# Dyck et al. (2019); Chen et al. (2020); Azar et al. (2021) "Do institutional investors drive corporate social responsibility?"

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# Outline

# Introduction

Do institutional investors drive portfolio firm's E&S performance?

- Dyck et al. (2019): Yes, for the international sample
  - Mostly the correlation, not causality
  - Mechanisms: voice, not exit
  - For both financial and social motivations
- Chen et al. (2020): Yes, for the US sample
  - Causality but very sample sample
  - Mechanisms: mainly voice
  - Inst. investors focus more on financially material E&S
- Azar et al. (2021): Yes, for the US sample
  - Causality but only for passive institutional investors
  - On $CO_2$ emission reduction
  - Mechanisms: voice

Dyck et al. (2019)
"Do institutional investors drive corporate social responsibility? International evidence"

# Data

- Firm level E&S performance: Thomson Reuters ASSET4 ESG Ratings
  - 2004–2013, annual
  - 45 countries
- Institutional ownership: Factset v5 Ownership
  - 2004–2013, quarterly
  - almost all countries

$\Rightarrow$ 19,489 observations
  - 3277 firms
  - 41 countries
  - 2004–2013.

# Does IO drive E&S performance?

$$\log(Score_{it}) = \alpha + \beta IO_{i,t-1} + X_{i,t-1}\gamma + FEs + \varepsilon_{it} \quad (1)$$

| | Environmental scores | | Social scores | |
|---|---|---|---|---|
| | Overall score (1) | ASSET4 z-score (2) | Overall score (3) | ASSET4 z-score (4) |
| *Panel A: Full sample* | | | | |
| Total IO | 0.268 | 0.403 | 0.124 | 0.491 |
| | (0.00) | (0.00) | (0.00) | (0.00) |

- Overall score: equal weighted across subcategories of E&S
- ASSET4 z-score: value weighted across subcategories of E&S

# Does IO drive E&S performance?

Two settings where IO has greater impact on firm's E&S

1. Institutions who sign the UN Principles for Responsible Investment
2. When firms have greater scope for improvement

| | | | | |
|---|---|---|---|---|
| *Panel B: Institutional ownership split by UN PRI signatory status* | | | | |
| IO UN PRI Signatories | 0.773 | 1.147 | 0.271 | 1.013 |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| *Panel C: Subsamples of firms with weak and strong initial E&S performance* | | | | |
| Weak initial E&S performance subsample | | | | |
| Total IO | 0.259 | 0.415 | 0.128 | 0.487 |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Control variables | Yes | Yes | Yes | Yes |
| Country fixed effects | Yes | Yes | Yes | Yes |
| Industry fixed effects | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.446 | 0.329 | 0.456 | 0.293 |
| Number of observations | 11,918 | 11,907 | 11,989 | 11,862 |
| Strong initial E&S performance subsample | | | | |
| Total IO | 0.137 | 0.207 | 0.039 | 0.093 |
| | (0.03) | (0.01) | (0.11) | (0.26) |

# Does IO drive E&S performance?

A quasi-natural experiment: The BP Deepwater Horizon Oil Spill at 05/20/2010

- Institutions pay more attention to firm's E commitment
- All oil and gas firms are affected
- Oil and gas firms with more IO should improve E more

| | Overall environmental score | | | Environmental ASSET4 z-score | | |
|---|---|---|---|---|---|---|
| | Oil and gas extraction (SIC 13) | Oil and petroleum products (FF 17) | Mining (SIC Division B) | Oil and gas extraction (SIC 13) | Oil and petroleum products (FF 17) | Mining (SIC Division B) |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| *Panel A: Within-industry regressions* | | | | | | |
| Total IO | 0.100 | 0.093 | 0.168 | 0.394 | 0.252 | 0.337 |
| | (0.32) | (0.46) | (0.12) | (0.05) | (0.17) | (0.01) |
| Post event | −0.007 | 0.028 | 0.008 | −0.154 | −0.099 | −0.125 |
| | (0.88) | (0.40) | (0.78) | (0.07) | (0.13) | (0.03) |
| Total IO × Post event | 0.216 | 0.150 | 0.120 | 0.332 | 0.240 | 0.235 |
| | (0.02) | (0.02) | (0.00) | (0.03) | (0.03) | (0.00) |

oil and gas extraction firms only

# Does IO drive E&S performance?

Relative to control firms, the oil and gas extraction firms should improve E more.

