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Supplementary information

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Impacts of climate litigation on firm value

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Supplementary Information

SI1. List of climate cases and their individual effect 2

SI2. Value-weighted versus non weighted results 12

SI3. Further heterogeneity and sensitivity analysis 15

SI3a. Further heterogeneity 15

SI3b. Sensitivity analysis 16

SI3c. Single regression approach 19

SI3d. Portfolio analysis 20

SI4. Anticipation of filings and decisions 22

SI5. Sectoral distribution 24

SI6. Financial data 25

References 26

SI1. List of climate cases and their individual effect

Table 1. Individual financial market response to climate litigation filings and decisions. We first list all filings, then decisions. Cum Ret is the cumulative return over the event window of (-1,1). CAR is the Cumulative Abnormal Return over the event window, measured with the CAPM model, excess returns winsorized at the 0.5% level, and an estimation window of (-770, -20). The Patell t-statistic indicates significance at the 95% level when it exceeds +-1.96. Note that tests on single events have low statistical power due to the small number of observations. In column Outcome, -1 denotes a negative decision for a firm and +1 a positive decision.

Date	Filing /Decision	Carbon Major	Novel	Outcome	Case	Firm Name	Cum Ret	CAR	t_patell
20-Sep-06	Filing	0	1		California v. GM Corp.	General Motors Co	-1.7%	-1.3%	-0.29
07-May-07	Filing	0	1		Germanwatch vs. Volkswagen	Volkswagen	-2.9%	-3.5%	-1.34
16-Jan-08	Filing	0	1		Australian Competition & Consumer Commission v. GM	General Motors Co	-3.4%	4.1%	1.00
12-Feb-08	Filing	0	0		Sierra Club v. Duke Energy Indiana	Duke Energy	1.4%	-0.8%	-0.52
26-Feb-08	Filing	1	1		Native Village of Kivalina v. ExxonMobil Corp.	BP	3.6%	-0.4%	-0.23
26-Feb-08	Filing	1	1		Native Village of Kivalina v. ExxonMobil Corp.	Chevron	3.3%	0.5%	0.27
26-Feb-08	Filing	1	1		Native Village of Kivalina v. ExxonMobil Corp.	ExxonMobil	2.5%	-0.4%	-0.23
26-Feb-08	Filing	1	1		Native Village of Kivalina v. ExxonMobil Corp.	Peabody	-1.4%	-6.0%	-1.44
26-Feb-08	Filing	1	1		Native Village of Kivalina v. ExxonMobil Corp.	Royal Dutch Shell	2.8%	-1.1%	-0.67
09-May-08	Filing	0	0		Connecticut v. Am. Elec. Power	American Electric Power	0.8%	-0.1%	-0.06
16-Jul-08	Filing	0	0		Southern Alliance for Clean Energy v. Duke Energy	Duke Energy	-0.1%	-1.7%	-1.00
23-Oct-08	Filing	0	0		Burton v. Dominion Nuclear Connecticut, Inc.	Dominion Energy	-2.2%	4.0%	2.36
24-Jun-10	Filing	0	0		Conservation Law Foundation v. Dominion Energy New	Dominion Energy	-1.7%	-0.8%	-0.38
09-Sep-10	Filing	0	0		Sierra Club v. Wisconsin Power & Light Co.	Alliant Energy	0.4%	-0.7%	-0.31
27-Dec-10	Filing	0	1		Sao Paulo Public Prosecutor's Office v. United Air	Delta Air Lines	0.4%	0.3%	0.04
27-Dec-10	Filing	0	1		Sao Paulo Public Prosecutor's Office v. United Air	United Airlines Holdings Inc	-4.7%	-5.1%	-0.64
28-Jan-11	Filing	0	0		United States v. DTE Energy	DTE Energy	-0.6%	-0.1%	-0.05
27-May-11	Filing	1	1		Comer v. Murphy Oil USA, Inc.	Chevron	1.6%	-0.4%	-0.20
27-May-11	Filing	1	1		Comer v. Murphy Oil USA, Inc.	ExxonMobil	1.8%	0.1%	0.05
27-May-11	Filing	0	1		Comer v. Murphy Oil USA, Inc.	Honeywell International	1.2%	-1.0%	-0.43
27-May-11	Filing	1	1		Comer v. Murphy Oil USA, Inc.	Murphy Oil Corp	1.0%	-1.4%	-0.44
27-May-11	Filing	1	1		Comer v. Murphy Oil USA, Inc.	Royal Dutch Shell	2.0%	0.0%	-0.01

28-Nov-11	Filing	1	1		Norwegian Climate Network et al vs Statoil	Equinor	5.4%	-0.1%	-0.05
09-Mar-12	Filing	0	0		California Health Communities Network v. City of P	Walmart Inc	2.0%	1.5%	0.96
22-Feb-13	Filing	0	0		Conservation Law Foundation v. Dominion Energy Bra	Dominion Energy	-0.3%	0.4%	0.33
30-Dec-13	Filing	0	1		In re Vienna-Schwechat Airport Expansion	Flughafen Wien	0.8%	-0.5%	-0.22
02-Jul-14	Filing	0	0		Northwest Environmental Defense Center v. Cascade	Global Partners	0.9%	-0.1%	-0.02
03-Sep-14	Filing	0	0		United States v. Costco Wholesale Corp. No. 3:14-	Costco Wholesale Corp	3.4%	3.4%	2.30
25-Mar-15	Filing	0	0		Nucor Steel-Arkansas v. Big River Steel, LLC, No.	US Steel	2.7%	6.6%	1.62
09-Jun-15	Filing	1	0		Roe v. Arch Coal, Inc.	Arch Resources	-8.0%	-7.9%	-1.25
11-Jun-15	Filing	1	0		Lynn v. Peabody Energy Corp.	Arch Resources	-21.7%	-21.8%	-3.47
22-Sep-15	Filing	0	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	APA Corp	-6.1%	-4.2%	-1.66
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Anadarko	-3.5%	-1.5%	-0.63
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Anglo America	-10.5%	-5.6%	-1.77
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Arch Resources	-15.4%	-12.8%	-1.81
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	BP	-3.0%	0.1%	0.06
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	CNX Resources	-16.2%	-14.1%	-4.03
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Chevron	-2.1%	-0.5%	-0.36
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Conocophillips	-1.0%	0.6%	0.35
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Devon Energy Corp	-4.1%	-2.1%	-0.85
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Eni Spa	-1.5%	3.5%	2.12
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	ExxonMobil	-0.5%	0.9%	0.71
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Glencore	-13.0%	-8.3%	-2.93
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Heidelberg Cement	-4.3%	0.3%	0.16
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Hess Corp	-4.6%	-2.7%	-1.18
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Husky Energy	-4.8%	-3.5%	-1.38
22-Sep-15	Filing	0	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Marathon Oil	-3.4%	-1.1%	-0.48
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Murphy Oil Corp	-7.2%	-5.4%	-2.26
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Occidental	-3.0%	-1.5%	-0.80
22-Sep-15	Filing	0	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Ovintiv Inc	-8.6%	-6.6%	-2.03
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Peabody	-17.0%	-14.1%	-2.62
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	RWE	-8.9%	-4.3%	-1.72
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Repsol SA	-8.3%	-3.4%	-2.07
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Royal Dutch Shell	-3.1%	0.0%	0.01
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Suncor Energy	-1.1%	0.6%	0.25
22-Sep-15	Filing	1	1		In re Greenpeace Southeast Asia et al., 2015-__ (C	Total Energies SE	-1.3%	3.2%	2.01

