

# ESG Shareholder Engagement and Downside Risk

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# ESG Engagement by Institutional Investors

- Negative ESG events can imply substantial legal, reputational, operational, and financial risks
  - BP's Deepwater Horizon oil spill showed the importance of robust E policies (Dyck, Lins, Roth & Wagner, 2019)
- Institutional investors increasingly engage to improve firms' ESG profiles, often through private engagements
  - McCahery, Sautner & Starks 2016
- A number of large investors engage firms on E&S as well as G
  - Dimson, Karakas & Li 2016; Dyck et al. 2019
- **This paper: Does ESG engagement reduce downside risks?**

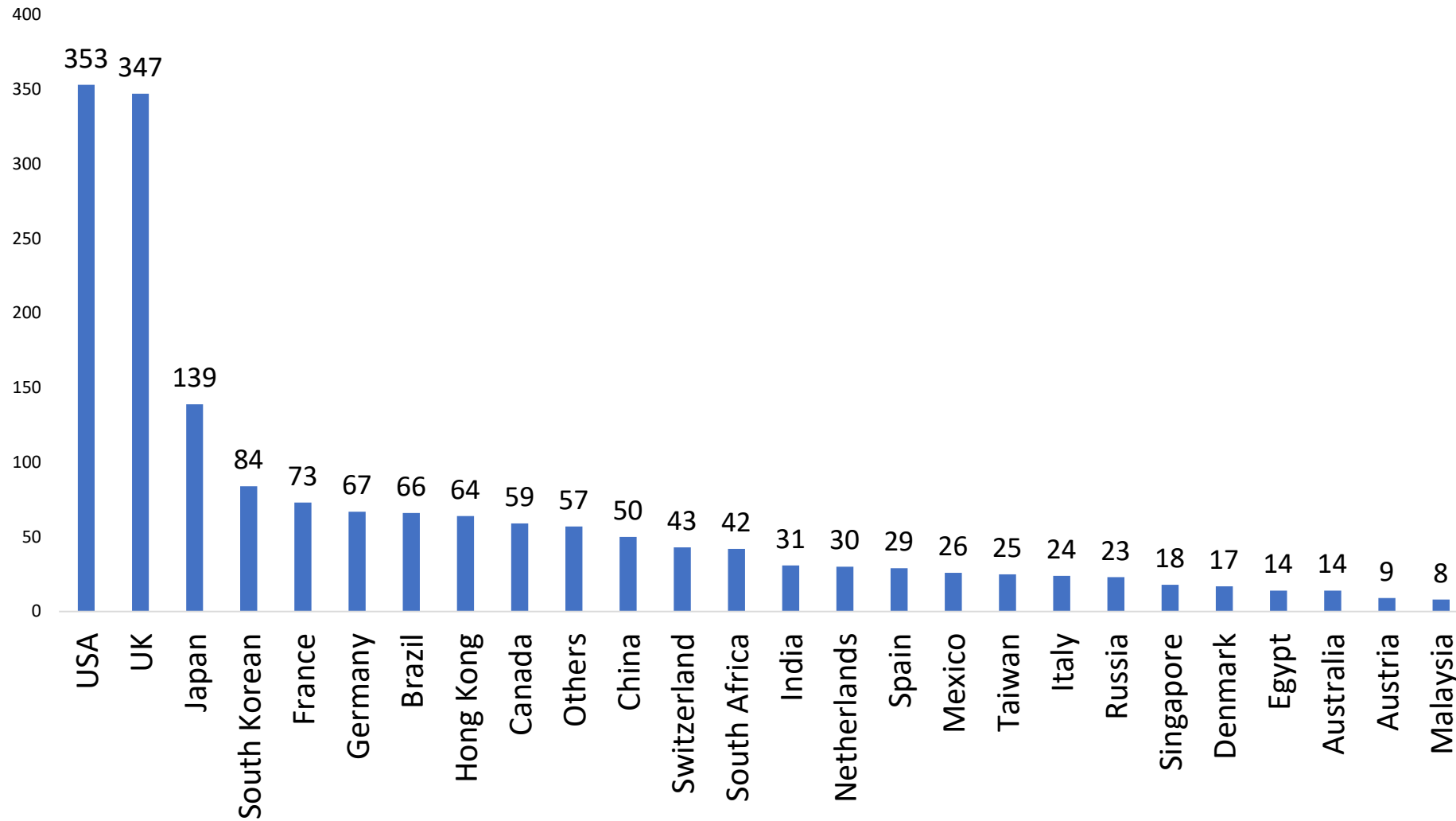
# Evidence on ESG and risk

- Lins, Servaes & Tamayo 2017: Firms with better E&S performed better during the crisis
- Albuquerque, Koskinen & Zhang 2019: A firm's effort to increase product differentiation through higher CSR investments decreases firm risk
- Ilhan, Sautner, & Vilkov 2019: Higher carbon emissions associated with higher downside tail risk
- And more papers...
  - ...but no evidence on effects of shareholder engagement

# Engagement Data

- ESG engagement data from a specialised shareholder engagement agent (*similar approach as in Marco Becht's series of papers*)
- Represents institutional investors with \$500bn+ assets under engagement advise
- Investor provided full access to its engagement database, including action reports, engagement activities, and measures of success
- 1712 engagements targeting 573 firms from 2005-2018

# Geographic Distribution of Engagements



# Engagement Themes (w/ Examples)

- Environmental: Carbon Intensity, Climate Change
- Governance: Remuneration, Board Structure, Board Diversity
- Social and Ethical: Health and Safety, Human Rights
- Strategy and Risk: Capital Structure, Risk Management

# Engagement Themes

Panel A: Governance Engagement			Panel B: Social Engagement		
Sub-themes	#	%	Sub-themes	#	%
Executive remuneration	206	28	Human rights	142	42
Board independence	193	26	Labour rights	91	27
Board diversity skills and experience	165	23	Bribery and corruption	47	14
Succession planning	84	12	Conduct and culture	39	12
Shareholder protection and right	81	11	Other social	16	5
Total	729	100	Total	335	100
% of Engagements (N = 1,712)		42.6	% of Engagements (N = 1,712)		19.6

