Carbon Policy Surprises and Stock Returns: Signals from Financial Markets

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Thank you for coming.


Good for teaching students in quant finance.
1. Summary of Work

• Study the price impact on firms of EU carbon policy from 2011-2021
• Events related to higher carbon prices lead to negative returns of firms with higher intensity for firms using more carbon
• Carbon policies can raise cost of capital for firms
2. Background & Findings

• EU Committed to reduce greenhouse emissions in December 2020 by 55%
• Data: Urgentum (carbon emission data by firm-year)
• Use 98 policy events and affect on carbon prices on a daily basis
• 1 SD increase in carbon price (on event day) leads to a 7% decrease in stock price (relation to sample) of median carbon emission firm
2. Background & Findings

• **Big Question**: Can policy penalize firms in terms of cost of capital that are exposed to the “bad”.

• **Thought Experiment**: What if these firms can’t change (e.g. coal), then are they penalized, but ultimately consumer pays the cost? Is that what we want? Are counting ways in which other companies are causing issues?
2. Background & Findings

• 54% of total emissions come from Utilities, Mining, and Energy producers
2. Background & Findings
2. General Comments

• I think their work is straightforward and apparently differentiated from other work on the topic, so not a lot to add.
• I would clean up presentation of paper, especially equations and methods of estimation (use more standard presentation methods).
• Maybe add graphs of “event” like series in the paper t-10 to t+10.
2. Specific Comments

• Page 7. I think it would help to explain the EUA futures contracts in footnote or even in main text.
• Page 10. Rewrite or spend more time explaining the estimation process. It’s a bit murky. Some of the equations look like functions rather than regressions.
2. Specific Comments

The main equation estimated is:

\[ R_{i,d(y)} = CE_{i,y-1} \left( \alpha + \beta_1 \Delta CP_{d(y)} + \beta_2 EV_{d(y)} + \beta_3 \Delta CP_{d(y)} \times EV_{d(y)} \right) + \phi_i + \tau_{c,s,d(y)} + \varepsilon_{i,d(y)} \quad (10) \]

where \( EV_{d(y)} \) is a dummy variable that takes value one on days of the regulatory events identified by Känzig (2022) and extended in this paper. All other variables are as in Equation 9.

Equation 10 implies that:

\[ \frac{\partial R}{\partial (\Delta CP)} = CE(\beta_1 + \beta_3 EV) \]
2. Specific Comments

• Find that firms have positive returns with carbon emissions on non-event days and substantial negative returns on event days.
2. Specific Comments

- Question #1: Are all of these events negative events? Wasn’t sure?

Table A.2: Regulatory events

table lists the events we identified over 2019–2021 to extend the carbon policy surprise series by Känzig (2022).

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 23, 2019</td>
<td>EU Emissions Trading System: Iceland, Liechtenstein and Norway to start auctions on the common auction platform soon</td>
<td>Auction</td>
</tr>
<tr>
<td>May 15, 2019</td>
<td>ETS Market Stability Reserve to reduce auction volume by almost 400 million allowances between September 2019 and August 2020</td>
<td>Auction</td>
</tr>
<tr>
<td>June 12, 2019</td>
<td>Poland’s 2020 auction volume to include allowances not used for power sector modernisation</td>
<td>Auction</td>
</tr>
<tr>
<td>June 19, 2019</td>
<td>Updated information on exchange and international credit use in the EU ETS</td>
<td>Intl. credits</td>
</tr>
<tr>
<td>October 31, 2019</td>
<td>Adoption of the Regulation on adjustments to free allocation of emission allowances due to activity level changes</td>
<td>Free alloc.</td>
</tr>
<tr>
<td>December 12, 2019</td>
<td>The start of auctioning for the Innovation Fund slightly postponed but no delay to the launch of the Innovation Fund</td>
<td>Auction</td>
</tr>
<tr>
<td>May 8, 2020</td>
<td>Updated information on exchange and international credit use in the EU ETS</td>
<td>Intl. credits</td>
</tr>
<tr>
<td>May 8, 2020</td>
<td>ETS Market Stability Reserve to reduce auction volume by over 330 million allowances between September 2020 and August 2021</td>
<td>Auction</td>
</tr>
<tr>
<td>December 11, 2020</td>
<td>Further information on the start of phase 4 of the EU ETS in 2021: emission allowances to be issued for aircraft operators and the Market Stability Reserve</td>
<td>Cap</td>
</tr>
<tr>
<td>March 15, 2021</td>
<td>Adoption of the Regulation determining benchmark values for free allocation for the period 2021-2025</td>
<td>Free alloc.</td>
</tr>
<tr>
<td>May 12, 2021</td>
<td>ETS Market Stability Reserve to reduce auction volume by over 378 million allowances between September 2021 and August 2022</td>
<td>Auction</td>
</tr>
<tr>
<td>May 25, 2021</td>
<td>Updated information on exchange and international credits’ use in the EU ETS</td>
<td>Intl. credits</td>
</tr>
<tr>
<td>May 31, 2021</td>
<td>Commission adopts the uniform cross-sectoral correction factor to be applied to free allocation for 2021 to 2025 in EU ETS</td>
<td>Free alloc.</td>
</tr>
</tbody>
</table>


2. Specific Comments

- Question #1: Are all of these events negative events? Wasn’t sure?
2. Specific Comments

- **Question #2**: Do certain countries behave differently than others?
- **Question #3**: Are you able to identify announcements that would affect one country versus another and hence witness some differentiation?
- **Question #4**: Is there a way to get a database of “events” that have conflicting sources of news? Positive and Negative for pricing?
2. Specific Comments

• **Question #5**: Are the results more about valuation or uncertainty? Is there a way to disentangle by the “type” of news?
Summary

- I like the approach of the paper, but would suggest they make a little more readable.
- Maybe start with an event-like graph to entice the reader.
- Overall, interesting contribution to the effects of climate regulation.
- More generally, I think people in ESG space need to also think about what is ultimate objective and how it would be achieved for society. Is shunning companies that naturally do these things the best approach?
- Is taxing companies the best approach?
Thank you

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