

Is ESG a Sideshow? ESG Perceptions, Investment, and Firms' Financing Decisions

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Motivation I

Sustainable investments are a fast-growing asset class

- According to the United States Sustainable Investment Forum, US sustainable assets were valued at \$8.4 trillion in 2022
- Globally, total value of sustainable assets could reach \$53 trillion by 2025 ([European Commission, 2022](#))

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How do firms respond?

- Increased supply of capital or increase in share prices without changing fundamentals might lead companies to increase assets ([Baker et al., 2003](#); [Baker, 2009](#))

Motivation II

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Firms do not have to invest in negative NPV projects in order to take advantage of overvalued equity; instead issue equity and engage in financial transactions such as buying Treasury bills ([Baker and Wurgler, 2002](#))

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- ⇒ We obtain a comprehensive database of all changes made to Refinitiv ESG scores since March 25, 2017

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Must carefully assess what investors know, and when

- ⇒ We obtain a comprehensive database of all changes made to Refinitiv ESG scores since March 25, 2017
- Compare results using point-in-time (PIT) scores and scores from Refinitiv's standard (biased: restated and backfilled) database

Results Preview

Increases in E (and overall ESG) ratings associated with increase in equity issuance, decrease in net debt issuance of similar magnitude

- ⇒ But changes in E (ESG) ratings have no effect on non-cash asset accumulation or capital expenditures
 - Robust to firm, industry \times time fixed effects; various lag structures

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E ratings changes also affect firms' valuation as measured by Tobin's Q

- ⇒ Firms exploit higher non-fundamental equity valuations to rebalance their capital structures (issue equity to retire debt) without increasing the firm's overall investment or capital

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False inferences if using standard Refinitiv product instead of PIT data

- ⇒ Researchers might falsely infer that higher ESG ratings lead to firm's investment and positive asset accumulation

ESG Data

The overall ESG ratings from Refinitiv are percentile scores that measure a company's ESG performance relative to industry peers along three dimensions

- **E** measures firm's resource use, emissions, and innovation
- **S** scores the firm's performance in human rights, workforce, community, and product responsibility categories
- **G** constitutes firm management, shareholders, and corporate social responsibility campaigns

ESG Data

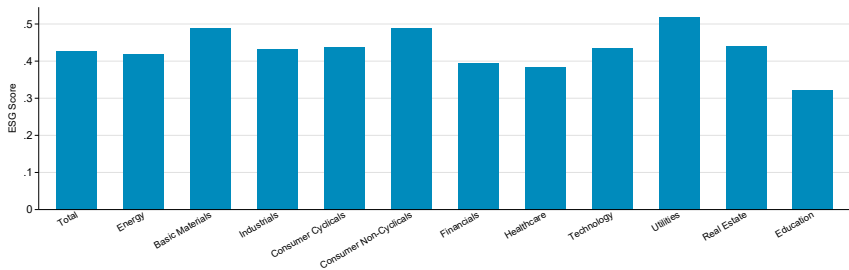
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We obtain a dataset of all changes made to ESG ratings between 2017 and 2023 to counteract problems encountered by [Berg et al. \(2020\)](#)

- PIT dataset includes the entire history of all reported values by Refinitiv, time-stamped to the moment they were made available to the market
- We are able to trace back the ESG scores that were originally available to investors at a given point in time, neither reclassified nor restated

ESG Ratings by Industry Group



ESG Rating Composition

Rating Differences Across Industries

ESG Ratings Regressions

In order to estimate the impact of ESG ratings (and individual pillar scores E, S and G) on debt and equity issuance, net asset growth, and firm valuation ratios, we use the following specifications:

$$Outcome_{i,q} = a + bESG_{i,q-2} + cX_{i,q-1} + f_i + \delta_{j(i),q} + u_{i,q} \quad (1)$$

- $Outcome_{i,q}$ is $EquityIssuance_{i,q}$, $NetDebtIssuance_{i,q}$, $NetAssetGrowth_{i,q}$, or $Tobin'sQ_{i,q}$
- $ESG_{i,q-2}$ is the PIT ESG score, lagged by two quarters
- $X_{i,q-1}$ is a lagged vector of control variables, namely *Profitability*, *Q*, and *Leverage*
 - ⇒ All variables are winsorized at the 1% level
- f_i is firm fixed effects and $\delta_{j(i),q}$ is industry \times time fixed effects (4)
 - ⇒ Three other regressions: either drop all fixed effects (1), include 2-digit SIC industry and time fixed effects (2), or firm and time fixed-effects (3)

ESG Ratings and Equity Issuance

	(1)	(2)	(3)	(4)	(5)	(6)
ESG	0.0065* (0.0036)	0.0047 (0.0075)	0.0215*** (0.0072)	0.0127** (0.0062)		
E					0.0141** (0.0059)	0.0112** (0.0049)
S					-0.0008 (0.0061)	-0.0034 (0.0057)
G					0.0014 (0.0031)	0.0019 (0.0031)
Profitability	-0.4772*** (0.0301)	-0.4455*** (0.0588)	-0.1920*** (0.0413)	-0.2325*** (0.0413)	-0.1923*** (0.0412)	-0.2324*** (0.0413)
Leverage	-0.0027 (0.0031)	-0.0022 (0.0028)	0.0643*** (0.0092)	0.0678*** (0.0101)	0.0650*** (0.0092)	0.0682*** (0.0101)
Assets	-0.0031*** (0.0006)	-0.0033*** (0.0010)	-0.0605*** (0.0060)	-0.0632*** (0.0065)	-0.0600*** (0.0059)	-0.0631*** (0.0064)
Q	0.0060*** (0.0005)	0.0065*** (0.0015)	0.0132*** (0.0012)	0.0130*** (0.0012)	0.0132*** (0.0012)	0.0130*** (0.0012)
Fixed Effects						
Year-month	N	Y	Y	N	Y	N
Firm	N	N	Y	Y	Y	Y
2-digit SIC	N	Y	N	N	N	N
YrMth*SIC	N	N	N	Y	N	Y
N	46,365	46,364	46,278	45,691	46,278	45,691
adj.R ²	0.1371	0.1438	0.2267	0.2138	0.2266	0.2138

