

Does Socially Responsible Investing Change Firm Behavior?

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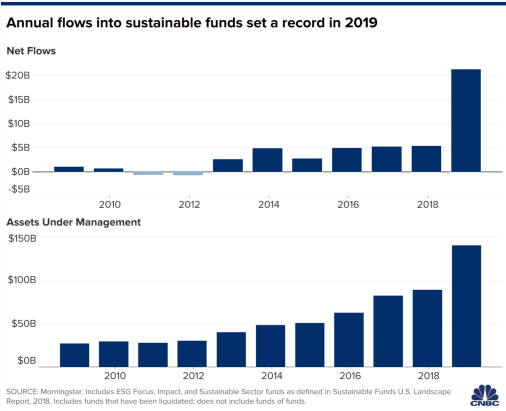
June 4, 2022

Intro

Renewed debate about the objective function of firms & funds

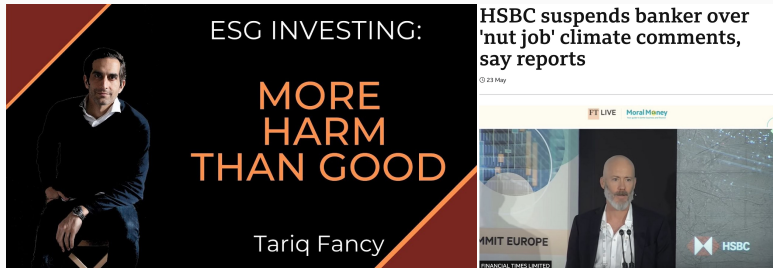
- Friedman 1970: Managers should maximize shareholder value
 - Give profits to investors who can use it to support other goals or tax profits and use that to make impact
- Hart and Zingales 2017:
 - Firms should maximize shareholder/stakeholder welfare
 - Institutional investors should pursue *environmental* and *social* policies consistent with the preferences of their investors
- The debate between these two views is ongoing

Renewed debate about the objective function of firms & funds



- Clear investors care about Socially Responsible Investing (SRI)

Renewed debate about the objective function of firms & funds



- But, unclear whether SRI is effective *in practice*

RQ: Do SRI funds generate real effects?

- While SRI funds are growing in size and popularity, not clear what they actually do
- **We examine (1) portfolio choices and (2) real outcomes**
- What should we expect? Three main possibilities:
 1. SRI funds are all talk (“greenwashing”)
 2. SRI funds select “green” companies, but do not change corporate behavior
 3. SRI funds actively improve corporate behavior

This paper: Selection, not treatment

- SRI funds *select* better behaved companies:
 1. that pollute less and invest more in green technology
 2. have better employee satisfaction
 3. have better workplace safety
 4. have better gender diversity on the board
- BUT, SRI funds do not *change* firm SRI behavior:
 1. no significant improvement in pollution abatement investments
 2. no significant reduction in pollution
 3. no improvement in employee and/or customer satisfaction
 4. no improvement in workplace safety
 5. no improvement in diversity on the board
- NEW RESULTS: What is the mechanism?

Background

Fast growing literature on SRI

- Many papers on the investment side of things...
 - Gantchev, Giannetti and Li (2022)
 - Berk and van Binsbergen (2021)
 - Hartzmark and Sussman (2019)
 - Davies and van Wesep (2018)
 - Hart and Zingales (2017)
 - Riedl and Smeets (2017)
 - Białkowski and Starks (2016)
 - Benson and Humphrey (2007)
 - Geczy, Stambaugh, Levin (2005)

Fast growing literature on SRI

- Institutional ownership (not just SRI) is positively associated with SRI outcomes
 - Dyck, Lins, Roth and Wagner (2019)
 - Azar, Duro, Kadach, and Ormazabal (2020)
 - Chen, Dong, and Lin (2020)
- SRI conscious investors sell firms following negative news coverage of firms' SRI policies
 - Gantchev, Giannetti and Li (2022)

Fast growing literature on SRI



- Growing concern about meaningfulness of ESG ratings
 - Berg, Fabisik, and Sautner (2022)
 - Berg, Kolbel, and Rigobon (2022)
 - Berg, Kolbel, Pavlova, Rigobon (2022)

