

The American Consumer: Reforming, or Just Resting?

Christopher Carroll¹ Jirka Slacalek²

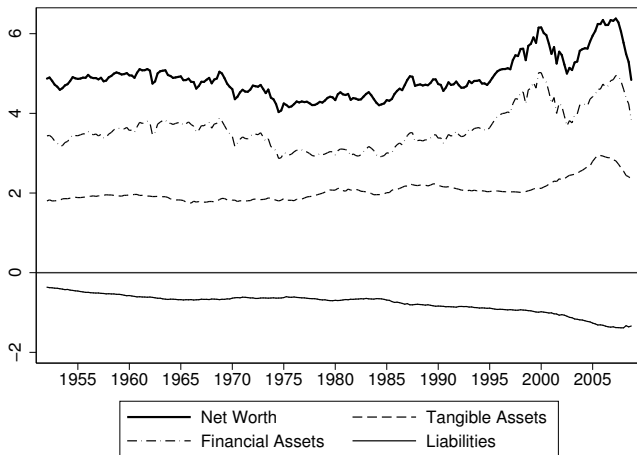
¹Johns Hopkins and NBER

²European Central Bank

May 23, 2009

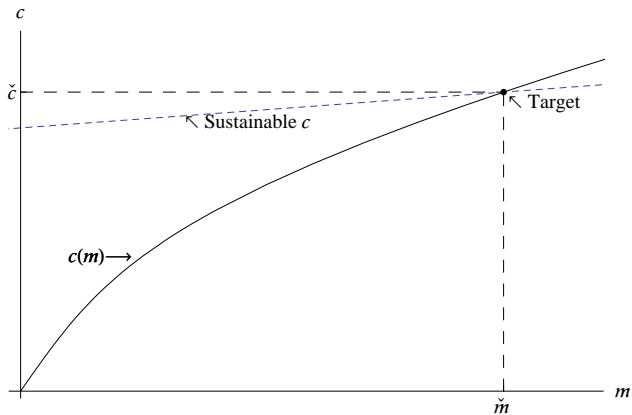
Household Net Worth and Its Components

Figure: Wealth Components as a Ratio to Disposable Income



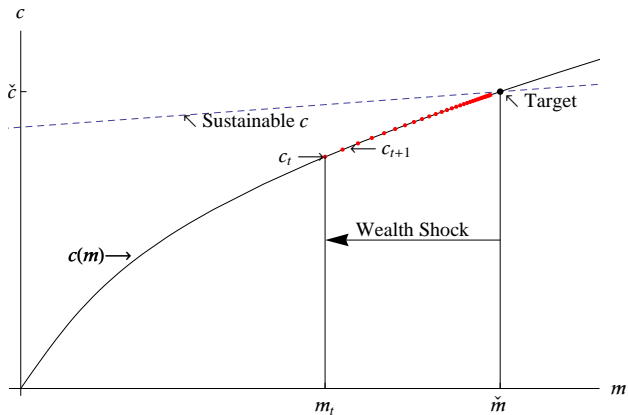
A Simple Buffer Stock Model

Figure: Consumption Function and Target Wealth Ratio



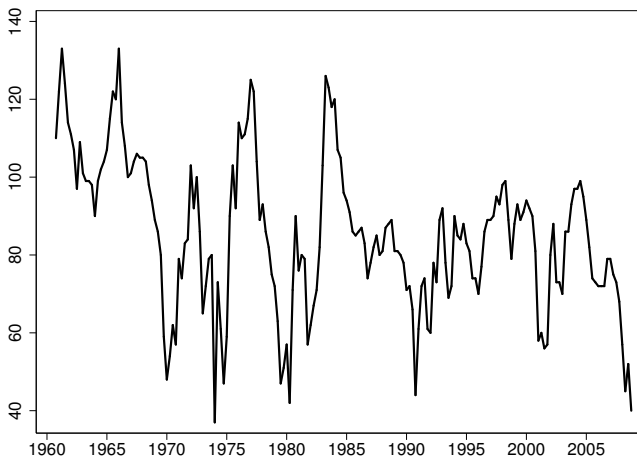
A Wealth Shock

Figure: Consumption Function and Target Wealth Ratio



Unemployment Expectations

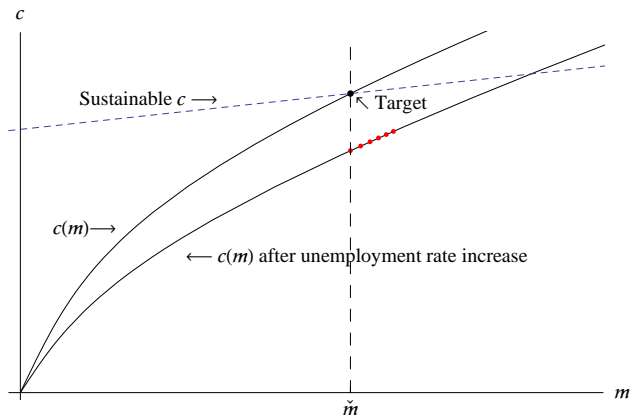
Figure: Household Expectations Of Improving Unemployment Conditions