ESG Ratings and Net Debt Issuance

	(1)	(2)	(3)	(4)	(5)	(6)
ESG	-0.0045 (0.0051)	-0.0040 (0.0031)	-0.0203*** (0.0055)	-0.0171*** (0.0054)		
E					-0.0180*** (0.0067)	-0.0132** (0.0057)
S					0.0038 (0.0054)	0.0001 (0.0059)
G					0.0011 (0.0051)	-0.0003 (0.0041)
Profitability	-0.0928** (0.0427)	-0.1064*** (0.0369)	0.0411 (0.0364)	0.0480 (0.0365)	0.0416 (0.0366)	0.0478 (0.0365)
Leverage	-0.0067* (0.0035)	-0.0066 (0.0057)	-0.1639*** (0.0172)	-0.1608*** (0.0150)	-0.1649*** (0.0171)	-0.1613*** (0.0149)
Assets	-0.0003 (0.0009)	-0.0001 (0.0007)	0.0218*** (0.0052)	0.0225*** (0.0053)	0.0212*** (0.0052)	0.0224*** (0.0053)
Q	-0.0015*** (0.0004)	-0.0018* (0.0011)	-0.0090*** (0.0012)	-0.0093*** (0.0012)	-0.0090*** (0.0012)	-0.0092*** (0.0012)
Fixed Effects						
Year-month	N	Y	Y	N	Y	N
Firm	N	N	Y	Y	Y	Y
2-digit SIC	N	Y	N	N	N	N
YrMth*SIC	N	N	N	Y	N	Y
N	46,365	46,364	46,278	45,691	46,278	45,691
adj.R ²	0.0045	0.0390	0.0862	0.0959	0.0863	0.0960

ESG Ratings and Asset Growth (excl. Cash)

	(1)	(2)	(3)	(4)	(5)	(6)
ESG	-0.0226*** (0.0045)	-0.0153*** (0.0052)	-0.0060 (0.0053)	-0.0072 (0.0050)		
E					-0.0015 (0.0044)	-0.0022 (0.0037)
S					-0.0022 (0.0059)	-0.0066 (0.0056)
G					0.0013 (0.0043)	0.0009 (0.0034)
Profitability	0.1076*** (0.0172)	0.0831*** (0.0293)	0.0620* (0.0366)	0.0033 (0.0305)	0.0620* (0.0366)	0.0029 (0.0305)
Leverage	-0.0139*** (0.0029)	-0.0129*** (0.0048)	-0.0350** (0.0145)	-0.0241** (0.0093)	-0.0350** (0.0145)	-0.0242** (0.0092)
Assets	0.0004 (0.0006)	-0.0004 (0.0006)	-0.0530*** (0.0058)	-0.0516*** (0.0053)	-0.0531*** (0.0058)	-0.0516*** (0.0053)
Q	0.0055*** (0.0005)	0.0055*** (0.0004)	0.0081*** (0.0007)	0.0076*** (0.0006)	0.0081*** (0.0007)	0.0076*** (0.0006)
Fixed Effects						
Year-month	N	Y	Y	N	Y	N
Firm	N	N	Y	Y	Y	Y
2-digit SIC	N	Y	N	N	N	N
YrMth*SIC	N	N	N	Y	N	Y
N	46,365	46,364	46,278	45,691	46,278	45,691
adj.R ²	0.0279	0.0672	0.1129	0.1586	0.1129	0.1586

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- Market perceptions related to the ESG qualities of a firm do not affect the firm's capital accumulation
- Rather, they have implications on the financing decisions of a firm
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- Higher ESG ratings associated with a subsequent increase in cash
- ⇒ Firms exploit fluctuation in market valuations not by investing in negative NPV projects but rather by issuing equity and engaging in financial transactions, such as buying Treasury bills
- Will firms exploit changes in equity valuations to shift their capital structures towards equity and away from debt? (Tobin's Q)

ESG Ratings and Tobin's Q

	(1)	(2)	(3)	(4)	(5)	(6)
ESG	1.0721*** (0.2488)	0.8951*** (0.2857)	0.0777 (0.1442)	0.0392 (0.1364)		
E					0.4222*** (0.1524)	0.3110** (0.1276)
S					-0.1411 (0.1406)	-0.0954 (0.1232)
G					-0.1509* (0.0784)	-0.1111 (0.0735)
Profitability	1.0258 (0.9947)	2.6108 (2.6139)	3.2967*** (0.6196)	2.8687*** (0.5923)	3.2855*** (0.6117)	2.8716*** (0.5894)
Leverage	-0.2128 (0.2045)	0.0725 (0.2330)	-0.3897** (0.1541)	-0.2624 (0.1646)	-0.3614** (0.1529)	-0.2492 (0.1642)
Assets	-0.3383*** (0.0358)	-0.2689*** (0.0372)	-0.7058*** (0.0979)	-0.7285*** (0.0922)	-0.6948*** (0.0959)	-0.7255*** (0.0916)
Fixed Effects						
Year-month	N	Y	Y	N	Y	N
Firm	N	N	Y	Y	Y	Y
2-digit SIC	N	Y	N	N	N	N
YrMth*SIC	N	N	N	Y	N	Y
N	46,365	46,364	46,278	45,691	46,278	45,691
adj.R ²	0.0590	0.2018	0.8389	0.8436	0.8393	0.8438

