

Economics 8823
Advanced Macroeconomics III
Assignment 1
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 Spring 2018

The aggregate matching function (stated in terms of active search s and market tightness $\theta \equiv v/s$) is

$$\tilde{m}(s, \theta) = \frac{s \cdot \theta}{(1 + \theta^\epsilon)^{1/\epsilon}}.$$

If wages in the decentralized economy arose through competitive search equilibrium, the surplus-sharing condition that arises

$$\mathbf{W}(w_t) - \mathbf{U} = \theta_t^\epsilon \cdot \mathbf{J}(w_t)$$

supports efficient matching (as per, say, Moen (1996) or Shimer (1997)), which, as a consequence, implies there is no scope for corrective policy (whether fiscal and/or monetary) intervention.

Suppose instead that the wage model in the decentralized economy were Nash bargaining and that the worker's "effective" bargaining power in the Nash maximand

$$\max_{w_t} (\mathbf{W}(w_t) - \mathbf{U})^{\omega_t} \cdot \mathbf{J}(w_t)^{1-\omega_t}$$

is $\omega_t \in (0,1)$ (and hence the firm's "effective" bargaining power is $1 - \omega_t$).

In order for Nash-bargained wages to support efficient allocations, workers' "effective" Nash bargaining power must be

$$\frac{\omega_t}{1 - \omega_t} = \theta_t^\epsilon.$$

Suppose there are no taxes at all levied on private-sector agents. **Show that if workers' "effective" Nash bargaining power is**

$$\omega_t = \frac{\theta_t^\epsilon}{1 + \theta_t^\epsilon}$$

then the Nash surplus-sharing condition that results supports efficient allocations.