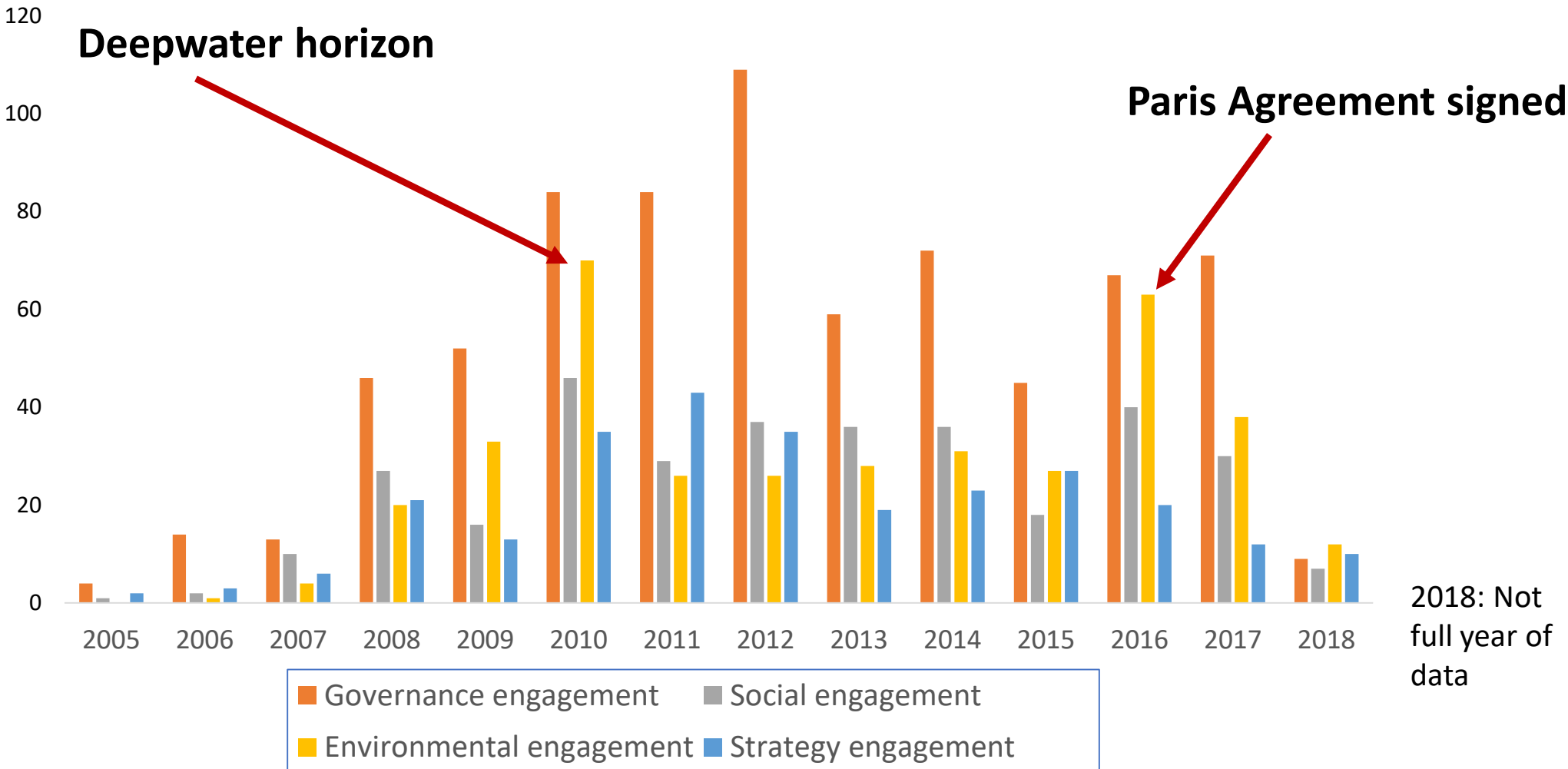
  

Panel C: Environmental Engagement			Panel D: Strategy Engagement		
Sub-themes	#	%	Sub-themes	#	%
Climate change	179	47	Business strategy	106	39
Environmental policy and strategy	51	13	Risk management	94	35
Supply chain management	44	12	Integrated reporting, accounting & auditing	59	22
Water	40	11	Cyber security	10	4
Pollution and waste management	38	10			
Forestry and land use	27	7			
Total	379	100	Total	269	100
% of Engagements (N = 1,712)		22.1	% of Engagements (N = 1,712)		15.7

About 80% of exec comp engagements



# Engagements over Time





# Engagement Actions

- Actions with the intention to enhance ESG characteristics
  - 5117 meetings
  - 2055 emails
  - 1748 calls
  - 1524 letters
- Contacts within target companies
  - 2042 contacts with senior executives
  - 1495 contacts with the boards of directors
  - 1527 contacts with the chairman of the board

# Engagement Process

## **Milestone 1 (completed by Agent):**

Concern raised with target company management

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## **Milestone 2 (completed by Target Company):**

Issue acknowledged by target company management

## **Milestone 3 (completed by Target Company):**

Action/strategy taken by management to solve the issue

## **Milestone 4 (completed by Target Company):**

Action/strategy successfully completed

# Engagement Success

## Milestone 1: Concern Raised with Target

Achieved Milestone 1 Only	302	17.6%
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## Milestone 2: Issue Acknowledged by Target

Achieved Milestones 1 to 2	522	30.5%
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## Milestone 3: Actions Taken by Target

Achieved Milestones 1 to 3	350	20.4%
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## Milestone 4: Engagement Successfully Completed