ESG Score Lags: Equity and Net Debt Issuance

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Equity Issuance						
ESG_{q-2}	0.0215*** (0.0072)	0.0127** (0.0062)	0.0306*** (0.0091)	0.0200*** (0.0069)	0.0271** (0.0120)	0.0180* (0.0090)
ESG_{q-4}			-0.0061 (0.0105)	-0.0037 (0.0088)	0.0029 (0.0123)	0.0069 (0.0112)
ESG_{q-6}					-0.0029 (0.0099)	-0.0078 (0.0098)
ESG_{q-8}					-0.0039 (0.0122)	0.0003 (0.0118)
N	46,278	45,691	39,457	38,930	27,725	27,313
adj.R ²	0.2267	0.2138	0.2207	0.2064	0.2076	0.1923
Panel B. Net Debt Issuance						
ESG_{q-2}	-0.0203*** (0.0055)	-0.0171*** (0.0054)	-0.0211*** (0.0070)	-0.0160** (0.0066)	-0.0221** (0.0093)	-0.0148* (0.0085)
ESG_{q-4}			-0.0055 (0.0079)	-0.0102 (0.0087)	-0.0117 (0.0097)	-0.0172* (0.0099)
ESG_{q-6}					0.0024 (0.0133)	-0.0016 (0.0120)
ESG_{q-8}					0.0028 (0.0117)	-0.0022 (0.0112)
N	46,278	45,691	39,457	38,930	27,725	27,313
adj.R ²	0.0862	0.0959	0.0826	0.0937	0.0844	0.0931
Fixed Effects						
Year-month	Y	N	Y	N	Y	N
Firm	Y	Y	Y	Y	Y	Y
YrMth*SIC	N	Y	N	Y	N	Y

One-Quarter Lag: Equity

One-Quarter Lag: Net Debt

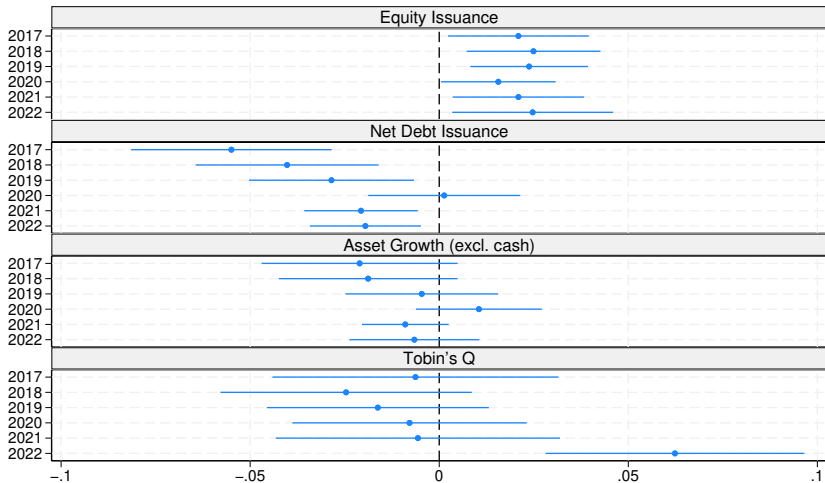
ESG Score Lags: Asset Growth and Tobin's Q

	(1)	(2)	(3)	(4)	(5)	(6)
Panel C. Asset Growth (Excl. Cash)						
ESG_{q-2}	-0.0060 (0.0053)	-0.0072 (0.0050)	-0.0039 (0.0072)	-0.0027 (0.0071)	-0.0078 (0.0088)	-0.0028 (0.0088)
ESG_{q-4}			-0.0034 (0.0063)	-0.0087 (0.0062)	-0.0025 (0.0071)	-0.0079 (0.0056)
ESG_{q-6}					-0.0104 (0.0100)	-0.0073 (0.0103)
ESG_{q-8}					0.0014 (0.0107)	-0.0033 (0.0110)
N	46,278	45,691	39,457	38,930	27,725	27,313
adj.R ²	0.1129	0.1586	0.1223	0.1696	0.1347	0.1734
Panel D. Tobin's Q						
ESG_{q-2}	0.0777 (0.1442)	0.0392 (0.1364)	0.0006 (0.1265)	-0.0358 (0.1212)	0.0100 (0.1280)	0.0036 (0.1216)
ESG_{q-4}			0.1975 (0.1535)	0.1677 (0.1412)	-0.0242 (0.1658)	-0.0409 (0.1384)
ESG_{q-6}					0.2107 (0.2090)	0.2582 (0.1798)
ESG_{q-8}					0.2426 (0.2133)	0.1792 (0.2052)
N	46,278	45,691	39,457	38,930	27,725	27,313
adj.R ²	0.8389	0.8436	0.8527	0.8568	0.8752	0.8785
Fixed Effects						
Year-month	Y	N	Y	N	Y	N
Firm	Y	Y	Y	Y	Y	Y
YrMth*SIC	N	Y	N	Y	N	Y

