Discussion of "Involuntary Unemployment and the Business Cycle" by Lawrence J. Christiano, Mathias Trabandt, and Karl Walentin

Robert E. Hall

Hoover Institution and Department of Economics, Stanford

6th Banco de Portugal Monetary Conference Lisbon

June 10 and 11, 2010

### The MP paradigm

- Hiring and separations are flows; employment and unemployment are state variables.
- Preferences are linear, so personal wealth is not a determinant of labor supply.
- All workers hold jobs or seek work all the time; participation is not modeled.
- ► Job-seekers all exert the same fixed amount of effort.
- Employers exert recruiting effort to the point of eliminating any pure profit from hiring.
- Workers and employers bargain over compensation with fixed shares of the surplus around 0.5.

### SEARCH AND MATCHING

The job-finding rate is an increasing and concave function  $\phi(\theta)$  and the vacancy-filling rate is the decreasing function  $\phi(\theta)/\theta$ .

### SEARCH AND MATCHING

The job-finding rate is an increasing and concave function  $\phi(\theta)$  and the vacancy-filling rate is the decreasing function  $\phi(\theta)/\theta$ .

$$n = \frac{\phi(\theta)}{s + \phi(\theta)}$$

### SEARCH AND MATCHING

The job-finding rate is an increasing and concave function  $\phi(\theta)$  and the vacancy-filling rate is the decreasing function  $\phi(\theta)/\theta$ .

$$n = \frac{\phi(\theta)}{s + \phi(\theta)}$$

$$q(n) = \phi(\theta(n))/\theta(n)$$

Employers pay workers  $w_t$  units of output for each hour of work in period t.

Employers pay workers  $w_t$  units of output for each hour of work in period t.

Employers collect an amount  $y_t$  from a new worker.

Employers pay workers  $w_t$  units of output for each hour of work in period t.

Employers collect an amount  $y_t$  from a new worker.

 $\boldsymbol{w}_t$  is common value of marginal product of labor and marginal value of time.

Employers pay workers  $w_t$  units of output for each hour of work in period t.

Employers collect an amount  $y_t$  from a new worker.

 $\boldsymbol{w}_t$  is common value of marginal product of labor and marginal value of time.

Thus the employment contract embodies efficient two-part pricing.

## EMPLOYMENT FUNCTION

Payoff to a vacancy:

$$q(n_t)y_t - \gamma$$

## EMPLOYMENT FUNCTION

Payoff to a vacancy:

$$q(n_t)y_t - \gamma$$

$$q(n)y = \gamma$$

### EMPLOYMENT FUNCTION

Payoff to a vacancy:

$$q(n_t)y_t - \gamma$$

$$q(n)y = \gamma$$

The employment rate that solves this zero-profit condition is a function n(y), which I call the *employment function*.

### Employment and labor force as percent of population



### FIGURE 4, NEUTRAL TECH SHOCK



### Relative movements of unemployment and labor force

US data –	CTW		
	Money	Tech	Invest
5.0	0	0	0
10.0	-0.09	-0.12	-0.09
66.0	0	0	0
64.6	0.06	0.09	0.05
-0.43	-0.67	-0.75	-0.56
	US data - 5.0 10.0 66.0 64.6 -0.43	US data <u>Money</u> 5.0 0 10.0 -0.09 66.0 0 64.6 0.06 -0.43 -0.67	US data CTW   Money Tech   5.0 0 0   10.0 -0.09 -0.12   66.0 0 0   64.6 0.06 0.09   -0.43 -0.67 -0.75

# DISTRIBUTIONS OF CONSUMPTION WITH AND WITHOUT PERFECT UNEMPLOYMENT INSURANCE

