Recession Scars and the Growth of Newborn Firms in General Equilibrium

Petr Sedlacek and Vincent Sterk

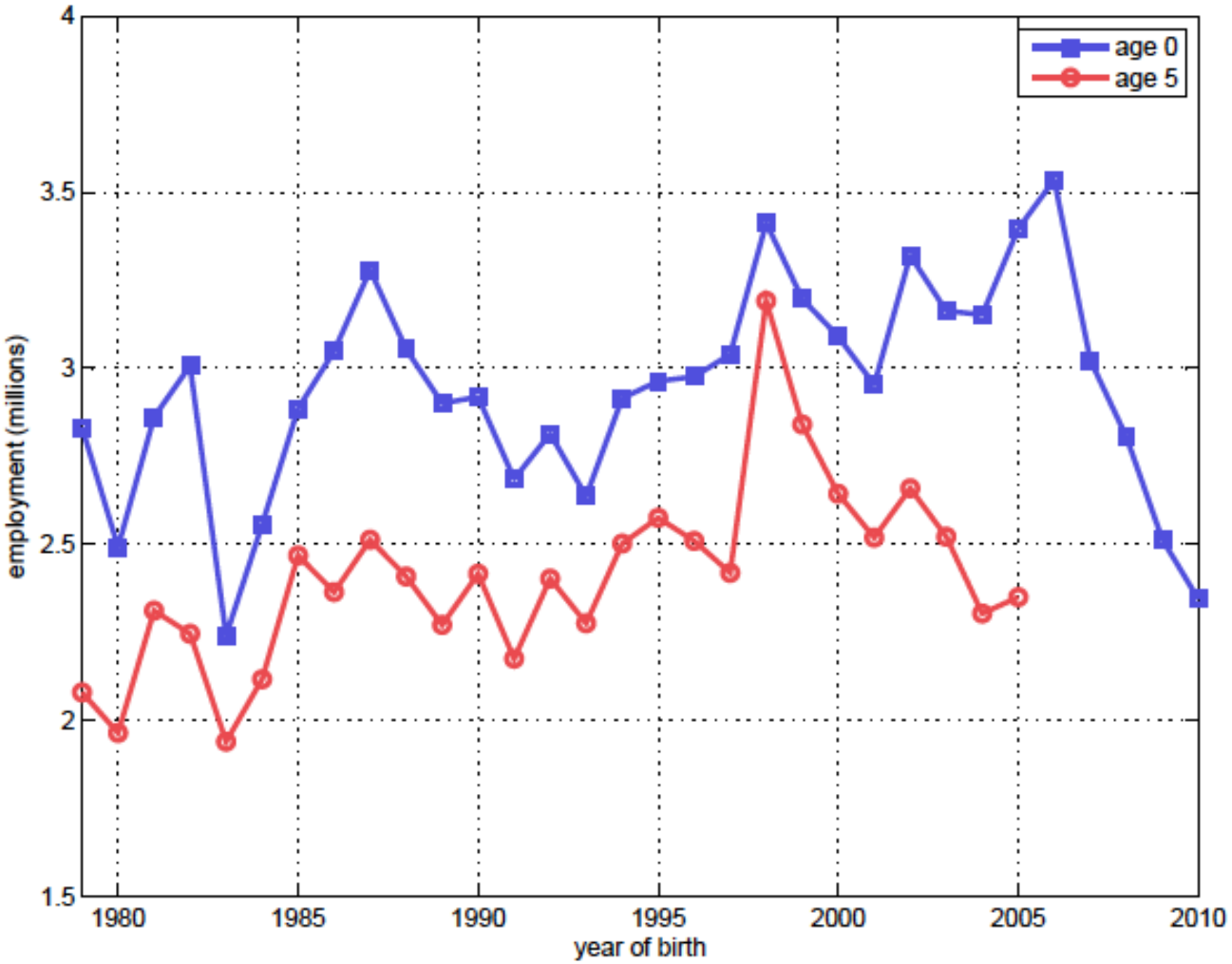
Discussion by Eric Bartelsman
DNB, October 18, 2013

Summary of Novelties

- Scarring in earnings cohorts known (Murphy and Welch 1990)
- New evidence for firm cohorts using US Business Dynamics Statistics (BDS)
  - In recession years, entry cohort is smaller (smaller number of firms, but mostly smaller avg firm size)
  - difference is persistent (for at least 5 years): Total employment of cohort mostly determined at birth, even with attrition of cohort and within-firm growth of survivors.
- New twist to GE modelling of determinants of firm size
  - Heterogeneity in decreasing returns to scale parameter, which is chosen by firm at birth
  - Fewer large (near CRTS) entrants in periods with high adjustment costs
- Interpretation: A period with high financial frictions may result in persistently depressed employment through effect on avg size of entry cohort

Cohort Employment

Figure 1: Total employment of firm cohorts of age 0 and 5



Empirical Evidence

- BDS is public use file of the LBD (Longitudinal Business Data)
- The split into size bins (and age bins after age 5) is quite arbitrary but has led modelling strategy
- What does firm-size distribution of entry cohort look like? Do we really have a reduction in mass at the large end of the distribution during a recession
- Interpretation of shift as a change in 'composition' of firms (fewer large-type firms) rather than a reduction in size results from the bins. But, it is crucial for model, with a firm-type being defined by its optimal employment size.

Model

- Optimal firm size is given by $n^* = \frac{A\alpha_i z_i}{w}^{\frac{1}{1-\alpha_i}}$
- Sensitivity of n^* to A increasing in α:
- Adjustment costs are convex (quadratic) and age dependent
- Firms do not enter at optimal size, but are subject to adjustment costs in period 0.
- Zero-profit condition through balance of entry cost and npv of quasi-rents
- Adjustment costs are subject to a shock
- When adj costs are high, we get less entry for firm-sizes where optimal employment more sensitive to costs (ie large firms)
- Crucial: Adjustment cost shock is highly persistent and firms cannot entry near optimal size

Questions

- If aggregate employment is sum of employment by cohort, why is it not peristent, while cohort employment is (after what age does persistence disappear?)
- In equilibrium of entry, we get fewer succesful entrants if value drops. Do we see probability of succes indeed rising in bad times?
- Do convex adjustment costs make sense for entry story (where changes in firm size from 1 to 2 is quite lumpy). Assumption of continuous n is difficult to defend.
- Is persistence in adjustment cost shock crucial for cohort effect?
- How/why do shocks to A and shocks to Q coincide? Does cohort size effect necessarily relate to 'business cycle'?