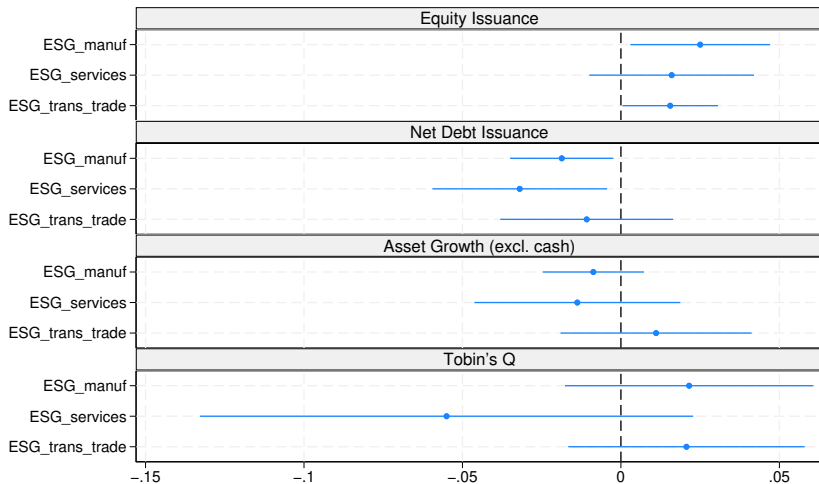
One-Quarter Lag: Asset Growth

One-Quarter Lag: Tobin's Q

ESG Ratings and Issuance Over Time



ESG Ratings and Issuance by Industry



Static ESG Scores

Point-in-time ESG scores not available through standard Refinitiv product

- ESG scores are known to change retroactively over time (restated)
- ESG scores are sometimes issued (backfilled) for firms long after a given fiscal year has ended

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⇒ How would results have been biased if we had used "Standard" ESG scores?

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⇒ How would results have been biased if we had used "Standard" ESG scores?

- To answer this, we consider ESG scores as they appeared in May 2023 in the standard product
- In order to restrict the analysis to the effect of retroactive changes, we also restrict the ratings coverage to the same firm \times month sample available in the PIT scores

Inferences Using Restated and Backfilled ESG Ratings

	Equity Issuance	Debt Issuance	Assets excl. Cash	Tobin's Q
Panel A. Restated Ratings and Backfilled Coverage				
ESG Score	0.0309** (0.0143)	-0.0228** (0.0108)	0.0106 (0.0088)	0.4050** (0.1790)
N	61,382	61,382	61,382	61,382
adj.R ²	0.2790	0.0939	0.1444	0.7823
Panel B. Restated Ratings and Point-in-Time Coverage				
ESG Score	0.0249*** (0.0085)	-0.0041 (0.0087)	0.0164** (0.0076)	0.2705 (0.1702)
N	45,590	45,590	45,590	45,590
adj.R ²	0.2144	0.0960	0.1591	0.8437

Note: All regressions run with firm, industry \times time fixed effects

Firm's Restated ESG Pillar Ratings

	Equity Issuance	Debt Issuance	Assets excl. Cash	Tobin's Q
Panel A. Restated Ratings and Backfilled Coverage				
Environmental Score	0.0158 (0.0110)	-0.0273*** (0.0101)	-0.0175*** (0.0058)	0.1404 (0.1414)
Social Score	0.0187 (0.0135)	0.0138 (0.0113)	0.0312*** (0.0086)	0.2361 (0.1625)
CorpGov Score	-0.0010 (0.0095)	-0.0101 (0.0073)	-0.0033 (0.0041)	0.1068 (0.1057)
N	61,382	61,382	61,382	61,382
adj.R ²	0.2791	0.0941	0.1448	0.7823
Panel B. Restated Ratings and Point-in-Time Coverage				
Environmental Score	0.0091* (0.0053)	-0.0142* (0.0072)	-0.0091 (0.0067)	0.0280 (0.1311)
Social Score	0.0201** (0.0078)	0.0090 (0.0065)	0.0271*** (0.0087)	0.1121 (0.1721)
CorpGov Score	-0.0031 (0.0054)	0.0017 (0.0055)	-0.0007 (0.0046)	0.1722* (0.0961)
N	45,590	45,590	45,590	45,590
adj.R ²	0.2145	0.0961	0.1593	0.8437
Firm FE	Y	Y	Y	Y
YrMth*2-dig SIC FE	Y	Y	Y	Y

Conclusion

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\Rightarrow **ESG is a sideshow of corporate investment**

ESG Rating Upgrades and Downgrades

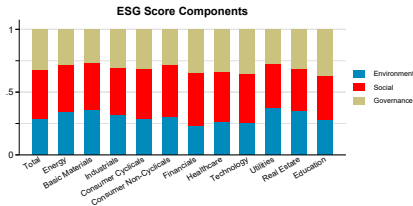
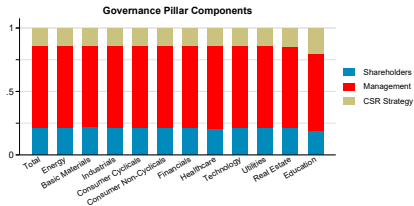
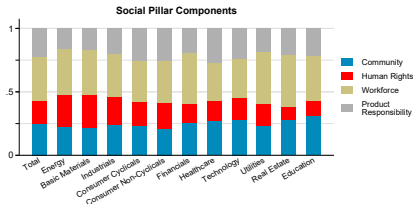
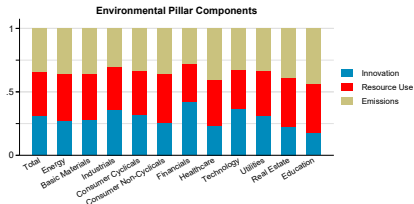
	NbFirms	Upgrades ($> \sigma$)	Downgrades ($> \sigma$)	Upgrades ($> 2\sigma$)	Downgrades ($> 2\sigma$)
Panel A. ESG Ratings					
2017	1069	212	65	80	18
2018	2141	415	334	230	135
2019	2283	451	380	243	133
2020	2397	380	570	137	329
2021	2817	518	280	336	114
2022	2123	452	251	279	84
Panel B. E Ratings					
2017	1069	135	67	60	30
2018	2141	313	248	196	130
2019	2283	337	258	223	149
2020	2397	213	620	88	391
2021	2817	401	126	279	66
2022	2123	374	93	273	48