Achieved Milestones 1 to 4	538	31.4%
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# Measures of Downside Risk

- Lower partial moment of second order (below 0%)
  - Captures distribution of returns that fall below 0%
  - Square root of semi-variance below 0%
  - Markowitz (1959)
  
- Value at risk (at 5% percentile)
  - Daily return outcomes ranked in the bottom fifth percentile
  - Duffie and Pan (1997), Jorion (2002)

# Two Empirical Approaches

- Average treatment effect on the treated (with monthly data)
  - DiD: Downside risk before versus after engagement milestones
  - Treatment and control firms
- Stock return analysis (with weekly data)
  - Change in sensitivity to downside risk factor

# DiD Analysis

# DiD Analysis (Details)

- Outcome and selection equation

$$\text{Downside Risk}_{i,t} = \alpha_1 + \beta_1 \text{Target}_{i,t} + \beta_2 \text{Post}_{i,t} + \beta_3 \text{Target}_{i,t} \times \text{Post}_{i,t} + \beta_4 \text{Lambda}_{i,t} + \beta_5 x_{i,t} + \varepsilon_{i,t}$$

$$\text{Engagement Target}_{i,t} = \alpha_2 + z_{i,t-1} \gamma + u_{i,t},$$

- Control group matched based on country, industry and size (FTSE All-World)
- 24 months period around initial engagement
- Entropy balancing: reweighting the control group observations so that controls have same mean/variance as in the treatment group

# Effect of ESG Engagement on Downside Risk

Dependent variable	LPM	VaR
Engagement success	All	All
	(1)	(5)
<i>Target x Post</i>	-0.004 (-0.15)	-0.009 (-0.15)
<i>Target</i>	1.022*** (8.39)	2.124*** (8.72)
<i>Post</i>	0.038 (1.53)	0.073 (1.48)
<i>Log(MV)</i>	-0.362*** (-15.09)	-0.741*** (-15.45)
<i>Market-to-book ratio</i>	-0.001*** (-5.12)	-0.003*** (-4.45)
<i>Leverage</i>	0.001 (0.72)	0.001 (0.55)
<i>Investment</i>	0.000 (0.20)	0.001 (0.51)
<i>Profit margin</i>	-0.001 (-0.36)	-0.001 (-0.26)
<i>Dividend</i>	0.019 (1.17)	0.019 (1.25)
<i>Free float</i>	-0.002*** (-2.60)	-0.005*** (-3.08)
<i>Inverse Mills Ratio</i>	-0.484*** (-7.12)	-1.020*** (-7.50)
<i>Constant</i>	4.289*** (14.18)	8.930*** (15.05)
Model	Heckman	Heckman
Matched sample	Yes	Yes
Country FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Entropy balancing	Yes	Yes
Obs.	89,970	89,970
adj. R-sq.	0.303	0.276



# Effect of ESG Engagement on Downside Risk

Engagement Success:

