Directed technological change with endogenous absorptive capacity

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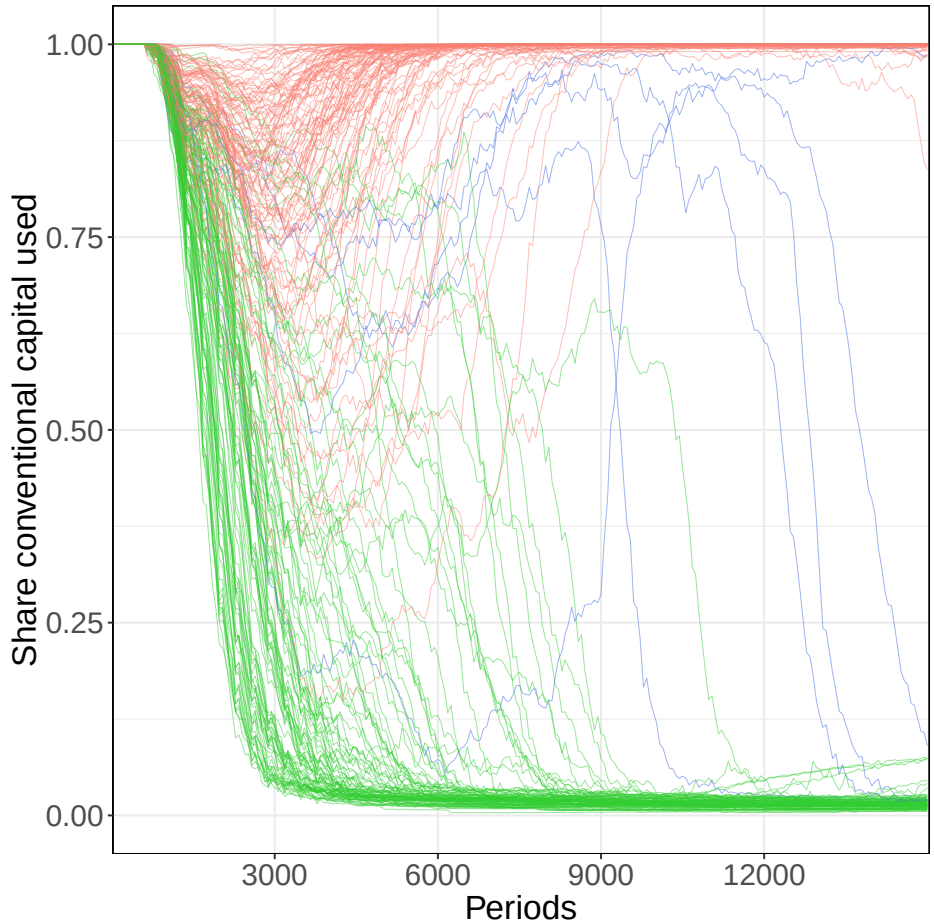
What is my research about?

Diffusion curves



Methods

- Macroeconomic agent-based model Eurace@unibi-eco:
  - Large scale, heterogen. agents, empirically validated: Emulates a full economy.
  - Green technology diffusion in presence of co-evolving, heterogen. absorptive capacity.

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Aims and guiding questions

- NOT: Optimal policy!
  - Incr. returns undermine optimality concept: Evolutionary approach.
- Understand transition processes:
  - Technologies need not only to be developed, but used: Technology selection model.
  - Stability, distributional impact, role of technological knowledge...
- Scope for policy: How to accelerate diffusion? (Esp. in climate context.)

Findings

- Techn. uncertainty is costly.
- Techn. distances matter: How radical is the new technology?
- Ambiguous effects of policy:
  - Reinforce incr. returns, non-linear effects, may increase techn. uncertainty, design and strength matter.
  - Effectiveness and side effects dependent on diffusion barriers and techn. distances

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Open issues

- Complex ABM as tool for theory generation.
- Empirical foundation of technology and knowledge!