Historical Changes in ESG Ratings

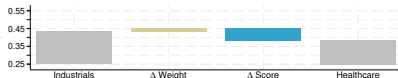
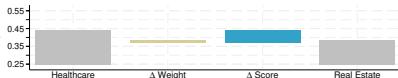
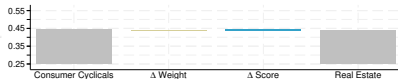
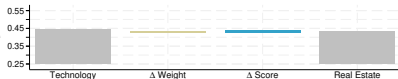
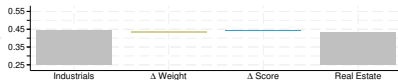
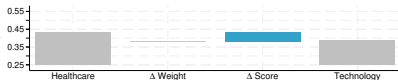
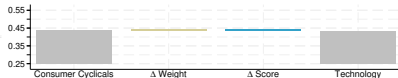
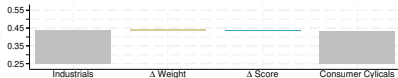
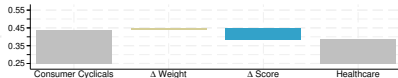
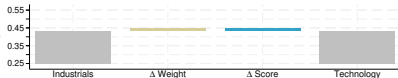
Year	Nb firms	Coverage updates (yrs)	Upgrades (per year)	Downgrades (per year)	Upgrades FY(t-1)	Downgrades FY(t-1)
2017	2,256	6.7	0.26	0.35	0.39	0.45
2018	2,484	7.8	0.30	0.25	0.50	0.39
2019	2,606	8.5	0.26	0.23	0.51	0.51
2020	3,116	8.1	0.60	0.67	0.91	1.00
2021	3,514	7.5	0.47	0.35	1.18	1.04
2022	3,531	7.1	0.26	0.22	0.65	0.50

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ESG Rating Composition by Industry Group



ESG Ratings Differences Across Industries: Weighting And Score Effects



Other Firm-Level Data

⇒ Equity Issuance

- Quarterly changes in *External Equity* (which is book equity minus balance sheet retained earnings) scaled by last quarter's *Total Assets*

⇒ Net Debt Issuance

- Quarterly changes in *Total Debt* net of cash, scaled by last quarter's *Total Assets*

⇒ Asset Growth (excl. Cash)

- Quarterly % changes in *Total Assets* net of cash

⇒ Tobin's Q Change

- Quarterly changes in *Tobin's Q*, defined as *Total Assets* and *Market Equity*, less *Book Equity*, scaled by current quarter's *Total Assets*

⇒ Other Controls

- *Profitability* is *Operating Income*, scaled by current quarter's *Total Assets*; *Leverage* is the ratio of *Total Debt* to *Total Assets*

Compustat Definitions

- *Total Assets* is Compustat item *atq*
- *External Equity* is *Book Equity* less Compustat item *req* (*Retained Earnings*)
 - ⇒ *Book Equity* is the sum of Compustat fields *atq* (*Total Assets*) and *txdbq* (*Deferred Taxes*) less the sum of *ltq* (*Total Liabilities*) and *pstkq* (*Preferred Stock*)
- *Total Debt* is the sum of Compustat items *dlttq* (*Long-Term Debt*) and *dlcq* (*Debt in Current Liabilites*)
- *Market Equity* is the product of *prccq* (*End-Of-Quarter Stock Price*) and *cshoq* (*End-Of-Quarter Shares Outstanding*)
- *Operating Income* is the Compustat field *oibdpq*

Summary Statistics for Firm-Level Variables

	N	Mean	SD	Median	P25	P75
Equity Issuance	46,365	0.0164	0.0853	0.0018	-0.0024	0.0097
Debt Issuance	46,365	0.0095	0.0639	-0.0000	-0.0070	0.0104
Net Debt Issuance	46,365	0.0061	0.0901	0.0012	-0.0191	0.0279
Change in Cash	46,365	0.0039	0.0815	-0.0001	-0.0174	0.0144
Asset Growth	46,365	0.0232	0.1239	0.0070	-0.0208	0.0380
Asset Growth (excl. cash)	46,365	0.0169	0.0792	0.0060	-0.0123	0.0301
PP&E Growth	46,365	0.0055	0.0258	0.0006	-0.0029	0.0080
Assets Growth (excl.PP&E)	46,365	0.0235	0.4107	0.0032	-0.0212	0.0298
Capex	45,945	0.0259	0.0356	0.0146	0.0059	0.0321
Tobin's Q	46,365	2.3490	2.0269	1.6156	1.1414	2.7286
Profitability	46,365	0.0145	0.0525	0.0247	0.0085	0.0388
Leverage	46,365	0.3155	0.2262	0.3017	0.1422	0.4426
Assets	46,365	7.8576	1.7836	7.7700	6.6341	9.0289
ESG Score	46,365	0.4519	0.1936	0.4252	0.3017	0.5958
Environmental Score	46,365	0.3684	0.2701	0.3405	0.1486	0.5752
Social Score	46,365	0.4634	0.2123	0.4332	0.2952	0.6116
CorpGov Score	46,365	0.5029	0.2239	0.5065	0.3206	0.6844

