

The expected returns of ESG excluded stocks. Shocks to firms costs of capital? Evidence from the Worlds' largest fund

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# Research issue

- ESG - Environmental, Social and Governance aspects of corporate decisions.
- Institutional investors unwilling to invest in “bad” ESG firms.
- Of interest: Consequences of ESG-based portfolio exclusions on the expected returns of firms subject to exclusions?
- Theory: Tradeoff ESG/Cost of Capital
- Use: exclusions by the worlds largest fund.
  - What are the returns of the portfolio of excluded firms?  
What are the implications for cost of capital?
  - Are firms reacting to their exclusions?  
With consequences for cost of capital?

# Exclusions in asset allocation

- Institutional investors
  - Need an opinion on the ESG characteristics of potential entrants to their portfolio
  - Dealing with low ESG ranking firms:
    - Dialogue – the most common.  
Arguably a better way of achieving change
    - Exclusion: a reaction of last resort

# Literature

- Equilibrium models – tradeoff ESG/Cost of Capital – Pástor et al. (2021) Pedersen et al. (2021)
- Uncertainty of ESG ranking : Muddle the tradeoff – (Avramov et al., 2022)
- Empirically, cost of equity capital decreases with ESG quality – Chava (2014), Ng and Rezaee (2015), Breuer et al. (2018)
- Institutional portfolios – are returns decreasing in quality of the funds ESG (Signing on to UN's Principles for Responsible Investment (PRI))?  
 Hedge funds → YES (Liang et al., 2022)  
 Mutual funds → Green-washing (Kim and Yoon, 2020)  
 Problem: Institutional portfolios additional layer
- “Sin stocks”
  - Booze, Guns, Tobacco → outperform (Hong and Kacperczyk, 2009).
  - Environment (Chava, 2014)
  - Carbon (Bolton and Kacperczyk, 2021)

# Literature - ctd

- Analysis of the oil fund's exclusions
  - Event studies. (Atta-Darkua, 2020), (Eriksen et al., 2020)
  - Long term performance of excluded portfolio. (Hoepner and Schopohl, 2018)

# Our Analysis – Preview

Construct portfolio of excluded firms.

- Does the portfolio have “too high” returns (alpha)?  
→ **Yes**
- Is this due to short-term overreactions, or changes to long term cost of capital  
→ **It is the long term cost of capital**

After firms get on the exclusion list

- Are firms happy with their high cost of capital?  
→ **No, they try get their exclusions revoked to get back to a lower cost of capital.**
- If a firm's exclusion is revoked, what happens to cost of capital?  
→ **It Falls**

# Norway's GPF (The Oil Fund)

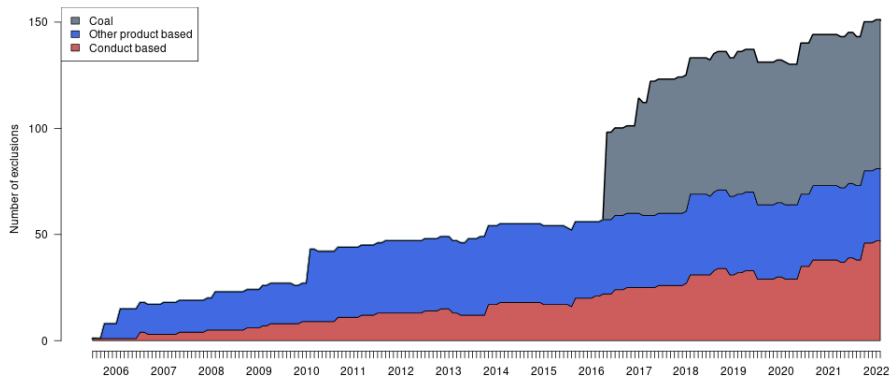
- World's largest SWF. Market value of equity 1 trillion USD at the end of 2021.
- "Near index fund".
- Exclusions handled by external "Council of Ethics", established 2004.
  - 2004–2021: 189 firms in total excluded, shorter or longer time periods.
  - At yearend 2021, fund invested in  $\approx$  10 thousand companies
  - $\rightarrow$  exclusions are truly exceptional