23-Nov-15	Filing	1	1		Lliuya v. RWE	RWE	-9.2%	-6.0%	-2.04
07-Dec-15	Filing	0	0		California v. Southern California Gas Co.	Sempra Energy	-3.0%	-3.2%	-2.10
26-Jan-16	Filing	0	0		California ex rel. South Coast Air Quality Managem	Sempra Energy	-2.4%	-1.6%	-1.07
02-Feb-16	Filing	0	0		People v. Southern California Gas Co.	Sempra Energy	0.9%	1.9%	1.26
03-Feb-16	Filing	0	0		Benton v. Global Companies, LLC, No. 1:16-cv-00125	Global Partners	0.8%	1.6%	0.38
19-Apr-16	Filing	0	1		Shupak v. Reed	Sempra Energy	-2.1%	-3.0%	-1.82
25-Jul-16	Filing	0	0		California v. Southern California Gas Co., No. BC6	Sempra Energy	-0.6%	-0.9%	-0.55
29-Sep-16	Filing	1	1		Conservation Law Foundation v. ExxonMobil Corp.	ExxonMobil	4.8%	4.3%	2.77
07-Nov-16	Filing	1	1		Ramirez v. Exxon Mobil Corp.	ExxonMobil	2.9%	0.6%	0.36
23-Nov-16	Filing	1	1		Fentress v. Exxon Mobil Corp.	ExxonMobil	0.7%	0.1%	0.04
08-May-17	Filing	0	1		BankTrack, et al. vs. ING Bank	ING Group	-0.6%	-1.0%	-0.48
18-May-17	Filing	0	1		In re Amended and Restated Preliminary Prospectus	Kinder Morgan Inc	-1.4%	-0.1%	-0.02
17-Jul-17	Filing	0	1		County of San Mateo v. Chevron Corp.	APA Corp	-1.0%	-1.5%	-0.40
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	Anadarko	-1.5%	-1.9%	-0.54
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	BP	0.5%	-0.3%	-0.15
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	Chevron	-0.4%	-0.8%	-0.43
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	Conocophillips	-0.4%	-0.8%	-0.27
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	Devon Energy Corp	0.5%	0.1%	0.02
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	Eni Spa	0.8%	-0.1%	-0.05
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	ExxonMobil	-0.5%	-0.8%	-0.49
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	Hess Corp	0.1%	-0.3%	-0.08
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	Marathon Petroleum	1.8%	1.1%	0.34
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	Occidental	1.2%	0.9%	0.41
17-Jul-17	Filing	0	1		County of San Mateo v. Chevron Corp.	Ovintiv Inc	2.8%	2.4%	0.45
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	Repsol SA	0.4%	-0.6%	-0.23
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	Royal Dutch Shell	0.6%	-0.1%	-0.07
17-Jul-17	Filing	1	1		County of San Mateo v. Chevron Corp.	Total Energies SE	0.9%	0.0%	0.00
28-Aug-17	Filing	1	1		Conservation Law Foundation, Inc. v. Shell Oil Pro	Royal Dutch Shell	0.6%	0.7%	0.33
19-Sep-17	Filing	1	1		City of Oakland v. BP p.l.c.	BP	1.7%	1.9%	0.81
20-Sep-17	Filing	1	1		City of Oakland v. BP p.l.c.	Chevron	1.1%	1.2%	0.61
21-Sep-17	Filing	1	1		City of Oakland v. BP p.l.c.	ExxonMobil	-0.4%	-0.3%	-0.16
22-Sep-17	Filing	1	1		City of Oakland v. BP p.l.c.	Conocophillips	3.4%	4.2%	1.36
16-Nov-17	Filing	0	0		Harris County v. Arkema, Inc.	Arkema	-0.2%	-0.2%	-0.14
20-Dec-17	Filing	0	1		County of Santa Cruz v. Chevron Corp.	APA Corp	8.3%	8.5%	2.21

20-Dec-17	Filing	1	1		County of Santa Cruz v. Chevron Corp.	Anadarko	6.9%	7.2%	2.04
20-Dec-17	Filing	1	1		County of Santa Cruz v. Chevron Corp.	BP	2.0%	1.6%	0.70
20-Dec-17	Filing	1	1		County of Santa Cruz v. Chevron Corp.	Chevron	4.2%	4.2%	2.19
20-Dec-17	Filing	1	1		County of Santa Cruz v. Chevron Corp.	Conocophillips	6.8%	6.9%	2.25
20-Dec-17	Filing	1	1		County of Santa Cruz v. Chevron Corp.	Devon Energy Corp	7.3%	7.6%	1.83
20-Dec-17	Filing	1	1		County of Santa Cruz v. Chevron Corp.	Eni Spa	0.5%	0.1%	0.05
20-Dec-17	Filing	1	1		County of Santa Cruz v. Chevron Corp.	ExxonMobil	1.1%	1.2%	0.74
20-Dec-17	Filing	1	1		County of Santa Cruz v. Chevron Corp.	Hess Corp	6.2%	6.5%	1.82
20-Dec-17	Filing	1	1		County of Santa Cruz v. Chevron Corp.	Occidental	2.3%	2.3%	1.07
20-Dec-17	Filing	0	1		County of Santa Cruz v. Chevron Corp.	Ovintiv Inc	11.6%	11.7%	2.17
20-Dec-17	Filing	0	1		County of Santa Cruz v. Chevron Corp.	Phillips 66	0.1%	0.0%	0.02
20-Dec-17	Filing	1	1		County of Santa Cruz v. Chevron Corp.	Repsol SA	1.0%	0.6%	0.25
20-Dec-17	Filing	1	1		County of Santa Cruz v. Chevron Corp.	Royal Dutch Shell	1.4%	1.0%	0.48
09-Jan-18	Filing	1	0		City of New York v. BP p.l.c.	BP	-0.3%	0.0%	0.00
09-Jan-18	Filing	1	0		City of New York v. BP p.l.c.	Chevron	0.6%	0.4%	0.23
09-Jan-18	Filing	1	0		City of New York v. BP p.l.c.	Conocophillips	1.4%	1.3%	0.43
09-Jan-18	Filing	1	0		City of New York v. BP p.l.c.	ExxonMobil	-0.8%	-0.8%	-0.53
09-Jan-18	Filing	1	0		City of New York v. BP p.l.c.	Royal Dutch Shell	0.6%	0.9%	0.42
22-Jan-18	Filing	1	0		City of Richmond v Chevron	Hess Corp	-0.4%	-2.5%	-0.70
23-Jan-18	Filing	0	0		City of Richmond v Chevron	APA Corp	4.5%	3.2%	0.85
24-Jan-18	Filing	1	0		City of Richmond v Chevron	BP	1.3%	1.1%	0.52
25-Jan-18	Filing	1	0		City of Richmond v Chevron	Chevron	0.1%	-0.9%	-0.49
26-Jan-18	Filing	1	0		City of Richmond v Chevron	ExxonMobil	-0.6%	-0.9%	-0.55
29-Jan-18	Filing	0	0		City of Richmond v Chevron	Ovintiv Inc	-5.8%	-4.5%	-0.84
30-Jan-18	Filing	1	0		City of Richmond v Chevron	Anadarko	-2.9%	0.3%	0.09
31-Jan-18	Filing	1	0		City of Richmond v Chevron	Royal Dutch Shell	-3.3%	-2.9%	-1.37
01-Feb-18	Filing	1	0		City of Richmond v Chevron	Devon Energy Corp	-3.5%	0.9%	0.21
02-Feb-18	Filing	1	0		City of Richmond v Chevron	Repsol SA	-2.6%	3.1%	1.28
05-Feb-18	Filing	0	0		City of Richmond v Chevron	Phillips 66	-3.9%	1.4%	0.75
06-Feb-18	Filing	1	0		City of Richmond v Chevron	Marathon Petroleum	-3.4%	0.8%	0.27
17-Apr-18	Filing	1	0		Board of County Commissioners of Boulder County v.	ExxonMobil	1.8%	0.0%	0.02
17-Apr-18	Filing	1	0		Board of County Commissioners of Boulder County v.	Suncor Energy	1.7%	-0.6%	-0.23
09-May-18	Filing	1	0		King County v. BP p.l.c.	BP	2.2%	1.2%	0.58
10-May-18	Filing	1	0		King County v. BP p.l.c.	Chevron	2.6%	0.4%	0.21

