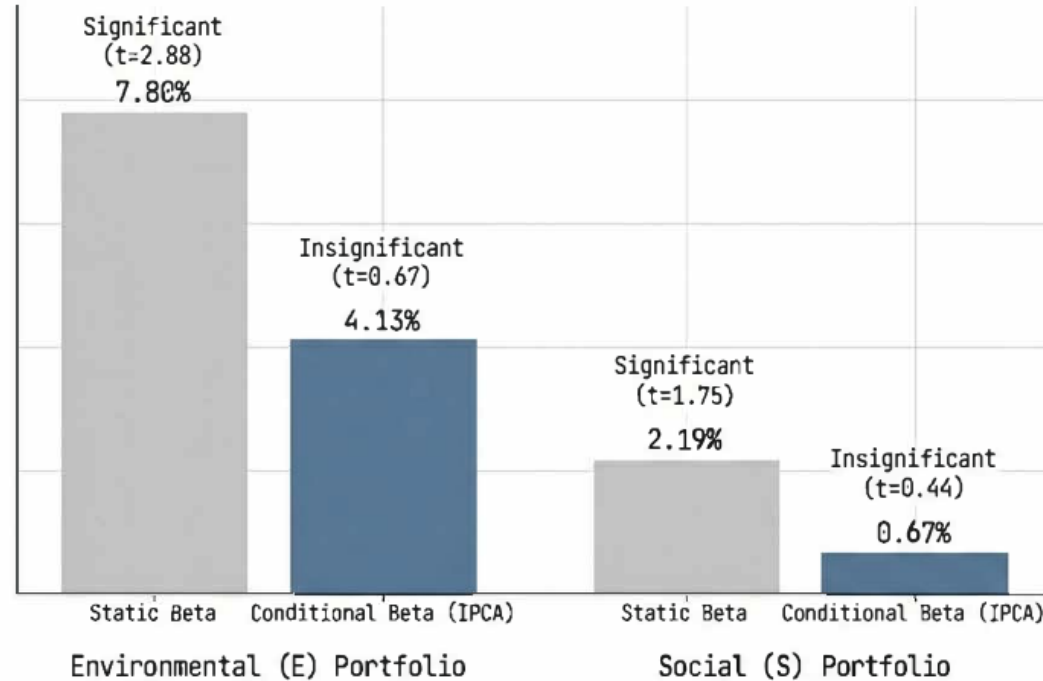
95% Confidence Intervals of ESG-Specific Factor Returns (Table II)



Result: We fail to reject the null hypothesis. Individual ESG scores do not capture a priced component orthogonal to existing factors.

Re-evaluating the 'Greenium': Alpha Disappears Under Conditional Scrutiny

Comparison of Alpha estimates: Standard Static Models vs. Conditional IPCA Model (Table III)



Sharpe Ratio Collapse

When moving from static to conditional risk models, the 'E' Portfolio Sharpe Ratio drops from 1.15 to 0.19.

Takeaway: Previously documented ESG alphas likely reflect omitted time-varying risk exposures (Beta), not true mispricing.

ESG as Information: Refining Exposure to Existing Risks

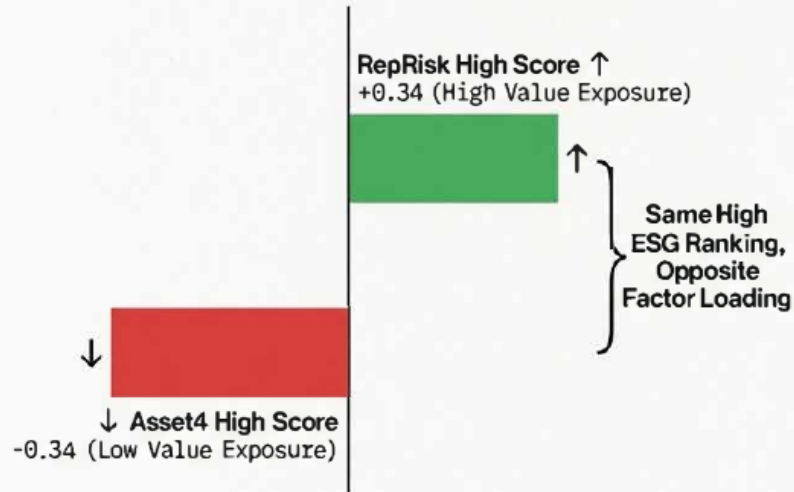
Joint Significance F-Tests (p-values) for ESG explaining Conditional Beta (Table IV)