# The reasons for exclusions

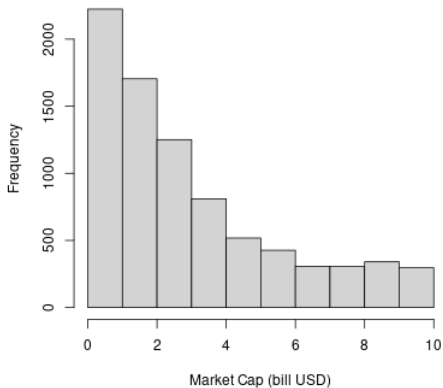
Exclusion reasons	Events
Conduct	67
Environmental damage	28
Individuals' rights in war or conflict	12
Violation of human rights	12
Environmental damage / Violation of human rights	4
Violation of ethical norms	5
Greenhouse gas emissions	4
Gross corruption	2
Product	122
Coal or coal-based energy	75
Weapons	26
Tobacco	21

# The number of exclusions

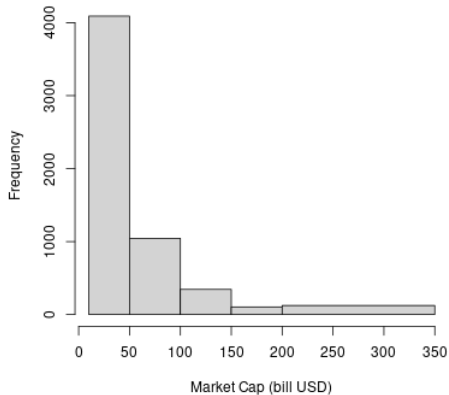


# Equity data - Size distribution

## B.1: Mkt Cap $\leq$ 10 bill USD



## B.2: Mkt Cap $>$ 10 bill USD



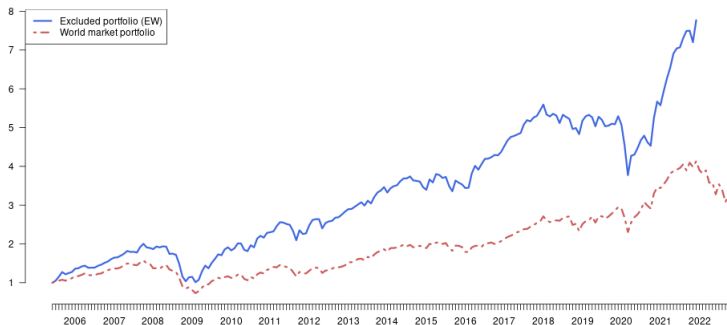
# Construction Exclusion Portfolio

The exclusion portfolios represent the expected returns of stocks with low ESG rankings.

- Firms enter portfolio month after exclusion
- If exclusion revoked, firms leave exclusion portfolio.

# Value evolution – exclusion portfolio vs market

- Exclusion portfolio perform better
- However, exclusion portfolio seem more exposed to crises ('08 and '20 covid)



Cumulative returns of equally weighted exclusion and global market portfolios

# Testing for performance

- Investigate whether the exclusion portfolio has higher/lower returns than it “should have”.
- → Estimate the “alpha,” the risk-adjusted excess return. (Return that can not be explained by an asset pricing model).
- Asset pricing model: Fama-French international five factor model (but do check alternatives)

$$(r_{p,t} - r_{f,t}) = \alpha + \beta(r_{m,t} - r_{f,t}) + b^{SMB}SMB_t + b^{HML}HML_t + b^{RMW}RMW_t + b^{CMA}CMA_t + \varepsilon_{p,t},$$