11-May-18	Filing	1	0		King County v. BP p.l.c.	ExxonMobil	3.4%	2.4%	1.55
02-Jul-18	Filing	1	0		Rhode Island v. Chevron Corp.	BP	0.7%	-1.0%	-0.48
02-Jul-18	Filing	1	0		Rhode Island v. Chevron Corp.	Chevron	-0.7%	-0.8%	-0.43
02-Jul-18	Filing	1	0		Rhode Island v. Chevron Corp.	Conocophillips	1.7%	1.7%	0.54
02-Jul-18	Filing	1	0		Rhode Island v. Chevron Corp.	ExxonMobil	0.3%	0.3%	0.21
02-Jul-18	Filing	1	0		Rhode Island v. Chevron Corp.	Hess Corp	0.7%	0.7%	0.19
02-Jul-18	Filing	1	0		Rhode Island v. Chevron Corp.	Marathon Petroleum	1.9%	1.7%	0.56
02-Jul-18	Filing	0	0		Rhode Island v. Chevron Corp.	Phillips 66	-1.1%	-1.3%	-0.72
02-Jul-18	Filing	1	0		Rhode Island v. Chevron Corp.	Royal Dutch Shell	-0.5%	-2.2%	-1.07
05-Jul-18	Filing	1	0		Friends of the Earth et al. v. Prefect of of Bouch	Total Energies SE	1.9%	-0.3%	-0.26
20-Jul-18	Filing	1	0		Mayor & City Council of Baltimore v. BP p.l.c.	BP	1.1%	1.2%	0.57
20-Jul-18	Filing	1	0		Mayor & City Council of Baltimore v. BP p.l.c.	CNX Resources	1.3%	1.9%	0.33
20-Jul-18	Filing	1	0		Mayor & City Council of Baltimore v. BP p.l.c.	Chevron	-0.2%	0.2%	0.08
20-Jul-18	Filing	1	0		Mayor & City Council of Baltimore v. BP p.l.c.	Conocophillips	-0.1%	0.4%	0.12
20-Jul-18	Filing	1	0		Mayor & City Council of Baltimore v. BP p.l.c.	Consol Energy	-1.4%	-2.2%	-0.32
20-Jul-18	Filing	1	0		Mayor & City Council of Baltimore v. BP p.l.c.	ExxonMobil	-1.0%	-0.6%	-0.40
20-Jul-18	Filing	1	0		Mayor & City Council of Baltimore v. BP p.l.c.	Hess Corp	0.2%	0.8%	0.23
20-Jul-18	Filing	1	0		Mayor & City Council of Baltimore v. BP p.l.c.	Marathon Petroleum	0.6%	1.0%	0.34
20-Jul-18	Filing	0	0		Mayor & City Council of Baltimore v. BP p.l.c.	Phillips 66	-0.4%	-0.1%	-0.07
20-Jul-18	Filing	1	0		Mayor & City Council of Baltimore v. BP p.l.c.	Royal Dutch Shell	1.4%	1.5%	0.74
06-Aug-18	Filing	0	1		Development YES – Open-Pit Mines NO v. Group PZU	Powszechny Zakład Ubezpieczeń	1.0%	0.1%	0.05
24-Oct-18	Filing	0	1		ClientEarth v Enea	Enea SA	-3.3%	-1.0%	-0.28
24-Oct-18	Filing	1	1		People of the State of New York v. Exxon Mobil Cor	ExxonMobil	-3.5%	-1.7%	-1.05
31-Oct-18	Filing	1	0		Mapuche Confederation of Neuquén v. YPF et al.	ExxonMobil	4.6%	1.2%	0.74
31-Oct-18	Filing	1	0		Mapuche Confederation of Neuquén v. YPF et al.	Total Energies SE	-0.3%	-3.5%	-2.26
14-Nov-18	Filing	0	1		Pacific Coast Federation of Fishermen's Associatio	APA Corp	2.7%	2.3%	0.60
14-Nov-18	Filing	1	1		Pacific Coast Federation of Fishermen's Associatio	Anadarko	-1.3%	-1.6%	-0.45
14-Nov-18	Filing	1	1		Pacific Coast Federation of Fishermen's Associatio	BP	-0.8%	-0.9%	-0.42
14-Nov-18	Filing	1	1		Pacific Coast Federation of Fishermen's Associatio	Chevron	0.6%	0.3%	0.14
14-Nov-18	Filing	1	1		Pacific Coast Federation of Fishermen's Associatio	Conocophillips	0.1%	-0.3%	-0.09
14-Nov-18	Filing	1	1		Pacific Coast Federation of Fishermen's Associatio	Devon Energy Corp	-3.0%	-3.3%	-0.78
14-Nov-18	Filing	1	1		Pacific Coast Federation of Fishermen's Associatio	Eni Spa	-2.4%	-2.4%	-1.39
14-Nov-18	Filing	1	1		Pacific Coast Federation of Fishermen's Associatio	ExxonMobil	-2.0%	-2.2%	-1.40
14-Nov-18	Filing	1	1		Pacific Coast Federation of Fishermen's Associatio	Hess Corp	-0.4%	-0.8%	-0.21
14-Nov-18	Filing	1	1		Pacific Coast Federation of Fishermen's Associatio	Occidental	0.6%	0.4%	0.19
14-Nov-18	Filing	0	1		Pacific Coast Federation of Fishermen's Associatio	Ovintiv Inc	-7.8%	-8.3%	-1.61

14-Nov-18	Filing	0	1		Pacific Coast Federation of Fishermen's Associatio	Phillips 66	-1.4%	-1.8%	-0.99
14-Nov-18	Filing	1	1		Pacific Coast Federation of Fishermen's Associatio	Repsol SA	0.3%	0.2%	0.07
14-Nov-18	Filing	1	1		Pacific Coast Federation of Fishermen's Associatio	Royal Dutch Shell	-0.3%	-0.4%	-0.20
14-Nov-18	Filing	1	1		Pacific Coast Federation of Fishermen's Associatio	Total Energies SE	0.8%	0.7%	0.44
16-Nov-18	Filing	0	1		Barnes v. Edison International	Edison International	-0.3%	-0.2%	-0.11
06-Dec-18	Filing	0	1		New York City Employees' Retirement System v. Tr	TransDigm Group	-8.0%	-2.2%	-0.96
10-Dec-18	Filing	0	1		California Fueling, LLC v. Best Energy Solutions &	Innospec	-1.2%	1.3%	0.52
08-Feb-19	Filing	0	1		Von Oeyen v. Southern California Edison Co.	Edison International	5.0%	5.1%	2.19
22-Mar-19	Filing	0	0		City of Torrance v. Southern California Edison Co.	Edison International	1.6%	1.9%	0.80
05-Apr-19	Filing	1	1		Milieudefensie et al. v. Royal Dutch Shell plc.	Royal Dutch Shell	2.2%	1.9%	1.12
02-May-19	Filing	1	1		In re Exxon Mobil Corp. Derivative Litigation Tex	ExxonMobil	-3.5%	-3.5%	-2.44
06-Aug-19	Filing	1	0		Saratoga Advantage Trust Energy & Basic Materials	ExxonMobil	-1.7%	-0.2%	-0.16
29-Aug-19	Filing	0	0		Public Watchdogs v. Southern California Edison Co.	Edison International	-1.4%	-2.3%	-0.92
05-Sep-19	Filing	1	0		Stourbridge Investments v Avery	ExxonMobil	3.4%	1.5%	0.99
09-Oct-19	Filing	0	0		Spoon v. Bayou Bridge Pipeline LLC	Energy Transfers	-2.3%	-2.0%	-0.73
24-Oct-19	Filing	1	1		Commonwealth v. Exxon Mobil Corp.	ExxonMobil	0.2%	-0.4%	-0.31
29-Oct-19	Filing	1	0		Friends of the Earth et al. v. Total	Total Energies SE	0.6%	-0.4%	-0.30
12-Nov-19	Filing	0	1		Specific instance under the OECD Guidelines for Mu	Ascent Resources	-7.6%	-6.5%	-0.77
02-Dec-19	Filing	1	1		In re Exxon Mobil Corp. Derivative Litigation N.J	ExxonMobil	-1.2%	1.0%	1.02
03-Dec-19	Filing	1	0		Complaint against BP in respect of violations of t	BP	-0.3%	0.0%	0.01
20-Dec-19	Filing	1	0		Italian Competition Authority Ruling Eni's Diesel+	Eni Spa	1.2%	0.6%	0.40
28-Jan-20	Filing	1	1		Notre Affaire a Tous and Others v. Total	Total Energies SE	-2.7%	-1.4%	-1.02
09-Mar-20	Filing	1	0		City & County of Honolulu v. Sunoco LP	BP	-12.1%	-1.4%	-0.70
09-Mar-20	Filing	1	0		City & County of Honolulu v. Sunoco LP	Chevron	-5.7%	-1.0%	-0.52
09-Mar-20	Filing	1	0		City & County of Honolulu v. Sunoco LP	Conocophillips	-11.7%	-6.0%	-2.35
09-Mar-20	Filing	0	0		City & County of Honolulu v. Sunoco LP	Energy Transfers	-14.7%	-8.6%	-3.24
09-Mar-20	Filing	1	0		City & County of Honolulu v. Sunoco LP	ExxonMobil	-10.3%	-5.5%	-3.49
09-Mar-20	Filing	0	0		City & County of Honolulu v. Sunoco LP	Marathon Oil	-8.4%	0.0%	-0.06
09-Mar-20	Filing	0	0		City & County of Honolulu v. Sunoco LP	Phillips 66	-10.8%	-5.6%	-2.85
09-Mar-20	Filing	1	0		City & County of Honolulu v. Sunoco LP	Royal Dutch Shell	-12.0%	-1.8%	-1.07
15-May-20	Filing	1	1		Beyond Pesticides v. Exxon Mobil Corp.	ExxonMobil	8.1%	3.9%	2.08
24-Jun-20	Filing	1	1		State of Minnesota v. American Petroleum Institute	ExxonMobil	-2.6%	-1.4%	-0.67
25-Jun-20	Filing	1	0		District of Columbia v. Exxon Mobil Corp.	BP	-6.7%	-3.3%	-1.47
25-Jun-20	Filing	1	0		District of Columbia v. Exxon Mobil Corp.	Chevron	-5.4%	-1.6%	-0.74