Methodology

Definition of an SRI fund

- Can be difficult to define what's an SRI fund
- We take the union of three lists: Bloomberg ESG-fund flag, Morningstar Socially Conscious fund list, Forum for Sustainable and Responsible Investment

Selection

- For each outcome, we examine two different analyses
- First we examine association between SRI investments and firm SRI behavior with OLS regressions with year FE
- If there is a relation, it could be from multiple channels:
 1. SRI funds could invest in firms that already behave in a responsible manner
 2. SRI investment could *cause* a change in firms' behavior

Identifying the Effect of SRI funds

Problem

- Fund holdings are endogenous:
 1. Firm characteristics jointly affect ownership and governance
(*omitted variable*)
 2. Different firm policies attract different types of investors
(*reverse causality*)

Idea

- Exogenous shock to SRI fund capital from exogenous variation in Morningstar fund ratings

Morningstar star ratings

- Morningstar assigns all funds a “star” rating from 1-5
- Stars assigned based on (3-5-10 year) risk-adjusted returns ranking within a fund category
- Difficult for funds to manipulate their rating (Kim 2021)
- Reuter & Zitzewitz (Forthcoming) show that stars affect flows
- The discontinuities in stars lead to sharp discontinuities in capital allocation

Morningstar Ratings

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Medalist Funds

These funds receive our analysts' highest ratings: Gold, Silver, or Bronze.

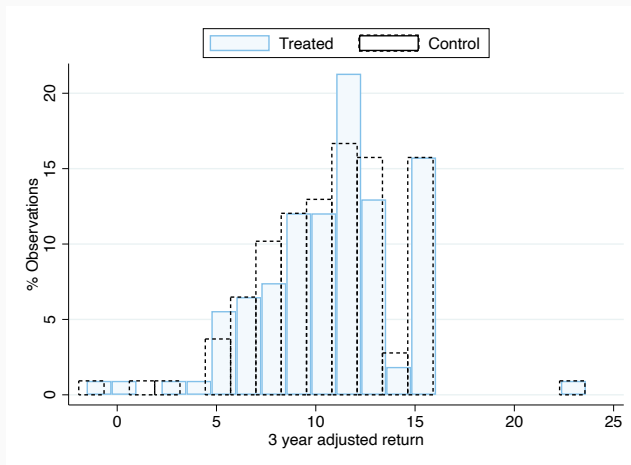
Name	Ticker	Morningstar Category	Morningstar Rating	Morningstar Analyst Rating	Total 1-Year Return (%)	Total 3-Year Return (%)	Total 5-Year Return (%)
Western Asset Core Plus Bond I	WACPX	Intermediate Core-Plus Bond	★★★★★	Gold	5.40	4.31	3.74
Western Asset Core Bond I	WATFX	Intermediate Core Bond	★★★★★	Gold	5.95	4.36	3.52
Wasatch Small Cap Growth Investor	WAAEX	Small Growth	★★★★	Gold	-11.08	8.61	5.52
Wasatch Core Growth	WGROX	Small Growth	★★★★★	Gold	-12.13	5.25	5.40
VY* T. Rowe Price Capital Apprec S	ITCSX	Allocation--50% to 70% Equity	★★★★★	Gold	-2.15	6.34	6.87
VY* JPMorgan Mid Cap Value I	IJMX	Mid-Cap Value	★★★★	Gold	-24.84	-5.95	-1.39
Vanguard Wellington™ Inv	VWELX	Allocation--50% to 70% Equity	★★★★★	Gold	-2.79	4.20	5.21
Vanguard Wellesley® Income Inv	VWINX	Allocation--30% to 50% Equity	★★★★★	Gold	0.94	4.22	4.57
Vanguard Total Intl Stock Index Inv	VGTSX	Foreign Large Blend	★★★	Gold	-16.64	-2.61	-0.74
Vanguard Tax-Managed Small Cap Adm	VTMSX	Small Blend	★★★★	Gold	-25.30	-5.09	0.47
Vanguard Tax-Managed Capital App I	VTICX	Large Blend	★★★★★	Gold	-7.69	4.88	6.49
Vanguard Tax-Managed Balanced Adm	VTIMFX	Allocation--30% to 50% Equity	★★★★★	Gold	-1.93	4.33	4.88
Vanguard Small Cap Index Inv	NAESX	Small Blend	★★★★★	Gold	-23.44	-3.39	0.30
Vanguard PRIMECAP Inv	VPMCX	Large Growth	★★★	Gold	-7.90	6.14	7.52
Vanguard PRIMECAP Core Inv	VPCCX	Large Blend	★★★	Gold	-11.38	3.15	5.60
Vanguard Mid Cap Index Institutional	VMCIX	Mid-Cap Blend	★★★★★	Gold	-16.63	-0.25	2.10
Vanguard Long-Term Tax-Exempt	VWLTX	Muni National Long	★★★★	Gold	4.62	4.58	3.70

