Discussion of Shi, Zhang, and Meinerding (2025)

"The Impact of Climate Policies on Financial Markets:
Evidence from the EU Carbon Border Adjustment Mechanism"

Discussant: Sangmin Simon Oh (Columbia Business School)

Econometric Society Meeting 2026

Recap

Question: How does the introduction of a carbon border tax (CBAM) affect firm valuations through international supply chains?

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Plan for Discussion

1. CBAM and Its Importance
2. Going Beyond CARs

Comment 1. CBAM and Its Importance

EU Carbon Border Adjustment Mechanism (CBAM)

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- Steel production emits ≈ 2 tons of CO_2 per ton of steel,
- EU carbon price (ETS): ≈ €80 per ton of CO_2
- EU-produced steel faces a carbon cost of 2 × €80 = €160 per ton, while imported steel into the EU faces €0 per ton

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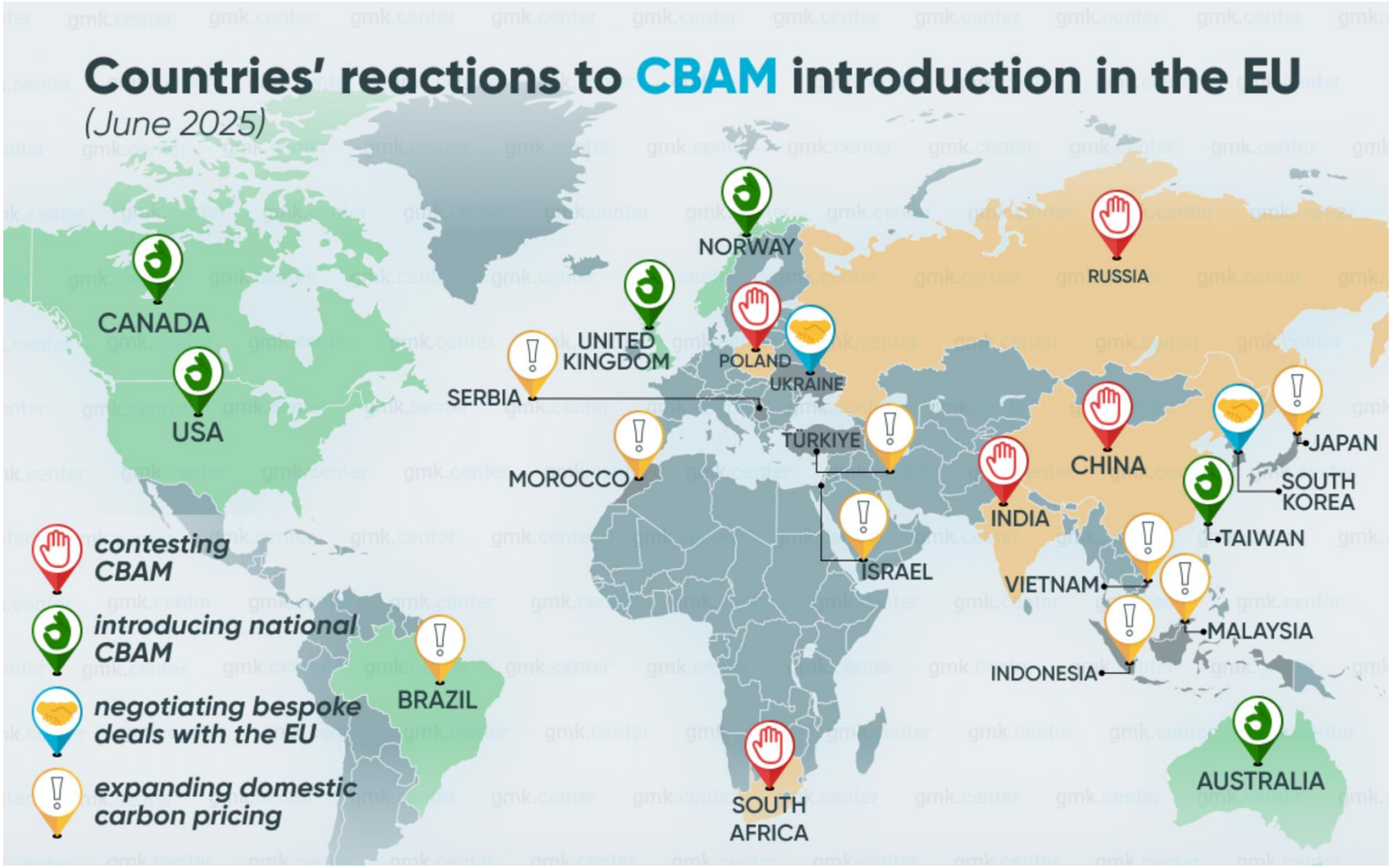
Why Important?

