Discussion of "Deconstructing Lifecycle Expenditures" by Aguiar and Hurst

Discussant: Fatih Guvenen

July 23, 2008
Overview of Results

Two New Empirical Findings:

Earlier papers: Hump-shaped total consumption over lifecycle

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   - New in this paper: No consistent hump within sub-categories
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Implications for Existing Theories

- Difficult to reconcile with standard models (with uninsurable idiosyncratic shocks and impatience).
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Implications for Existing Theories

- Difficult to reconcile with standard models (with uninsurable idiosyncratic shocks and impatience).
- Categories that behave differently are work-related (transport and clothing) or suitable for home production (food).
ln C_{it}^k = \beta_0 + \beta_{age}^k \text{Age}_{it} + \beta_{cohort}^k \text{Cohort}_i + \beta_{fs}^k \text{Family}_{it} + \varepsilon_{it}^k
Control for relative prices when constructing profiles, because:

1. Population aging over sample period.
   Age distribution by year
   
<table>
<thead>
<tr>
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2. Relative prices have increased differently during this period:
   
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<td>140</td>
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<td>Food away</td>
<td>125</td>
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<td>107</td>
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Web appendix: "housing services" and "entertainment" could be the culprits. The paper could shed light on why we see instability in the variance profile of total consumption in different time periods. Same comment applies to the different results obtained by "cohort effects" versus "time effects" approaches. Similar sensitivity in "mean profiles" of food, transport and clothing. The paper currently does not focus on any of these results. But it could be useful to dig further.

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What to Make of These New Facts?

Mean Profile

Variance Profile

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Discussion of "Deconstructing Lifecycle Expenditure Patterns" by Aguiar and Hurst

July 23, 2008
Three Regularities to note from Previous Page

Putting all sub-categories on the same graphs (instead of separately looking at "increasing" and "decreasing categories) reveals more systematic patterns:

1. Mean profiles of different categories:
   a. are all concave
   b. Do not criss-cross each other (ie, a ranked in an orderly fashion)
   c. all look like each other except being rotated around age 25.

2. Sub-categories rank on the mean and variance profiles in exactly opposite order!!

3. Subcategories associated with goods consumed away from home all decline later in life whereas those that capture consumption at home all rise (broader than home production!)

Overall, these are remarkably systematic patterns that seem to point to a general explanation (rather than a different explanation for each category as currently done in paper).
## Consumption “Home” versus “Away”

<table>
<thead>
<tr>
<th>Home Consumption:</th>
<th>share</th>
<th>Mean</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food at home</td>
<td>.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilities</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic services</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing services</td>
<td>.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Home</strong></td>
<td>.60</td>
<td></td>
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<td></td>
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<td></td>
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<td><strong>Total Away</strong></td>
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Attempt at a Model: “Standard Framework” with a Twist

\[
\max \sum_{t=1}^{T} \beta^t \frac{C_t^{1-\alpha}}{1-\alpha}
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s.t.

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where the income process is given by:

\[
\log(Y_{t}) = \log(Y_{t-1}) + \varepsilon_{t}, \quad \varepsilon_{t} \sim iid \ N(0, \sigma_{\varepsilon}^{2}) \quad \text{for} \ t = 1, .., R
\]

\[
Y_{t} \equiv 0 \quad \text{for} \ t = R + 1, .., T
\]
Home Sweet-er Home

- Two types of consumption goods aggregated by:

\[ u(C) = \left((\theta H)^\rho + ((1 - \theta) M)^\rho\right)^{\alpha/\rho} \]

where \( H \): good consumed at home; \( M \): good consumed away from home.
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\[ \theta^i_t = \theta_0 + \delta^i t \]
Home Sweet-er Home

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1 - $\theta$: Preference for Away Goods

AGE

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

25 30 35 40 45 50 55 60 65

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AGE

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Simple Calibration

- $R = 40$, $T - R = 20$.
- $\sigma_\varepsilon = 0.15$
- $\beta = 0.94$, $r = \frac{1}{0.96} - 1$.
- $\rho = 0.6 \rightarrow Elasticity = 2.5$.
- $\theta_0 = 0.55$, $\theta_{40} = 0.68$ (to match the share of home versus away foods at age 25)
- $\sigma \left( \delta^i \right) = 0.10$
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- The systematic behavior of all sub-categories seem to suggest a broader explanation than offered in the paper.

First attempt at a model: increasing preference for goods consumed at home.
This simple modification of the "standard incomplete markets model" seems broadly consistent with trends presented.
Introducing "opportunity cost of time" (via endog. labor supply) into this framework could form the basis of a more compelling explanation.
ATUS data could be used to shed more light on time spent at home versus away.
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