Discussion of “Windfall Income Shocks with Finite Planning Horizons” by Michael Boutros

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June 16, 2021

Overview

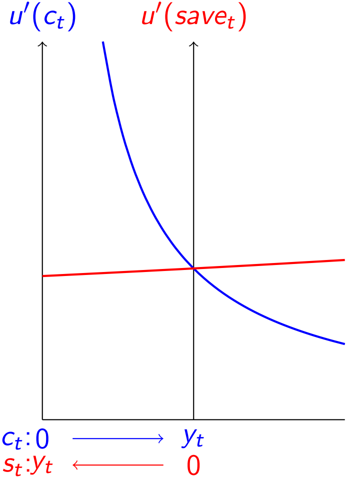
Q: How do households respond to transitory income shocks?

2 stylized facts:

1. MPCs are high even for households with high liquidity (e.g. Jappelli and Pistaferri, 2014) - borrowing constraints can't explain.
2. MPCs are higher when $\left(\frac{\text{shock}}{\text{income}}\right)$ low (Kueng 2018, this paper)
   - Because MPCs higher when *income* high.

This paper: Explanation based on 'bounded intertemporal rationality' - i.e. costly planning.
$+$ quantification, application to ESP (2008)

Intuition: full smoothing $\Rightarrow$ flat MU(save)



HH problem for diagram:

$\max_{c_t, b_t} \sum_{t=0}^{\infty} \beta^t \log(c_t)$

s.t.

$c_t + b_t = (1+r)b_{t-1} + y_t$

Assumptions:

$\beta(1+r) = 1,\ b_0 = 0,$

$y_t = y\ \forall t$

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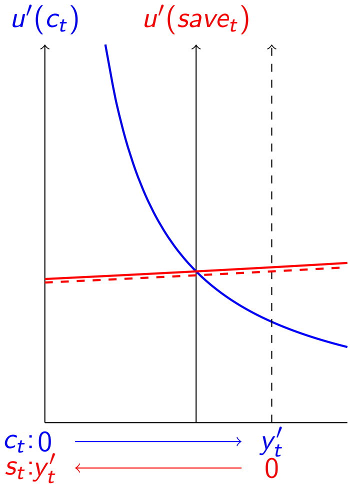

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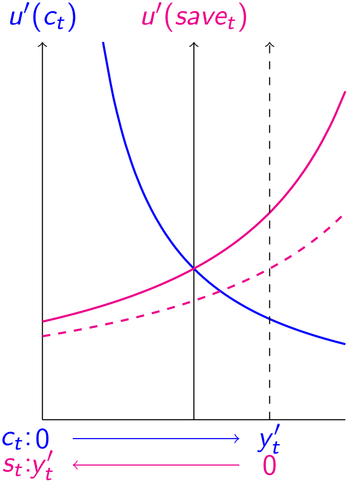
Assumptions:

$\beta(1+r) = 1,\ b_0 = 0,$

$y_t = y \ \forall t > 0$

$y_0 = y + \delta > y$

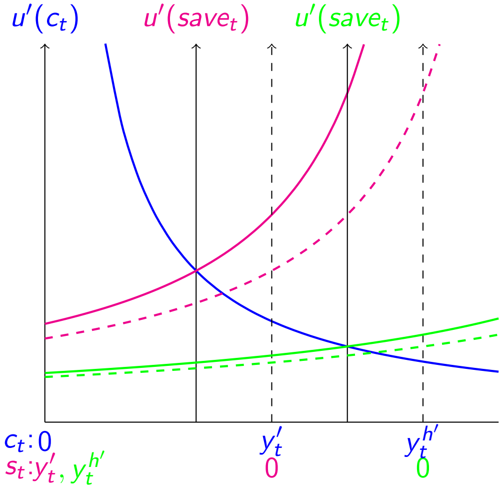
Intuition: short planning horizon $\Rightarrow$ steeper MU(save)



HH problem for diagram:
$\max_{c_t, b_t} \sum_{t=0}^{T} \beta^t \log(c_t) + \sum_{t=T+1}^{\infty} \beta^t \log(c^{LR})$ s.t.
$c_t + b_t = (1+r)b_{t-1} + y_t$

Assumptions:
$\beta(1+r) = 1,\ b_0 = 0,$
$y_t = y \ \forall t$
$y_0 = y + \delta > y$
T=2

Intuition: short planning horizon less costly with high y



Low income household as before.

High income household the same except $y^h = 2y$

$\frac{\Delta c_t}{\Delta y_t}$ the same for both, but $\boldsymbol{u'(c_t^h)}$ falls by less $\Rightarrow$ smaller u loss relative to full smoothing.

