

# FIRM GROWTH THROUGH NEW ESTABLISHMENTS

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*discussion by*

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<sup>†</sup>The views expressed here are those of the authors and do not necessarily reflect those of the Board of Governors or the Federal Reserve System.

# Motivation

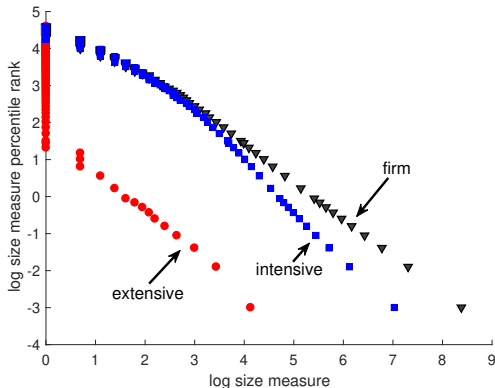
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- ▶ Great work to read, a lot to learn from!
  - ▶ Meticulous data work with new facts on firm growth
  - ▶ Rich yet tractable theoretical framework, well exposed
  - ▶ Careful quantitative exercise
- ▶ Comments regarding quantitative implications and possible extensions

# Observation I

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Figure 1: Size-rank relationships, ranked separately by size measure

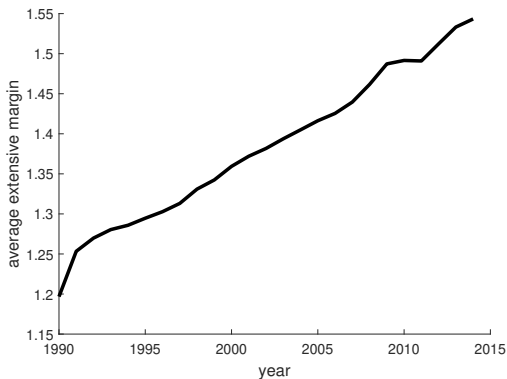


- Pareto tails  $\Rightarrow$  suggests proportionate growth in both margins

# Observation II

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Figure 4: Average extensive margin



- ▶ Firm growth driven by extensive margin

## Framework and results

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- ▶ Semi-endogenous growth framework with external and internal innovations (and entry)
    - ▶ External innovation  $\Rightarrow$  adding establishments (number)
    - ▶ Internal innovation  $\Rightarrow$  expanding establishments (size)
  - ▶ Expanding varieties onto Klette&Kortum (2004), Akcigit&Kerr (2018)
  - ▶ Firm types as in Lentz & Mortensen (2008)
  - ▶ Firms & establishments subject to exogenous exit shock
  - ▶ Endogenous expansion & exogenous exit determine thick tails
- $\Rightarrow$  Analytical characterization of size distributions, *liked one-type exposition*
- $\Rightarrow$  Quantitatively, matches the empirical distributions very well

# Robustness

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- ▶ Calibration suggests a dichotomy of firms
  - ▶ L-types growing through intensive margin
  - ▶ H-types growing through extensive margin

Table 4: Parameter Estimates and Model Outcomes, 1995 versus 2014

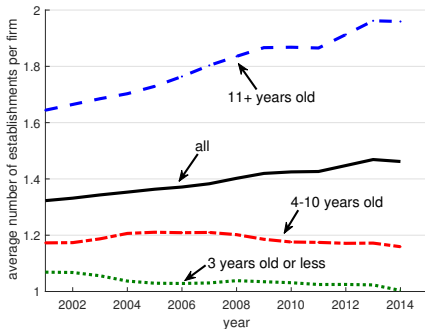
Parameter	Description	Value (1995)	Value (2014)
<i>Innovation Investments</i>			
$z_X^H$	<i>H</i> -type external innovation	0.3281	0.5120
$z_X^L$	<i>L</i> -type external innovation	0.0019	0.0002
$z_I^H$	<i>H</i> -type internal innovation	0.0000	0.0000
$z_I^L$	<i>L</i> -type internal innovation	0.1058	0.0822

- ⇒ Robustness: model with transformational & subsistence firms
- ▶ One-type model also generates Pareto tails; but, few small firms
  - ▶ Retail: speaks to large chains vs. mom and pop shops

# Paths to explore

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Figure D.3: Average establishment size (number of workers), different age groups



- ▶ Other interesting facts: age profiles
- ▶ What might be the factors that differentially affected firms across these characteristics?
- ▶ Changes in competitive structure? M&As, adjustment costs?

# Conclusion

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- ▶ Enlightening and meticulous work, enjoy reading it!