ESG Ratings and Changes in Asset Composition: PP&E

	(1)	(2)	(3)	(4)	(5)	(6)
ESG	-0.0071*** (0.0023)	-0.0082*** (0.0020)	0.0010 (0.0018)	0.0006 (0.0017)		
E					0.0007 (0.0019)	-0.0003 (0.0014)
S					0.0016 (0.0017)	0.0015 (0.0017)
G					-0.0006 (0.0016)	-0.0006 (0.0010)
Profitability	0.0441*** (0.0070)	0.0389** (0.0151)	0.0593*** (0.0134)	0.0317*** (0.0112)	0.0594*** (0.0133)	0.0317*** (0.0112)
Leverage	-0.0045*** (0.0012)	-0.0051*** (0.0009)	-0.0233*** (0.0064)	-0.0187*** (0.0043)	-0.0233*** (0.0063)	-0.0187*** (0.0043)
Assets	0.0000 (0.0003)	-0.0001 (0.0002)	-0.0102*** (0.0022)	-0.0094*** (0.0017)	-0.0102*** (0.0022)	-0.0094*** (0.0017)
Q	0.0008*** (0.0002)	0.0012*** (0.0003)	0.0012*** (0.0002)	0.0011*** (0.0002)	0.0012*** (0.0002)	0.0011*** (0.0002)
Fixed Effects						
Year-month	N	Y	Y	N	Y	N
Firm	N	N	Y	Y	Y	Y
2-digit SIC	N	Y	N	N	N	N
YrMth*SIC	N	N	N	Y	N	Y
N	46,365	46,364	46,278	45,691	46,278	45,691
adj.R ²	0.0141	0.1282	0.2132	0.2773	0.2132	0.2773

Capital Expenditures

	(1)	(2)	(3)	(4)	(5)	(6)
ESG	-0.0090** (0.0034)	-0.0064 (0.0042)	0.0022 (0.0024)	-0.0011 (0.0022)		
E					-0.0012 (0.0026)	-0.0011 (0.0016)
S					0.0021 (0.0023)	0.0011 (0.0016)
G					-0.0010 (0.0013)	-0.0010 (0.0012)
Profitability	0.0990*** (0.0126)	0.0736*** (0.0161)	0.0259*** (0.0096)	0.0134** (0.0060)	0.0260*** (0.0096)	0.0134** (0.0060)
Leverage	0.0032 (0.0020)	0.0006 (0.0023)	-0.0110*** (0.0022)	-0.0054*** (0.0019)	-0.0111*** (0.0022)	-0.0054*** (0.0019)
Assets	0.0006 (0.0004)	-0.0000 (0.0004)	0.0002 (0.0010)	-0.0010 (0.0007)	0.0002 (0.0010)	-0.0010 (0.0007)
Q	-0.0011*** (0.0002)	0.0005* (0.0003)	0.0007*** (0.0002)	0.0005*** (0.0002)	0.0007*** (0.0002)	0.0005*** (0.0002)
Fixed Effects						
Year-month	N	Y	Y	N	Y	N
Firm	N	N	Y	Y	Y	Y
2-digit SIC	N	Y	N	N	N	N
YrMth*SIC	N	N	N	Y	N	Y
N	45,947	45,946	45,854	45,259	45,854	45,259
adj.R ²	0.0414	0.3286	0.6861	0.7390	0.6862	0.7390

Changes in Cash

	(1)	(2)	(3)	(4)	(5)	(6)
ESG	0.0028 (0.0038)	0.0004 (0.0038)	0.0222*** (0.0060)	0.0161*** (0.0054)		
E					0.0024 (0.0068)	0.0004 (0.0052)
S					0.0048 (0.0047)	0.0027 (0.0050)
G					0.0025 (0.0044)	0.0046 (0.0039)
Profitability	0.0316 (0.0392)	0.0240 (0.0244)	-0.0926** (0.0385)	-0.1144*** (0.0390)	-0.0927** (0.0386)	-0.1145*** (0.0391)
Leverage	-0.0021 (0.0026)	-0.0066*** (0.0025)	-0.0019 (0.0064)	-0.0063 (0.0068)	-0.0020 (0.0063)	-0.0064 (0.0067)
Assets	-0.0000 (0.0005)	-0.0002 (0.0003)	-0.0554*** (0.0057)	-0.0584*** (0.0062)	-0.0552*** (0.0057)	-0.0583*** (0.0062)
Q	0.0052*** (0.0007)	0.0058*** (0.0015)	0.0136*** (0.0018)	0.0138*** (0.0018)	0.0136*** (0.0018)	0.0138*** (0.0018)
Fixed Effects						
Year-month	N	Y	Y	N	Y	N
Firm	N	N	Y	Y	Y	Y
2-digit SIC	N	Y	N	N	N	N
YrMth*SIC	N	N	N	Y	N	Y
N	46,365	46,364	46,278	45,691	46,278	45,691
adj.R ²	0.0172	0.0322	0.0743	0.0613	0.0740	0.0611

ESG Ratings and Equity Issuance (one-quarter lag)

