Foreign Institutional Ownership and Corporate Carbon Emissions

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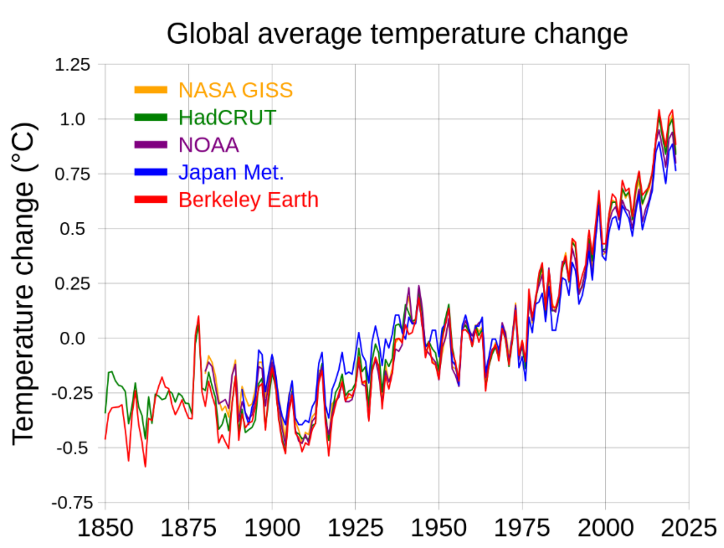
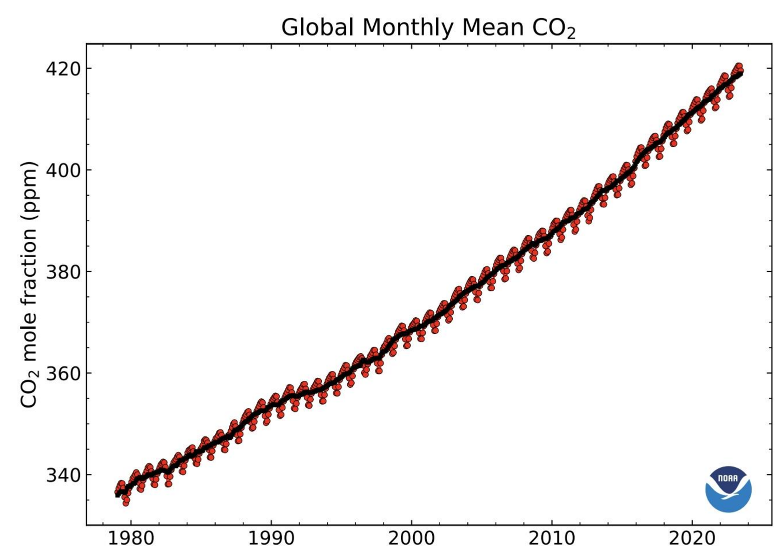
MOTIVATION

A FACT: GREENHOUSE GAS AND GLOBAL WARMING



Source: SealGlobal. Co, https://sealglobal.co/the-problem/



Source: NOAA Earth System Research Laboratories, https://gml.noaa.gov/ccgg/trends/global.html

A SOLUTION: ACTIVE OWNERSHIP

- *"We will be active owners and incorporate ESG issues into our ownership policies and practices." - PRI Principle 2*

- File shareholder resolutions consistent with long-term ESG considerations.
- Exercise voting rights or monitor compliance with voting policy (if outsourced).
- Engage with companies on ESG issues.

Robeco announces interim targets for 2025 and 2030 on its road to net zero emissions by 2050

The Challenge
From Owner to Active Owner, What Does It Take?

RESEARCH QUESTION & SETTING

HYPOTHESIS DEVELOPMENT

Are foreign institutions better positioned to reduce investee firms' carbon emissions through active engagement?

1. **Independence**
   - Foreign institutions are less likely to have business ties with their portfolio firms (Ferreira and Matos, 2008).
   - Without the constraint of business ties, foreign institutions are better positioned to engage with investee firms for carbon emission policies.
2. **Resources and expertise**
   - Decarbonization is not easy and requires knowledge and resources.
   - Foreign institutions could bring decarbonization knowledge to the investee firms, particularly when they come from regions with high climate change awareness.

Based on their unique features, we hypothesize that **foreign institutional investors are in a better position to improve firms' carbon performance**.