Source: University of Michigan Survey of Consumers

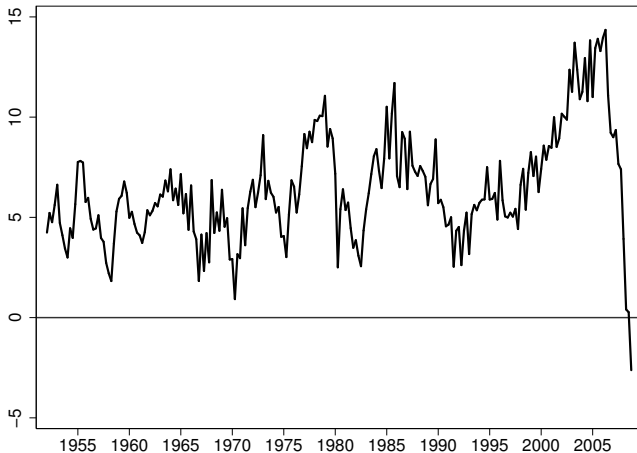
Unemployment Expectations – Theory

Figure: Consumption Function Drops When u Risk Rises



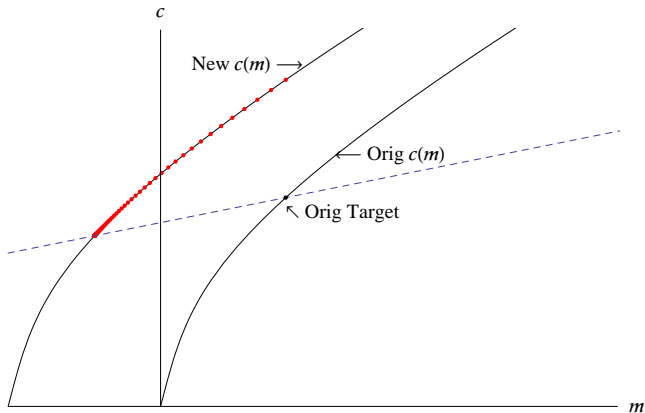
Debt Growth

Figure: Growth of Household Net Borrowing (as a % disposable income)



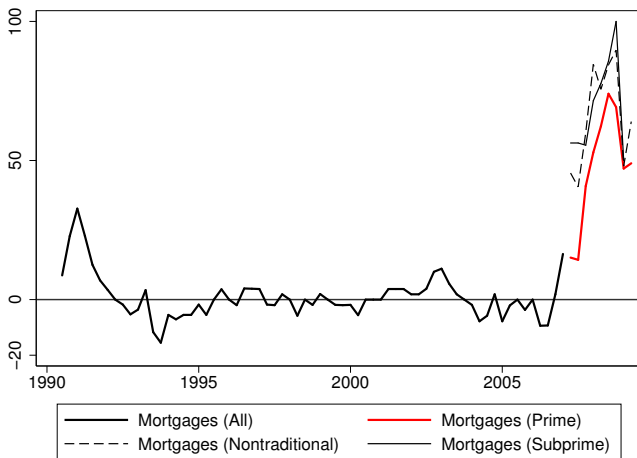
A Relaxation of Borrowing Constraints – Theory

Figure: Effect on Consumption Of A Relaxation of Borrowing Constraints



Senior Loan Officers' Survey Measure of Credit Tightening

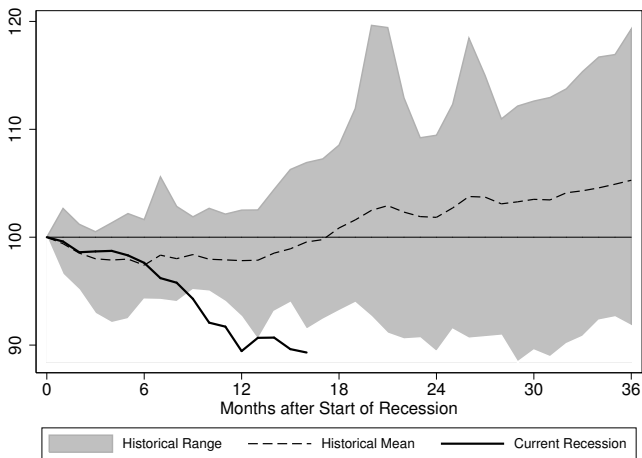
Figure: Fraction of Banks Tightening Mortgage Lending Terms



