Discussion of "Hysteresis in Unemployment and Jobless Recoveries" by D. Plotnikov

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Multiple Equilibria and Financial Crises
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[1] Any opinions expressed here do not necessarily reflect the views of the management of the Federal Reserve Bank of San Francisco or of the Board of Governors of the Federal Reserve System

What explains "jobless" recoveries?

Sluggish employment & hours growth after recessions in 1990-91, 2001, and 2007-09.

Summary:

- Agents either work or search for work: Don't care about leisure. Negative externality as firms search harder for workers.
- Model introduces a persistent "belief shock" to c_t / w_t ratio in place of labor-leisure tradeoff.
- Steady state does not pin down $c_t / w_t \Rightarrow$ continuum of steady state employment rates.
- Persistent belief shock $\Rightarrow$ persistent shift in $c_t / w_t \Rightarrow$ persistent shift in employment.

Basic setup of model

Standard part:

$$\frac{1}{c_t} = \beta E_t \left\{ \frac{1}{c_{t+1}} \left[r_{t+1} + 1 - \delta \right] \right\}$$

$$c_t + \underbrace{k_{t+1} - (1-\delta)\, k_t}_{i_t} = \underbrace{r_t k_t + w_t \ell_t}_{y_t}, \qquad \begin{aligned} r_t &= \partial y_t / \partial k_t \\ w_t &= \partial y_t / \partial \ell_t \end{aligned}$$

Non-standard part:

$$c_t = \phi \left[\frac{y_t^p}{w_t} \right] w_t, \qquad (\phi \equiv c_{ss} / y_{ss})$$

$$\left[\frac{y_t^p}{w_t} \right] = \left[\frac{y_{t-1}^p}{w_{t-1}} \right]^{0.95} \left[\frac{y_t}{w_t} \right]^{0.05} \exp\left(\varepsilon_t^b \right), \qquad \text{persistent belief shock}$$

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Hansen (1985):

$$c_t = \frac{1}{B} w_t, \qquad B = \text{ marginal disutility of labor}$$

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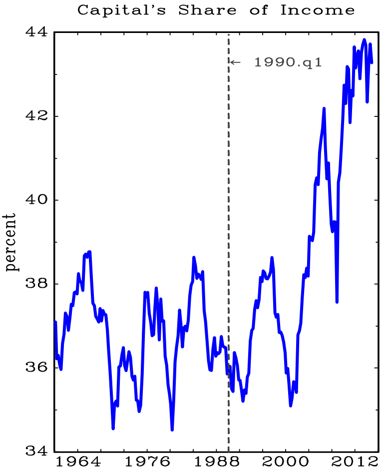
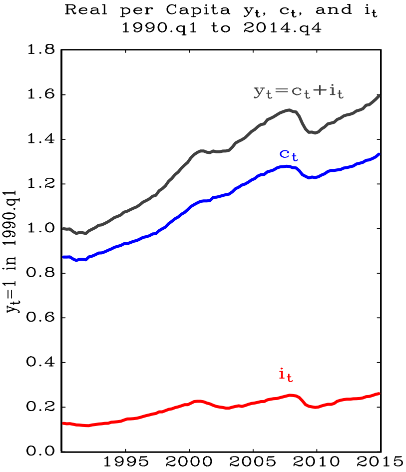
- Other types of fundamental shocks could account for sluggish employment recoveries, e.g., distribution shocks.

Capital's share of income is not constant

Capital share = 1 - employee compensation/gross value-added of corporate bus. sector.





Simple Two-Shock RBC Model

See Lansing (2015 AEJ-Macro, f.) and Lansing & Markiewicz (FRBSF WP 2012-23).

Capital Owners:

$$\max E_0 \sum_{t=0}^{\infty} \beta^t \log\left(c_t^c\right), \qquad c_t^c + k_{t+1} - (1-\delta)\, k_t \;=\; r_t k_t$$

Workers:

$$\max E_0 \sum_{t=0}^{\infty} \beta^t \log\left[c_t^w - B\exp\left(\overline{z}_t\right)\ell_t^{\gamma}\right], \qquad c_t^w \;=\; w_t \ell_t$$

$$\overline{z}_t = \overline{z}_t + \mu, \qquad (\gamma - 1)^{-1} = 10.$$

Production:

$$y_t \;=\; A k_t^{\theta_t}\left[\exp\left(z_t\right) n \ell_t\right]^{1-\theta_t}, \qquad n = 4,$$