Overview of our matched sample of funds

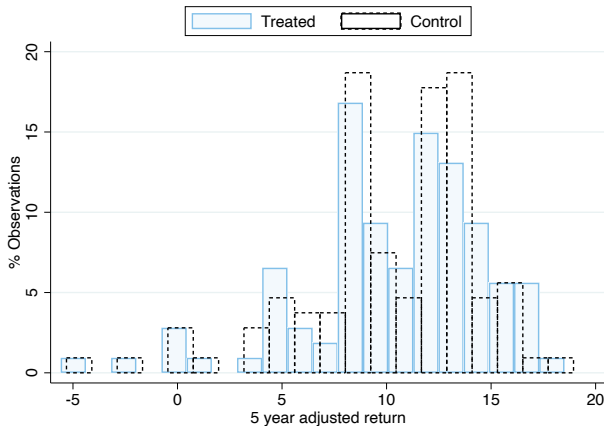
- We construct a matched set of SRI and control funds with near-identical returns but different star ratings

Variable	Treated Funds		Control Funds		Difference	t-stat
	Mean	St.Dev.	Mean	St.Dev.		
	(1)	(2)	(3)	(4)	(5)	(6)
MS Star Rating	3.88	0.65	2.88	0.65	1.00***	(11.28)
Fund Assets (\$M)	952.45	1395.67	894.92	1492.70	57.53	(0.29)
3 year MS Return	10.81	3.59	10.72	3.55	0.08	(0.17)
5 year MS Return	10.35	4.34	10.25	4.28	0.10	(0.16)
10 year MS Return	5.59	3.56	5.50	3.56	0.09	(0.19)
Turnover Ratio	0.33	0.34	0.43	0.82	-0.10	(-1.13)
Management Fee	0.47	0.33	0.48	0.29	-0.01	(-0.21)
Expense Ratio	0.75	0.33	0.83	0.37	-0.08	(-1.58)
Observations	108		108			