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

à la Campbell and Deaton (1989), Constantinides (1990), Rotemberg and Woodford (1997), Fuhrer (2000), Sommer (2002), Carroll, Sommer, and Slacalek (2008)

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

$$\chi \approx 0.75$$

MPC out of Wealth

- ▶ $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- ▶ **Immediate MPC:** α/χ
- ▶ **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

à la Campbell and Deaton (1989), Constantinides (1990), Rotemberg and Woodford (1997), Fuhrer (2000), Sommer (2002), Carroll, Sommer, and Slacalek (2008)

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

$$\chi \approx 0.75$$

MPC out of Wealth

- ▶ $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- ▶ Immediate MPC: α/χ
- ▶ 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

à la Campbell and Deaton (1989), Constantinides (1990), Rotemberg and Woodford (1997), Fuhrer (2000), Sommer (2002), Carroll, Sommer, and Slacalek (2008)

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

$$\chi \approx 0.75$$

MPC out of Wealth

- ▶ $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- ▶ Immediate MPC: α/χ
- ▶ 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

à la Campbell and Deaton (1989), Constantinides (1990), Rotemberg and Woodford (1997), Fuhrer (2000), Sommer (2002), Carroll, Sommer, and Slacalek (2008)

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

$$\chi \approx 0.75$$

MPC out of Wealth

- ▶ $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- ▶ Immediate MPC: α/χ
- ▶ 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

à la Campbell and Deaton (1989), Constantinides (1990), Rotemberg and Woodford (1997), Fuhrer (2000), Sommer (2002), Carroll, Sommer, and Slacalek (2008)

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

$$\chi \approx 0.75$$

MPC out of Wealth

- ▶ $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- ▶ Immediate MPC: α/χ
- ▶ 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

à la Campbell and Deaton (1989), Constantinides (1990), Rotemberg and Woodford (1997), Fuhrer (2000), Sommer (2002), Carroll, Sommer, and Slacalek (2008)

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

$$\chi \approx 0.75$$

MPC out of Wealth

- ▶ $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- ▶ **Immediate MPC:** α/χ
- ▶ **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

à la Campbell and Deaton (1989), Constantinides (1990), Rotemberg and Woodford (1997), Fuhrer (2000), Sommer (2002), Carroll, Sommer, and Slacalek (2008)

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

$$\chi \approx 0.75$$

MPC out of Wealth

- ▶ $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- ▶ **Immediate MPC:** α/χ
- ▶ **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

à la Campbell and Deaton (1989), Constantinides (1990), Rotemberg and Woodford (1997), Fuhrer (2000), Sommer (2002), Carroll, Sommer, and Slacalek (2008)

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

$$\chi \approx 0.75$$

MPC out of Wealth

- ▶ $\partial C_t = \alpha_0 + \alpha \partial B_{t-1}$
- ▶ **Immediate MPC:** α/χ
- ▶ **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

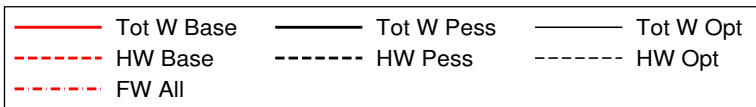
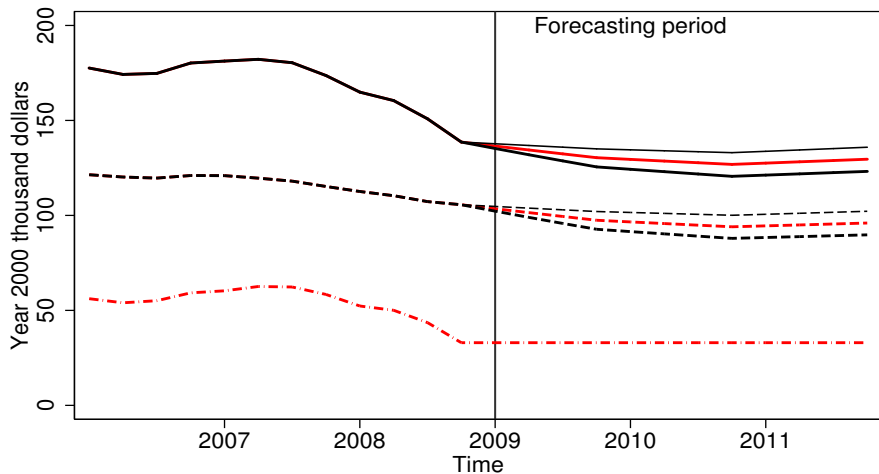
Forecasting Assumptions—2 Models × 3 Scenarios

