Time Varying Risk Premia, Labor Market Dynamics, and Income Risk

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Overview

• Empirical analysis:
  – Risk premia ↑: low-earning workers lose the most
  – These losses largely coincide with separations
  – Different from productivity ↓, where high earners lose the most

• Structural model:
  – Search and matching model + wage smoothing assumption
  – Endogenous separations when surplus goes negative
  – Able to match cross-sectional patterns without imposing heterogeneous impacts of shocks on productivity
This discussion

• My evaluation: great paper, interesting and intuitive mechanism

• Where does it fit in the literature?
  – Angeletos et al (2020): single shock that moves both risk premia and real activity seems to explain most business cycles
  – Hall (2017): risk premia can generate large and volatile unemployment in search models
  – This paper: how do risk premia affect the cross section of workers?

• This discussion:
  – Unpacking the mechanism
  – Quick comments on financial conditions and risk-free rates
Review: Cash Flow Duration

- Exposure of an asset’s value to a change in the discount rate is summarized by duration
  - Average time until asset’s cash flows received, weighted by value
- Consider asset with value $P$ and discount rate $r$
- After a permanent change in rates $\Delta r$:

$$\frac{\Delta P}{P} \approx -\frac{D}{1 + r} \times \Delta r$$
Application: Job Separations

• In this model, worker and firm split the surplus proportionally
  – Job separations occur (efficiently) when surplus is negative

• Let $B$ denote benefits created by working, $C$ denote the costs
  – $B$ is value added from production
  – $C$ is foregone payoffs in unemployment
  – Surplus is $S = B - C$

• Duration of the surplus is:

$$D_S = \left( \frac{B}{S} \right) D_B - \left( \frac{C}{S} \right) D_C$$
Duration of Surplus

• Can rewrite duration of surplus formula as

\[ D_S = D_B + \left( \frac{C}{S} \right) (D_B - D_C) \]

• Surplus is sensitive to discount rates (high duration) when:
  1. Duration of benefits \((D_B)\) is high
  2. Duration of benefits exceeds costs \((D_B - D_C)\) is high
  3. Assuming \(D_B > D_C\), ratio of cost to surplus \((C/S)\) is high

• Key to negative surplus is complementarity between 2 and 3
Duration of Surplus

• Can rewrite duration of surplus formula as

\[ D_S = D_B + \left( \frac{C}{S} \right) (D_B - D_C) \]

• In this model:
  – Slope of costs are the same for everyone
  – Slope of benefits highest for less skilled (low z) workers
  – Ratio of costs to surplus is highest for less skilled workers

• Note: less skilled workers also more likely to separate, which pushes all durations downward
Comment 1: Using the Decomposition

• This could be a nice way to quantitatively decompose the paper’s results (free disposal)
  – Separates effect of high C/S ratio from high B slope
  – My prior: C/S ratio doing more work than benefit duration

• Can we measure any components in the data?
  – Use characteristics to predict earnings growth. Are high expected earnings growth workers more likely to lose their job?
  – Variation in C/S is more tricky. Maybe workers close to the minimum wage, or part of highly unionized industries?
  – Note: neither of these actually correct in model
Comment 2: Firm Constraints

• Employment tends to drop a lot in recessions
  – E.g., manufacturing employment ↓ 2M (15%) in 2008 – 2009 crisis

• This paper’s view: discount rates pushed surplus negative

• Alternative view: credit conditions/firm constraints/demand forced firms to shrink
  – Constrained optimization: lay off workers with lowest ratio of surplus to “footprint” (effect on constraint)
  – Very different story because it is about level of surplus in a changing firm rather than change in surplus
Comment 3: Risk-Free Rates

- Paper is focused empirically on shocks to risk premia
  - But mechanism is based on discount rates in general
  - Movements in real risk-free rates should have the same effect

- What would happen if you fed in the path of interest rates?
  - Seems like falling rates since the 1980s could have reduced separations and boosted employment

- Risk free rates less countercyclical than risk premia, would be nice evidence if the same cross-sectional patterns emerged
Conclusion

• Great paper with super interesting mechanism

• Sensitivity of surplus due to complementarity between:
  – High duration (slope) of production benefits relative to costs
  – High ratio of costs to surplus
  – Would be great to measure these objects more directly

• Future work should try to separate changes in surplus from constraints that force firms to lay off by level of surplus

• Same logic should apply to real risk-free rates