

Discussion of “Firm-level CO2 Emissions and Production Networks: Macroeconomic Implications of a Carbon Tax” by Acevedo, Albagli, García-Trujillo and Yung

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Summary

- Authors take advantage of great data to construct a map of firm CO₂ emissions in Chile
- Identify fossil fuels sold firm-to-firm and use CO₂ emission factors from IPPC
 - Construct monthly series of CO₂ emissions at aggregate and sectoral levels and by fuel type
 - Construct the production network to highlight direct and indirect carbon footprint
- Suggest a quantitative setup to analyze the effect of a carbon tax. Plan to estimate
 - downstream and upstream network spillover measures
 - the impact of these measures on firm-level price and quantity indexes

Strengths

- Data is great: replicate the input-output linkages of the universe of (formal) firms
- Very relevant application to consider carbon emissions
- Interesting motivating question

Comment #1

- Is (upstream or downstream) centrality of a sector relatively constant across time?
- Authors suggest that differences in centrality are a reason to consider heterogeneous carbon taxes across sectors, but only estimate centrality for 2022

Comment #2

- Quantitative setup will yield interesting information, but I'm not so sure it is the best setup to understand general equilibrium effects
 - interesting to analyze how firms would adapt to higher prices due to carbon tax: suppliers and labor reallocation
 - role of informality?

Comment #3

- With the current quantitative setup there are only downsides of a carbon tax: input prices increase
- Ideally, posit a quantitative theoretical model that you can calibrate with this wonderful data
 - Golosov et al (2014), Belfiori (2018), etc model externality of CO₂ emissions
 - Compare flat carbon tax across sectors vs specific sector carbon tax
 - Analyze optimal carbon policy

Comment #3

- Alternatively, use the current setup
 - Assume negative impact of aggregate CO2 emissions on firm revenue
 - Compare aggregate production with flat carbon tax vs specific sector carbon tax

Conclusion

- Very good use of wonderful data
- Very interesting application to an extremely relevant question
- I look forward to seeing quantitative results and future papers!