25-Jun-20	Filing	1	0		District of Columbia v. Exxon Mobil Corp.	ExxonMobil	-6.6%	-2.7%	-1.36
25-Jun-20	Filing	1	0		District of Columbia v. Exxon Mobil Corp.	Royal Dutch Shell	-6.5%	-3.1%	-1.37
18-Aug-20	Filing	1	0		Walkover v Woods	ExxonMobil	-2.9%	-2.9%	-1.36
02-Sep-20	Filing	1	0		City of Hoboken v. Exxon Mobil Corp.	BP	-2.3%	-1.2%	-0.51
02-Sep-20	Filing	1	0		City of Hoboken v. Exxon Mobil Corp.	Chevron	-2.0%	-0.4%	-0.20
02-Sep-20	Filing	1	0		City of Hoboken v. Exxon Mobil Corp.	Conocophillips	-5.1%	-3.5%	-1.13
02-Sep-20	Filing	1	0		City of Hoboken v. Exxon Mobil Corp.	ExxonMobil	-2.1%	-0.4%	-0.19
02-Sep-20	Filing	0	0		City of Hoboken v. Exxon Mobil Corp.	Phillips 66	2.1%	3.8%	1.29
02-Sep-20	Filing	1	0		City of Hoboken v. Exxon Mobil Corp.	Royal Dutch Shell	-3.0%	-1.8%	-0.76
09-Sep-20	Filing	1	0		City of Charleston v. Brabham Oil Co.	BP	-4.3%	-4.1%	-1.69
09-Sep-20	Filing	1	0		City of Charleston v. Brabham Oil Co.	Chevron	-4.6%	-2.1%	-0.94
09-Sep-20	Filing	1	0		City of Charleston v. Brabham Oil Co.	Conocophillips	-8.3%	-5.7%	-1.84
09-Sep-20	Filing	1	0		City of Charleston v. Brabham Oil Co.	ExxonMobil	-5.4%	-2.8%	-1.28
09-Sep-20	Filing	1	0		City of Charleston v. Brabham Oil Co.	Hess Corp	-7.6%	-4.9%	-1.25
09-Sep-20	Filing	0	0		City of Charleston v. Brabham Oil Co.	Marathon Oil	-11.8%	-8.9%	-1.94
09-Sep-20	Filing	1	0		City of Charleston v. Brabham Oil Co.	Murphy Oil Corp	-17.3%	-14.6%	-3.11
09-Sep-20	Filing	0	0		City of Charleston v. Brabham Oil Co.	Phillips 66	-6.2%	-3.5%	-1.21
09-Sep-20	Filing	1	0		City of Charleston v. Brabham Oil Co.	Royal Dutch Shell	-3.6%	-3.3%	-1.37
14-Sep-20	Filing	1	0		Connecticut v. Exxon Mobil Corp.	ExxonMobil	-2.0%	-3.8%	-1.71
09-Oct-20	Filing	0	0		Delaware v. BP America Inc.	APA Corp	-2.4%	-5.7%	-1.13
09-Oct-20	Filing	1	0		Delaware v. BP America Inc.	CNX Resources	4.9%	2.8%	0.51
09-Oct-20	Filing	1	0		Delaware v. BP America Inc.	Chevron	1.0%	-2.1%	-0.93
09-Oct-20	Filing	1	0		Delaware v. BP America Inc.	Conocophillips	3.7%	0.4%	0.12
09-Oct-20	Filing	1	0		Delaware v. BP America Inc.	Consol Energy	5.8%	3.5%	0.57
09-Oct-20	Filing	1	0		Delaware v. BP America Inc.	Devon Energy Corp	0.1%	-3.6%	-0.79
09-Oct-20	Filing	1	0		Delaware v. BP America Inc.	ExxonMobil	3.5%	0.7%	0.29
09-Oct-20	Filing	1	0		Delaware v. BP America Inc.	Hess Corp	2.6%	-1.4%	-0.34
09-Oct-20	Filing	0	0		Delaware v. BP America Inc.	Marathon Oil	4.0%	0.6%	0.13
09-Oct-20	Filing	1	0		Delaware v. BP America Inc.	Marathon Petroleum	4.6%	0.8%	0.22
09-Oct-20	Filing	1	0		Delaware v. BP America Inc.	Murphy Oil Corp	1.0%	-2.6%	-0.54
09-Oct-20	Filing	1	0		Delaware v. BP America Inc.	Occidental	5.4%	2.5%	0.62
09-Oct-20	Filing	0	0		Delaware v. BP America Inc.	Ovintiv Inc	6.1%	2.7%	0.47
09-Oct-20	Filing	0	0		Delaware v. BP America Inc.	Phillips 66	3.0%	-0.3%	-0.11
09-Oct-20	Filing	1	0		Delaware v. BP America Inc.	Royal Dutch Shell	3.4%	0.8%	0.34

09-Oct-20	Filing	1	0		Delaware v. BP America Inc.	Total Energies SE	2.2%	-0.4%	-0.20
12-Oct-20	Filing	1	0		County of Maui v. Sunoco LP	BP	-3.5%	-3.9%	-1.58
12-Oct-20	Filing	1	0		County of Maui v. Sunoco LP	Chevron	-2.4%	-4.2%	-1.84
12-Oct-20	Filing	1	0		County of Maui v. Sunoco LP	Conocophillips	-1.8%	-3.7%	-1.17
12-Oct-20	Filing	1	0		County of Maui v. Sunoco LP	ExxonMobil	-3.0%	-4.5%	-1.99
12-Oct-20	Filing	1	0		County of Maui v. Sunoco LP	Marathon Petroleum	-5.6%	-7.8%	-2.15
12-Oct-20	Filing	0	0		County of Maui v. Sunoco LP	Phillips 66	-4.4%	-6.3%	-2.11
12-Oct-20	Filing	1	0		County of Maui v. Sunoco LP	Royal Dutch Shell	-1.2%	-1.6%	-0.65
11-Nov-20	Filing	0	1		Adorers of the Blood of Christ v. Transcontinental	Williams Companies	0.1%	0.4%	0.14
16-Dec-20	Filing	0	1		Greenpeace, Inc. v. Walmart Inc.	Walmart Inc	0.3%	-1.0%	-0.42
22-Feb-21	Filing	1	0		Annapolis v API	BP	6.2%	6.2%	2.22
22-Feb-21	Filing	1	0		Annapolis v API	CNX Resources	-6.1%	-5.5%	-0.95
22-Feb-21	Filing	1	0		Annapolis v API	Chevron	4.8%	5.7%	2.22
22-Feb-21	Filing	1	0		Annapolis v API	Conocophillips	9.0%	10.0%	2.81
22-Feb-21	Filing	1	0		Annapolis v API	Consol Energy	5.3%	6.7%	1.06
22-Feb-21	Filing	1	0		Annapolis v API	ExxonMobil	5.7%	6.8%	2.52
22-Feb-21	Filing	1	0		Annapolis v API	Hess Corp	11.9%	12.9%	3.05
22-Feb-21	Filing	0	0		Annapolis v API	Marathon Oil	21.0%	22.2%	4.42
22-Feb-21	Filing	0	0		Annapolis v API	Phillips 66	7.8%	8.9%	2.61
22-Feb-21	Filing	1	0		Annapolis v API	Royal Dutch Shell	4.1%	4.1%	1.50
02-Mar-21	Filing	0	1		Envol Vert et al. v. Casino	Groupe Casino	-2.6%	-3.8%	-1.00
04-Mar-21	Filing	0	0		Last Beach Cleanup v. TerraCycle, Inc.	Campbell Soup Company	2.1%	2.4%	0.78
04-Mar-21	Filing	0	0		Last Beach Cleanup v. TerraCycle, Inc.	Colgate-Palmolive Co	0.9%	1.6%	0.78
04-Mar-21	Filing	0	0		Last Beach Cleanup v. TerraCycle, Inc.	Nestle	-0.9%	0.0%	-0.03
04-Mar-21	Filing	0	0		Last Beach Cleanup v. TerraCycle, Inc.	Proctor & Gamble	1.7%	2.3%	1.12
04-Mar-21	Filing	0	0		Last Beach Cleanup v. TerraCycle, Inc.	The Clorox Co	3.0%	3.1%	1.17
04-Mar-21	Filing	0	0		Last Beach Cleanup v. TerraCycle, Inc.	The Coca-Cola Company	1.4%	2.2%	1.12
22-Apr-21	Filing	1	0		City of New York v. American Petroleum Institute,	BP	-0.3%	-2.4%	-0.84
22-Apr-21	Filing	1	0		City of New York v. American Petroleum Institute,	ExxonMobil	0.5%	-0.8%	-0.30
22-Apr-21	Filing	1	1		Patrick Pouyanné (CEO of TotalEnergies) v. Greenp	Marathon Petroleum	1.9%	0.1%	0.02
22-Apr-21	Filing	1	0		City of New York v. American Petroleum Institute,	Royal Dutch Shell	0.0%	-2.1%	-0.74
26-Apr-21	Filing	1	0		Anne Arundel v BP	BP	0.7%	-0.2%	-0.07
26-Apr-21	Filing	1	0		Anne Arundel v BP	CNX Resources	4.6%	3.5%	0.60
26-Apr-21	Filing	1	0		Anne Arundel v BP	Chevron	1.7%	0.2%	0.07