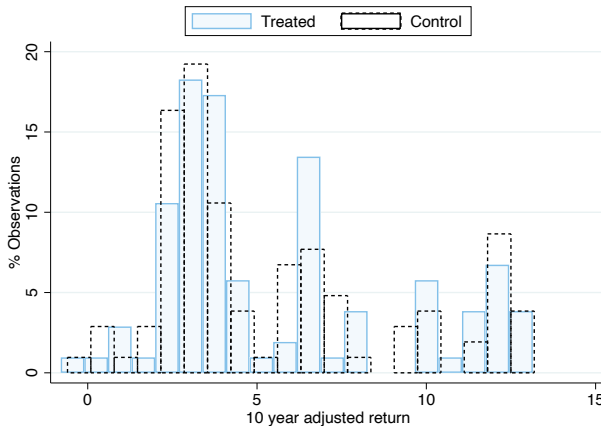
Morningstar Ratings



Morningstar Ratings



Morningstar Ratings

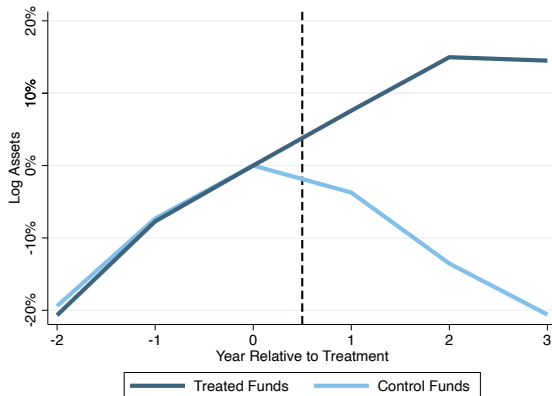


First Stage: Morningstar change affects SRI ownership

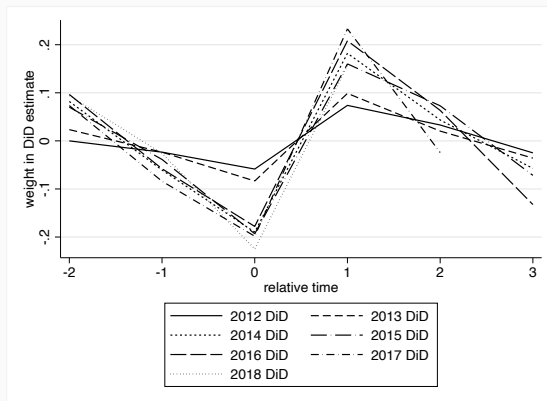
- Look at funds' AUM for ± 3 years relative to cohort-year

	log(AUM) (1)	Falsification log(AUM) (2)	Residualized log(AUM) (3)
Treated \times Post	0.229*** (0.072)		0.213*** (0.064)
Placebo \times Post		0.008 (0.059)	
Observations	1,161	1,778	1,088
Adjusted R-squared	0.909	0.918	0.923
Fund \times Cohort FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Parallel Trends



Sun-Abraham Weights



- Results go through with S-A weighting

Overview of our DiD methodology

- We compute the fitted value of the first stage for fund assets, and multiply that change by the fund's *ex ante* holdings
- Formally, we examine DiD regressions in a firm-year panel where the treatment is continuous:
 1. 0 for firms never held by a treated SRI fund
 2. 0 in pretreatment years for firms held by any treated SRI fund
 3. >0 in post-treatment years for firms held by at least one treated SRI fund

Results

Analyses: selection or treatment?

- For each real outcome, we present two sets of results:
 1. Cross-sectional estimates - these examine selection
 2. DiD estimates - these examine treatment
- By examining both, we hope to pin down whether:
 1. SRI funds are all talk (they do nothing)
 2. SRI funds hold “good” companies, but do not act
 3. SRI funds actively improve corporate SRI behavior

Selection

	Total releases (1)	Air (2)	Water (3)	Land (4)	Abatement (5)	logAbatements (6)	CCExposure (7)
<i>SRI Investment</i>	-0.245 (0.094)	-0.251 (0.092)	-0.684 (0.162)	-0.342 (0.286)	0.022 (0.012)	0.032 (0.040)	-0.061 (0.023)
Unadjusted p	0.010***	0.007***	0.001***	0.233	0.067*	0.421	0.009***
Romano-Wolf p	0.081*	0.077*	0.004***	0.435	0.229	0.435	0.081*
Observations	3,759	3,584	1,885	1,222	3,579	1,526	15,004
Adjusted R-squared	0.005	0.006	0.038	-0.000	0.015	0.013	0.002
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- SRI funds hold firms that pollute less
- Results still present after Romano-Wolf correction

Selection

	Overall (1)	Careeropps (2)	Srleader (3)	Worklife (4)	Culture (5)	CEO (6)	Outlook (7)	Hospitalization (8)	Amputation (9)
<i>SRI Investment</i>	0.004 (0.006)	0.008 (0.006)	0.006 (0.007)	0.006 (0.006)	0.013 (0.007)	0.007 (0.004)	0.012 (0.004)	-0.042 (0.014)	-0.009 (0.007)
Unadjusted p	0.511	0.179	0.390	0.319	0.082*	0.058*	0.001***	0.002***	0.192
Romano-Wolf p	0.778	0.642	0.697	0.682	0.452	0.387	0.078*	0.091*	0.642
Observations	12,113	12,038	12,032	12,042	10,701	11,566	10,628	1,251	1,251
Adjusted R-squared	0.035	0.027	0.013	0.011	0.012	0.010	0.014	-0.001	-0.001
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- SRI funds hold firms that have happier employees
- Results still weakly present after Romano-Wolf correction

