03/02/2017 貨幣總體經濟研討會導讀

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The Welfare Consequences of a Quantitative Search and Matching Approach to the Labor Market

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17th February, 2017

WHAT IS THE QUESTION OF THE PAPER?

Search and matching models have been applied to study the observed volatility in the labor market mostly by the relation between the employee's bargaining power over wages and the maximum social welfare / social optimum which happen when the bargaining power is equal to the matching elasticity. But the welfare consequences of different parameters about the bargaining power are rarely studied.

WHY SHOULD WE CARE ABOUT IT?

Based on the standard search and matching models, the author calibrated different values of bargaining power to catch the changes of social welfare. It is an alternative way to study the labor market. Various values of the bargaining power with 2 forms of matching functions: Cobb-Douglas function and DRW function. It shows the changes in welfare loss due to different matching functions, the bargaining power, the matching elasticity, the utility discount factor, the matching technology, the value of leisure, and the employee's productivity. It thus explains the labor market by these factors.

WHAT IS THE AUTHOR'S ANSWER?

1. **Standard search and matching models + specific calibration strategies + Cobb-Douglas matching function:**

   (1) When the bargaining power is close to the matching elasticity, the welfare loss changes smoothly. Otherwise when the bargaining power is close to 0 or 1, welfare loss changes are significant.

   (2) The modified case with different values of the utility discount factor shows the smaller utility discount factor plays a role to do the social planner's problem as it ensures the economy starts from the steady state.

(3) The matching elasticity is important to determine the welfare loss function.

(4) The higher matching technology implies less search friction and smaller impact on welfare.

2. **Standard search and matching models + specific calibration strategies + DRW matching function:**

   (1) The non-constant matching elasticity in DRW function makes the changes in social loss much more smoothly than the Cobb-Douglas function.

   (2) The author argued that the smooth welfare loss is due to the high value of the leisure. When the value of leisure is close to the employee's productivity, the welfare loss changes very smoothly.

HOW DID THE AUTHOR GET THERE?

1. **Standard search and matching models + specific calibration strategies + Cobb-Douglas matching function:** The author quantitatively analyzed the welfare loss by varying values of the bargaining power. Taking the calibrated parameters from Shimer (2005) as the benchmark compares with the computed parameters from Kashiwagi (2015).

   - Standard search and matching models by Diamond (1982), Pissarides (1985), and Mortensen and Pissarides (1994)
   - Calibration strategies from Shimer (2005)

2. **Standard search and matching models + specific calibration strategies + DRW matching function:** The author employed the same model in Shimer (2005) except that the matching function is DRW function. Then did the same calibrations with 1.

   - Standard search and matching models by Diamond (1982), Pissarides (1985), and Mortensen and Pissarides (1994)
   - Calibration strategies from Manovskii (2008)
   - DRW matching function introduced by denHaan, Ramey, and Watson (2000)

SYMBOLS & FUNCTIONS

- Cobb-Douglas matching function: $m(u,v) = \mu u^{\alpha} v^{1-\alpha}$

  $, where\ \mu: the\ maching\ technology. u: unemployment. v: vacacies.$

- DRW matching function: $m(u,v) = uv(u^{l} + v^{l})^{-\frac{1}{l}}$

  $, where\ \mu: the\ maching\ technology. u: unemployment. v: vacacies.$

- Welfare loss function: $L(\beta) \equiv \frac{W(\beta) - W^{*}}{W^{*}} \times 100$

  $, where\ W(\beta): the\ computd\ welfare. W^{*}: the\ maximized\ welfare.$

- γ: the discount factor of the utility.
- p: Employee's productivity.
- β: Bargaining power.
- α: Matching elasticity.