- First credible attempt by a major economy to impose carbon pricing at the border
- A global policy event with exporters, foreign governments, and multinational firms all updating beliefs about future trade costs and climate regulation

Exhibit #1: Global Reaction to CBAM



Source: GMK Center

Exhibit #2: Foreign Policy Responses

1. Expanding National Carbon Pricing (China, India)

- Expanded or accelerated national ETS / carbon pricing, which allows exporters to claim a deduction for “carbon price paid” under CBAM
- Keeps carbon revenue at home rather than transferring it to the EU

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3. Climate Club Alignment (United States)

- Congressional proposals for CBAM-style border adjustments
- Parallel negotiations on climate-linked steel and aluminum trade

IN THE SENATE OF THE UNITED STATES

_____

Mr. WHITEHOUSE introduced the following bill; which was read twice and referred to the Committee on _____

_____

A BILL

To amend the Internal Revenue Code of 1986 to create a carbon border adjustment based on carbon intensity, and for other purposes.

Exhibit #3: CBAM-Related Uncertainty

Implementation Uncertainty: Insufficient data systems and rising reporting costs

"Around three quarters of German companies are not able or only partially able to report emissions data from their suppliers outside the EU… the pressure to set up the necessary monitoring and reporting systems in companies is increasing significantly." [source]

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Price and Margin Uncertainty: Unclear levied rates, unclear pass-through

"Most of the companies are yet figuring out a way to deal with CBAM… about 60% of our exports go to Europe and we want to know what is the rate that will be levied and will it be company specific?" [source]

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Strategic Risk Perceptions: Concerns about undermined competitiveness & investment

"The first thing to do about CBAM is just to eradicate it, get rid of it… it may not yield real environmental benefits and could gradually drive investment out of Europe." [source]

CAR Result and Its Interpretation

Paper finds -1% to -1.3% CARs for exposed EU customer firms over a few days.

Table 3: **Total treatment effect**

	(1) **Control group** $loc\_treat\_ratio_i = 0$ & $ind\_treat\_ratio_i = 0$	(2) **Generalized control group** $loc\_treat\_ratio_i <$ median & $ind\_treat\_ratio_i <$ median	(3) **Treatment group** $loc\_treat\_ratio_i >$ median & $ind\_treat\_ratio_i >$ median	(4) **Difference (3) − (1)**	(5) **Difference (3) − (2)**
Mean CAR	0.0035	0.0000	-0.0097***	-0.0131***	-0.0096**
SE	(0.0036)	(0.0030)	(0.0030)		
p-value				(0.0036)	(0.0164)
# Obs	117	354	209		

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- **Discount rate** news: exposure to systematic carbon price volatility, regulatory uncertainty, international trade frictions, policy uncertainty, risk aversion
- **Cash flow** news: future import intensity, ability to pass through costs, market structure

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Suggestion 1: Rebalance the institutional background for better interpretation of results

- Paper provides detailed political timeline to help justify the event date
- But more detail is needed on what CBAM actually implied for firms and markets at the time (e.g. connection to ETS reform, global policy reactions, firm-level uncertainty)

Comment 2. Going Beyond CARs

Why do we care about CARs?

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Reason 2. **CARs matter for real outcomes.**

- A persistent price decline raises the firm's cost of capital, even if cash flows don't change
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- If CARs are zero when no new information is released, it validates the models' ability to capture systematic risk.

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- Does the CAR line up with movements in discounting objects (yields, spreads)?

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Suggestion 2b. Method in Nagel and Xu (2025) Movements in Yields, not the Equity Premium: Bernanke-Kuttner Redux

- Nagel and Xu (2025) construct a counterfactual stock price change that would occur if only discounting moved, holding the cash-flow claims fixed.
- If the authors can get dividend futures for a subset of EU customer firms, they can do:
  - Treat dividend futures prices as the “cash flow leg”
  - Treat risk-free curve as the “discounting leg”
- Then the authors can fix the “cash flow leg” at pre-event and only let the “discounting leg” move with the event

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Suggestion 3. Benchmark CBAM CARs against two groups of policies –-

- Magnitude and persistence relative to other climate policy announcements
  - E.g. ETS reforms, carbon tax introductions, subsidy rollbacks
- Policies with similar scope but different enforcement mechanisms
  - E.g. price-based vs. quantity-based regulation, border-adjusted vs. domestic-only

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Useful Example: December 2017–2018 EU ETS Phase IV reform

- Tightened the emissions cap and adjusted the supply of carbon allowances over time
- Directly affects expected carbon costs and long-run regulation
- Widely viewed as a regime shift

Final Thoughts

- Clean and carefully executed event-study evidence that CBAM announcements are priced by equity markets through international supply chains

- **Punchline:** CBAM announcements lead to negative abnormal returns for exposed EU firms, consistent with markets pricing the consequences of stricter climate policy

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- **A few questions prompted by the paper for the future:**
  - To what extent can firms hedge or insure against policy-induced risks?
  - When do policy interventions primarily reallocate risk across firms and sectors, and when do they create new aggregate risks that financial markets must absorb?

- **Very much looking forward to the next version!**