Industry Dynamics, Investment and Business Cycles
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What have we learned?

- **Theoretical contributions:**
  - Investment irreversibilities at micro level **do** matter for aggregate outcomes when interacted with 3 ingredients:
    i) aggregate uncertainty
    ii) industry dynamics (entry/upgrade/exit)
    iii) general equilibrium framework
  - **Non-monotonic** relationship between cross-sectional dispersion of productivities and aggregate volatility.
  - Persistence and volatility of aggregate shocks may have **different** effects.

What have we learned?

- **Lessons for empirical work:**
  - Dispersion in productivities is an **imperfect measure** of efficiency loses
  - Policies might be **correlated** with productivity (not the usual assumption)
  - Important to **control** for features of business cycle
- **Industrial policy:**
  - Investment in capacity and entry costs should be **subsidized** pro-cyclically

Key assumptions

1. Theoretical results
    - Scrap values are **equal** for all types of firms
    - Equivalence between centralized and decentralized allocations needs **linear** sunk costs and **state contingent** taxes
2. Numerical results
    - **Two** levels of capital
    - **Elastic** supply of capital / fixed interest rate

- Interesting to explore intensive margin in investment

What identifies the model?

- What distinguishes technological I&I from other frictions?
  - Convex adjustment costs
  - Financial frictions
- Could study implications of model with dynamic statistics
  - **hazard rates** of exit, entry and upgrade
  - impulse responses to rates after a negative aggregate shock

More tests of main implications

- Industry dynamics have different responses to persistence and volatility of aggregate shocks
  - Stylized fact: Aggregate volatility has decreased
  - Disentangle changes in persistence/volatility via the industry dynamics?
- Inverted U relationship between cross-sectional dispersion in productivity and output volatility
  - Cross-country evidence of this relationship in Appendix
  - Estimate for US at different time periods (great moderation vs. last recession)