Session: “How can we leverage markets to achieve the net-zero 2050 targets?”

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Discussion by
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Disclaimer: Presentation focused on “bigger picture” policy recommendations, with references to some of my work in footnotes.
Idealized features in emissions markets are not always feasible or desirable with frictions

1. **Universal coverage**: sectoral, geographic, temporal.

2. **Adequate** price levels that properly reflect externalities (or that are consistent with goals).

3. **Polluter-pays** principle.

!! Political feasibility and imperfections (e.g., in monitoring) make design of non-trivial, while limiting their effectiveness.¹

¹ Some of these challenges are described in more detail in Gollier and Reguant (2021) and Fabra and Reguant (2022, in preparation).
Universal sectoral coverage comes with dangers (internal leaks)

- In theory, all sectors covered in one unified scheme.

- **Challenges:**
  - Limits political feasibility, can lead to generous rebates / very low prices / protests.\(^2\)
  - Opens the door to false emissions reductions (e.g., shady offsets or non-additional negative emissions), which contaminate price in a quantity scheme.
  - Complicates accounting with other gases and land use, difficult to verify, easy way out to claim visible targets.

- While not first best, might need to focus reductions where they are **verifiable and feasible.**

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2. A mathematical model with feasibility constraints can easily show that a partial system is better than a universal price system where the price is reduced enough to be politically feasible (Fabra and Reguant, 2022, in preparation).
Geographic coverage has proven challenging (external leaks)

- Not all countries or states participate in carbon markets leading to leakage.
- Most effective economic solutions (carbon border adjustment mechanisms, taxing consumption, taxing fossil fuels for their CO2 and methane embedded content) generally not politically feasible or hard to quantify.\(^3\)

- More aggressive policies might be available/easier on specific sectors, rather than trying to fix it for all.
- Consumption taxes of embedded footprint can level playing field.

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3. Some of my work looks at the accounting challenges of setting carbon border adjustments (Fowlie & Reguant, 2022; Fowlie, Petersen & Reguant, 2021).
Temporal commitments are subject to high levels of uncertainty

- Credibility of climate policy is **inexistent or extremely limited**.
- Carbon prices and agreements often a function of the economic **business cycle**.
  - Example: stringency of reserve, recent changes in EU policy declaring investments in natural gas “green,” quantity pathways easily manipulated (e.g., via offsets).

- Mechanisms give the impression of credibility, but unclear that it generates necessary **long-term credibility for investors**.\(^4\)

- Bans (e.g., to public investment in fossil fuels) can be more concrete. If successfully implemented, more difficult to revert.

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\(^4\) See Gollier and Reguant (2021) with suggestions on way to address these difficulties.
Carbon markets are not particularly popular, limiting ambition

- They can be highly regressive, as seen now with the gas crisis.
- Households do not perceive proposed remedies as equalizing (even if they are).
- Some people can always afford prices, even if very high: “The 1% can pay their way out.”

Figure 7 – Impact of increasing the carbon tax from €44.6 to €86.2/tCO₂ (plus diesel catch-up) on household disposable income

Source: Bureau, Henriot, and Schubert (2019)
“Drastic” measures like bans can be equivalent to carbon prices, which we often fail to recognize.

- Net-Zero pathways imply very high prices of CO₂.
- Even with current technology, they already make many fossil fuel applications uneconomical (e.g., electricity, cars, heating).
- Effectively equivalent to a ban, but a ban is (maybe surprisingly) more popular.

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Source: France Stratégie. Shadow carbon price (in 2018 euros per metric ton of CO₂) in France implied by three different commissions.
Synergies between prices and more direct action need to be embraced

- There is a confrontation between two narratives: prices and sectoral efforts.
- Sectoral efforts painted as more popular, but they might not be as popular at the proper scale.
- Sectoral efforts painted as too intrusive, but easily compatible with suggested price paths.
- Carbon prices painted as evil but removing a subsidy to fossil fuel consumption cannot hurt!

- We will surely fall short in achieving net-zero targets at a global scale (which is what is truly needed).\(^5\)
- Prioritize concrete and certain reductions.

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5. See comment (Reguant, 2021) where I show that simple constraints to stylized DICE-like models make optimal emissions reductions infeasible. This should be obvious by looking at the history of decades of promises of climate action while global emissions continue to grow.
Summary

- Idealized features in emissions markets are not always feasible or desirable with frictions.
- Universal sectoral coverage comes with dangers (internal leaks).
- Geographic coverage has proven challenging (external leaks).
- Temporal commitments are subject to high levels of uncertainty.

- Carbon markets are not particularly popular, limiting ambition.
- “Drastic” measures like bans can be equivalent to carbon prices.
- Synergies between prices and more direct action need to be embraced.
Thank you.
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