# Estimates of alpha for (EW) Exclusion Portfolio

	(1)	(2)	(3)	(4)
Alpha	0.004*** (0.002)	0.004** (0.002)	0.004*** (0.002)	0.005*** (0.002)
Rm-Rf	0.961*** (0.040)	1.021*** (0.049)	0.993*** (0.042)	0.962*** (0.049)
SMB	0.173 (0.115)		0.178 (0.115)	0.177 (0.123)
HML	0.467*** (0.115)		0.310*** (0.074)	0.224*** (0.089)
RMW	0.155 (0.156)			
CMA	-0.257 (0.233)			
WML				-0.138*** (0.076)
Annualized Alphas(percent)	5.170	4.420	5.220	5.980
Adj. R <sup>2</sup>	0.809	0.788	0.808	0.813

# Estimates of alpha for Exclusion Portfolio

- Alpha:  $> 5\%$  in annual terms — economically and statistically significant
- The exclusion portfolio substantial higher returns than it “should have”
- Finding robust to
  - asset pricing model
  - weighting scheme (equal, value weighted)
  - subportfolios: reason for exclusion, country (US).

## Conclude:

The Excluded firms have a return premium.



# Deconstructing alpha

## Potential Explanations of the high alpha (5%)

- Short term price pressure from exclusion
- Changes to long term cost of capital

Argue → The alpha too high to be explained by short term price corrections following an one-time price fall (event study return) in the region of 1.5 percent

### **Conclude:**

Cost of capital has a substantial (bad) ESG premium.

# Firm's reactions

How do firms react when they are excluded?

- No reaction.
- Reputational issue, some action in the press, but no real changes to firm's operations (green-washing).
- Firms act to reverse the exclusion.

# Revoking exclusions

Firms remove cause of exclusions → Exclusions revoked  
**Exclusions revoked**

Cause	no
Change of product mix	11
Cease of activity	7
Sale of subsidiary	4
Other reasons	6
Total	28

# Revoking exclusions – analysis

Actions to improve ESG leading to exclusion revoked

→ Endogenous action by firms

Trading off

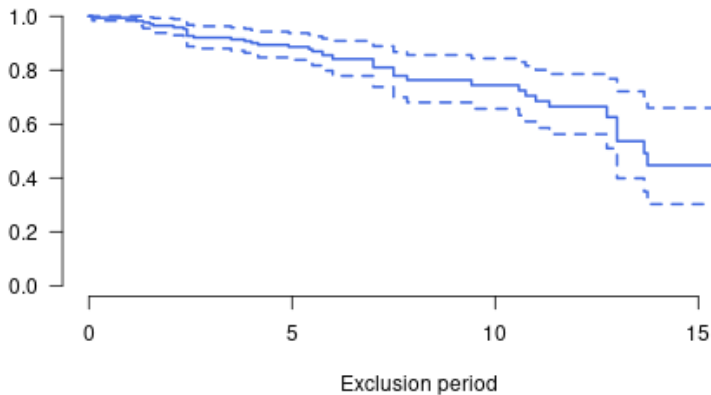
- Cost of improving ESG (Cause of exclusion)
- Benefits from a lower cost of capital (cheaper to raise capital)

Motivate empirical investigations – proxies

- Cost – ESG score when excluded.
- Benefits
  - Capital needs  
(Revenue increase → Need for scale investments)
  - Actual capital raising

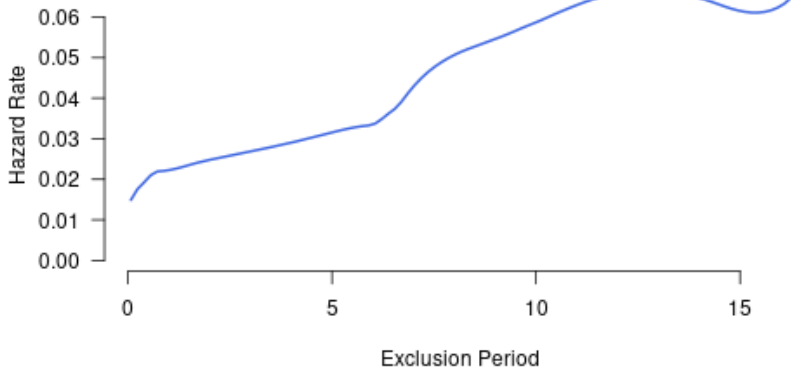
# Duration (survival) analysis of exit from Exclusion Portfolio

