

# Two Papers About the MPC!

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Chris Carroll

*These are my views and not those of anybody else at CFPB*

May 20, 2015

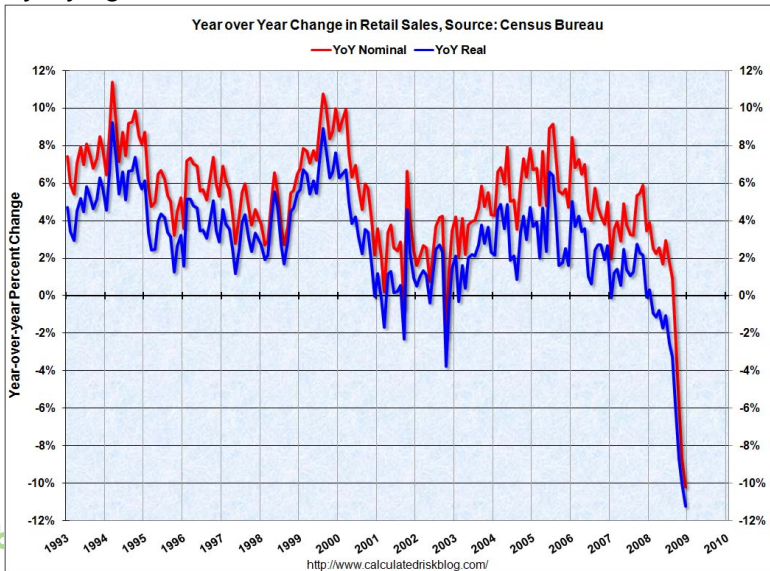
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  - If  $\kappa = 0.05$  then multiplier is only  $\approx 0.05$ 
    - 2007-vintage DSGE models mostly implied  $\kappa \in (0.00, 0.05)$



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# $0 < \hat{\alpha} < 1$ : Not Exactly a Triumph

Problem:

- Friedman's PIH is not really about  $r$

## Standard Theory About Response to $r$ ...

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

$$\mathbf{c} = \underbrace{\left( \mathbf{b}_t + \boldsymbol{\rho} \left( \frac{1+r}{r} \right) \right)}_o \overbrace{\left( r - \gamma^{-1}(r - \vartheta) \right)}^k$$

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where  $\mathbf{o}$  is 'overall wealth' (human plus nonhuman), and  $\mathbf{o}\kappa$  is the amount that the model says is OK to spend (!)

## Unanticipated Permanent Change In $r$

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

Three effects:

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

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

$$\begin{aligned} \Delta \mathbf{c}_{t+1} &\approx (1/r_{t+1} - 1/r_t) \boldsymbol{\rho} \kappa_t \\ &= (r_t/r_{t+1} - 1) (\kappa_t/r_t) \boldsymbol{\rho} \end{aligned}$$

## Sizes? Depends ...

Simple calibration:  $\mathbf{b}_t = \mathbf{p} = 1$ ,  $r_t = 0.06$ ,  $r_{t+1} = \vartheta = 0.03$

$\gamma$	Effect Size		$\Delta \mathbf{c}_{t+1} / \Delta \mathbf{y}_{t+1}$
	Income-And-Subst	Human Wealth	
$\infty$	0.03	1.0	$1.03/0.03 \approx 30$
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Definitely not rejected!



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Any of these differences could make *huge* difference for behavior

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- $\exists$  people for whom extra income from ARM resets in 2009-2010 will lead to some  $c$  and some deleveraging
- Little progress has been made on 'What will the MPC be out of stimulus payments?'

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- LATE/Natural Experiment/Micro Crowd:
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- Me: No! Use data and results to *calibrate a theory*
  - IF data line up reasonably with theory, maybe we learned something



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    - Dummies maybe control for levels but not *patterns of behavior*

## Example Of Puzzle That Isn't

At a couple of places, some confusion about apparent contradiction:

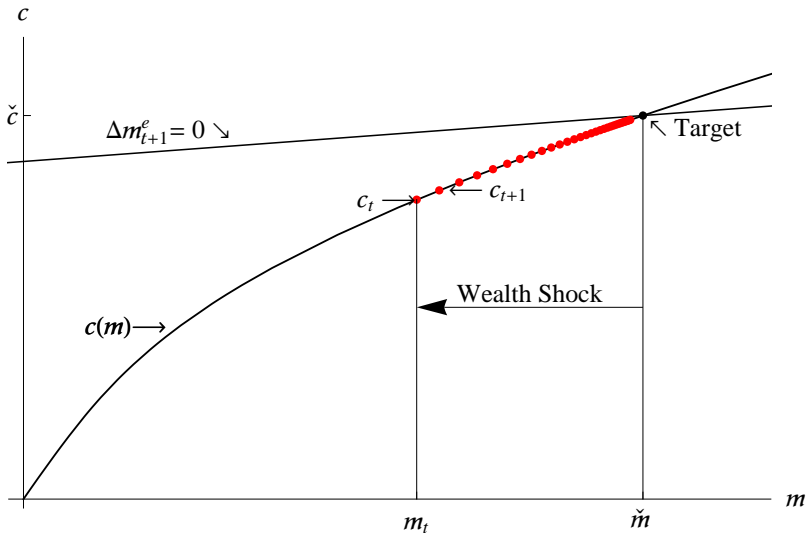
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- Low wealth borrowers deleverage *more*

# A Wealth Shock



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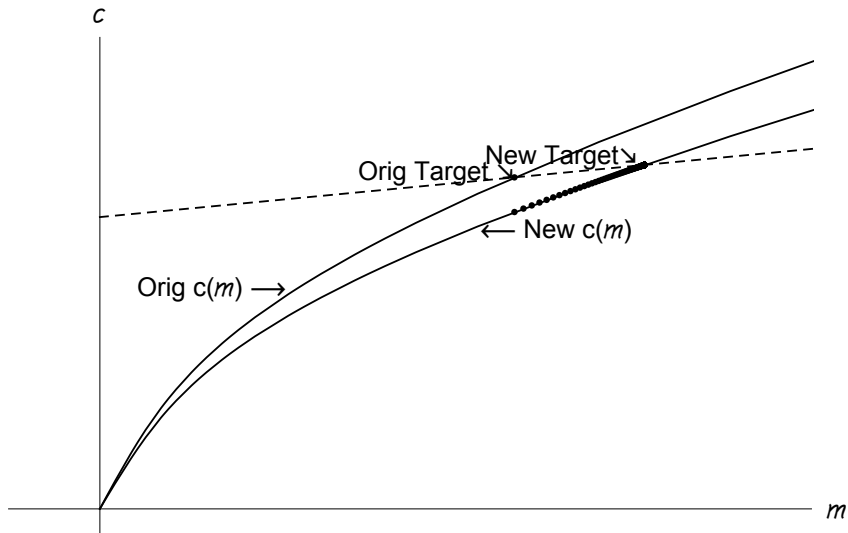
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# Differences Across Households In Time Preference



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This DOES reject a theory: RBC at local level

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- $\Rightarrow$  Use for calibrating theories

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