

# The stock market and corporate consequences of ethical exclusions by the world's largest fund

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# Overview

- 1 Research Issue
- 2 Our Analysis - Preview
- 3 Literature
- 4 The oil fund and its exclusions
- 5 Analysis I – Estimating “unethical” returns
- 6 Analysis II - “Post-Exclusion” portfolio
- 7 Analysis III – Causality – event study
- 8 Analysis IV - Firm’s reactions to exclusion
- 9 Conclusion

# Research issue

- ESG - Environmental, Social and Governance aspects of corporate decisions.
- Generally – Does ESG affect companies?
  - Cost of capital/stock return?
    - Pecuniary view (The BlackRock Argument)  
Firms preparing for the new sustainable economy  
→ will do better (doing well by doing good).  
(Mispricing argument)
    - Non-pecuniary view.  
Investors care about sustainability in addition to returns.  
→ Sustainable firms have lower cost of capital.
  - Company behavior?
- Specifically - Institutional investors unwilling to hold “bad” ESG firms.
  - Consequences of exclusions

# Research issue ctd

Our research: The exclusions by Norway's GPF "The Oil Fund)" – Huge Sovereign Wealth Fund.

- Exclusions ethically motivated – “worst offenders”
- Investigate:
  - The return of the portfolio of excluded firms
    - Lead to estimate of Green Return Premium
  - Stock price reactions to announced exclusions.
  - Firms reactions to exclusions.  
Do they attempt to reverse exclusion?
  - If the exclusion is reversed,  
what happens to returns going forward?

# Our Analysis – Preview

## From excluded portfolio return to green return premium

- Is there a return premium (alpha) on the portfolio of excluded firms?  
→ **Yes, Alpha = 5%**
- Implication: Premium on being ethical (“Green Return Premium”)  
→  $\approx -5\%$

## Does it pay to get exclusion revoked?

- What happens to “newly ethical” firms? (after exclusion revoked)  
**Alpha** → 0

## Stock Price Reactions to exclusions by “Oil Fund”

- **Muted**

## Do firms react to exclusions?

- → **Only 14% act to get it reversed**

# Literature etc

## Modelling differences in cost of capital due to ESG

- The pecuniary view.
  - Stock prices do not fully reflect future ESG consequences (e.g. climate).
  - Short-termism (Stein, 1989)
- The non-pecuniary view
  - Equilibrium models – tradeoff ESG/Cost of Capital
    - Pástor et al. (2021) Pedersen et al. (2021)
  - Question magnitude exclusion effects (Berk and van Binsbergen, 2024)
  - ESG ranking uncertainty muddle tradeoff (Avramov et al., 2022)

## Estimates of Green Return Premium

- Evidence support non-pecuniary view (Green Return Premium  $< 0$ )  
Examples (estimated return difference)
  - Sin (Hong and Kacperczyk, 2009) ( $-3.5\%$ )
  - Environment (Chava, 2014) ( $-0.7\%$  to  $-1.4\%$ )
  - Green vs Brown (Pástor, Stambaugh, and Taylor, 2022) ( $-1.4\%$ )

# Literature ctd – The magnitude of the green premium

## Cost of improving ESG argument

The return difference is a tradeoff between:

- Cost of removing reasons for exclusion (becoming more ethical)
- Benefits from lower cost of capital.

Example from (Hong, Wang, and Yang, 2023) (decarbonization):

Equilibrium return difference (green premium) =  $-m/q$ ,

( $m$  – cost of mitigation per unit of production,  $q$  – price of firm capital.

→ If green premium reflects costs of mitigation,  
green return premium can be large

## Arbitrage type counterargument (Berk and van Binsbergen, 2024)

Investors not concerned with ESG jump on return premium

→ Green premium should be small in magnitude.

# Developing hypothesis I – “Unethical” premium

## I: Estimating “unethical” premium

Assumption: Work of Ethical Council *identifies* stocks likely to be excluded by many institutional investors.

→ Sample of excluded stocks can be used to estimate return difference excluded and non-excluded stocks.

Hypothesis: Positive excess return (alpha) on the portfolio of excluded stocks.



# Developing hypothesis II – “Newly ethical firms”

## II. Portfolio of newly ethical firms

By acting to remove cause of exclusions, firms can get exclusions revoked.

Assumption: Work of Ethical Council *identifies* companies that have actually *acted* to remove the cause of exclusion

(No Greenwashing, please)

Question: Do returns going forward reflect the new “ethical” classification?

