# A Search and Learning Model of Export Dynamics

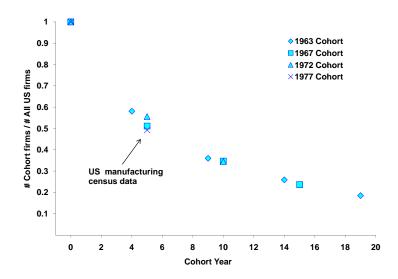
Eaton, Eslava, Krizan, Kugler, & Tybout
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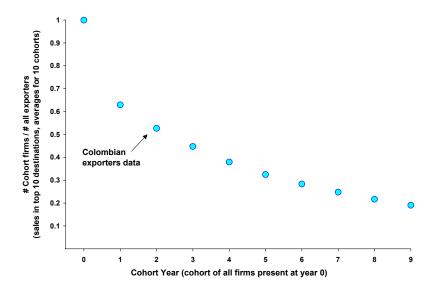
## Big Picture

- 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

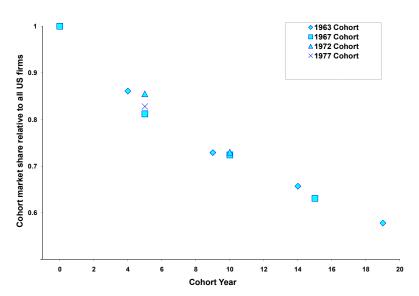
### Survivors Market Share in the US Census



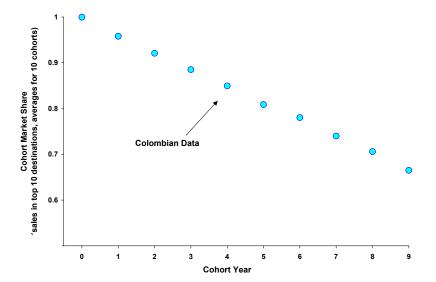
Fact 1: Large exit rate of exporters in a destination



### Survivors Market Share in the US Census



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 (ala 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...

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- 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 

    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?