$\Rightarrow$ high y HH less willing to pay planning costs, $\Rightarrow$ higher MPC.

Flaw in this intuition

Proposition 2: the optimal planning horizon is increasing in the household's income and wealth.

The missing ingredient: borrowing constraints.

- $\Rightarrow$ $u'(save_t)$ steeper and more convex.
  $\Rightarrow$ fully rational choice more similar to limited-horizon choice
  $\Rightarrow$ smaller benefits of planning
- Richer HHs further from constraints, so less affected.

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Questions:

1. Why doesn't this dominate in quantitative exercise, so MPC highest at *low* $\left(\frac{\text{shock}}{\text{income}}\right)$?
2. Is this inconsistent with Kueng (2018), where $Corr(MPC, income) > 0$?

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   - A fix: reduce dependence of Pr(liquidity constrained) on income, let effect of convex $u'(c)$ dominate.

An alternative mechanism: heterogeneous preferences for wealth

1) Fits stylized facts

- If HH places high value on money, they work harder to get it: *selection* into high income.
- $\Rightarrow$ $Corr(y, \text{wealth in utility}) > 0$.
- $\Rightarrow$ high y associated with steep MU(save).

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2) But different implications

- To maximise short-term aggregate c response to \$X billion stimulus, target payments at high earners.
- They have highest (average) weight on wealth in utility.

Welfare

How to maximise short-term aggregate c response to \$X billion stimulus?

- **Is this the right question?**

Low-income households see larger *welfare* boost from stimulus, even if *MPC* lower when target them.

> *"This plan will get checks out the door, starting this month, to the American people who so desperately need the help, many of whom are lying in bed at night, staring at the ceiling, wondering, 'Will I lose my job, if I haven't already? Will I lose my insurance? Will I lose my home?'"*
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Suggestion: how large would GE effects of aggregate $c \uparrow$ have to be for your hypothetical stimulus to be better for welfare than actual ESP? Relative to fiscal multiplier literature?

A challenge: find the smoking gun?

How to distinguish costly planning from other mechanisms?

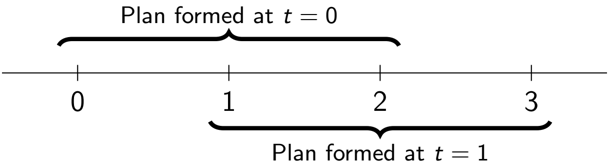
Ideas:

1. Variation in ESP payments conditional on income.
   - (Potentially) rule out income-only explanations.
2. iMPCs: should have discontinuities at the end of planning horizons in BIR model.
   - Is there a way to look for these in the data?
   - Or are there aggregate implications?

Other points: Time Inconsistency Estimation Targets Minor Points

Time Inconsistency Back

Woodford (2018): Suppose shock occurs in $t = 0$.



'Discover' extra period in $t = 1$, so re-optimize $t = 0$ plan.

Difference here: horizon chosen optimally.

- But if plan for > 1 period after shock, arrive in next period with more wealth. Optimal horizon $\uparrow$ in wealth - so might re-optimise to a longer horizon, $\Rightarrow$ time inconsistency?
- Possible even without borrowing constraint effect (proposition 2), if ϕ_k (slightly) convex at some horizons. As it is in the quantitative exercise!

Estimation Targets Back

1. Estimation targets the median *and* maximum MPC of terciles 1 & 2 by relative ESP, and targets them to be the same. For tercile 3 it's median and upper quartile.
   - Why try to force homogeneity within terciles? Better fit to regressions would be to target the mean MPC in each tercile, or do indirect inference.
   - Why is tercile 3 different?

2. In regressions for Table 3, instrument for ESP_{it} with indicator for $ESP_{it} > 0$.
   - What is the endogeneity problem being solved? And why doesn't $1\{\text{Tercile } j\}_{it}$ suffer from the same, since it is computed with ESP_{it}?

Extras Back

1. Heterogeneous planning costs (as in Ameriks, Caplin, Leahy 2003). If the model had periodic unexpected shocks, lower planning costs $\Rightarrow$ more wealth accumulation $\Rightarrow$ even more planning.
    - Helps get some of the right tail of wealth distribution? Is it a reason to target stimulus more at low-wealth HHs?
2. The discontinuities in Fig. 5c are due to discrete time. What does it converge to as go to continuous time?
3. Section 3.2.1: assume planning horizon $\geq$ length of the shock. But in Fig. 9 allow for horizon$=0$?