*Panel B: Difference-in-differences regressions*

| | | | | | | |
|---|---|---|---|---|---|---|
| Total IO | 0.288 | 0.306 | 0.377 | 0.431 | 0.454 | 0.523 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Post event | 0.087 | 0.089 | 0.097 | 0.002 | 0.005 | 0.017 |
| | (0.00) | (0.00) | (0.00) | (0.90) | (0.78) | (0.38) |
| Treated firm | −0.100 | −0.038 | −0.122 | −0.091 | −0.032 | −0.195 |
| | (0.45) | (0.68) | (0.28) | (0.68) | (0.78) | (0.27) |
| Total IO × Post | 0.156 | 0.091 | 0.116 | 0.247 | 0.149 | 0.222 |
| event × Treated firm | (0.06) | (0.12) | (0.01) | (0.08) | (0.17) | (0.01) |

oil and gas extraction firms + all other firms as control

# Which mechanism do institutions use to push for E&S performance?

- Exit: excluding poor E&S firms affects firm's behavior
  - Granger causality tests do not support this: only $IO_{i,t-1} \Rightarrow E\&S_{i,t}$, not $E\&S_{i,t-1} \Rightarrow IO_{i,t}$
- Voice
  - Use the comprehensive Canada shareholder proposals data
  - The submission of E&S proposals is followed by an increase in E&S performance
  - Mostly private engagement

# Why do institutions push firms to improve E&S performance?

## Financial vs. social motivations

To test financial motivations,

- Use the 2008–09 financial crisis as a shock
  - The financial crisis revealed the financial value of firm's social capital
  - Financially motivated institutions would push more E&S after the crisis
  - Firm with higher IO would during crisis would subsequently improve E&S more

| | Environmental scores | | Social scores | |
|---|---|---|---|---|
| | Overall score (1) | ASSET4 $z$-score (2) | Overall score (3) | ASSET4 $z$-score (4) |
| Total IO × Post crisis | 0.155 | 0.182 | 0.065 | 0.179 |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Total IO | 0.268 | 0.397 | 0.155 | 0.649 |
| | (0.01) | (0.00) | (0.00) | (0.00) |
| Post crisis | 0.010 | 0.002 | 0.011 | 0.039 |
| | (0.61) | (0.92) | (0.12) | (0.09) |
| Control variables | Yes | Yes | Yes | Yes |
| Country fixed effects | Yes | Yes | Yes | Yes |
| Industry fixed effects | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.501 | 0.449 | 0.468 | 0.408 |
| Number of observations | 3698 | 3698 | 3698 | 3698 |
| Number of firms | 1849 | 1849 | 1849 | 1849 |

# Why do institutions push firms to improve E&S performance?

Financial vs. social motivations

To test social motivations,

- Use institution's foreign holdings
  - Firm managers and domestic institutions are both affected by country social norms: hard to separate
  - Foreign institutions are unlikely to obtain private benefits other than through social norm channel
  - Firm with higher foreign IO from high social norm countries would subsequently improve E&S more

# Why do institutions push firms to improve E&S performance?

*Panel A: Environmental scores*

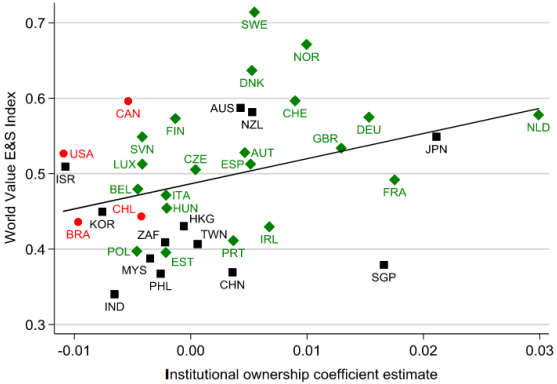
| | Overall score | | ASSET4 z-score | |
|---|---|---|---|---|
| | Environmental Performance Index | World Value E&S Index | Environmental Performance Index | World Value E&S Index |
| | (1) | (2) | (3) | (4) |
| Foreign IO | | | | |
| High social norm group | 0.948 | 0.885 | 1.265 | 1.171 |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Low social norm group | −0.001 | 0.065 | 0.051 | 0.132 |
| | (1.00) | (0.59) | (0.75) | (0.42) |
| Domestic IO | 0.442 | 0.444 | 0.644 | 0.646 |
| | (0.00) | (0.00) | (0.00) | (0.00) |

