A Search and Learning Model of Export Dynamics

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Big Picture

- Exciting era for trade theory: firms & trade

- Exciting EEKKT agenda: Establish new facts on firm **dynamics**
  - Large turnover of small exporters
  - Large growth rates of small exporters
  - Entrants and Exitors typically small
Survivors Market Share in the US Census

![Graph showing the market share of survivors over different US manufacturing cohorts.]

- **1963 Cohort**
- **1967 Cohort**
- **1972 Cohort**
- **1977 Cohort**

**US manufacturing census data**

- Y-axis: # Cohort firms / # All US firms
- X-axis: Cohort Year

Costas Arkolakis: Market Access Costs
Fact 1: Large exit rate of exporters in a destination

Colombian exporters data

Costas Arkolakis: Market Access Costs
Survivors Market Share in the US Census

Costas Arkolakis: Market Access Costs
Fact 2: In a decade, new exporters large part of trade
Potential Contribution

- Rich data can identify right modeling assumptions
  - Favor a theory of firm-productivity dynamics (a la Hopenhayn)
    - But too much turnover in the first year!
    - Learning can help us explain this fact
    - Learning can explain growth as a function of age (conditional on size)
Why searching and learning together?

- Modeling subtlety
  - i. Searching alone probably not enough to match 1st year turnover
  - ii. Learning alone no value (no reason for adjustment of sales!)
So what do we Learn from “Learning”? 

- EKK, EEKKT present striking findings:
  - Many really tiny exporters and really tiny entrants
  - Size of entrants and exitors almost the same

- Data put doubts on assumption of sunk costs (as currently modeled)

- Learning can create a ”sunk cost” behavior (generates irreversibility)
Two main counterfactual experiments

- Productivity shocks alone can match exporter turnover & growth

- Model with learning overqualified to simply do this
  - Its real value in counterfactual experiments

- Counterfactual 1: Exporter behavior and exchange rate movements
  - Is irreversibility created by persistence in matches...
Two main counterfactual experiments

- Productivity shocks alone can match exporter turnover & growth

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  - Its real value in counterfactual experiments

- Counterfactual 1: Exporter behavior and exchange rate movements
  - Is irreversibility created by persistence in matches...
  - Or the sales within the matches?
Two main counterfactual experiments

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- Model with learning overqualified to simply do this
  - Its real value in counterfactual experiments

- Counterfactual 2: Trade Liberalization
  - Why growth of trade is slow?
  - Modeling export surges: further complications (learning spillover?)
Across Matches and Within Matches

- The truth for firm Growth is in the matches!
Across Matches and Within Matches

- Matched data can help us figure out the mechanics of export growth

- Here is an example:
  - If sales in matches not correlated growth similar to Kortum Klette
  - If sales in matches perfectly correlated similar to Luttmer
  - In the first case variance declines by rate $\propto 1/$firm size in the second it might actually increase (due to selection)!
A Robustness Check for Learning

- A way to check how much of a “kick” learning gives

- Take $N$ (correlated) stochastic processes

- Look at their behavior (turnover and growth)
  - Does it look like turnover & growth of within firm matches?
  - Can you replicate the behavior of the EEKKT model?