	Topline	E	S	G
Asset4	0.00	0.00	0.00	0.00
KLD	0.00	0.00	0.14	0.14
MSCI	0.00	0.00	0.00	0.00
RepRisk	0.00	0.00	0.00	0.00
Sustainalytics	0.00	0.00	0.00	0.00
Trucost	0.00	0.00	0.00	0.00

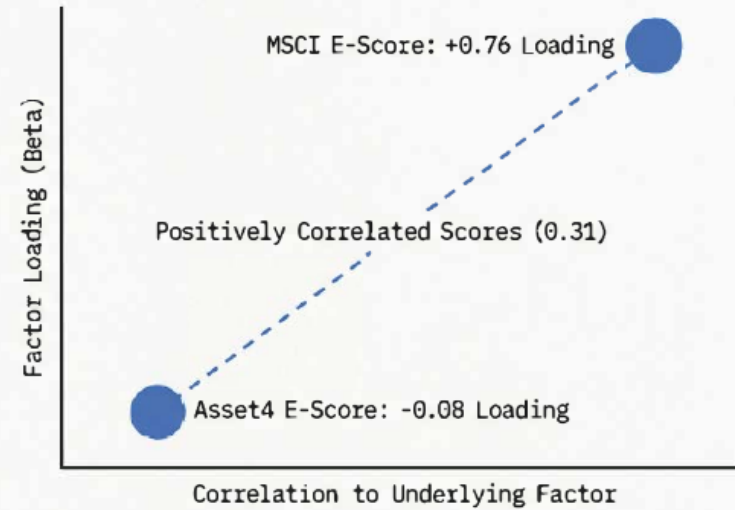
- **Headline Finding:** We reject the null that ESG has zero relationship to Beta.
- **Implication:** ESG scores contain significant information about firms' exposure to Size, Value, and Profitability factors.

The Disagreement Paradox: Correlated Scores, Divergent Economic Signals

Disagreement on Value Risk



Disagreement on Environmental Risk



Takeaway: You cannot simply swap ESG providers. Doing so fundamentally alters the portfolio's implied economic bets.

Negatively-screened portfolios have similar Sharpe ratios

ESG measure	Mean	Time-Series C.I.	Placebo C.I.	Avg N_t	Min N_t
Tangency	16.33	(11.40, 21.25)		1016	892
Asset4	14.01	(9.23, 18.79)	(13.49, 17.66)	632	547
KLD	16.87	(12.00, 21.74)	(13.47, 17.06)	651	506
MSCI	15.87	(10.79, 20.94)	(13.76, 17.24)	668	575
RepRisk	15.91	(9.99, 21.83)	(13.69, 17.77)	633	551
S&P	15.82	(10.80, 20.84)	(14.97, 16.73)	886	701
Sustainalytics	15.61	(10.27, 20.94)	(14.18, 17.37)	737	631

The “ESG-efficient frontier” is effectively flat

Strategic Implications for Quantitative Allocation

- 01. Stop Chasing ESG Alpha.**
There is no evidence of a consistent 'Greenium' or ESG-specific priced factor once conditional risk is accounted for.
- 02. Use ESG for Risk Precision.**
Incorporate ESG data to refine conditional beta estimates (specifically for Value and Size factors), not to predict residual returns.
- 03. Mind the Provider Risk.**
Due to economic disagreement, investment committees must select one provider and stick to it. Mixing signals creates unintended factor bets.
- 04. Implement with Confidence.**
Negative screening is a safe implementation route. It satisfies stakeholder requirements without dragging down the Sharpe ratio.

"ESG characteristics do not define a new risk; they help us better understand the risks we already know."