Selection

	Gender Div. (1)	Racial Div. (2)
<i>SRI Investment</i>	0.006 (0.001)	0.000 (0.002)
Unadjusted p	0.001***	0.997
Romano-Wolf p	0.025**	0.997
Observations	15,624	9,870
Adjusted R-squared	0.115	0.005
Year FE	Yes	Yes

- SRI funds hold firms that have higher gender diversity
- Results still present after Romano-Wolf correction

Selection

	(1) KLD ES_Index	(2) KLD Env	(3) KLD Soc
<i>SRI Investment</i>	0.018 (0.005)	0.004 (0.001)	0.014 (0.005)
Unadjusted <i>p</i>	0.001***	0.001***	0.004***
Romano-Wolf <i>p</i>	0.001***	0.001***	0.007***
Observations	11,780	11,780	11,780
Adjusted R-squared	0.100	0.088	0.127
Year FE	Yes	Yes	Yes

- SRI funds hold firms that have higher ESG scores
- Results still present after Romano-Wolf correction

Selection

- Results suggest SRI funds invest in accordance with their principles. They hold companies:
 1. that pollute less and invest more in green technology
 2. have better employee satisfaction
 3. have better workplace safety
 4. have better gender diversity on the board
- They also hold companies that have better ESG scores

Treatment

	Total releases (1)	Air (2)	Water (3)	Land (4)	Abatement (5)	logAbatements (6)	CCExposure (7)
$\Delta SRI Investment$	0.030 (0.042)	0.018 (0.041)	0.077 (0.064)	0.034 (0.098)	0.013 (0.016)	0.019 (0.040)	-0.000 (0.023)
MDES	±0.119	±0.116	±0.181	±0.278	±0.046	±0.114	±0.065
Unadjusted p	0.481	0.658	0.230	0.729	0.420	0.628	0.998
Romano-Wolf p	0.959	0.985	0.811	0.985	0.959	0.985	0.996
Observations	3,728	3,555	1,869	1,183	3,551	1,456	14,973
Adjusted R-squared	0.887	0.892	0.888	0.906	0.508	0.718	0.857
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- SRI funds do not *change* pollution in their portfolio companies
- Non-results not due to low power

Treatment

	Overall (1)	Careeropps (2)	Srleader (3)	Worklife (4)	Culture (5)	CEO (6)	Outlook (7)	Hospitalization (8)	Amputation (9)
$\Delta SRI \widehat{Investment}$	0.015 (0.011)	0.019 (0.011)	0.011 (0.011)	0.010 (0.010)	0.016 (0.013)	0.013 (0.006)	0.014 (0.008)	0.048 (0.034)	-0.028 (0.029)
MDES	±0.030	±0.030	±0.032	±0.028	±0.035	±0.017	±0.024	±0.097	±0.081
Unadjusted p	0.150	0.071*	0.336	0.303	0.194	0.026**	0.088*	0.159	0.333
Romano-Wolf p	0.665	0.563	0.774	0.774	0.710	0.458	0.589	0.665	0.774
Observations	12,017	11,939	11,933	11,944	10,592	11,451	10,512	963	963
Adjusted R-squared	0.364	0.330	0.333	0.371	0.401	0.343	0.338	0.823	-0.097
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- Some evidence SRI leads to better employee conditions
- Results do not survive Romano-Wolf correction
- Non-results not due to low power

Treatment

	Gender Div. (1)	Racial Div. (2)
$\Delta SRI \widehat{Investment}$	0.005 (0.001)	0.002 (0.002)
MDES	± 0.004	± 0.004
Unadjusted p	0.002***	0.295
Romano-Wolf p	0.368	0.774
Observations	15,610	9,779
Adjusted R-squared	0.773	0.773
Year FE	Yes	Yes
Firm FE	Yes	Yes

- Some evidence SRI leads to higher gender diversity
- Results do not survive Romano-Wolf correction
- Non-results not due to low power

Treatment

	(1) KLD ES_Index	(2) KLD Env	(3) KLD Soc
$\Delta \widehat{SRI\ Investment}$	-0.021 (0.012)	-0.014 (0.003)	-0.006 (0.011)
Unadjusted p	0.082*	0.001***	0.555
Romano-Wolf p	0.113	0.001***	0.558
MDES	± 0.034	± 0.007	± 0.031
Observations	11,637	11,637	11,637
Adjusted R-squared	0.555	0.547	0.527
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

- If anything, SRI leads to *lower* ESG scores at portfolio firms!

