



Green growth and competitiveness: incentivizing the transition

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Industrial Decarbonization Challenge

- Economists agree that **significant, comprehensive carbon pricing** is best to ensure consistent financial incentives for reducing emissions across all sectors
- Addressing concerns about **carbon leakage** is essential
 - When pricing not comprehensive
 - Else we get pricing that is not significant
- Focus on **energy-intensive, trade-exposed (EITE)** sectors



Options for addressing competitiveness-related carbon leakage

- **Lower emissions prices** and use technology incentives
 - Diminishes decarbonization incentives for non-EITE sectors as well and requires more expensive subsidies
- **Exempt** vulnerable sectors
 - Avoids direct cost increase but doesn't address costs from indirect emissions; Removes all incentives for even low-cost improvements
- **Output-based allocation** / “benchmarking”
 - Emissions price remains to incentivize reductions in emissions intensity, but conditioning allocation on production means carbon cost not passed on to consumers
- **Border carbon adjustment**
 - Prices all consumption of carbon, including imports, so consumers make informed tradeoffs
 - EITE sectors are already some of the most trade disputed

Behind-the-border adjustment

- Carbon price
 - + output-based rebate
 - + consumption tax
- OBR deals with leakage and tax offsets distortion to consumer incentives
- Tax covers imports and domestic production

Neuhoff, K., et al. 2016. Inclusion of Consumption of carbon intensive materials in emissions trading – An option for carbon pricing post-2020. Berlin: Climate Strategies.

Empirical estimates of competitiveness effects: Europe

- Dechezlepretre et al: **positive impact** of EU ETS on profits, revenues
- Commins et al 2011: EU ETS **+1.5% employment**, -3% TFP growth
- Abrell et al 2011: **no stat. sign. impact** of EU ETS on value added, profit margin or employment.
- Wagner et al 2014 (France): **no stat. sign. impact** on employment
- Petrick & Wagner 2014 (Germany): **no stat. sign. impact** on employment, turnover or exports
- Klemetsen et al 2016 (Norway): **increases** in value added and labor productivity
- Jaraite and Di Maria 2016 (Lithuania): **no stat. sign. impact** on profitability
- Calligaris et al 2018 (Italy): **positive impact** on TFP

Why so little evidence?

- Carbon prices have been low
- Relatively short timeframe
- Less trade sensitivity / pass-through than expected
- Free allocation works
 - Carbon price fears may be overblown, since policies available

Other (complementary) policy options

- Sectoral agreements
 - Ensure that trade partners in EITE sectors have similar policies
- Support for RD&D of new technologies
- Support skills formation to complement clean production techniques
- Energy market reforms
- Target demand for lower emission products
 - Procurement
 - Building codes
 - Public pressure on major retailers

Conclusion

- Addressing competitiveness-related leakage and other challenges can make room for stronger, more comprehensive carbon pricing
- Technology oriented interventions can address additional barriers but are poor substitutes for pricing
 - And overreliance on them further weakens ETS prices...