	(1)	(2)	(3)	(4)	(5)	(6)
ESG	0.0048 (0.0034)	0.0046 (0.0072)	0.0184** (0.0075)	0.0139** (0.0069)		
E					0.0125** (0.0057)	0.0088* (0.0046)
S					0.0019 (0.0058)	0.0023 (0.0054)
G					0.0008 (0.0035)	0.0026 (0.0034)
Profitability	-0.5032*** (0.0370)	-0.4701*** (0.0628)	-0.2225*** (0.0409)	-0.2647*** (0.0404)	-0.2223*** (0.0409)	-0.2644*** (0.0404)
Leverage	-0.0029 (0.0034)	-0.0024 (0.0034)	0.0601*** (0.0098)	0.0633*** (0.0110)	0.0607*** (0.0099)	0.0636*** (0.0111)
Assets	-0.0032*** (0.0006)	-0.0035*** (0.0011)	-0.0605*** (0.0068)	-0.0634*** (0.0074)	-0.0601*** (0.0068)	-0.0633*** (0.0074)
Q	0.0066*** (0.0006)	0.0071*** (0.0016)	0.0139*** (0.0013)	0.0135*** (0.0013)	0.0139*** (0.0013)	0.0135*** (0.0013)
Fixed Effects						
Year-month	N	Y	Y	N	Y	N
Firm	N	N	Y	Y	Y	Y
2-digit SIC	N	Y	N	N	N	N
YrMth*SIC	N	N	N	Y	N	Y
N	49,934	49,933	49,755	49,139	49,755	49,139
adj. R ²	0.1477	0.1562	0.2336	0.2234	0.2337	0.2233

ESG Ratings and Net Debt Issuance (one-quarter lag)

	(1)	(2)	(3)	(4)	(5)	(6)
ESG	-0.0011 (0.0047)	-0.0051* (0.0029)	-0.0146** (0.0065)	-0.0127** (0.0058)		
E					-0.0190*** (0.0068)	-0.0131** (0.0059)
S					0.0098* (0.0056)	0.0047 (0.0056)
G					-0.0015 (0.0046)	-0.0023 (0.0039)
Profitability	-0.0697 (0.0464)	-0.0843*** (0.0287)	0.0626* (0.0349)	0.0739** (0.0357)	0.0631* (0.0349)	0.0739** (0.0357)
Leverage	-0.0066* (0.0036)	-0.0072 (0.0054)	-0.1538*** (0.0175)	-0.1523*** (0.0157)	-0.1548*** (0.0175)	-0.1527*** (0.0157)
Assets	-0.0004 (0.0008)	0.0001 (0.0007)	0.0241*** (0.0054)	0.0250*** (0.0057)	0.0235*** (0.0054)	0.0248*** (0.0057)
Q	-0.0019*** (0.0005)	-0.0022* (0.0012)	-0.0095*** (0.0012)	-0.0095*** (0.0011)	-0.0094*** (0.0012)	-0.0095*** (0.0011)
Fixed Effects						
Year-month	N	Y	Y	N	Y	N
Firm	N	N	Y	Y	Y	Y
2-digit SIC	N	Y	N	N	N	N
YrMth*SIC	N	N	N	Y	N	Y
N	49,934	49,933	49,755	49,139	49,755	49,139
adj.R ²	0.0035	0.0376	0.0769	0.0866	0.0771	0.0867

ESG Ratings and Asset Growth (one-quarter lag)

	(1)	(2)	(3)	(4)	(5)	(6)
ESG	-0.0210*** (0.0044)	-0.0144*** (0.0052)	0.0003 (0.0053)	-0.0013 (0.0050)		
E					-0.0013 (0.0047)	-0.0006 (0.0042)
S					0.0014 (0.0061)	-0.0026 (0.0060)
G					0.0009 (0.0038)	0.0016 (0.0034)
Profitability	0.1087*** (0.0159)	0.0824*** (0.0277)	0.0510 (0.0369)	-0.0059 (0.0307)	0.0511 (0.0369)	-0.0061 (0.0308)
Leverage	-0.0141*** (0.0029)	-0.0135*** (0.0048)	-0.0314** (0.0138)	-0.0220** (0.0092)	-0.0315** (0.0138)	-0.0220** (0.0092)
Assets	0.0002 (0.0005)	-0.0006 (0.0006)	-0.0494*** (0.0053)	-0.0483*** (0.0050)	-0.0494*** (0.0053)	-0.0483*** (0.0050)
Q	0.0055*** (0.0005)	0.0055*** (0.0004)	0.0084*** (0.0007)	0.0080*** (0.0007)	0.0084*** (0.0007)	0.0080*** (0.0007)
Fixed Effects						
Year-month	N	Y	Y	N	Y	N
Firm	N	N	Y	Y	Y	Y
2-digit SIC	N	Y	N	N	N	N
YrMth*SIC	N	N	N	Y	N	Y
N	49,934	49,933	49,755	49,139	49,755	49,139
adj.R ²	0.0280	0.0664	0.1121	0.1566	0.1121	0.1566

ESG Ratings and Tobin's Q (one-quarter lag)

	(1)	(2)	(3)	(4)	(5)	(6)
ESG	1.1058*** (0.2397)	0.9059*** (0.2823)	0.1281 (0.1379)	0.0699 (0.1333)		
E					0.4044** (0.1547)	0.3047** (0.1277)
S					-0.2000 (0.1442)	-0.1447 (0.1236)
G					-0.1027 (0.0745)	-0.0684 (0.0720)
Profitability	0.5407 (0.9499)	2.1730 (2.5162)	3.3812*** (0.6070)	2.9701*** (0.5841)	3.3694*** (0.6001)	2.9694*** (0.5813)
Leverage	-0.2397 (0.1992)	0.0420 (0.2323)	-0.4014** (0.1548)	-0.2764* (0.1645)	-0.3757** (0.1531)	-0.2643 (0.1638)
Assets	-0.3444*** (0.0355)	-0.2730*** (0.0373)	-0.7109*** (0.0928)	-0.7349*** (0.0873)	-0.6982*** (0.0905)	-0.7312*** (0.0864)
Fixed Effects						
Year-month	N	Y	Y	N	Y	N
Firm	N	N	Y	Y	Y	Y
2-digit SIC	N	Y	N	N	N	N
YrMth*SIC	N	N	N	Y	N	Y
N	49,934	49,933	49,755	49,139	49,755	49,139
adj.R ²	0.0637	0.2023	0.8313	0.8366	0.8317	0.8367