Hypothesis: Alpha of “newly ethical” portfolio  $\rightarrow 0$ .

# Developing hypothesis III – “Causality”

## III. Do stock prices react to actions by Oil Fund?

### *Actions* by the Oil Fund

- Before exclusion announced
  - two month period
  - need to divest holdings
  - typical ownership fraction – 1.5% → Price Impact
- Announcement of exclusion
  - To what extent is this a surprise?

## Developing hypothesis III – “Causality” – ctd

Suppose market opinion of likelihood of widespread exclusions of stock is updated.

### Hypothesis

Permanent negative impact on stock prices associated with Oil Fund actions

- 1 In two month period leading up to announcement
- 2 At announcement.

Operationalized with event studies. Test for a permanent negative CAR

- Day before exclusion is announced.
- Week after exclusion is announced.

# Developing hypothesis IV – Corporate Reactions

## IV. Company reaction to divestment

Announced exclusion: Investors realize this is a “bad ESG” company, demand higher return/cost of capital?

This goes both ways → company can lower cost of capital if they “get off” blacklist.

Incentive for firms to act to reverse exclusion.

→ Investigate determinants of firm’s decisions to reverse exclusion.

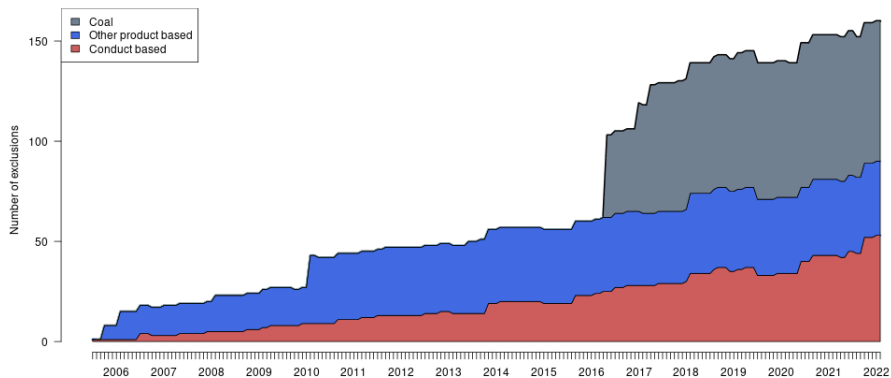
# Norway's GPF (The Oil Fund)

- World's largest SWF. Market value of equity 1 trillion USD at the end of 2021.
- One of the most transparent such funds, model for many institutional investors.
- 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 year end 2021, fund invested in  $\approx$  10 thousand companies
  - $\rightarrow$  exclusions are truly exceptional

# Norway's GPFG – The reasons for exclusions

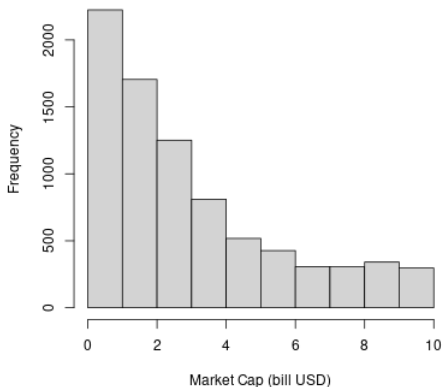
Exclusion reasons	Events
Conduct	67
Environmental damage	28
Individuals' rights in war or conflict	12
Violation of human rights	12
Environmental damage / Violation of human rights	4
Violation of ethical norms	5
Greenhouse gas emissions	4
Gross corruption	2
Product	122
Coal or coal-based energy	75
Weapons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

