Two Awesome Papers Sort of About the MPC!

Chris Carroll

May 20, 2015

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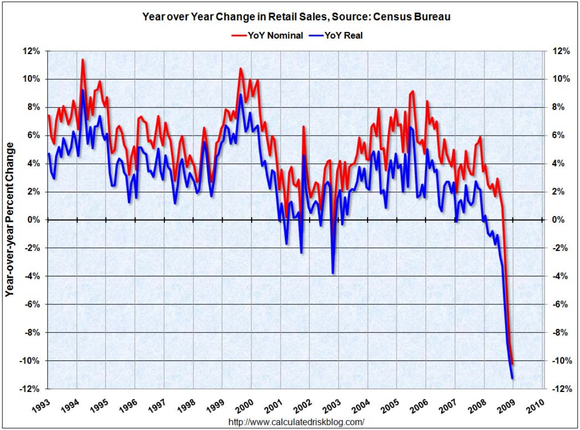

Consumer Financial Protection Bureau

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  - If $\kappa = 0.05$ then multiplier is only ≈ 0.05
    - 2007-vintage DSGE models mostly implied $\kappa \in (0.00, 0.05)$

What, If Anything, Is 'the MPC'

Friedman [1957]:

$$\begin{aligned} \boldsymbol{y}_t &= \boldsymbol{p}_t + \Theta_t \\ \boldsymbol{c}_t &= \boldsymbol{p}_t \end{aligned}$$

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Both papers are consistent with $0 < \hat{\alpha} < 1$. Yay! (?)

What About Interest Income?

If $u(\boldsymbol{c}) = (1-\gamma)^{-1}\boldsymbol{c}^{1-\gamma}$, and r is believed to be constant forever, then perfect foresight infinite horizon model says

$$\begin{aligned}
\boldsymbol{c} &= \underbrace{\left(\boldsymbol{b}_t + \boldsymbol{p}\left(\frac{1+\mathsf{r}}{\mathsf{r}}\right)\right)}_{\boldsymbol{o}} \overbrace{\left(\mathsf{r} - \gamma^{-1}(\mathsf{r} - \vartheta)\right)}^{\kappa} \\
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where $\boldsymbol{o}$ is 'overall wealth' (human plus nonhuman), and $\boldsymbol{o}\kappa$ is the amount that is OK to spend (!)

Unanticipated Permanent Change In r

$$\mathbf{c}_t = \left(\mathrm{r} - \gamma^{-1}(\mathrm{r} - \vartheta)\right)\left(\mathbf{b}_t + \mathbf{p}\left(\frac{1+\mathrm{r}}{\mathrm{r}}\right)\right)$$

Three effects of an unanticipated permanent change in r:

- Income Effect (assume $\gamma^{-1} = 0$ and $\mathbf{p} = 0$):

$$\Delta \mathbf{c}_{t+1} = \Delta \mathrm{r}_{t+1} \mathbf{b}_t$$

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- Human Wealth Effect ($\mathbf{p} \neq 0$, r_t and r_{t+1} small)

$$\begin{aligned} \Delta \mathbf{c}_{t+1} &\approx (1/\mathrm{r}_{t+1} - 1/\mathrm{r}_t)\,\mathbf{p}\kappa_t \\ &= (\mathrm{r}_t/\mathrm{r}_{t+1} - 1)\,(\kappa_t/\mathrm{r}_t)\mathbf{p} \end{aligned}$$

Sizes? Depends on γ ...

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- Simple calibration: $\boldsymbol{b}_t = \boldsymbol{p} = 1$, $\mathrm{r}_t = 0.06$, $\mathrm{r}_{t+1} = \vartheta = 0.03$

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γ	Income-And-Substitution	Human Wealth
∞	0.03	1
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- Hi

Milton A. Friedman. *A Theory of the Consumption Function*. Princeton University Press, 1957.

John F. Muth. Optimal properties of exponentially weighted forecasts. *Journal of the American Statistical Association*, 55(290):299–306, 1960.