*Panel B: Social scores*

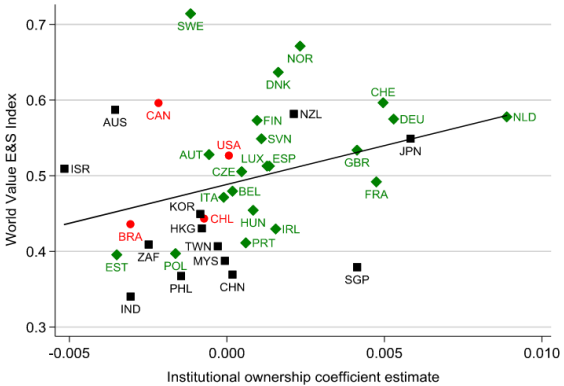
| | Overall score | | ASSET4 z-score | |
|---|---|---|---|---|
| | Employment Laws Index | World Value E&S Index | Employment Laws Index | World Value E&S Index |
| | (1) | (2) | (3) | (4) |
| Foreign IO | | | | |
| High social norm group | 0.556 | 0.285 | 1.449 | 0.962 |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Low social norm group | 0.063 | 0.056 | 0.359 | 0.291 |
| | (0.04) | (0.29) | (0.00) | (0.18) |
| Domestic IO $_{t-1}$ | 0.175 | 0.186 | 0.702 | 0.733 |
| | (0.00) | (0.00) | (0.00) | (0.00) |

# Why do institutions push firms to improve E&S performance?

(a) Overall environmental score




(b) Overall social score



# Why do institutions push firms to improve E&S performance?

The second test of social motivations,

- Investment companies and advisors are more concerned about E&S since they raise fund locally
- Long term investors such as pension funds are also more concerned about E&S
- Firms with higher foreign IO from these institutions would subsequently improve E&S more

*Panel A: Environmental scores*

| | Overall score | | ASSET4 z-score | |
|---|---|---|---|---|
| | Environmental Performance Index (1) | World Value E&S Index (2) | Environmental Performance Index (3) | World Value E&S Index (4) |
| Foreign IO, high social norm group | | | | |
| Independent institutional investors | 0.615 | 0.563 | 0.864 | 0.771 |
| | (0.00) | (0.01) | (0.00) | (0.00) |
| Pension funds | 2.668 | 2.030 | 3.217 | 2.418 |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Hedge funds | −0.501 | −2.573 | −0.295 | −3.428 |
| | (0.87) | (0.10) | (0.95) | (0.13) |
| Foreign IO, low social norm group | | | | |
| Independent institutional investors | 0.005 | 0.089 | 0.049 | 0.152 |
| | (0.97) | (0.42) | (0.74) | (0.30) |
| Pension funds | 1.433 | 3.868 | 1.638 | 5.131 |
| | (0.07) | (0.00) | (0.09) | (0.01) |
| Hedge funds | −0.743 | −0.856 | −0.640 | −0.808 |
| | (0.26) | (0.23) | (0.35) | (0.29) |
| Domestic IO | 0.416 | 0.418 | 0.617 | 0.619 |
| | (0.00) | (0.00) | (0.00) | (0.00) |

Chen et al. (2020)
"Institutional shareholders and corporate social responsibility"

# Data

- Firm level ESG performance: MSCI KLD database
  - 2003–2006, annual
- Institutional ownership: Thomson Reuters Institutional Holdings
  - 2003–2006, quarterly
  - US only
- Russell 1000/2000 index
  - Prior to 2007, Russell does not implement "banding" methodology for reconstitution
  - Sharp RDD before 2007

