Discussion of: "Environmental regulation and productivity growth: Main policy challenges"

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Overview

- Cross country investigation of the link between environmental regulation and productivity.
- Porter Hypothesis: Tighter environmental policies can stimulate innovation. The benefits from this may over-compensate for the costs of compliance with these policies.
  1. **Weak PH**: ↑ Environmental Policies ↑ Innovation ↑ Productivity. (Does not necessarily compensate for costs)
  2. **Strong PH**: ↑ Environmental Policies ↑ Innovation ↑ Productivity. (Compensates for costs)
  3. **Narrow PH**: Market-based instruments (taxes, tradable permits) are more likely to foster innovation than non-market based instruments.
- Panel VAR approach and impulse response analysis of 18 OECD countries between 1990 and 2015.

Main Findings

- **Weak and Strong PH**: Introduction of regulation to support the transition can also lead to increased productivity and economic growth.
- **Narrow PH** Market-based instruments (Emission trading schemes) contribute most significantly to productivity growth.
- Non market-based instrument in high ICT countries can also positively impact productivity.

Investigating the channels?

Interpretation of the results Descriptive approach. Further work in the future to investigate the channels?

Finding: Effect of environmental policy stringency on productivity is larger in high ICT countries.
Is it easier to adjust ICT capital to comply with stricter regulation rather than low ICT? Are there better financial system in high ICT countries? Or higher investments in R&D at the country level that might lead to better innovation outcomes?

Example: [1]

IT: Low ICT, low regulatory stance, 1,39% of GDP as R&D Expenditure, Firms not needing a loan 57,8%, Investments financed by banks 19%

DNK: High ICT, high regulatory stance, 3,03% of GDP as R&D Expenditure, Firms not needing a loan 79,2%, Investments financed by banks 11%

[1] Worldbank Data (most recent observations available)

Question on the productivity measure

The measure The authors look at environmental adjusted labor productivity using environmental adjusted GDP for pollution abatement in per hour terms. What counts as an effect? If overall emissions are reduced does that count as an increase in productivity even if output does not change?

Example: There are two fuel types, one more polluting than the other. Firms switch types following the policy introduction because costs of switching are slightly lower than costs of continuing production with the more polluting fuel due to regulation. What happens to the measure? Does it vary?

When you evaluate policy impact using this measure are you looking at changes in productivity or at reductions in emissions?

Policy challenges in this context

Main policy challenges: Further elaboration on these challenges?

- *Not all policies have the same impact on reducing emissions or fostering the transition.* Can you elaborate further on whether the more effective policies (e.g. in reducing emission) are also the ones fostering more productivity?
- *Financial constraints* Bartram et al (forthcoming JFE) find that financially constrained firms can strategically reallocate production to avoid costly environmental regulation.
  Complying with regulation has a cost: In this setting financial constraints might play a role also with regard to impact of policy stringency on innovation and productivity.