OLS PANEL REGRESSION SETTING

$$Ln\left(\frac{SCOPE1}{REVENUE}\right)_{i,t} = \alpha + \beta \times IO\_FOR_{i,t-1} + \gamma \times Control\ Variables_{i,t-1} + Country\_Year\ FE + Firm\ FE + \varepsilon_{i,t}$$

- **Ln(SCOPE1/REVENUE):** the natural logarithm of Scope1 carbon emissions scaled by total revenue (REVENUE) in US dollars (millions). (from *Trucost*)
- **IO_FOR**: the percentage of a firm's market capitalization held by institutions domiciled in a country other than the one where the focal firm is domiciled. (from *Factset*)
- **Control Variables**: Size, leverage, market-to-book, ROA, etc.

RESULTS & DISCUSSION

BASELINE RESULTS

$$Ln\left(\frac{SCOPE1}{REVENUE}\right)_{i,t} = \alpha + \beta \times IO\_FOR_{i,t-1} + \gamma \times Control\ Variables_{i,t-1} + Country\_Year\ FE + Firm\ FE + \varepsilon_{i,t}$$

- Sample Coverage (2001-2020): 75,650 firm-year observations and 11,379 unique firms from 56 countries.

	Ln(SCOPE1/REVENUE)	
	(1)	(2)
IO_FOR	-0.808***	-0.534***
	(-5.24)	(-3.41)
IO_DOM		0.125
		(1.23)
Controls	No	Yes
Observations	74,525	74,525
Adjusted R2	0.91	0.92

- **Column (2) shows that one standard deviation increase in foreign institutional ownership is associated with a 3.42% (0.064*0.534) decrease in Scope 1 carbon intensity, equivalent to around 60,000 tons of raw carbon emissions.**

ACTIVE ENGAGEMENTS

➢ **Engagement Channel 1 - Carbon-linked executive compensation**

- SALARY_GROWTH: the annual growth rate of the average salary for a firm's executive CEOs.
- Column (2) shows compensation growth is lower for firms with high carbon emissions, conditional on the presence of foreign institutions.

	SALARY_GROWTH	
	(1)	(2)
IO_FOR	0.281	0.361**
	(1.59)	(1.98)
Ln(SCOPE1/REVENUE)	0.012	0.011
	(1.38)	(1.29)
Ln(SCOPE1/REVENUE) × IO_FOR	-0.100**	-0.112**
	(-2.13)	(-2.43)
Controls	No	Yes
Observations	8,830	8,830
Adjusted R2	0.01	0.01

➢ **Engagement Channel 2 - Shareholder proposals on environmental & social issues**

- The results show that foreign institutions have significantly positive effects on the ES proposal proportions.

	Environmental- & Social-Related Proposal	
	ES_N/PROPOSAL_N	ES_IND
	(1)	(2)
IO_FOR	0.422**	0.435*
	(1.97)	(1.71)
Controls	Yes	Yes
Observations	7,938	7,938
Adjusted R2	0.54	0.57

UNDERLYING INCENTIVES

- Institutions with higher climate awareness: institutions in a country with a top 10 percentile climate score.
- Long-term institutions: institutions with a "Very Low" or "Low" turnover level.
- Independent institutions: institutions classified as mutual funds, hedge funds, or investment advisors.

	Ln(SCOPE1/REVENUE)		
	(1)	(2)	(3)
IO_FOR_HIGHSCORE	-0.521***		
	(-3.09)		
IO_FOR_LOWSCORE	-0.729		
	(-1.45)		
IO_FOR_LT		-0.554***	
		(-2.99)	
IO_FOR_ST		-0.510	
		(-1.50)	
IO_FOR_INDEP			-0.580***
			(-3.36)
IO_FOR_GREY			-0.329
			(-0.78)
Controls	No	Yes	Yes
Observations	74,525	74,525	74,525
Adjusted R2	0.91	0.92	0.92

- **The results above show that foreign institutional investors, who have higher climate change awareness, adopt the long-term strategy, and possess independent monitoring power, drive the negative effect of foreign institutional ownership on carbon emission levels.**

ENDOGENEITY CONCERN

Is it possible that foreign institutions happen to choose companies with lower carbon emissions? Or do firms emit less to attract more foreign investment?

- We show this is not the case.
- Specifically, when a firm experiences an unexpected increase in foreign institutional ownership (other aspects do not change) due to the MSCI ACWI Index Addition, its future carbon emissions decrease.
- Further Evidence: Paris Agreement, Investors' Attention

Our Answer: Foreign Institutions Change Firms.

CONCLUSION

We document an economically significant negative causal relationship between foreign institutional ownership and corporate carbon emissions.

1. The relationship is driven by foreign institutional investors with higher climate awareness, long-term orientation, and higher independence.
2. Regarding the active engagement to reduce carbon emissions, foreign institutional investors increase carbon-compensation sensitivity and initiate ES proposals in their portfolio firms.

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