# Two Settings

Research question: the causal relationship between institutional shareholders and firm's ESG

1. IO on ESG: shocks in IO
2. Institutions' attention on ESG: shocks in institution attention

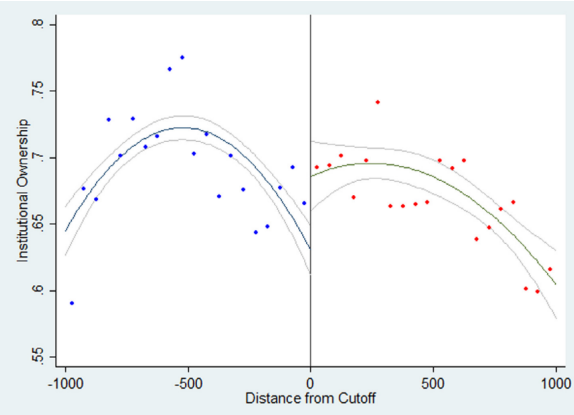
# IO on ESG

$$CSR_{i,t} = \beta_0 + \beta_1 IO_{i,t} + \beta_2 X_{i,t} + u_i + v_t + \xi_{i,t} \tag{2}$$

- $IO_{it}$ is endogenous
  - reverse causality: institutions hold more of high ESG firms
  - omitted variables: unobserved heterogeneity correlates with both IO and ESG
- Shocks in $IO_{it}$
  - Russell 1000/2000 indices introduce IO discontinuity around the cutoff
  - Top firms in Russell 2000 have more IO than bottom firms in Russell 1000

# IO on ESG

Discontinuity in IO:




Sharp RDD!

# IO on ESG

Predict $IO_{i,t}$ by Russell Index:

$$IO_{i,t} = \alpha + \tau D_{i,t} + f\left(R_{i,t}\right) + \beta_1 X_{i,t} + \beta_2 \text{ FloatAdj }_{i,t} + u_i + v_t + \epsilon_{i,t} \tag{3}$$

Use the predicted $\widehat{IO}_{i,t}$ to estimate $\beta_1$

$$CSR_{i,t} = \beta_0 + \beta_1 \widehat{IO}_{i,t} + g\left(R_{i,t}\right) + \beta_2 X_{i,t} + \beta_3 \text{ FloatAdj } j_{i,t} + u_i + v_t + \xi_{i,t} \tag{4}$$

# IO on ESG

| | Bandwidth ±50 | | Bandwidth ±150 | | Bandwidth ±250 | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| *First-stage* | IO | IO | IO | IO | IO | IO |
| $D_{i,t}$ | 0.157*** | 0.150** | 0.122*** | 0.132*** | 0.128*** | 0.115*** |
| | (0.055) | (0.073) | (0.031) | (0.043) | (0.025) | (0.035) |
| Adj. $R^2$ | 0.537 | 0.546 | 0.445 | 0.447 | 0.436 | 0.436 |
| *Second-stage* | CSR | CSR | CSR | CSR | CSR | CSR |
| $\widehat{IO}_{i,t}$ | 5.975** | 3.457 | 5.184*** | 5.407*** | 2.817** | 4.342** |
| | (2.355) | (3.660) | (1.751) | (2.065) | (1.263) | (1.965) |
| Adj. $R^2$ | 0.236 | 0.240 | 0.157 | 0.160 | 0.107 | 0.107 |
| *Second-stage* | Strengths | Strengths | Strengths | Strengths | Strengths | Strengths |
| $\widehat{IO}_{i,t}$ | 0.933 | −0.409 | 2.565 | 2.230 | 1.323 | 2.282 |
| | (2.812) | (4.137) | (1.989) | (2.498) | (1.448) | (2.306) |
| Adj. $R^2$ | 0.175 | 0.176 | 0.088 | 0.088 | 0.080 | 0.080 |
| *Second-stage* | Concerns | Concerns | Concerns | Concerns | Concerns | Concerns |
| $\widehat{IO}_{i,t}$ | −7.717*** | −5.539** | −5.047*** | −5.681*** | −2.798*** | −4.115*** |
| | (1.695) | (2.514) | (1.442) | (1.567) | (1.077) | (1.508) |
| Adj. $R^2$ | 0.229 | 0.234 | 0.203 | 0.206 | 0.166 | 0.167 |
| Polynomial order, $\kappa$ | 2 | 3 | 2 | 3 | 2 | 3 |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| FloatAdj. | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Obs. | 314 | 314 | 983 | 983 | 1631 | 1631 |