**Low:** The target company does not acknowledge the concern. Views do NOT align and remain opposed.

*Milestone 2 has not been achieved*

**High:** The target company acknowledges the concern or takes actions.

*At least Milestone 2 has been achieved*

Dependent variable	LPM			VaR		
	All	Below Milestone 2	Milestone 2 and above	All	Below Milestone 2	Milestone 2 and above
Engagement success	(1)	(2)	(3)	(5)	(6)	(7)
<i>Target x Post</i>	-0.004 (-0.15)	0.038 (1.05)	-0.080* (-1.83)	-0.009 (-0.15)	0.066 (0.89)	-0.151* (-1.69)
<i>Target</i>	1.022*** (8.39)	1.100*** (6.97)	1.043*** (5.54)	2.124*** (8.72)	2.318*** (7.46)	2.094*** (5.46)
<i>Post</i>	0.038 (1.53)	0.031 (0.99)	0.069** (2.30)	0.073 (1.48)	0.079 (1.23)	0.102 (1.60)
<i>Log(MV)</i>	-0.362*** (-15.09)	-0.359*** (-12.21)	-0.383*** (-9.44)	-0.741*** (-15.45)	-0.746*** (-12.84)	-0.770*** (-9.31)
<i>Market-to-book ratio</i>	-0.001*** (-5.12)	-0.002*** (-4.78)	-0.017*** (-3.07)	-0.003*** (-4.45)	-0.003*** (-4.37)	-0.029** (-2.08)
<i>Leverage</i>	0.001 (0.72)	0.001 (0.80)	0.000 (0.07)	0.001 (0.55)	0.001 (0.78)	-0.000 (-0.12)
<i>Investment</i>	0.000 (0.20)	0.001 (1.56)	-0.001** (-1.98)	0.001 (0.51)	0.002* (1.87)	-0.001 (-1.34)
<i>Profit margin</i>	-0.001 (-0.36)	-0.001 (-0.62)	0.000 (0.07)	-0.001 (-0.26)	-0.002 (-0.41)	-0.000 (-0.01)
<i>Dividend</i>	0.019 (1.17)	0.029 (1.28)	0.005 (0.42)	0.019 (1.25)	0.027 (1.47)	0.016 (0.66)
<i>Free float</i>	-0.002*** (-2.60)	-0.002*** (-2.65)	-0.002 (-1.62)	-0.005*** (-3.08)	-0.005*** (-3.12)	-0.006* (-1.89)
<i>Inverse Mills Ratio</i>	-0.484*** (-7.12)	-0.566*** (-6.58)	-0.431*** (-4.30)	-1.020*** (-7.50)	-1.209*** (-7.04)	-0.862*** (-4.22)
<i>Constant</i>	4.289*** (14.18)	3.831*** (10.52)	6.903*** (18.52)	8.930*** (15.05)	8.161*** (11.46)	14.183*** (18.78)
Model	Heckman	Heckman	Heckman	Heckman	Heckman	Heckman
Matched sample	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Entropy balancing	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	89,970	56,644	33,326	89,970	56,644	33,326
adj. R-sq.	0.303	0.285	0.367	0.276	0.252	0.348

# Effect of ESG Engagement on Downside Risk

## Engagement Success:

**Low:** The target company does not acknowledge the concern of the leading shareholder activist. Views do NOT align and remain opposed. *Milestone 2 has not been achieved*

**High:** The target company acknowledges the concern of the leading shareholder activist. Their views commence to align.

- *At least Milestone 2 has been achieved*
- *Better if Milestone 3 has been achieved too*