26-Apr-21	Filing	1	0		Anne Arundel v BP	Conocophillips	3.7%	2.0%	0.56
26-Apr-21	Filing	1	0		Anne Arundel v BP	Consol Energy	7.2%	6.2%	0.96
26-Apr-21	Filing	1	0		Anne Arundel v BP	ExxonMobil	2.1%	0.7%	0.24
26-Apr-21	Filing	1	0		Anne Arundel v BP	Hess Corp	5.1%	3.1%	0.71
26-Apr-21	Filing	0	0		Anne Arundel v BP	Marathon Oil	6.7%	5.0%	0.96
26-Apr-21	Filing	0	0		Anne Arundel v BP	Phillips 66	4.2%	2.5%	0.72
26-Apr-21	Filing	1	0		Anne Arundel v BP	Royal Dutch Shell	0.0%	-0.9%	-0.32
08-Jun-21	Filing	0	0		Earth Island Institute v. Coca-Cola Co.	The Coca-Cola Company	-1.4%	-1.3%	-0.68
16-Jun-21	Filing	0	0		Swartz and Muto v. Coca-Cola Co.	The Coca-Cola Company	-1.1%	-0.5%	-0.26
07-Jul-21	Filing	1	0		Conservation Law Foundation v. Shell Oil Co.	Royal Dutch Shell	-2.4%	-0.3%	-0.11
14-Sep-21	Filing	1	0		State of Vermont v Exxon	ExxonMobil	4.5%	4.3%	1.49
14-Sep-21	Filing	1	0		State of Vermont v Exxon	Royal Dutch Shell	4.0%	4.9%	1.70
14-Sep-21	Filing	0	0		State of Vermont v Exxon	Sunoco LP	0.7%	0.1%	0.02
16-Sep-21	Filing	0	0		Complaint to Ad Standards on HSBC's Great Barrie	HSBC	0.4%	2.3%	0.92
20-Sep-21	Filing	0	1		Deutsche Umwelthilfe (DUH) v. BMW	BMW	-4.2%	-1.9%	-0.81
20-Sep-21	Filing	0	1		Deutsche Umwelthilfe (DUH) v. Mercedes-Benz AG	Mercedes-Benz AG	-4.3%	-1.7%	-0.65
09-Nov-21	Filing	0	1		Kaiser et al v. Volkswagen AG	Volkswagen	-5.9%	-5.1%	-1.72
17-Sep-07	Decision	0	0	1	California v. GM Corp.	General Motors Co	7.3%	4.6%	1.14
20-Nov-07	Decision	0	0	1	Germanwatch vs. Volkswagen	Volkswagen	-3.6%	-2.1%	-0.79
29-Apr-08	Decision	0	0	-1	Australian Competition & Consumer Commission v. De	De Longhi Spa	2.3%	2.0%	0.61
25-Jun-08	Decision	0	0	-1	Australian Competition & Consumer Commission v. Go	Goodyear Tire & Rubber Co	-6.7%	-3.1%	-0.86
18-Sep-08	Decision	0	0	-1	Australian Competition & Consumer Commission v. GM	General Motors Co	11.3%	5.0%	1.08
02-Dec-08	Decision	0	0	-1	Southern Alliance for Clean Energy v. Duke Energy	Duke Energy	-5.1%	-3.1%	-1.50
24-Jun-09	Decision	0	0	1	California v. GM Corp.	General Motors Co	-3.1%	-6.3%	-1.02
13-May-10	Decision	0	0	1	Connecticut v. Am. Elec. Power	American Electric Power	-0.4%	0.6%	0.23
28-May-10	Decision	1	0	1	Comer v. Murphy Oil USA, Inc.	Chevron	1.1%	0.7%	0.35
28-May-10	Decision	1	0	1	Comer v. Murphy Oil USA, Inc.	ExxonMobil	0.0%	-0.3%	-0.12
28-May-10	Decision	0	0	1	Comer v. Murphy Oil USA, Inc.	Honeywell International	-0.4%	-0.8%	-0.32
28-May-10	Decision	1	0	1	Comer v. Murphy Oil USA, Inc.	Murphy Oil Corp	0.3%	-0.3%	-0.08
28-May-10	Decision	1	0	1	Comer v. Murphy Oil USA, Inc.	Royal Dutch Shell	4.0%	-0.3%	-0.15
24-Nov-10	Decision	0	0	1	Sierra Club v. Duke Energy Indiana	Duke Energy	-0.6%	-0.4%	-0.16
19-Apr-11	Decision	0	0	1	Burton v. Dominion Nuclear Connecticut, Inc.	Dominion Energy	0.0%	-0.6%	-0.30
20-Jun-11	Decision	0	0	1	Connecticut v. Am. Elec. Power	American Electric Power	1.4%	-0.1%	-0.06
13-Mar-12	Decision	1	0	1	Norwegian Climate Network et al vs Statoil	Equinor	-1.0%	-2.2%	-0.92

21-Sep-12	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	BP	-0.2%	0.6%	0.23
21-Sep-12	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	Chevron	1.0%	1.4%	1.05
21-Sep-12	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	ExxonMobil	1.4%	1.8%	1.45
21-Sep-12	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	Peabody	-7.7%	-6.5%	-1.96
21-Sep-12	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	Royal Dutch Shell	-1.9%	-1.3%	-0.82
18-Mar-13	Decision	0	0	1	Sao Paulo Public Prosecutor's Office v. United Air	Delta Air Lines	1.6%	2.7%	0.66
18-Mar-13	Decision	0	0	1	Sao Paulo Public Prosecutor's Office v. United Air	United Airlines Holdings Inc	2.0%	3.0%	0.67
14-May-13	Decision	1	0	1	Comer v. Murphy Oil USA, Inc.	Chevron	0.6%	-0.7%	-0.55
14-May-13	Decision	1	0	1	Comer v. Murphy Oil USA, Inc.	ExxonMobil	1.2%	0.1%	0.05
14-May-13	Decision	0	0	1	Comer v. Murphy Oil USA, Inc.	Honeywell International	2.7%	1.1%	0.77
14-May-13	Decision	1	0	1	Comer v. Murphy Oil USA, Inc.	Murphy Oil Corp	2.9%	1.2%	0.57
14-May-13	Decision	1	0	1	Comer v. Murphy Oil USA, Inc.	Royal Dutch Shell	-0.3%	-0.5%	-0.38
20-May-13	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	BP	1.8%	1.0%	0.41
20-May-13	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	Chevron	2.6%	1.4%	1.05
20-May-13	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	ExxonMobil	2.3%	1.3%	1.07
20-May-13	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	Peabody	5.1%	3.6%	0.99
20-May-13	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	Royal Dutch Shell	1.6%	0.7%	0.53
03-Sep-14	Decision	0	0	-1	California Health Communities Network v. City of P	Walmart Inc	1.4%	1.4%	1.01
08-Jun-16	Decision	0	0	1	Nucor Steel-Arkansas v. Big River Steel, LLC, No.	US Steel	7.9%	7.6%	1.45
13-Sep-16	Decision	0	0	-1	People v. Southern California Gas Co.	Sempra Energy	1.2%	1.3%	0.79
18-Oct-16	Decision	0	0	1	Sao Paulo Public Prosecutor's Office v. United Air	Delta Air Lines	2.2%	1.2%	0.41
18-Oct-16	Decision	0	0	1	Sao Paulo Public Prosecutor's Office v. United Air	United Airlines Holdings Inc	4.2%	3.2%	0.82
07-Feb-17	Decision	0	0	-1	California ex rel. South Coast Air Quality Managem	Sempra Energy	1.4%	1.5%	0.84
30-Mar-17	Decision	1	0	1	Lynn v. Peabody Energy Corp	Peabody	-8.4%	-7.7%	-0.89
01-Jun-17	Decision	0	0	1	In re Vienna-Schwechat Airport Expansion	Flughafen Wien	3.8%	3.2%	1.44
30-Nov-17	Decision	1	0	-1	Lliuya v. RWE	RWE	-2.1%	-1.3%	-0.36
28-Mar-18	Decision	0	0	1	In re Vienna-Schwechat Airport Expansion	Flughafen Wien	-1.9%	-2.3%	-1.04
08-Aug-18	Decision	0	0	-1	California v. Southern California Gas Co.	Sempra Energy	-0.5%	-0.7%	-0.34
14-Aug-18	Decision	1	0	-1	Ramirez v. Exxon Mobil Corp.	ExxonMobil	-3.2%	-2.4%	-1.49
18-Jan-19	Decision	0	0	-1	New York City Employees' Retirement System v. Tr	TransDigm Group	-1.4%	-2.2%	-0.95
04-Feb-19	Decision	1	0	1	Fentress v. Exxon Mobil Corp.	ExxonMobil	3.2%	2.2%	1.39
25-Feb-19	Decision	0	0	1	California v. Southern California Gas Co.	Sempra Energy	1.1%	0.8%	0.42
14-Mar-19	Decision	1	0	-1	Conservation Law Foundation v. ExxonMobil Corp.	ExxonMobil	0.2%	-0.5%	-0.36
19-Apr-19	Decision	0	0	-1	BankTrack, et al. vs. ING Bank	ING Group	0.0%	0.3%	0.25

