The American Consumer: Reforming, or Just Resting?

Christopher Carroll\textsuperscript{1} Jirka Slacalek\textsuperscript{2}

\textsuperscript{1}Johns Hopkins and NBER
\textsuperscript{2}European Central Bank

May 23, 2009
Household Net Worth and Its Components

Figure: Wealth Components as a Ratio to Disposable Income
A Simple Buffer Stock Model

Figure: Consumption Function and Target Wealth Ratio

\[ c \]
\[ \hat{c} \]
\[ \text{Sustainable } c \]
\[ \text{Target} \]
\[ c(m) \rightarrow \]
\[ m \]
\[ \hat{m} \]
A Wealth Shock

Figure: Consumption Function and Target Wealth Ratio
Unemployment Expectations

Figure: Household Expectations Of Improving Unemployment Conditions

Source: University of Michigan Survey of Consumers
Unemployment Expectations – Theory

Figure: Consumption Function Drops When \( u \) Risk Rises

\[
\text{Sustainable } c \rightarrow
\]

\[
c(m) \rightarrow
\]

\[
\leftarrow c(m) \text{ after unemployment rate increase}
\]
Debt Growth

Figure: Growth of Household Net Borrowing (as a % disposable income)
Figure: Effect on Consumption Of A Relaxation of Borrowing Constraints
Senior Loan Officers’ Survey Measure of Credit Tightening

Figure: Fraction of Banks Tightening Mortgage Lending Terms

Source: Federal Reserve Survey of Senior Loan Officers
The Effect

Figure: Retail Sales, Current and Previous Recessions

Note: Historical Range includes all recessions since November 1948
Estimating Wealth and $\mathbb{E}[\Delta u]$ Effects

Sluggishness of $C$ Growth

$$\Delta C_t = \chi \mathbb{E}_{t-2} \Delta C_{t-1} + \varepsilon_t$$

$\chi \approx 0.75$

MPC out of Wealth

- $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- Immediate MPC: $\alpha / \chi$
- Eventual MPC: $\bar{\kappa} = \frac{\alpha}{\chi(1 - \chi)}$
- $\bar{\kappa} \approx 0.06$ for total $B$, 0.05 for financial, 0.09 for housing
Estimating Wealth and $E[\Delta u]$ Effects

**Sluggishness of C Growth**


\[ \Delta C_t = \chi E_{t-2} \Delta C_{t-1} + \varepsilon_t \]

\( \chi \approx 0.75 \)

**MPC out of Wealth**

- \( \partial C_t = \alpha_0 + \alpha \partial B_{t-1} \)
- **Immediate MPC:** \( \frac{\alpha}{\chi} \)
- **Eventual MPC:** \( \bar{\kappa} = \frac{\alpha}{\chi(1 - \chi)} \)
- \( \bar{\kappa} \approx 0.06 \) for total \( B \), 0.05 for financial, 0.09 for housing
Estimating Wealth and $\mathbb{E}[\Delta u]$ Effects

Sluggishness of C Growth


$$\Delta C_t = \chi \mathbb{E}_{t-2} \Delta C_{t-1} + \varepsilon_t$$

$\chi \approx 0.75$

MPC out of Wealth

- $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- Immediate MPC: $\alpha / \chi$
- Eventual MPC: $\bar{\kappa} = \frac{\alpha}{\chi (1 - \chi)}$
- $\bar{\kappa} \approx 0.06$ for total $B$, 0.05 for financial, 0.09 for housing
Estimating Wealth and $E[\Delta u]$ Effects

Sluggishness of C Growth

$$\Delta C_t = \chi E_{t-2} \Delta C_{t-1} + \varepsilon_t$$

$\chi \approx 0.75$

MPC out of Wealth

- $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- Immediate MPC: $\alpha / \chi$
- Eventual MPC: $\bar{\kappa} = \frac{\alpha}{\chi(1 - \chi)}$
- $\bar{\kappa} \approx 0.06$ for total $B$, 0.05 for financial, 0.09 for housing
Estimating Wealth and $\mathbb{E}[\Delta u]$ Effects

