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On the interaction between EU ETS and companion policies in the age of corona

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Policy Session: EU ETS plus X? Policy needs for industrial decarbonisation in the age of corona

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Overview of the presentation

Interaction between EU ETS and X (companion policies)

1) Theoretical foundations → Are companion policies theoretically sound?

2) Empirical evidence → Lessons from the ex-post literature

- a) How much abatement can be ascribed to complementary policies rather than to the EU ETS?;
- b) What was the abatement cost of complementary policies so far?;
- c) What was the impact of complementary policies on carbon prices in the EU ETS?;

3) The MSR and the post-COVID recovery

Can the Market Stability Reserve (MSR) effectively shelter the EU ETS from the side effects of companion policies and/or from unanticipated shocks?

Personal remarks

Interaction between EU ETS and companion policies: theoretical foundations

- In an ideal 1st-best world allowance prices move along an intertemporally optimal path so as to minimise the cost of meeting the long-term cap (Fuss et al., 2018).
- Companion policies increase such cost: unanticipated emission abatement make allowance prices deviate from the optimal path.
- Companion policies undermine the EU ETS: by lowering allowance prices, they lower incentives to low-carbon innovation and investment
- Waterbed effect in space/time: increases emissions elsewhere or later on within the system

What about a 2nd-best world?

Several reasons why companion policies make sense

- Multiple market failures (carbon emissions, learning spillovers, and R&D spillovers) call for multiple instruments (e.g. emission prices, R&D subsidies and renewable energy subsidies)
- Specific needs: increasing energy security and/or supporting local employment in labour-intensive sectors
- Time matters: carbon pricing takes time to reach the levels triggering the needed abatement, which justifies early-targeted public intervention (Vogt-Schilb and Hallegatte, 2014; Vogt-Schilb et al., 2018)
- Carbon pricing alone insufficient to induce major emission reductions at minimum cost: high marginal abatement costs for full decarbonisation (Burke et al., 2019: 135-225€) → average current carbon prices would need to grow 10 times or more in the next 30 years with large competitiveness and distributional effects (Verde et al., 2020)

→ call for a wider policy mix than ETS only

Empirical evidence: impact of the EU ETS on basic materials sectors

- Few estimates of sector-specific effects of EU ETS (FSR Climate, 2019)
- Impact of activity thresholds and allocation methods on sectors production (Neuhoff et al. 2014, Branger et al. 2015, Branger and Sato, 2017)
- Impact of EU ETS on carbon leakage
- Iron, steel and cement highest index of risk of carbon leakage (Martin et al., 2014)
- However, little/no evidence of leakage
- On iron and steel: no/modest impact EUA price on net imports (Branger et al. 2016, Boutabba and Lardic 2017)
- On aluminium: impact of EU ETS mainly through electricity prices (Reinaud 2008, Sartor 2012)
- Focus on ex-post EU ETS literature on interaction

Empirical evidence on the interaction:

2.1) abatement by companion policies

- **What is the relative importance of different factors in reducing emissions?**
- RES more important than other factors (e.g. energy and carbon prices) in reducing emissions from EU electricity sector in the first two phases (Berghmans et al., 2014)
- Counterfactual analyses suggest that *without* RES emissions from electricity sector would have been higher (+11-20% for Germany Weigt et al. 2013; +10-16% for 12 EU MS van den Bergh et al., 2013)
- It is estimated that in the period 2005-11 more than half of emission reductions from EU ETS sectors resulted from RES and EE policies (Gloaguen and Alberola, 2013)

Empirical evidence on the interaction:

2.2) abatement cost of companion policies

- **What is the cost of reducing emissions through companion policies?**
- Cost of reducing emissions through wind electricity generation lower than through PV (Marcantonini and Ellerman 2016; Marcantonini and Valero 2017)
- PV highest abatement costs with respect to alternative RES policies (hydro, wind, biomass, biogas, geothermal and waste) (Rey et al., 2013)
- Wide differences across countries and technologies, depending on financial support and energy mix

Empirical evidence on the interaction:

2.3) effect of companion policies on allowance prices

- **What is the impact of companion policies on EUA prices?**
- Moderate interaction effects: only 10% of variation in EUA prices due to «fundamentals» of carbon prices; within this 10%, only 25% due to RES policies (Koch et al., 2014)
- However, very few studies and very low EUA prices in the period taken into account (2008-13)

- Whatever the impact, MSR should address any interaction...

The MSR and the post-COVID recovery

Can the Market Stability Reserve (MSR) effectively shelter the EU ETS from the side effects of other policies and/or from unanticipated shocks?

MSR reduced the surplus, contributed to support prices, increased resilience to future shocks however...

Will it manage to ensure stability of higher prices?

Will it be sufficiently resilient to multiple stress tests (e.g. decarbonisation policies, overlapping national policies and COVID)?



The post-COVID recovery

- Crucial role of expectations: pre-COVID price increased due to ***anticipated*** effect of MSR, limited impact of COVID due to ***anticipated*** higher ambition targets but....
- Expectations subject to rapid changes
- Agents subject to bounded rationality and herd behaviours
- MSR operates with minimum one-year delay with respect to the shock
- Need reinforce and anticipate the mechanism (MSR review 2021)
- Time for a floor?
 - Sound theoretical arguments (e.g. Flachsland et al., 2020; Burtraw et al., 2018: MSR cannot totally eliminate waterbed effect, price floor can further reduce it)
 - Already in most other ETSs
 - Already implicit price ceiling (the fee)
 - Ensure market stability, increase regulatory certainty and reinforce signal to the market

EU ETS + X: In good company?

- X theoretically sound, can contribute to emissions reductions, had a moderate effect on carbon prices.
- MSR reduced interactions but a price floor could also be considered



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Thank you!

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