06-May-19	Decision	1	0	-1	City of Birmingham Relief & Retirement System v. E	ExxonMobil	-0.7%	0.1%	0.05
26-Jul-19	Decision	0	0	-1	Development YES – Open-Pit Mines NO v. Group PZU	Powszechny Zakład Ubezpieczeń	-3.6%	-3.5%	-1.36
31-Jul-19	Decision	0	0	-1	ClientEarth v Enea	Enea SA	-2.7%	-1.1%	-0.32
10-Dec-19	Decision	1	0	1	People of the State of New York v. Exxon Mobil Cor	ExxonMobil	-0.8%	-0.6%	-0.40
05-Feb-20	Decision	0	0	-1	ASA Ruling on Ryanair Ltd t/a Ryanair Ltd	Ryanair	0.6%	-2.1%	-0.67
08-Jun-20	Decision	1	0	-1	Advertising Standards Authority's Ruling on Shell	Royal Dutch Shell	4.9%	4.0%	1.74
16-Jun-20	Decision	1	0	-1	Complaint against BP in respect of violations of t	BP	-1.8%	-5.4%	-2.41
22-Sep-20	Decision	0	0	-1	ClientEarth v. Polska Grupa Energetyczna	PGE SA	-8.6%	-4.7%	-1.05
28-Sep-20	Decision	1	0	-1	Conservation Law Foundation, Inc. v. Shell Oil Pro	Royal Dutch Shell	-2.1%	-4.6%	-1.87
17-Mar-21	Decision	0	0	-1	City of Torrance v. Southern California Edison Co.	Edison International	-1.7%	-0.4%	-0.12
01-Apr-21	Decision	1	0	1	City of New York v. BP p.l.c.	BP	-3.3%	-4.4%	-2.27
01-Apr-21	Decision	1	0	-1	Friends of the Earth et al. v. Prefect of of Bouch	Total Energies SE	-2.5%	-3.5%	-2.27
27-Apr-21	Decision	0	0	1	Barnes v. Edison International	Edison International	-1.3%	-1.6%	-0.52
26-May-21	Decision	1	0	-1	Milieudefensie et al. v. Royal Dutch Shell plc.	Royal Dutch Shell	-3.7%	-3.8%	-1.35
22-Jun-21	Decision	1	0	-1	Commonwealth v. Exxon Mobil Corp.	ExxonMobil	6.3%	4.5%	1.60
20-Sep-21	Decision	0	0	1	Greenpeace, Inc. v. Walmart Inc.	Walmart Inc	-1.4%	-0.2%	-0.10
28-Sep-21	Decision	1	0	1	King County v. BP p.l.c.	BP	3.6%	7.5%	2.48
30-Sep-21	Decision	0	0	1	Adorers of the Blood of Christ v. Transcontinental	Williams Companies	1.2%	1.2%	0.38
15-Nov-21	Decision	0	0	1	Last Beach Cleanup v. TerraCycle, Inc.	Campbell Soup Company	1.1%	0.7%	0.26
15-Nov-21	Decision	0	0	1	Last Beach Cleanup v. TerraCycle, Inc.	Colgate-Palmolive Co	-0.1%	-0.7%	-0.36
15-Nov-21	Decision	0	0	1	Last Beach Cleanup v. TerraCycle, Inc.	Nestle	-0.8%	-0.8%	-0.50
15-Nov-21	Decision	0	0	1	Last Beach Cleanup v. TerraCycle, Inc.	Proctor & Gamble	0.5%	-0.2%	-0.09
15-Nov-21	Decision	0	0	1	Last Beach Cleanup v. TerraCycle, Inc.	The Clorox Co	2.4%	2.1%	0.79
15-Nov-21	Decision	0	0	1	Last Beach Cleanup v. TerraCycle, Inc.	The Coca-Cola Company	-0.9%	-1.6%	-0.81
18-Nov-21	Decision	1	0	-1	Notre Affaire a Tous and Others v. Total	Total Energies SE	-4.8%	-3.6%	-1.49
06-Dec-21	Decision	0	0	1	Public Watchdogs v. Southern California Edison Co.	Edison International	2.7%	1.0%	0.32
16-Dec-21	Decision	1	0	-1	Friends of the Earth et al. v. Total	Total Energies SE	-0.2%	-0.7%	-0.31

SI2. Value-weighted versus non weighted results

We explore the sensitivity of our main result to the choice to weight the returns. We compare unweighted estimates of cumulative average abnormal returns (CAAR) to CAAR estimates that weight returns by the log of market capitalization. Equipped with the weighted results and the unweighted results, we can compare the estimated coefficients to understand if weighting our results is important.

We calculate z-statistics of the difference in these estimates (Paternoster et al., 1998), where u denotes unweighted and w denotes weighted:

$$Z = \frac{\beta_U - \beta_W}{\sqrt{SE(\beta_U^2) + SE(\beta_W^2)}}$$

The results are given in Table 2. Our conclusion is that the coefficients are not significantly different between the unweighted and weighted CAAR estimates. This suggests our choice to focus on the weighted result does not drive the result. If anything, not weighting returns leads to higher point estimates of the cumulative average abnormal return but we feel it is important to report our weighted result as the main result since we are interested in understanding the economic magnitude of climate litigation.

Table 2. Value-weighted versus non weighted results. We calculate a z-score of the difference between cumulative average abnormal return estimates (CAAR) where we weight returns by market capitalization versus when we do not weight returns by market capitalization. Since the z-scores are below conventional significance levels, we conclude the estimates are indistinguishable.

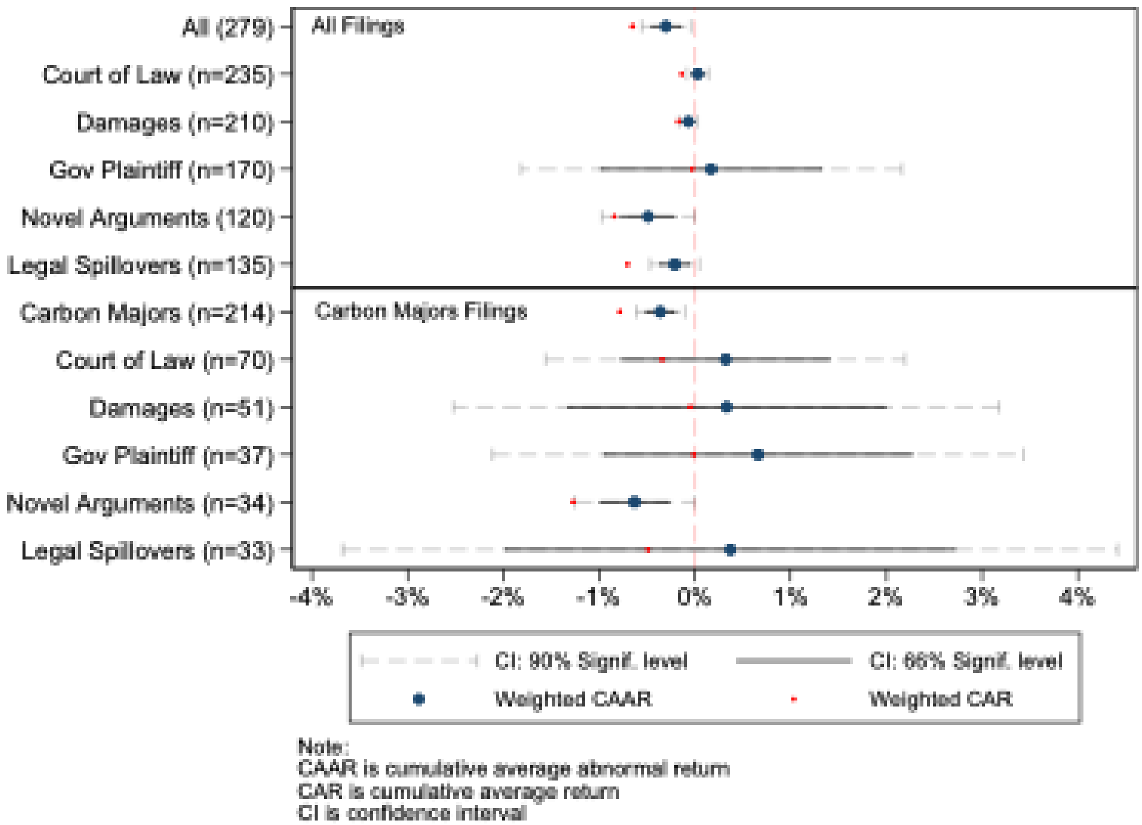
Estimate	**Z-score**
All Filings & Neg. Decisions	-0.011
Carbon Majors Filings & Neg. Decisions	-0.013
Non-Carbon Majors Filings & Neg. Decisions	-0.039
All Filings	-0.021
Carbon Majors Filings	-0.020
Non-Carbon Majors Filings	-0.039
All Filings Before 2019	-0.063
All Filings After 2019	0.014
Carbon Majors Filings Before 2019	-0.093
Carbon Majors Filings After 2019	0.029
All Novel Argument Filings	-0.056
Carbon Majors Novel Argument Filings	-0.075
All Positive Decisions	-0.026
Carbon Majors Positive Decisions	-0.153
All Negative Decisions	0.012
Carbon Majors Negative Decisions	0.026
All Negative before 2019	0.154
All Negative after 2019	0.005

SI3. Further heterogeneity and sensitivity analysis

SI3a. Further heterogeneity

Figure 1 shows the results for different legal characteristics. Novel cases clearly have larger effects. However, other attributes seem to give lower than average abnormal returns. This is counterintuitive. When considering subsamples, a lower number of observations mechanically increases standard errors. Future research based on more filings will be needed to investigate this further.