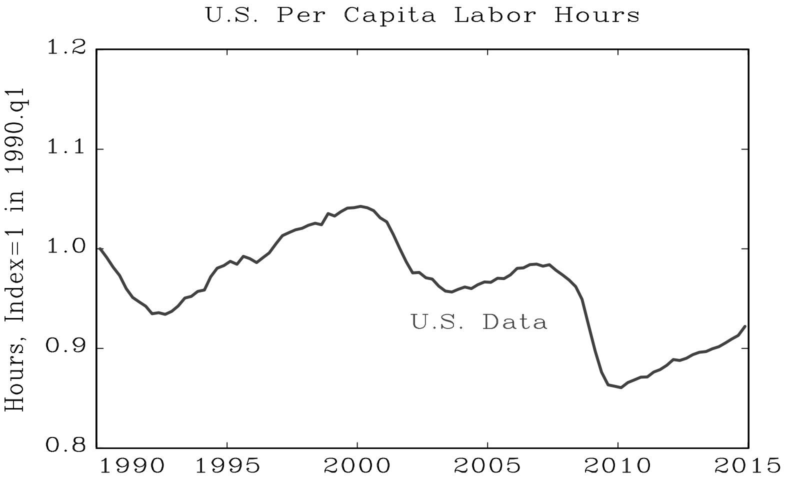
z_t = productivity shock (choose to match y_t series in U.S. data).

θ_t = distribution shock (take directly from U.S. data).

$$\ell_t \;=\; \left\{\frac{A(1-\theta_t)}{B\gamma}\left[\frac{k_t}{\exp(z_t)\, n}\right]^{\theta_t}\exp\left(z_t - \overline{z}_t\right)\right\}^{\frac{1}{\gamma+\theta_t-1}} \qquad \text{(decision rule).}$$

Data vs. Model: Per Capita Labor Hours

Nonfarm Business Sector: Hours of All Persons/Population, Indexed to 1 in 1990.q1.



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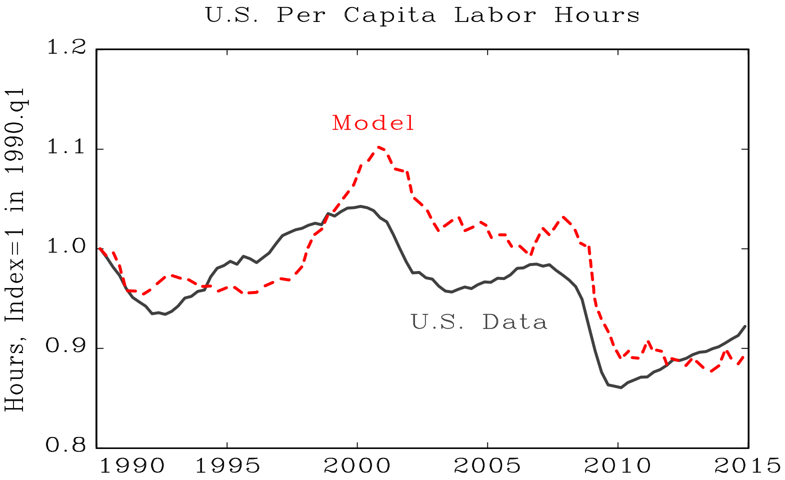

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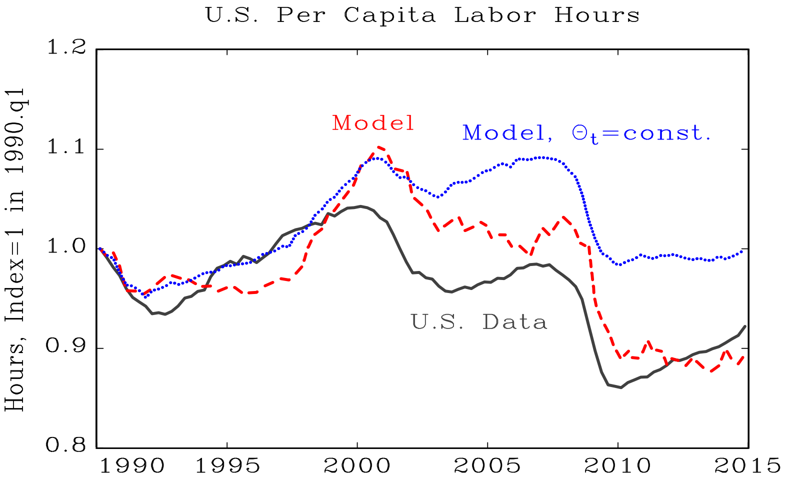

Model-Implied Productivity Shocks