Dependent variable	LPM				VaR			
	All	Below Milestone 2	Milestone 2 and above	Milestone 3 and above	All	Below Milestone 2	Milestone 2 and above	Milestone 3 and above
Engagement success	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Target x Post</i>	-0.004 (-0.15)	0.038 (1.05)	-0.080* (-1.83)	-0.419*** (-3.05)	-0.009 (-0.15)	0.066 (0.89)	-0.151* (-1.69)	-0.799*** (-2.95)
<i>Target</i>	1.022*** (8.39)	1.100*** (6.97)	1.043*** (5.54)	2.607*** (3.79)	2.124*** (8.72)	2.318*** (7.46)	2.094*** (5.46)	5.502*** (3.74)
<i>Post</i>	0.038 (1.53)	0.031 (0.99)	0.069** (2.30)	0.176** (2.39)	0.073 (1.48)	0.079 (1.23)	0.102 (1.60)	0.249* (1.70)
<i>Log(MV)</i>	-0.362*** (-15.09)	-0.359*** (-12.21)	-0.383*** (-9.44)	-0.666*** (-4.61)	-0.741*** (-15.45)	-0.746*** (-12.84)	-0.770*** (-9.31)	-1.396*** (-4.38)
<i>Market-to-book ratio</i>	-0.001*** (-5.12)	-0.002*** (-4.78)	-0.017*** (-3.07)	-0.014 (-1.21)	-0.003*** (-4.45)	-0.003*** (-4.37)	-0.029** (-2.08)	-0.005 (-0.26)
<i>Leverage</i>	0.001 (0.72)	0.001 (0.80)	0.000 (0.07)	0.000 (0.08)	0.001 (0.55)	0.001 (0.78)	-0.000 (-0.12)	-0.001 (-0.13)
<i>Investment</i>	0.000 (0.20)	0.001 (1.56)	-0.001** (-1.98)	-0.001 (-0.21)	0.001 (0.51)	0.002* (1.87)	-0.001 (-1.34)	0.003 (0.35)
<i>Profit margin</i>	-0.001 (-0.36)	-0.001 (-0.62)	0.000 (0.07)	0.001 (0.25)	-0.001 (-0.26)	-0.002 (-0.41)	-0.000 (-0.01)	0.001 (0.18)
<i>Dividend</i>	0.019 (1.17)	0.029 (1.28)	0.005 (0.42)	0.000 (0.00)	0.019 (1.25)	0.027 (1.47)	0.016 (0.66)	0.007 (0.09)
<i>Free float</i>	-0.002*** (-2.60)	-0.002*** (-2.65)	-0.002 (-1.62)	-0.009** (-2.32)	-0.005*** (-3.08)	-0.005*** (-3.12)	-0.006* (-1.89)	-0.017** (-2.38)
<i>Inverse Mills Ratio</i>	-0.484*** (-7.12)	-0.566*** (-6.58)	-0.431*** (-4.30)	-1.144*** (-3.51)	-1.020*** (-7.50)	-1.209*** (-7.04)	-0.862*** (-4.22)	-2.440*** (-3.47)
<i>Constant</i>	4.289*** (14.18)	3.831*** (10.52)	6.903*** (18.52)	8.092*** (8.56)	8.930*** (15.05)	8.161*** (11.46)	14.183*** (18.78)	15.989*** (7.85)
Model	Heckman	Heckman	Heckman	Heckman	Heckman	Heckman	Heckman	Heckman
Matched sample	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entropy balancing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	89,970	56,644	33,326	5,843	89,970	56,644	33,326	5,843
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Leverage	0.001	0.001	0.000	0.000				-0.001
		0.80 ,001	0.07 -0.001**	0.08 -0.001				-0.13 0.003
		1.56 0.001	-1.98 0.000	-0.21 0.001				0.35 0.001
		0.62 ,029	0.07 0.005	0.25 0.000				0.18 0.007
		1.28	0.42	0.00	1.25	1.47	0.66	0.09
Free float	-0.002*** (-2.60)	-0.002*** (-2.65)	-0.002 (-1.62)	-0.009** (-2.32)	-0.005*** (-3.08)	-0.005*** (-3.12)	-0.006* (-1.89)	-0.017** (-2.38)
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7% of the variable's STD

38% of the variable's STD

# Multiple Engagements at a Firm

- Challenge for every DiD: overlapping event windows
- Focus on downside risk around initial engagement of the first engagement
- For success analysis: Require success across all engagements
  - High bar
  - Reduces number of observations
  - Similar but slightly weaker results if we lift the requirement

# Effects by Engagement Theme

- Which engagement themes are most effective in reducing downside risk?
- Milestone 2: Engagement over E topics deliver the highest benefits in terms of reduction of downside risks
  - Key topic within E was climate change
- Consistent with Krueger, Sautner, and Starks (2019)
  - Engagement over climate change is an important channel through which institutions try to tackle climate risks
- Milestone 3: Next to E effects, some evidence also for G (but weak)
- *Currently work on more tests regarding the themes/interactions*

# Stock Return Analysis

# Stock Return Analysis

- Measure change in targets' return sensitivity to Downside Risk Factor
  - DOWN: Return of Highest minus Lowest 30% (based on risk measures)
  - Similar to Ang et al. (2009)
- Weekly returns, 24 months periods around initial engagement
  - Measure a Post vs. Pre effects of engagement
- Two dependent variables
  - Weekly target excess returns
  - Weekly target excess returns minus matched peer excess returns