Figure 1. Legal characteristics. Red dots indicate the cumulative average return (CAR) during a 3 -day window around the filing and decision dates in %. Blue dots, bars and whiskers indicate the mean, p66 and p90 of the cumulative average abnormal return (CAAR), measured with the Capital Asset Pricing Model. Returns are weighted using the log of market value. Returns are winsorized at the 0.5% level. N indicates the number of firm-events. Standard errors with weighted Patell correction.



SI3b. Sensitivity analysis

Table 3 shows the results for a set of different specifications. The results using a single panel regression, rather than our standard 2-stage tests on abnormal returns, give almost identical results (see SI3c for details). The t-stats of these panel regressions are slightly smaller than those of our 2-step procedure, because the errors from the first step (calculating abnormal returns) are included in the uncertainty assessment. However, the results remain significant with p-values below 10% and below 5% in the case of filings and negative decisions for Carbon Majors. In contrast, when we equal variances for all error terms, t-statistics increase, and most results become significant at the 95% level. This indicates that more volatile stocks, which tend to be smaller and less liquid, tend to react stronger to litigation.

Adding two extra risk factors to the risk model has a very modest effect on abnormal returns, rarely affecting results by more than 0.1%. The main results (all filings, all negative decisions, filings for Carbon Majors, negative decisions for Carbon Majors) increase in magnitude, yet the t-statistics become slightly larger. This may indicate a problem of overfitting (Campbell et al., 2012). Indeed, the out-of-sample errors of the risk model are hardly affected (standard error of the residual is .0208 for CAPM and .0193 for the 3 factor model).

Next, we test anticipation effects by expanding the event window to -5,1, including the week before the announcement (numbers refer to trading days). We do not find anticipation effects for filings (for all filings the effect is -0.35 in both cases), or for positive decisions. For negative decisions, anticipation effects add approximately 0.30% extra negative returns. Since the expanded event window inevitably incorporates many other events (noise in a statistical sense), we conclude these results are not significant.

Table 3. Sensitivity analysis. Window -x,y indicates the estimation window from x days before the event until y days after the event. The 3 factor model is the Fama & French 3 factor model (1993), the other models use the CAPM model. Returns are weighted by log of the market value (in millions). Cum return is the cumulative average return over the event window (in %). CAAR is the cumulative average abnormal return (in %). T-values indicate significant results at the 5% when absolute values exceed 1.96. T-Patell is calculated using the Patell correction. CAAR regr uses the single stage panel regression described in SI3c and t-regr is the associated t-value with standard errors clustered both at the firm-event level and firm-date level. Fama-French risk factors were downloaded from https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

		#obs	Window -1,1 Cum return	CAAR	t-patell	t-eq var	CAAR regr	t-regr	CAAR 3factor	t-patell 3factor	Window -5,1 Cum return	CAAR	t-patell
Panel A: Filings and negative decisions													
All		306	-0.66	-0.41	-2.77	-2.38	-0.41	-1.92	-0.43	-2.48	-0.54	-0.44	-2.1
Carbon Majors		206	-0.68	-0.57	-2.84	-2.76	-0.55	-2.23	-0.60	-2.63	-0.46	-0.44	-1.46
Non-Carbon Majors		100	-0.60	-0.09	-0.71	-0.28	-0.09	-0.22	-0.07	-0.51	-0.71	-0.4 4	-1.61
Panel B: Filings													
All		279	-0.64	-0.35	-2.27	-1.94	-0.35	-1.5	-0.37	-1.98	-0.46	-0.35	-1.63
Carbon Majors		194	-0.67	-0.51	-2.36	-2.39	-0.49	-1.85	-0.57	-2.25	-0.36	-0.36	-1.04
Non-Carbon Majors		85	-0.58	0.00	-0.49	0	0.00	0.01	0.09	-0.14	-0.7	-0.34	-1.42
All	Before 2019	167	-0.62	-0.37	-1.10	-1.68	-0.36	-1.37	-0.50	-1.77	-0.63	-0.46	-0.7
All	After 2019	112	-0.68	-0.34	-2.23	-0.96	-0.21	-0.49	-0.18	-0.97	-0.23	-0.2	-1.73
C-Maj	Before 2019	118	-0.61	-0.49	-0.96	-1.97	-0.48	-1.49	-0.65	-1.57	-0.52	-0.4	0.04
C-Maj	After 2019	76	-0.78	-0.55	-2.57	-1.25	-0.35	-0.75	-0.44	-1.63	-0.12	-0.29	-1.7
All	Novel arguments	120	-0.85	-0.52	-1.66	-1.91	-0.52	-1.63	-0.74	-2.73	-1.04	-0.77	-1.5
C-Maj	Novel arguments	34	-1.27	-0.66	-1.69	-1.07	-0.70	-1.05	-0.75	-1.98	-1.65	-1.33	-2.11
Panel C: Decisions													
All:	Positive	51	0.75	0.29	1.07	0.71	0.30	0.81	0.05	0.43	1.4	0.72	0.79
C-Maj	Positive	24	0.54	0.07	0.9	0.12	0.07	0.12	-0.34	0.3	1.06	0.04	-0.3

All:	Negative	27	-0.79	-0.99	-2.04	-1.92	-1.02	-1.81	-1.04	-1.99	-1.35	-1.36	-1.85
C-Maj	Negative	12	-0.84	-1.50	-2.21	-2.05	-1.45	-1.53	-1.15	-1.81	-2.08	-1.78	-1.82
All	Neg Before 2019	10	-0.03	0.03	-0.12	0.03	-0.01	-0.01	-0.49	-0.54	-0.2	-0.35	-0.43
All	Neg After 2019	17	-1.23	-1.55	-2.27	-2.05	-1.49	-1.92	-1.32	-1.91	-2.04	-1.86	-1.79

SI3c. Single regression approach

We run the following regression:

$$r_{it} - rf_t = \alpha_i + \beta_{1i}(Mkt_t - rf_t) + \beta_{2i}SMB + \beta_{3i}HML + \beta_{4i}WTI + \delta D_{event} + e_{it}$$

Where the dependent variable is the excess return (the difference between the raw return and the riskless return) on day t for firm i. Each loading on our factors is firm-specific to take into account different levels of risk for different firms. α_i is the firm-specific alpha measuring the extent to which the market return cannot explain the firm return and is also the firm fixed effect of our panel regression. ϵ_{it} is the abnormal return on each day. D_{event} is a dummy variable which is one during the event window and delta is our variable of interest, i.e. the mean abnormal return during the event window (we multiply delta by the number of days in the event). We restrict the observations to the estimation window and the event window. By doing so we make sure that the risk sensitivity (beta's) is measured on the last 540 days so we have the appropriate risk sensitivity in case firm's risk profile would slowly change over time. For companies with multiple events, we duplicate the data, to have a set of risk factors that are specific to each firm-event. Errors are 2-way clustered both by firm-event and by firm-period. The latter corrects the standard errors for duplication. The panel approach has the advantage that the standard errors on delta takes into account the interactions with the other regressors.

In our main analysis, we follow a two-stage approach. We run the above equation separately for each firm-event, only during the estimation window. Next, abnormal returns are calculated as the forecasted errors. This avoids that the event affects the risk factors (betas). It also allows us to develop t-tests that have different standard variations for each firm.

SI3d. Portfolio analysis

When multiple firms are targeted in the same climate litigation filing, inference is challenged by the fact there is cross-sectional correlation in returns. This leads to an over-rejection of the null hypothesis since the estimated standard deviation is biased downwards (Kolari & Pynnonen, 2010; Collins & Dent, 1984). Essentially, because the lawsuit targets similar (and many) firms, returns are likely to be correlated on the event date. One way to avoid this issue of cross-correlation altogether is to form portfolios that contain all affected firms (Jaffe, 1974) and this approach is often used in event studies (e.g. Voeten, 2024; Ramelli et al., 2021; Monasterolo & De Angelis, 2020).

We assess the robustness of our results to this issue, using the portfolio approach to eliminate cross-sectional correlation. For cases against multiple firms, such as *Anne Arundel v. BP*, we form equal-weighted portfolios for each case and investigate their abnormal returns over the event window. If more than half of the portfolio contains firms designated as a Carbon Major, we label the entire portfolio as a Carbon Major portfolio. If the portfolio contains both North American and European stocks, we use the North American market factor. Since most multi-firm cases involve many US firms, we feel this is a reasonable approach. Further, in the weighted results, the weight of the portfolio corresponds to the log of the market capitalization of the portfolio.

We find that our main result, that is the negative response to all filings and negative decisions, remains significant at the 10% level after we control for the issue of cross-correlation using our portfolio approach. The cumulative average abnormal return is also slightly larger. Whilst it is known that the portfolio approach suffers from lower statistical power (Kolari & Pynnonen, 2010), the significance at the 10% level reassures us we are capturing some significant effect even given our relatively small sample. Other main results reach a similar conclusion (see Table 4).