# IO on ESG: Robustness

- Different categories of ESG issues
  - IO mainly improves ESG issues that're financially material to firm values
  - IO mainly improves ESG issues that lead to lawsuits or regulatory penalties
- Different types of institutions
  - mainly quasi-indexers, passive mutual funds and long-term investors

Glossner (2019) shows that Russell 1000/2000 cutoff generates ownership differences for passive institutions, **not total institutions**.

- After correcting this instrument for passive institutional ownership, he finds that passive investors have **no** significant effect on CSR.

# Institutions' attention on ESG

$$CSR_{i,t} = \beta_0 + \beta_1 \text{Attention}_{i,t-1} + \beta_2 X_{i,t} + u_i + v_t + \xi_{i,t} \tag{5}$$

- Attention$_{i,t}$ is endogenous
- Shocks in Attention$_{i,t}$
  1. Attention distraction events in other industry
  2. Fund-level attention grabbing events
     - fund performance
     - fund outflow
     - fund's decline in shareholder voting participation

# Institutions' attention on ESG

Shocks in institution's' attention

$$Distraction_{i,q} = \sum_{j \in I_{q-1}} w_{i,j,q-1} \sum_{Ind \neq Ind_i} w_{j,q-1}^{Ind} \times IndShock_q^{Ind} \tag{6}$$

$IndShock_q^{Ind} = 1$ if an industry has the highest or lowest return across all 12 Fama-French industries.

# Institutions' attention on ESG

$$CSR_{i,t} = \alpha + \beta_1 \text{Distraction}_{i,t-1} + \beta_2 IO_{i,t} + \beta_3 X_{i,t} + u_i + v_t + \xi_{i,t}, \tag{7}$$

| | Dependent variable | | | | | |
|---|---|---|---|---|---|---|
| | CSR | Strengths | Concerns | CSR | Strengths | Concerns |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Distraction | −8.983*** | −4.645*** | 4.577*** | −16.169*** | −14.131*** | 2.267** |
| | (1.737) | (1.535) | (1.177) | (1.871) | (1.493) | (1.096) |
| IO | 0.005 | −0.227*** | −0.201*** | −0.184 | −0.327*** | −0.104 |
| | (0.084) | (0.074) | (0.054) | (0.122) | (0.109) | (0.078) |

Columns (4)–(6) add firm fixed effects.

# Institutions' attention on ESG

Fund-level attention grabbing events

- past 6-m fund performance↑: attention on firm↑
- past 6-m fund outflow↑: attention on firm↓
- decline in shareholder participation in voting↑: attention on firm↓

| | Dependent variable | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Attention based on past 6-m fund performance | | | Attention based on past 6-m fund outflow | | | Attention based on recent decline in shareholder participation in voting | | |
| | CSR (1) | Strengths (2) | Concerns (3) | CSR (4) | Strengths (5) | Concerns (6) | CSR (7) | Strengths (8) | Concerns (9) |
| Attention | 0.611*** | 0.460*** | −0.177* | −0.849*** | −0.637*** | 0.272* | −0.220*** | −0.165*** | 0.066*** |
| | (0.150) | (0.111) | (0.100) | (0.219) | (0.176) | (0.143) | (0.021) | (0.017) | (0.013) |
| IO | −0.181 | −0.333*** | −0.116 | −0.184 | −0.339*** | −0.119 | −0.191 | −0.189* | 0.007 |
| | (0.123) | (0.110) | (0.078) | (0.123) | (0.110) | (0.078) | (0.125) | (0.102) | (0.084) |

Azar et al. (2021)
"The big three and corporate carbon emissions around the world"

# Conclusion

# References


Azar, J., M. Duro, I. Kadach, and G. Ormazabal (2021). The big three and corporate carbon emissions around the world. *Journal of Financial Economics 142*(2), 674–696.

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