# Time-Series DiD Analysis

Time stamp used to measure <i>Post</i> dummy:	<i>LPM</i>		<i>VaR</i>		<i>LPM</i>		<i>VaR</i>	
	Milestone 2	Milestone 3	Milestone 2	Milestone 3	Milestone 2	Milestone 3	Milestone 2	Milestone 3
	Excess Return		Excess Return		Excess Return		Excess Return	
	Target		Target		Target - Control		Target - Control	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Post</i> * <i>DOWN</i>	-0.011 (-1.33)	-0.058*** (-4.80)	-0.009 (-1.13)	-0.057*** (-4.83)	-0.036*** (-4.07)	-0.075*** (-5.72)	-0.034*** (-3.82)	-0.074*** (-5.70)
<i>DOWN</i>	0.067*** (10.29)	0.066*** (10.19)	0.076*** (11.47)	0.075*** (11.37)	0.004 (0.56)	0.004 (0.61)	0.006 (0.77)	0.006 (0.81)
<i>Post</i>	-0.000 (-1.15)	-0.000 (-0.09)	-0.000 (-1.37)	0.000 (-0.08)	0.000 (0.27)	0.000 (1.50)	0.000 (0.25)	-0.001* (1.66)
<i>MKT</i>	1.006*** (151.89)	1.006*** (151.89)	1.002*** (151.35)	1.002*** (151.34)	-0.008 (-1.04)	-0.008 (-1.03)	-0.009 (-1.25)	-0.009 (-1.24)
<i>SMB</i>	0.337*** (22.87)	0.337*** (22.90)	0.334*** (22.70)	0.334*** (22.73)	-0.189*** (-11.52)	-0.189*** (-11.52)	-0.189*** (-11.54)	-0.189*** (-11.53)
<i>HML</i>	0.172*** (13.59)	0.172*** (13.54)	0.160*** (12.63)	0.159*** (12.58)	0.102*** (7.31)	0.103*** (7.31)	0.101*** (7.18)	0.101*** (7.18)
<i>RMW</i>	0.159*** (12.00)	0.158*** (11.96)	0.160*** (12.04)	0.159*** (12.00)	0.055*** (3.71)	0.055*** (3.75)	0.056*** (3.78)	0.056*** (3.80)
<i>CMA</i>	-0.008 (-1.14)	-0.007 (-1.11)	-0.007 (-0.99)	-0.006 (-0.95)	0.010 (1.38)	0.010 (1.37)	0.009 (1.19)	0.009 (1.18)
<i>Alpha</i>	0.001*** (2.70)	0.001*** (2.69)	0.002*** (3.54)	0.002*** (3.52)	-0.001 (-1.04)	-0.001 (-1.03)	-0.001 (-1.18)	-0.001 (-1.18)
Obs.	218,429	218,429	219,181	219,181	214,948	214,948	215,716	215,716
Adj. R-sq.	0.273	0.273	0.274	0.274	0.001	0.001	0.001	0.001