Table 4. Portfolio analysis. Window -x,y indicates the estimation window from x days before the event until y days after the event. The model for estimating abnormal returns uses the CAPM model. Returns are weighted by log of the market value (in millions). Cum return is the cumulative average

return over the event window (in %). CAAR is the cumulative average abnormal return (in %). T-values indicate significant results at the 5% when absolute values exceed 1.96. T-Patell is calculated using the Patell correction. For events that target multiple firms, we group firms together into equal-weighted portfolios. If more than half of the portfolio contains firms designated as a Carbon Major, we label the entire portfolio as a Carbon Major portfolio. If the portfolio contains both European and North American stocks, we use the North American market factor. In the weighted results, the weight of the portfolio corresponds to the log of the market capitalization of the portfolio.

			Weighted			Unweighted		
			-1,1			-1,1		
		#obs	Cum return	CAAR	t-patell	Cum return	CAAR	t-patell
Panel A: Filings and negative decisions								
All		131	-0.6	-0.44	-1.65	-0.72	-0.51	-1.73
Carbon Majors		73	-0.51	-0.62	-1.84	-0.63	-0.7	-1.95
Non-Carbon Majors		58	-0.72	-0.22	-0.31	-0.83	-0.28	-0.41
Panel B: Filings								
All		107	-0.62	-0.39	-1.29	-0.75	-0.48	-1.38
Carbon Majors		62	-0.49	-0.51	-1.23	-0.62	-0.6	-1.32
Non-Carbon Majors		45	-0.81	-0.23	-0.5	-0.93	-0.31	-0.57
All	< 2019	69	-0.55	-0.29	-0.44	-0.73	-0.4	-0.6
All	> 2019	38	-0.75	-0.58	-1.53	-0.79	-0.62	-1.51
Carbon Majors	< 2019	37	-0.31	-0.46	-0.19	-0.6	-0.67	-0.4
Carbon Majors	> 2019	25	-0.75	-0.58	-1.67	-0.65	-0.51	-1.6
All	Novel arguments	42	-0.4	-0.3	-0.66	-0.57	-0.39	-0.76
Carbon Majors	Novel arguments	24	0.44	0.14	0.14	0.36	0.12	0.15
Panel C: Decisions								
All	Positive	30	0.42	0.03	0.14	0.38	0	0.14
Carbon Majors	Positive	10	0.31	-0.11	0.41	-0.01	-0.32	0.34
All	Negative	24	-0.52	-0.67	-1.14	-0.56	-0.68	-1.13
Carbon Majors	Negative	11	-0.66	-1.27	-1.85	-0.67	-1.26	-1.88
All	Neg < 2019	10	0.08	0.13	0.26	0.1	0.16	0.26
All	Neg > 2019	14	-0.94	-1.24	-1.66	-1.03	-1.28	-1.71

SI4. Anticipation of filings and decisions

To define the event window in event studies, it is important to understand when markets may acquire information about climate lawsuits. In general, filings and decision dates are unanticipated. It is common that on the filing day, plaintiffs hold a press conference and/or issue a press release announcing the filing, and this is typically the first time information on the claim becomes publicly available. In cases where prior information is available, for example with an ongoing investigation or prior announcement, the exact date of filing is usually kept unknown. For court judgments, the date of the decision is typically unanticipated. If a date is announced, the content of the decision is always unknown until the moment the decision is made. We describe examples of cases where there was anticipation of the filings and decisions to illustrate differences in anticipation. We also assess the impact of anticipation in our empirical setting, finding our results are qualitatively robust. This is in line with evidence on *partial* anticipation of lawsuits.

State Attorney Generals vs Exxon

The securities lawsuits filed by the New York and the Massachusetts Attorney Generals Offices against ExxonMobil Corp in the US were filed following public investigations, initiated on November 4, 2015 and reported in an article published in the New York Times on the following day. Over the years ExxonMobil tried to halt such investigations in state and federal courts, all without success. On October 24, 2018, the New York Attorney General finally filed “the long-anticipated lawsuit” (Gerrard, 2021) alleging that Exxon misled investors and regulators by publicly claiming that climate change is not a severe problem, while its own scientists advised otherwise. Hence, while there was anticipation about a potential case, the filing date was unknown. The case went to trial in October 2019. After a 12-day trial, on October 12, 2019, the court found that the New York Office of the Attorney General failed to demonstrate that ExxonMobil misled investors about its practises or procedures for accounting for climate risk.

While the New York trial was underway, on October 24, 2019, the Attorney General of Massachusetts brought another security lawsuit against ExxonMobil. The suit also followed an investigation, initiated by Attorney General Maura Healey on April 19, 2016. The lawsuit claims that ExxonMobil committed deceptive practises against Massachusetts investors and consumers by failing to disclose climate change risks, misrepresenting its business practises related to the use of proxy costs of carbon, misleadingly advertising its products, failing to disclose its products’ impacts on climate change, and engaging in greenwashing campaigns. ExxonMobil’s attempt to remove the case from state to federal court was rejected by the federal district court in Boston. Unlike the case brought in New York, this suit is still pending in state court.

Milieudefensie et al. v. Royal Dutch Shell plc.

An unusual case was *Milieudefensie et al. v Shell,* in which information about the timeline was pre-announced. In April 2018, one year before the actual filing, Milieudefensie (Friends of the Earth Netherlands) sent a letter to Mr Van Beurden, CEO of Royal Dutch Shell plc. The letter, also published online, explained why Milieudefensie was of the position that Shell was breaching its legal duty of care and, therefore, that Shell should remedy this unlawful situation by aligning its corporate activities and investment decisions with global climate targets.

Following the letter, Milieudefensie initiated a campaign asking Dutch citizens to sign a petition and become co-plaintiffs. By May 2018, 10,000 people in the Netherlands had signed the letter. In February 2019, six organisations (ActionAid Netherlands, Both ENDS, Fossielvrij NL, Greenpeace Netherlands, Wadden Sea Forum and Youth Environment Active) joined Milieudefensie and together sent a second letter to Shell, informing them that if Shell failed to meet their requests, they would hand over a court summons on April 5th. By the end of March, more than 17,000 co-plaintiffs had expressed their willingness to join a lawsuit. The lawsuit was filed on April 5th as planned before the District Court of the Hague.

Following the filing of the lawsuit, Shell was given three months to respond. In December 2020, the parties were requested to attend four hearing days in court. The District Court also announced that it would hand down a decision on May 26th 2021. On that day, the court session was delivered and livestreamed. The decision immediately received extremely high coverage by the media. On July 20th, Shell confirmed its intention to appeal the District Court ruling; the appeal was filed on August 23. There is an expectation that it will take between 2-3 years for the appeal to be decided.

SI5. Sectoral distribution

Table 5. Sectoral distribution of firm-events. Carbon Majors are defined as cases where one of the 90 largest historical emitters is involved.

Sector	Carbon Major	non-Carbon Major	Total
Energy	245	33	278
Utilities	3	32	35
Consumer Staples	0	20	20
Industrials	0	12	12
Consumer Discretion	0	12	12
Materials	3	4	7
Financials	0	5	5
Total	251	118	369

SI6. Financial data

We obtain the daily closing price P_{jt}, stock-split adjustment factor AF_{jt}, and daily total return factor (including cash equivalent distributions, reinvestment of dividends, and the compounding effect of dividends paid on reinvested dividends) TRF_{jt} for each common stock in North America and Europe that has had a climate litigation case filed against them over our sample period between 1st January 2005 and 31st December 2021 from Compustat North America and Compustat Global via the Wharton Research Data Service (WRDS). For stocks with multiple listings, we identify the primary listing and the exchange where most volume is traded for the common stock, and further cross-reference the returns with The Center for Research in Security Prices (CRSP) via WRDS for North American stocks and Yahoo! Finance for all stocks in the sample. We collect daily exchange rates from I/B/E/S. We then calculate the adjusted daily-closing price as:

$$AP_{jt} = \left(\frac{P_{jt}}{AF_{jt}}\right) \times TRF_{jt}$$

Daily stock returns are then $R_{jt} = (AP_{jt} - AP_{jt-1})/AP_{jt-1}$. Due to the volatile small-cap stocks in our sample, to limit extreme values, we winsorize returns at the 0.5% level. We complement this with fundamental data from Compustat Global and Compustat North America to provide summary statistics. We calculate market capitalisation as share outstanding times the year-end closing price, return on assets as income before depreciation over total assets, leverage as long-term plus debt in current liabilities over stockholders' equity, and also obtain total revenue.

We obtain daily regional returns for the risk-free rate, market, size, and value risk factors from Ken French's Data Library for North America and Europe. We also obtain the daily closing price for a barrel of crude oil (specifically, WTI spot Cushing in US dollars) from Refinitiv Datastream and calculate simple returns similar to our measure of daily stock returns.

Table 6. Summary financial statistics for firms in the sample.

Variable	Mean	Median	SD	Min	Max
Excess return (%)	0.05	0.04	2.67	-84.51	157.42
Excess return winsorized (%)	0.04	0.04	2.24	-9.13	9.87
Market equity (billion USD)	52.89	22.55	85.66	0.02	67.68
Return on assets	0.03	0.03	0.10	-1.19	1.50
Leverage	0.03	0.00	1.31	-0.15	51.26
Revenue (billions USD)	59.18	17.14	95.38	0.00	705.70

Notes: Excess returns are wisorized at the 0.5% level.

Sources: Compustat North America and Compustat Global

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