## Panel A. Survival curve



# Duration (survival) analysis of exit from Exclusion Portfolio

## Panel B. Instantaneous hazard curve (smoothed)



# Duration (survival) analysis of exit from Exclusion Portfolio

## Contributions to survival of exclusion

	(1)	(2)	(3)	(4)
ESG Score	-0.03*** (0.01)	-0.03*** (0.01)	-0.02** (0.01)	-0.03** (0.01)
Ind(Conduct)		0.85** (0.39)		0.98*** (0.44)
ln(Mkt Cap)			-0.05 (0.09)	-0.11 (0.10)
AIC	219.27	217.21	221.05	218.16
R <sup>2</sup>	0.03	0.06	0.04	0.07
Max. R <sup>2</sup>	0.77	0.77	0.77	0.77
Num. events	28	28	28	28
Num. obs.	150	150	150	150
PH test	0.47	0.76	0.55	0.68

\*\*\*  $p < 0.025$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$

# Duration (survival) analysis of exit from Exclusion Portfolio

Interpreting survival analysis

Explanatory variables:

Of interest:

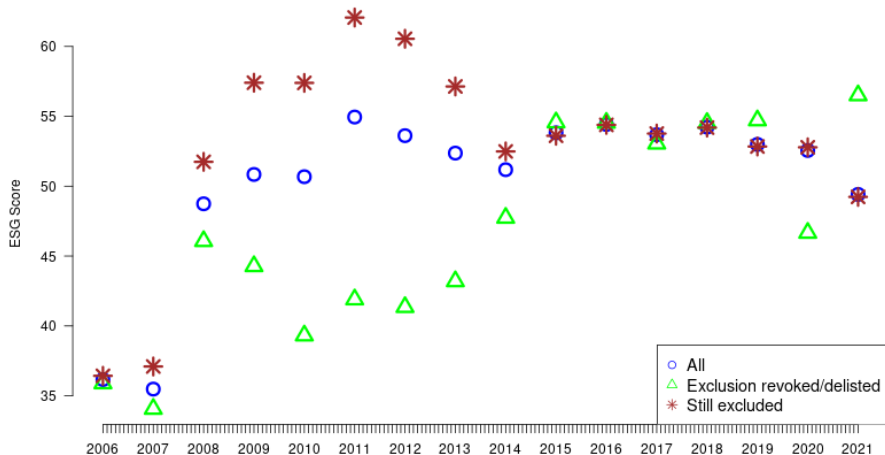
- ESG score when excluded – (negative coefficient)  
→ Low ESG score when entering exclusion portfolio → lower time till exit.  
Possible interpretation: Cost of improving ESG low when starting from a low base.

Controls:

- Conduct based exclusion dummy (easier to fix conduct based than product based reasons for exclusion)
- Firm Market Capitalization



# ESG Scores for firms with/without exclusion revoked



# Benefits from cheaper cost of capital

Higher likelihood of raising capital – increased benefits?

Higher Revenue – Higher investment needs

To investigate:

Probit - Model probability of having exclusions revoked as a function of

- Revenue growth – negative relation:  
High revenue growth → higher probability of exclusion revoked.
- Earnings growth – no relation

# Probit estimation of determinants of discontinuation of exclusion

	(1)	(2)	(3)	(4)
(Intercept)	-3.53*** (1.12)	-2.26*** (0.13)	-2.24*** (0.13)	-3.38*** (1.13)
Growth EPS	-0.02 (0.02)	-0.02 (0.02)		
Ind(Conduct)	0.69*** (0.19)	0.66*** (0.19)	0.52*** (0.19)	0.54*** (0.19)
ln(Mkt Cap)	0.06 (0.05)			0.05 (0.05)
Growth Revenue			0.46* (0.26)	0.45* (0.26)
Log Likelihood	-97.86	-98.51	-99.08	-98.55
Num. obs.	981	981	969	969