Sluggishness of C Growth

$$\Delta C_t = \chi \mathbb{E}_{t-2} \Delta C_{t-1} + \varepsilon_t$$

$\chi \approx 0.75$

MPC out of Wealth

- $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- Immediate MPC: $\alpha / \chi$
- Eventual MPC: $\bar{\kappa} = \frac{\alpha}{\chi(1 - \chi)}$
- $\bar{\kappa} \approx 0.06$ for total $B$, 0.05 for financial, 0.09 for housing
Estimating Wealth and $E[\Delta u]$ Effects

Sluggishness of C Growth

$$\Delta C_t = \chi E_{t-2} \Delta C_{t-1} + \varepsilon_t$$

$$\chi \approx 0.75$$

MPC out of Wealth

- $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- Immediate MPC: $\alpha / \chi$
- Eventual MPC: $\bar{\kappa} = \frac{\alpha}{\chi(1 - \chi)}$
- $\bar{\kappa} \approx 0.06$ for total $B$, 0.05 for financial, 0.09 for housing
Estimating Wealth and $E[\Delta u]$ Effects

Sluggishness of C Growth

$$\Delta C_t = \chi E_{t-2} \Delta C_{t-1} + \varepsilon_t$$

$\chi \approx 0.75$

MPC out of Wealth

- $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- Immediate MPC: $\alpha / \chi$
- Eventual MPC: $\bar{\kappa} = \frac{\alpha}{\chi(1 - \chi)}$

$\bar{\kappa} \approx 0.06$ for total $B$, 0.05 for financial, 0.09 for housing
Estimating Wealth and $E[\Delta u]$ Effects

Sluggishness of $C$ Growth

\[ \Delta C_t = \chi E_{t-2} \Delta C_{t-1} + \varepsilon_t \]
\[ \chi \approx 0.75 \]

MPC out of Wealth

- $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- Immediate MPC: $\alpha / \chi$
- Eventual MPC: $\bar{\kappa} = \frac{\alpha}{\chi(1 - \chi)}$
- $\bar{\kappa} \approx 0.06$ for total $B$, 0.05 for financial, 0.09 for housing
### Forecasting Assumptions—2 Models × 3 Scenarios

#### Models

- **Total Net Worth**
- **Housing and Financial Wealth Separately**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Variable</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>House Prices</td>
<td>−14</td>
<td>−4</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td></td>
<td>Unemployment Rate</td>
<td>8.4</td>
<td>8.8</td>
<td>7.9</td>
<td>6.8</td>
</tr>
<tr>
<td></td>
<td>Disposable Income (Per Capita)</td>
<td>−3.8</td>
<td>0.7</td>
<td>2.4</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td>Fed Funds Rate</td>
<td>0.3</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>Inflation</td>
<td>−0.7</td>
<td>1.6</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Population</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>Implied Per Cap Real HW</td>
<td>−14.4</td>
<td>−6.7</td>
<td>2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>Pessimistic</td>
<td>House Prices</td>
<td>−22</td>
<td>−7</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td></td>
<td>Unemployment Rate</td>
<td>8.9</td>
<td>10.3</td>
<td>9.1</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>Implied Per Cap Real HW</td>
<td>−22.4</td>
<td>−9.7</td>
<td>2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>Optimistic</td>
<td>House Prices</td>
<td>−6</td>
<td>−1</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td></td>
<td>Unemployment Rate</td>
<td>7.9</td>
<td>7.3</td>
<td>6.7</td>
<td>5.4</td>
</tr>
<tr>
<td></td>
<td>Implied Per Cap Real HW</td>
<td>−6.4</td>
<td>−3.7</td>
<td>2.1</td>
<td>2.1</td>
</tr>
</tbody>
</table>
Assumptions about Wealth Components

Year 2000 thousand dollars

Forecasting period

Time

Tot W Base
Tot W Pess
Tot W Opt

HW Base
HW Pess
HW Opt

FW All
Projected Consumption Paths

Year 2000 thousand dollars

Time

Consensus

Forecasting period

Tot W Base

Tot W Pess

Tot W Opt

H&F W Base

H&F W Pess

H&F W Opt

Consensus
Projected Saving Rates

![Projected Saving Rates Graph](image-url)