PIT Scores

We construct point-in-time (PIT) scores quarterly for firms in the following manner:

$$\begin{aligned} ESG_{i,t,q} &= PITscore_{i,FY_m,d} \\ \text{s.t. } FY_m &= \max(FY_{i,t,d}) \end{aligned} \quad (2)$$

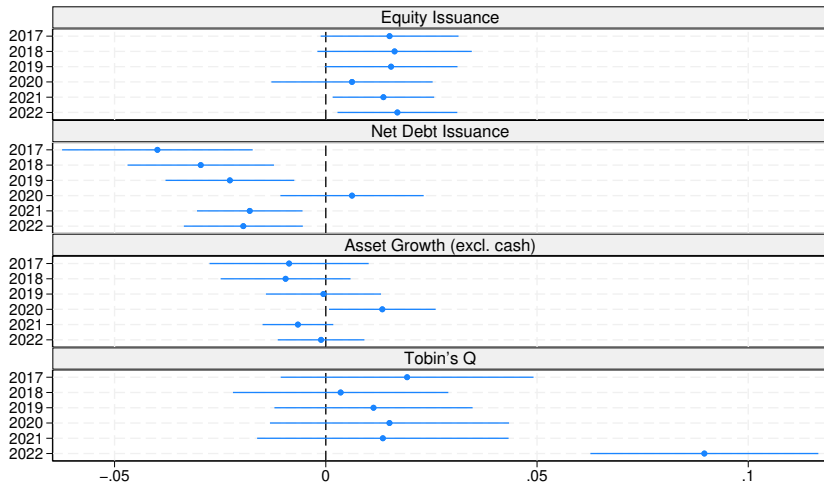
where $FY_{i,t,d}$ is the set of all fiscal years prior to and including year t for which there is a published ESG score for company i and the publication date d of that score is on or before quarter-end q of year t .

⇒ Most of the time, $ESG_{i,t,q}$ reflects ESG scores from previous year, but not always: in 2017, the median firm received their ESG scores 234 days after end of fiscal year, while 5% received theirs a month *before* fiscal year end

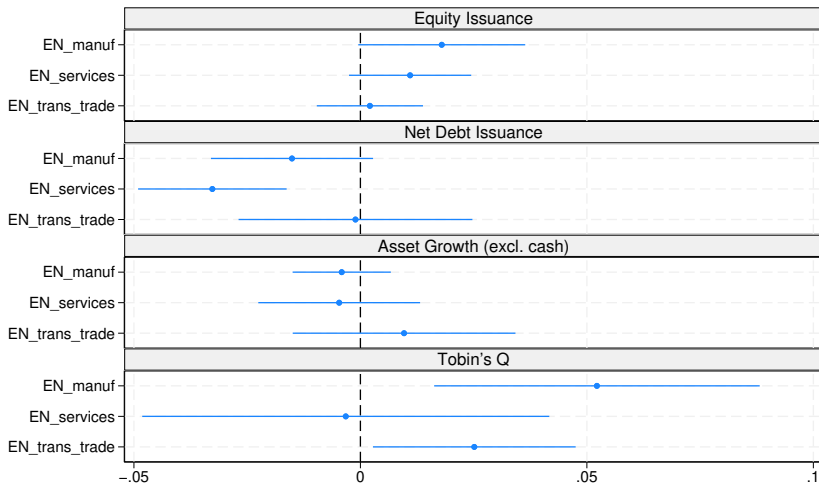
ESG and (Gross) Debt Issuance

	(1)	(2)	(3)	(4)	(5)	(6)
ESG	-0.0018 (0.0040)	-0.0042 (0.0031)	0.0012 (0.0049)	-0.0007 (0.0042)		
E					-0.0158*** (0.0040)	-0.0123*** (0.0035)
S					0.0075* (0.0044)	0.0015 (0.0043)
G					0.0043 (0.0034)	0.0049* (0.0027)
Profitability	-0.0208 (0.0151)	-0.0421** (0.0172)	-0.0342* (0.0191)	-0.0439*** (0.0165)	-0.0339* (0.0189)	-0.0443*** (0.0164)
Leverage	-0.0085** (0.0034)	-0.0130*** (0.0047)	-0.1598*** (0.0154)	-0.1594*** (0.0128)	-0.1609*** (0.0153)	-0.1599*** (0.0128)
Assets	-0.0003 (0.0006)	-0.0003 (0.0004)	-0.0320*** (0.0044)	-0.0337*** (0.0041)	-0.0323*** (0.0043)	-0.0338*** (0.0041)
Q	0.0030*** (0.0004)	0.0033*** (0.0004)	0.0039*** (0.0008)	0.0039*** (0.0008)	0.0039*** (0.0008)	0.0039*** (0.0008)
Fixed Effects						
Year-month	N	Y	Y	N	Y	N
Firm	N	N	Y	Y	Y	Y
2-digit SIC	N	Y	N	N	N	N
YrMth*SIC	N	N	N	Y	N	Y
N	46,365	46,364	46,278	45,691	46,278	45,691
adj.R ²	0.0124	0.0587	0.1301	0.1692	0.1307	0.1695

"E" Ratings and Issuance Over Time



"E" Ratings Differences Across Industries



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