A Replication of Carroll(1997)

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1 Summary

This paper argues that the saving behaviour of a household is better described by the buffer stock version of the Life Cycle/Permanent Income Hypothesis (LC/PIH) than the traditional version of it. Buffer Stock Consumers set average consumption growth equal to average labor income growth, regardless of tastes. The buffer stock model predicts a higher marginal propensity to consume (MPC) out of transitory income, higher effective discount rate for future labor income, and a positive sign for the correlation between saving and expected labor income growth.

The finite horizon version of the model presented in the paper explains three emprical puzzles.

- **Consumption/income parallel:**Aggregate consumption parallels growth in income over periods of more than a few years.

- **Consumption/income divergence:** For individual households, consumption is far from current income. This implies the consumption/income parallel does not arise at the household level.

- **Stability of the household age/wealth profile:**The effects of the productivity growth slowdown after 1973 on the age/median-wealth profile and the extraordinarily high volatility of the household liquid wealth are explained.

The Traditional model is the following:

Finite Horizon

$$c_t = \kappa_t[m_t + h_t]h_t = \sum_{i=t+1}^{T} R^{i-t}y_i\kappa_t = \frac{(1 - [R^{-1}(\beta R)^{1/\rho}])}{(1 - [R^{-1}(\beta R)^{1/\rho}]^{T-t+1})} \qquad (1)$$

Infinite Horizon

$$c_t = \kappa_t[m_t + h_t]h_t = \sum_{i=t+1}^{\infty} R^{i-t}y_i \approx \frac{y_t}{r-g}\kappa = (1 - [R^{-1}(\beta R)^{1/\rho}]) \qquad (2)$$

The Euler Equation in the buffer stock version of the model is the following:

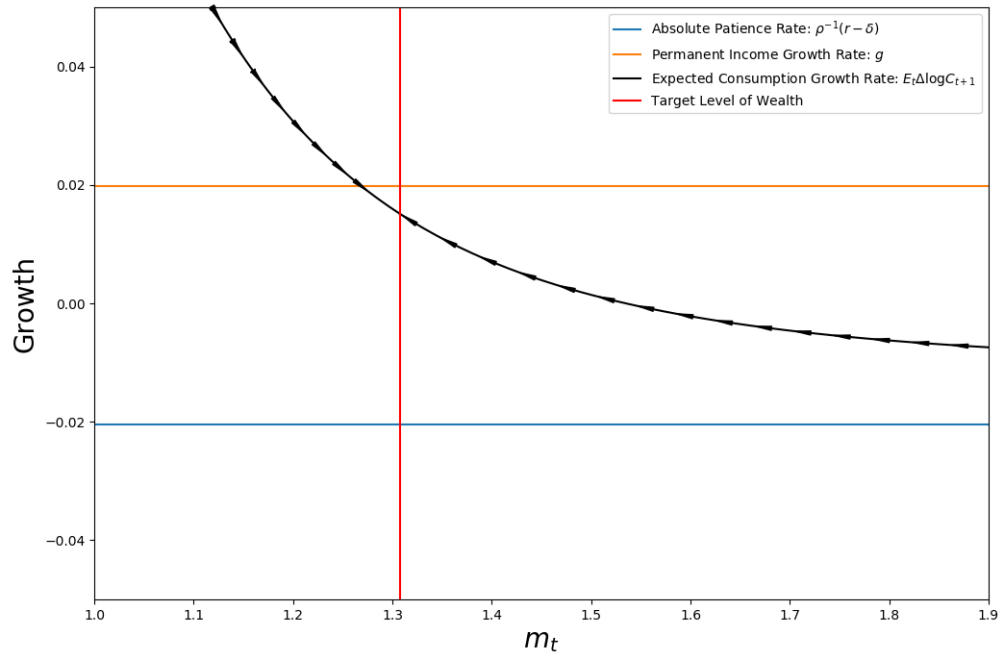$$1 = R\beta E_{t-1}[\{c_t[R[m_{t-1} - c_{t-1}]/Gn_t + v_t]Gn_t/c_{t-1}\}^{-\rho}] \qquad (3)$$

Figure 1: Expected Consumption Growth as a Function of Cash on Hand

2   Appendix

	Agg Cons Growth Rate	Perm Inc Av Growth Rate	Cons Av Growth Rate	Agg Saving Rate	Av MPC	Av Net Wealth	Target Net Wealth
Base Model	0.020957	0.0148071	0.0149784	0.00626517	0.31582	0.34177	0.31377
g = .04	0.0402904	0.0342252	0.0345081	0.00989084	0.414938	0.265945	0.246728
DiscFac = .90	0.0208206	0.0148071	0.015143	0.00431013	0.477366	0.230806	0.214614

References

Carroll, C. D. (1997). Buffer-stock saving and the life cycle/permanent income

   hypothesis. *The Quarterly Journal of Economics, CXII,* 1–55.