# Norway's GPFG – The number of exclusions

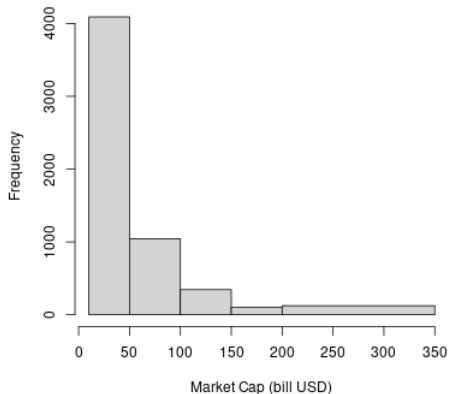


# Norway's GPFG – Size (market cap) distribution of excluded firms

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



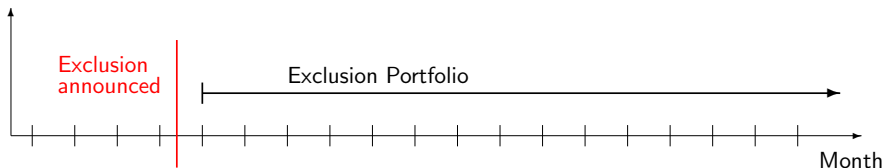
## B.2: Mkt Cap $>$ 10 bill USD



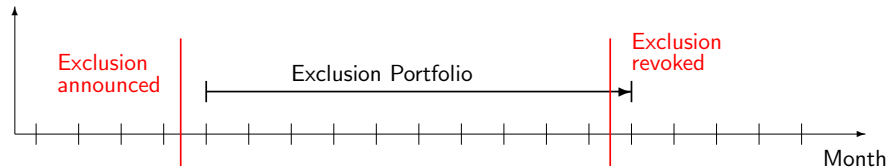


# Analysis I: Constructing the Exclusion Portfolio

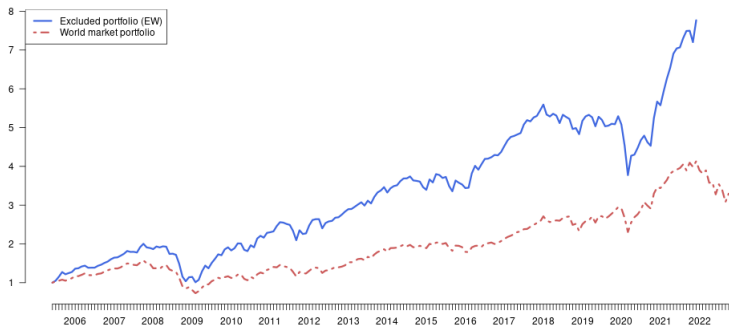
- Firms enter portfolio month after exclusion



- If exclusion revoked, firms leave exclusion portfolio next month.



# Analysis I: Value evolution – exclusion portfolio vs market



Cumulative returns of equally weighted exclusion and global market portfolios

# Analysis I: Estimation of “unethical” portfolio return

Brown return premium (return premium for excluded firms) estimated as

- Alpha (the risk-adjusted excess return) of the Excluded Portfolio.
- Estimated using: Fama-French international five factor model

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

- This model necessary to control for business cycle effects (Bansal et al., 2021)
- (do show estimates with alternative asset pricing models)

## Analysis I: 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

# Analysis I: From alpha to green return premium

- Alpha:  $> 5\%$  in annual terms — economically and statistically significant
- Finding robust to
  - asset pricing model
  - weighting scheme (equal, value weighted)
  - sub-portfolios: reason for exclusion, country (US).

## Conclude:

The alpha is the premium on unethical excluded firms.

The green return premium then the negative of this.

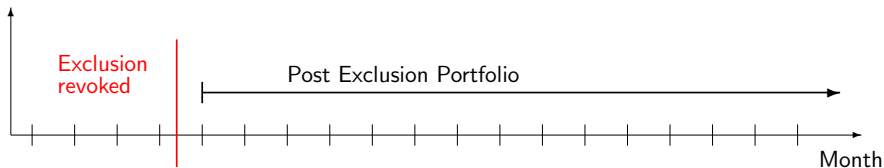
→ We estimate a (negative) green premium of  $\approx -5\%$ .

# Analysis I: Green premium estimates

- The green premium is negative, in line with
  - a non-pecuniary explanation,
  - the majority of estimates in the literature.
- The point estimate of  $-5\%$  is larger in magnitude than most other estimates
  - Possibly due to the sample being only the “worst offenders”

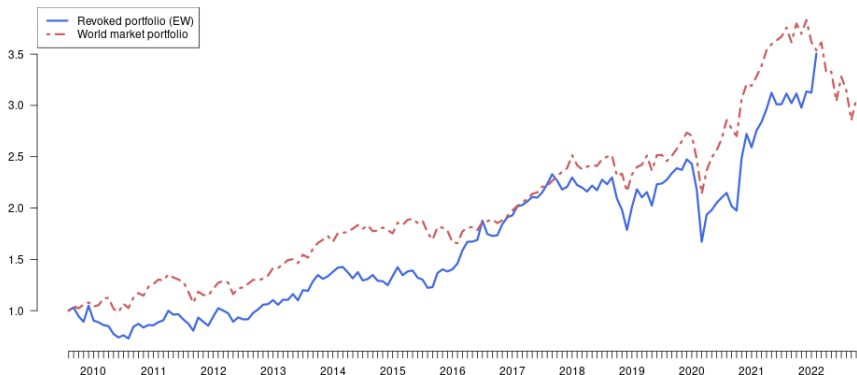
# Analysis II - "Post-Exclusion" portfolio construction