# Time-Series DiD Analysis

Time stamp used to measure <i>Post</i> dummy:	<i>LPM</i>		<i>VaR</i>		<i>LPM</i>		<i>VaR</i>	
	Milestone 2	Milestone 3	Milestone 2	Milestone 3	Milestone 2	Milestone 3	Milestone 2	Milestone 3
	Excess Return		Excess Return		Excess Return		Excess Return	
	Target		Target		Target - Control		Target - Control	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Post</i> * <i>DOWN</i>	-0.011 (-1.33)	-0.058*** (-4.80)	-0.009 (-1.13)	-0.057*** (-4.83)	-0.036*** (-4.07)	-0.075*** (-5.72)	-0.034*** (-3.82)	-0.074*** (-5.70)
<i>DOWN</i>	0.067*** (10.29)	0.066*** (10.19)	0.076*** (11.47)	0.075*** (11.37)	0.004 (0.56)	0.004 (0.61)	0.006 (0.77)	0.006 (0.81)
<i>Post</i>	-0.000 (-1.15)	-0.000 (-0.09)	-0.000 (-1.37)	0.000 (-0.08)	0.000 (0.27)	0.000 (1.50)	0.000 (0.25)	-0.001* (1.66)
<i>MKT</i>	1.006*** (151.89)	1.006*** (151.89)	1.002*** (151.35)	1.002*** (151.35)	0.008 (0.08)	-0.008 (-1.03)	-0.009 (-1.25)	-0.009 (-1.24)
<i>SMB</i>	0.337*** (22.87)	0.337*** (22.90)	0.334*** (22.70)	0.334*** (22.70)	0.000 (0.00)	-0.189*** (-11.52)	-0.189*** (-11.54)	-0.189*** (-11.53)
<i>HML</i>	0.172*** (13.59)	0.172*** (13.54)	0.160*** (12.63)	0.159*** (12.63)	0.000 (0.00)	0.103*** (7.31)	0.101*** (7.18)	0.101*** (7.18)
<i>RMW</i>	0.159*** (12.00)	0.158*** (11.96)	0.160*** (12.04)	0.159*** (12.00)	0.000 (0.00)	0.055*** (3.75)	0.056*** (3.78)	0.056*** (3.80)
<i>CMA</i>	-0.008 (-1.14)	-0.007 (-1.11)	-0.007 (-0.99)	-0.006 (-0.95)	0.010 (1.38)	0.010 (1.37)	0.009 (1.19)	0.009 (1.18)
<i>Alpha</i>	0.001*** (2.70)	0.001*** (2.69)	0.002*** (3.54)	0.002*** (3.52)	-0.001 (-1.04)	-0.001 (-1.03)	-0.001 (-1.18)	-0.001 (-1.18)
Obs.	218,429	218,429	219,181	219,181	214,948	214,948	215,716	215,716
Adj. R-sq.	0.273	0.273	0.274	0.274	0.001	0.001	0.001	0.001

**Around 4%  
annualized  
return**

# Conclusions

- ESG engagements can lead to a reduction in a firm's downside risk
  - Risk reduction effects are stronger for more successful engagements
  - Effects also strongest when E topics are addressed
  - No evidence of a price paid in terms of Alpha for risk reductions
- Evidence from two complementary approaches
- Our analysis contributes new insights into understanding the channel through which ESG engagement can create value for investors

Thank you for your attention!

Questions and Comments very welcome.

# Summary Statistics **pre** vs. **post** Entropy Balancing

Summary Statistics <b>pre</b> Entropy Balancing	Treated		Control	
	Mean	St. Dev.	Mean	St. Dev.
<i>Log(MV)</i>	9.58	1.39	8.05	1.28
<i>Market-to-book ratio</i>	3.63	20.32	3.04	9.01
<i>Leverage</i>	35.62	21.21	33.60	23.28
<i>Investment</i>	11.55	27.56	10.51	26.40
<i>Profit margin</i>	16.00	14.31	11.46	26.37
<i>Dividend</i>	2.37	2.25	2.15	2.99
<i>Freefloat</i>	78.79	22.64	74.25	24.79

Summary Statistics <b>post</b> Entropy Balancing	Treated		Control	
	Mean	St. Dev.	Mean	St. Dev.
<i>Log(MV)</i>	9.58	1.39	9.58	1.39
<i>Market-to-book ratio</i>	3.63	20.32	3.63	20.32
<i>Leverage</i>	35.62	21.21	35.62	21.21
<i>Investment</i>	11.55	27.56	11.55	23.57
<i>Profit margin</i>	16.00	14.31	16.00	14.34
<i>Dividend</i>	2.37	2.25	2.37	2.25
<i>Freefloat</i>	78.79	22.64	78.79	22.64