SRI Funds: Selection, not treatment. But why?

- Results suggest SRI funds are all selection, no treatment
- Why?
 - What are funds' incentives?
 - Do they engage?
- Simply holding “green” and divesting “brown” firms may be insufficient to change behavior – Davies and Van Wesep (2018); Berk and van Binsbergen (2022)

Mechanism: What are the incentives?

New Table: Relation between ESG Scores and Real Outcomes

	(1)	(2)	(3)	(4)
	Dependent Variable = KLD ESG Score by Firm-Year			
Sorting Variable:	Total Releases	Abatements	Gender Div.	OverallRating
Firm SRI Quintile	0.032** (0.014)	0.021 (0.015)	0.152*** (0.006)	0.079*** (0.008)
ΔFirm SRI Quintile	-0.009 (0.007)	0.011 (0.010)	-0.003 (0.003)	-0.018*** (0.005)
Observations	2,653	10,022	9,602	6,952
Adjusted R-squared	0.067	0.077	0.215	0.105
Year FE	Yes	Yes	Yes	Yes

- Flows respond to ESG scores (Hartzmark and Sussman (2019))
- We show: ESG scores respond to *levels*, not *changes*
- Suggests SRI funds have little incentive to improve firm behavior

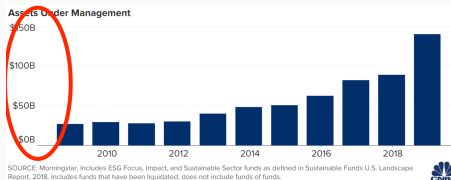
Mechanism: What are the observable actions?

New Table: Do they change ESG proposal outcomes?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Number of ES Items	Number of E Items	Number of S Items	Number of ES Items Passed	Fraction of ES Items Passed	ES Items by SRI Funds	ES Items Withdrawn	Fraction of ES Items Withdrawn
$\Delta SRI Investment$	0.001 (0.006)	0.003 (0.005)	-0.003 (0.003)	-0.002** (0.001)	-0.000** (0.000)	0.006 (0.006)	-0.001 (0.006)	-0.012 (0.009)
Observations	16,192	16,192	16,192	16,192	15,761	9,119	9,119	3,022
Adjusted R-squared	0.461	0.432	0.278	0.008	0.043	0.256	0.113	0.199
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- SRI funds do not engage in a noticeable way

Other Checks



- We are looking at a relatively narrow set of capital flows and time periods \implies external validity?
- SRI is still relatively new... shocks are small
- SRI is still relatively new... change may take time

Longer-Horizon Tests

Relative to treatment year:	Total Releases		Overall Rating		Gender Div.	
	$t + 2$	$t + 3$	$t + 2$	$t + 3$	$t + 2$	$t + 3$
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta SRI \widehat{Investment}$	0.036 (0.050)	0.015 (0.062)	0.008 (0.011)	0.003 (0.011)	0.003 (0.001)	0.002 (0.002)
MDES	±0.141	±0.174	±0.031	±0.030	±0.004	±0.004
Unadjusted p	0.450	0.771	0.636	0.503	0.007***	0.159
Romano-Wolf p	0.665	0.863	0.764	0.764	0.150	0.569
Observations	3,231	2,744	10,588	9,070	13,307	10,997
Adjusted R-squared	0.888	0.886	0.380	0.395	0.781	0.793
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes

- No evidence of bigger changes in the longer term

Conclusion

Conclusions: SRI does not change corporate behavior

- SRI funds invest differently than non-SRI funds
 - Significantly more likely to hold green companies
 - Offer investors a portfolio consistent with their stated objective
- But SRI does not alter real outcomes