## Illustrating the construction of the Post-Exclusion Portfolio



# Analysis II - "Post-Exclusion" portfolio

## Value evolution – Post-Exclusion Portfolio vs market





# Analysis II - "Post-Exclusion" portfolio

Estimates of alpha for the post-exclusion portfolio

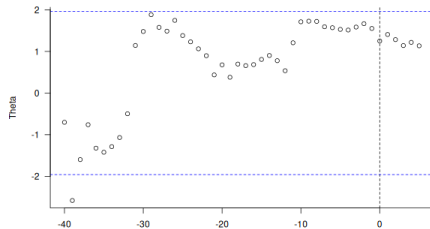
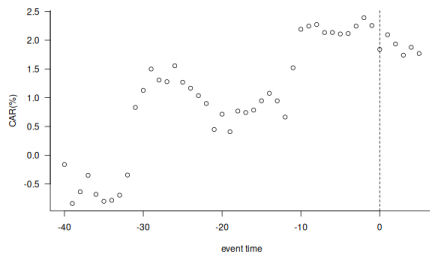
	(1)	(2)	(3)	(4)
Alpha	-0.002 (0.003)	-0.002 (0.003)	-0.001 (0.003)	0.000 (0.003)
Rm-Rf	1.080*** (0.077)	1.085*** (0.073)	1.061*** (0.073)	1.033*** (0.076)
SMB	0.335 (0.221)		0.250 (0.209)	0.245 (0.208)
HML	0.271 (0.215)		0.235* (0.123)	0.128 (0.144)
RMW	0.326 (0.292)			
CMA	0.107 (0.345)			
WML				-0.192 (0.136)
<b>Annualized Alphas(percent)</b>	<b>-2.230</b>	<b>-1.970</b>	<b>-0.860</b>	<b>0.300</b>
Adj. R <sup>2</sup>	0.604	0.596	0.606	0.609
Num. obs.	149	149	149	149

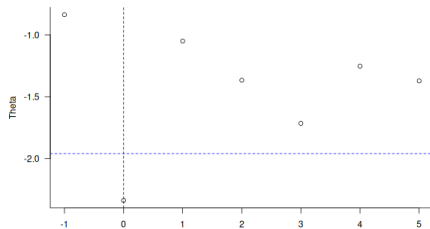
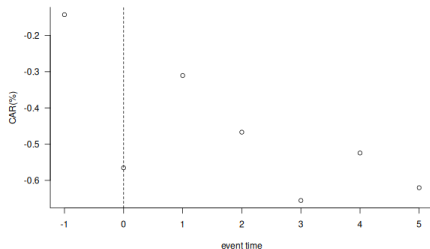
## Analysis II - "Post-Exclusion" portfolio

Estimate alpha for the post-exclusion portfolio

**Alpha**  $\rightarrow 0$

Implication: Post-exclusion – Cost of capital lower

Analysis III: Causality – event study ( $CAR(-40, -1)$ )

Analysis III: Causality – event study -  $CAR(-1, 5)$ 

## Analysis III: Causality – event studies

Summarize: Event studies do not support a causal link

→ Not even a fund of the GPFG's size can achieve much on its own.

## Analysis IV - Firm's reactions to exclusion

### **How many firms react enough to get exclusion revoked?**

If exclusion leads to higher cost of capital,  
firms have incentives to get exclusion revoked.

Can they? Yes, remove cause of exclusion.

How many do?

*14% act to get exclusion revoked*

→ *Most firms do not react to exclusion.*

Is the threat of exclusion *really* driving extra return?

# Analysis IV - Firm's reactions to exclusion

## How do firms act to revoke exclusion?

Look at the few firms actually doing something about the exclusion.

