Shareholders' coalition for climate solutions: Is there a case for competition policy? Discussion

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My Comments

- Interesting paper!
- Competition policy trade-off when competing firms make R&D investments in (green) technologies:
  - Cooperation among firms/common ownership raise the usual collusion concerns
  - However, cooperation/CO can induce firms to internalize technological spillovers, in turn aligning private and social incentives to invest in (green) R&D (Lopez & Vives 2019)
- My comments:
  - What key ingredients in a model of green R&D?
  - R&D spillovers are endogenous

Lopez & Vives(2019)

LV in a nutshell

- Focus on two-firm Cournot model: firm j chooses its production level and investment in green R&D to maximize

$$\pi_j + \lambda \pi_k$$

- The (positive) impact of common ownership λ on R&D incentives depends on the degree of technological spillovers (β), i.e. how much firm j's R&D affects firm k's carbon costs (and thus π_k)
- This is because each firm's R&D incentives depend on:
  - impact of own R&D on own carbon cost per unit produced
  - $\lambda\times$ impact of own R&D on rival firm's carbon cost per unit produced, which increases with β
- With large enough technological spillovers, common ownership has a positive effect on equilibrium R&D *and* output.

A model of green R&D (I)

Policymakers' tools:

- Carbon pricing and environmental enforcement: to induce firms internalize environmental externality
- Subsidies to green $R\&D$: to directly boost investment
- Regulate R&D cooperation and common ownership: mindful of trade-off à la Lopez & Vives (2019)

What if we incorporate imperfect environmental regulation enforcement in LV framework?

A model of green R&D (II)

- Carbon emissions: marginal social cost (c in LV model) may be larger than marginal cost to the emitting firm. Say, the latter is ρc with $\rho \leq 1$ capturing the strength of environmental regulatory enforcement.
- When ρ is smaller:
  1. Green R&D is ceteris paribus smaller
  2. Impact of common ownership on green R&D (via internalization of spillovers) must also be smaller

Policy implications:

- "Bright side of common ownership" is smaller (for given β) in the presence of weaker environmental regulation enforcement ρ.
- EU/UK mild approach to "green agreements" is only sensible in the presence of effective and well-enforced carbon emissions regulation.

A model of green R&D (III)

- Model of firm cooperation and green R&D should also account for heterogeneity in ρ for firms located across different regions/states:
  - Difference in carbon pricing across states (even within the US)
  - Local political corruption worsens environmental regulatory enforcement (Chen & Tao 2024)

Predictions:

1. Impact of common ownership on green R&D depends on the location of commonly owned firms
2. When the "coalition" extends to firms in poorly regulated regions, the green R&D-boosting impact of common ownership is diminished.

R&D spillovers are endogenous

- In LV (2019) model, degree of R&D spillovers is key: larger $\beta \implies$ the bright side of common ownership is more likely to dominate
- Firms have some control over knowledge sharing, e.g. by using contractual covenants (NCAs etc).
- More restrictive contractual covenants $\rightarrow$ less knowledge spillovers $\rightarrow$ more difficult to make the case for common ownership?

Wrapping up

- Lopez & Vives (2019) is a very useful framework to look at decarbonization collusion/green agreements, and more generally at the impact of common ownership in the presence of green R&D.
- Milder competition policy approach to cooperation/CO may be justified in the presence of effective carbon pricing and environmental regulation enforcement.