Models

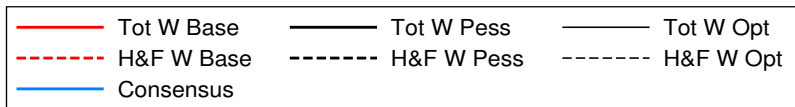
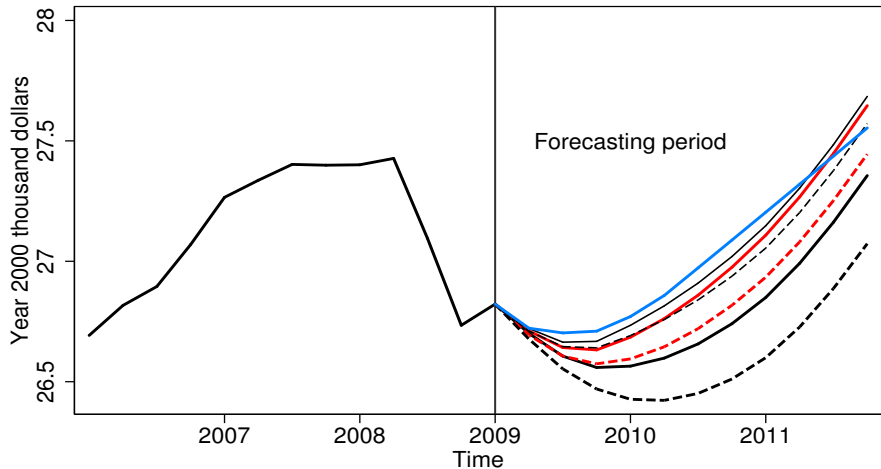
- ▶ Total Net Worth
- ▶ Housing and Financial Wealth Separately

Scenario	Variable	2009	2010	2011	2012
Baseline	House Prices	-14	-4	-	-
	Unemployment Rate	8.4	8.8	7.9	6.8
	Disposable Income (Per Capita)	-3.8	0.7	2.4	2.6
	Fed Funds Rate	0.3	0.9	0.9	0.9
	Inflation	-0.7	1.6	2.2	2.2
	Population	1.1	1.1	1.1	1.1
	Implied Per Cap Real HW	-14.4	-6.7	2.1	2.1
Pessimistic	House Prices	-22	-7	-	-
	Unemployment Rate	8.9	10.3	9.1	8.2
	Implied Per Cap Real HW	-22.4	-9.7	2.1	2.1
Optimistic	House Prices	-6	-1	-	-
	Unemployment Rate	7.9	7.3	6.7	5.4
	Implied Per Cap Real HW	-6.4	-3.7	2.1	2.1

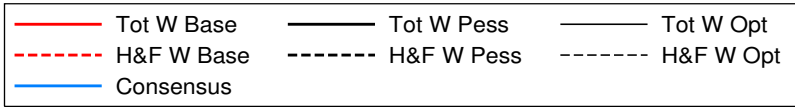
Assumptions about Wealth Components



Projected Consumption Paths



Projected Saving Rates



- CAMPBELL, JOHN Y., AND ANGUS S. DEATON (1989): "Why Is Consumption So Smooth?," *Review of Economic Studies*, 56, 357–74.
- CARROLL, CHRISTOPHER D., MARTIN SOMMER, AND JIRI SLACALEK (2008): "International Evidence on Sticky Consumption Growth," *Johns Hopkins University Working Paper Number 542*, Available at <http://econ.jhu.edu/people/ccarroll/papers/cssIntlStickyC>
<http://econ.jhu.edu/people/ccarroll/papers/cssIntlStickyC.pdf>
<http://econ.jhu.edu/people/ccarroll/papers/cssIntlStickyC.zip>.
- CONSTANTINIDES, GEORGE M. (1990): "Habit Formation: A Resolution of the Equity Premium Puzzle," *Journal of Political Economy*, 98(3), 519–543.
- FUHRER, JEFFREY C. (2000): "An Optimizing Model for Monetary Policy: Can Habit Formation Help?," *American Economic Review*, 90(3).
- ROTEMBERG, JULIO J., AND MICHAEL WOODFORD (1997): "An Optimization-Based Econometric Model for the Evaluation of Monetary Policy," in *NBER Macroeconomics Annual, 1997*, ed. by Benjamin S. Bernanke, and Julio J. Rotemberg, vol. 12, pp. 297–346. MIT Press, Cambridge, MA.
- SOMMER, MARTIN (2002): "Habits, Sentiment and Predictable Income in the Dynamics of Aggregate Consumption," working paper number 458; updated 2006, Johns Hopkins University, Available at http://econ.jhu.edu/pdf/papers/wp458_version2006.pdf.