### How are exclusions revoked

Cause	number
Change of product mix	11
Cease of activity	7
Sale of subsidiary	4
Other reasons	6

# Analysis IV - Firm's reactions to exclusion

## What firms acts to revoke exclusions?

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

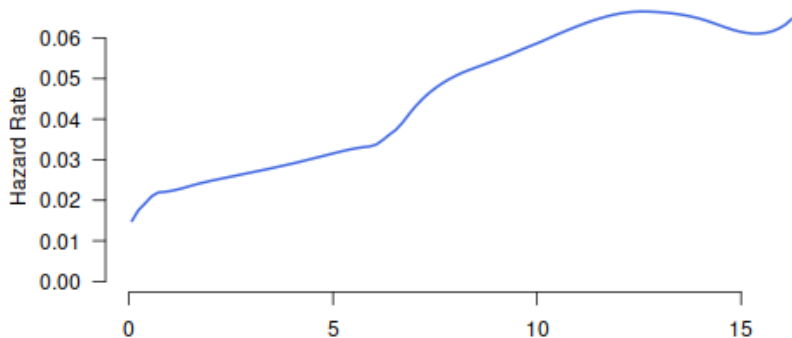
- A. Costs of improving – ESG score when excluded.
- Benefits of low cost of capital –
  - B. Capital needs  
(Revenue increase → Need for scale increasing investments)
  - C. Actual capital raising.



## Analysis IV.A: What determines time till exclusion is revoked?

Duration (survival) analysis of exit from Exclusion Portfolio.

### Instantaneous hazard curve (smoothed)



## Analysis IV.A: What determines time till exclusion is revoked?

Allows estimation of how e.g. cost of improvement affects time till exit.  
Estimates

- 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 (ESG) base.

Controls:

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

## Analysis IV.B: Benefits from cheaper cost of capital

Benefits of low cost of capital arise when firm needs to raise new external capital.

Argue: Higher likelihood of raising capital – increased benefits.

Empirically: Higher Revenue – Higher investment needs

Empirical formulation:

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

## Analysis IV.C: Another estimate of benefit of low cost of capital

Actual equity deals – raising new equity capital

- High probability of raising capital after exclusion revoked

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

# Conclusion

- ① **Green return premium** estimate  $\approx -5\%$ .
  - Negative in line with most of literature
  - *Magnitude* of the return difference linked to ESG higher than most estimates, possibly due to sample of “worst offenders.”
- ② **What if firm acts to remove cause of exclusion?**
  - Alpha zero (returns lower) for portfolio of post-excluded firms.
- ③ **Stock Price reaction** to exclusion
  - Time frame when GPFG divesting: Positive CAR.
  - Announcement date: Negative one day, CAR but insignificant after a week.
  - → No permanent negative impact
- ④ **Company reactions** to exclusions
  - **Most firms:** Do not react
  - **Those (few) that revoke exclusions:**  
More likely to see exclusion revoked if
    - ESG “really bad” at exclusion (cheaper to rectify?)
    - Revenue growth high (investment needs?)

- Doron Avramov, Si Cheng, Abraham Lioui, and Andrea Tarelli. Sustainable investing with ESG rating uncertainty. *Journal of Financial Economics*, 145(2, Part B): 642–664, 2022. doi: 10.1016/j.jfineco.2021.09.009.
- Ravi Bansal, Di (Andrew) Wu, and Amir Yaron. Socially Responsible Investing in Good and Bad Times. *The Review of Financial Studies*, 35(4):2067–2099, 06 2021. doi: 10.1093/rfs/hhab072.
- Jonathan Berk and Jules H van Binsbergen. The impact of impact investing. Available at SSRN, 2024.
- Sudheer Chava. Environmental externalities and cost of capital. *Management Science*, 60(9):2223–2247, 2014.
- Harrison Hong and Marcin Kacperczyk. The price of sin: The effects of social norms on markets. *Journal of Financial Economics*, 93(1):15–36, 2009. doi: 10.1016/j.jfineco.2008.09.001.
- Harrison Hong, Neng Wang, and Jinqiang Yang. Welfare Consequences of Sustainable Finance. *The Review of Financial Studies*, 06 2023. doi: 10.1093/rfs/hhad048.
- Lúboš Pástor, Robert F Stambaugh, and Lucian A Taylor. Sustainable investing in equilibrium. *Journal of Financial Economics*, 142(2):550–571, 2021. doi: 10.1016/j.jfineco.2020.12.011.
- Lúboš Pástor, Robert F Stambaugh, and Lucian A Taylor. Dissecting green returns. *Journal of Financial Economics*, 146(2):403–424, 2022. doi: 10.1016/j.jfineco.2022.07.007.

Lasse Heje Pedersen, Shaun Fitzgibbons, and Lukasz Pomorski. Responsible investing: The ESG-efficient frontier. *Journal of Financial Economics*, 142(2):572–597, 2021. doi: 10.1016/j.jfineco.2020.11.001.

Jeremy Stein. Overreactions in the options market. *Journal of Finance*, 44:1011–23, 1989.