Discussion of Colciago and Rossi "Endogenous Market Structures and Labor Market Dynamics"

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Summary

- This paper presents a model with endogenous market structure and search and matching frictions in the labor market.
- With respect to the standard search and matching model the process of entry and exit of firms provides an additional source of variability in employment and hours.
- When compared to a standard search and matching model with capital accumulation, this new model can better account for the US business cycle statistics.

Value added of the paper

- It explicitly addresses the interaction between firms creation and destruction and labor market outcomes. Consistent with empirical evidence for the US a large fraction of job creation (destruction) is due to the birth (death) of firms.
- It allows to study this interaction under different types of market structures (Bertrand and Cournot).
- Provides a detailed quantitative analysis.

The quantitative analysis: 1) the stochastic process

- The authors compare impulse response functions of their model with a standard search and matching model with capital accumulation.

- However, a TFP shock in the author's model is not equivalent to a TFP shock in the standard search model with capital accumulation. This is because in the first case the production technology is linear in labor, in the second case it is Cobb-Douglas in capital and labor. In the latter case a firm that maximizes profits solves

$$\max_{K,N} \left[AK^{\alpha} N^{1-\alpha} - rK - wN \right]$$

The quantitative analysis: 1) the stochastic process

- Take the first order condition with respect to capital and use it in the original problem to obtain

$$\max_N \left[\left(\frac{\alpha}{r} \right)^{\frac{\alpha}{1-\alpha}} A^{\frac{1}{1-\alpha}} N - wN \right]$$

- Thus, a shock of 1% to TFP ($\hat{A}$) in the model with capital translates into a shock of $\frac{1}{1-\alpha}\% > 1\%$ to TFP ($\frac{1}{1-\alpha}\hat{A}$) in the model without capital (see Hornstein, Krusell, and Violante, 2007).

- You use the stochastic process in King and Rebelo (Handbook of Macro, 2000), which is estimated using US data together with a Cobb-Douglas production function in capital and labor. The shock should be adjusted to compare models.

The quantitative analysis: 2) Why do you compare with a model with capital?

- Is it because you have a measure of investment which in the search model without capital accumulation is absent?
- To assess the quantitative relevance of the mechanisms you are proposing, you should first compare with the search model with no capital.
- Once this comparison is understood, you should compare with the search model with capital accumulation.
- Note that another (maybe more appropriate alternative) is to introduce capital accumulation in your model.

The quantitative analysis: 3) Your definition of investment

- You define investment as the total entry cost paid in a period.
- Thus, investment in this model is due only to new firms entering the market. Is this a reasonable assumption? Anyway, you are comparing two different objects across models.
- With endogenous capital, you can assume that the entry cost is a minimum amount of capital that has to be installed to enter the market. (Hornstein, Krusell, and Violante (2007) assume that the firm has to buy a new machine which is then added at the vacancy pool at no cost).
- In that case, you would be able to separate the volatility of investment due to new firms entering the market and that due to incumbents.

Other issues

- Some parameters seem to be calibrated ad-hoc.
- For instance θ (the ratio between the probability to find a job z, and the probability a firm fills a vacancy q) is set arbitrarily to one, and $q = 0.7$ as in Shimer (AER, 2005). But this implies that $z = q\theta = 0.7$ as well. Is this true in the data?
- You set a steady state labor supply equal to one. Which is the maximum amount of labor supply? Usually 1/3 of the total available time in RBC models.

Other issues

- Younger firms grow faster than more mature firms only in the first period.
- Why the volatility of profits is almost half (1.43) that of the standard model (2.56)?
- In the business cycle statistics you report L as total hours, while in the rest of the paper this is employment. Should be nL?

Other issues

- Put a table with the calibration.
- Put a unique table with data statistics and the three models.

To conclude

- Very nice model.
- Even nicer with capital accumulation.
- The quantitative analysis could be improved.