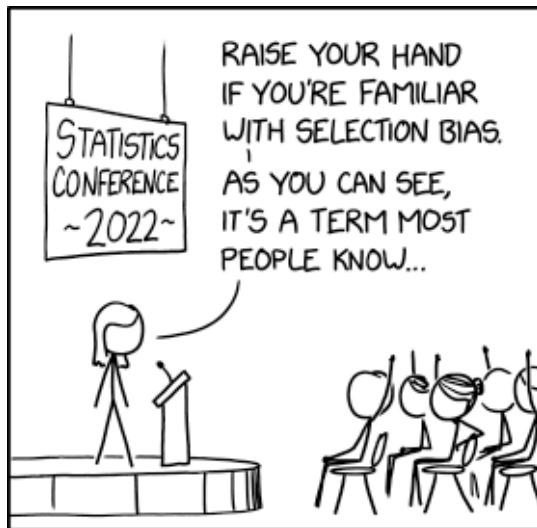
# Revoking exclusions

Actual equity deals – raising new equity capital

- High probability of raising capital after exclusion revoked (albeit on a small sample).

	Firms raising capital	
	Number	Percent
Firms still excluded	56	37.1
Firms with exclusion revoked	11	57.9

## Exclusion revoked → Selection problem?

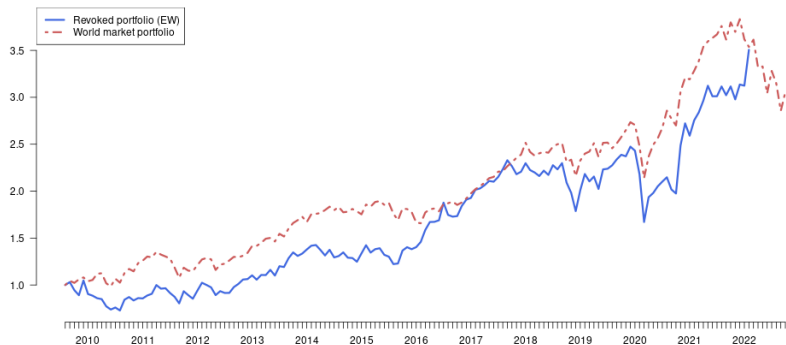


# Exclusion revoked → Selection problem?

- The Exclusion portfolio – firms only in portfolio *while* excluded.
- Remove firms *post* exclusion. Selection problem?
  - What is the return on the portfolio of post-excluded firms?
  - What if we keep firms in the portfolio even if the exclusion is revoked?

# The Post-Exclusion portfolio

Firms enter the post-exclusion portfolio month after exclusion is revoked.



## Cumulative returns for the Post-Exclusion Portfolio

# Estimates of alpha for the post-exclusion portfolio

	(1)	(2)	(3)	(4)
Alpha	-0.002 (0.003)	-0.002 (0.003)	-0.001 (0.003)	0.000 (0.003)
Rm-Rf	1.080*** (0.077)	1.085*** (0.073)	1.061*** (0.073)	1.033*** (0.076)
SMB	0.335 (0.221)		0.250 (0.209)	0.245 (0.208)
HML	0.271 (0.215)		0.235* (0.123)	0.128 (0.144)
RMW	0.326 (0.292)			
CMA	0.107 (0.345)			
WML				-0.192 (0.136)
Annualized Alphas(percent)	-2.230	-1.970	-0.860	0.300
Adj. R <sup>2</sup>	0.604	0.596	0.606	0.609



# Conclusion

Prime contributions:

- ① Sheer *magnitude* of the return difference linked to ESG.
- ② *Speed* by which the increased cost of capital affects returns.
- ③ *dynamics* of corporate reactions to exclusion.

# Interpretation

- Low quality ESG firms provide exceptionally high returns
- → The cost of capital for new investments for low quality ESG firms also exceptionally high.
- → To survive most low quality ESG firms have to move towards better quality ESG (“greener investments”) to lower their cost of capital
- From society’s point of view:
  - This is the desired outcome.
- To ponder:
  - Would this have happened without the exclusions?
  - Have the owners of the GPFM lost out?

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