

Dissecting Saving Dynamics: Measuring Credit, Wealth and Precautionary Effects*

Online Appendix

Christopher Carroll

ccarroll@jhu.edu

JHU

Jiri Slacalek

jiri.slacalek@ecb.int

ECB

Martin Sommer

msommer@imf.org

IMF

September 1, 2012

Abstract

We argue that the US personal saving rate's long stability (from the 1960s through the early 1980s), subsequent steady decline (1980s–2007), and recent substantial increase (2008–2010) can all be interpreted using a parsimonious ‘buffer stock’ model of optimal consumption choice in the presence of uncertainty and time-varying credit constraints. According to the model, saving depends on the gap between ‘target’ wealth and actual wealth, where the target depends on credit conditions and uncertainty. We identify target wealth using measures of uncertainty, expected real interest rates and expected income. Our results suggest that higher credit availability can account for most of the saving rate's long-term decline, while the wealth gap captures the bulk of the business-cycle variation (including an important part attributable to movements in the precautionary motive). The model suggests that, if credit conditions remain roughly unchanged, the U.S. personal saving rate will likely remain for considerable time in the neighborhood of the 5–7 percent range that has prevailed since the end of 2009.

Keywords: Consumption, Saving, Wealth, Credit Availability, Uncertainty

JEL classification: E21, E32

*Carroll: Johns Hopkins University, Baltimore, MD, <http://econ.jhu.edu/people/ccarroll/>; Slacalek: European Central Bank, Frankfurt am Main, Germany, <http://www.slacalek.com/>; Sommer: International Monetary Fund, Washington, DC, <http://martinsommeronline.googlepages.com/>. We thank Charles Kramer, John Muellbauer, David Robinson and Jonathan Wright and seminar audiences at the Bank of England, the ECB and the 2011 NBER Summer Institute for insightful comments, and Kerstin Holzheu and Joanna Slawatyniec for excellent research assistance. The views presented in this paper are those of the authors, and should not be attributed to the International Monetary Fund, its Executive Board, or management, or to the European Central Bank.

Table 1: Preliminary regressions with time trend

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{E}_t u_{t+4} + \gamma_t t + \gamma_{uC} (\mathbf{E}_t u_{t+4} \times CEA_t) + \varepsilon_t$$

Model	Time	Wealth	CEA	Un Risk	All 3	Baseline	Interact
γ_0	11.954*** (0.608)	22.596*** (1.414)	9.321*** (0.574)	8.241*** (0.420)	13.772*** (2.143)	14.043*** (1.819)	14.181*** (2.112)
γ_m		-2.606*** (0.319)			-1.124*** (0.423)	-1.183*** (0.347)	-1.368*** (0.456)
γ_{CEA}			-14.138*** (1.736)		-5.472*** (1.936)	-6.121*** (0.573)	-4.604*** (1.721)
γ_{Eu}				0.670*** (0.055)	0.316*** (0.117)	0.287*** (0.075)	0.385*** (0.108)
γ_t	-0.044*** (0.005)	-0.025*** (0.003)	0.042*** (0.011)	-0.048*** (0.002)	-0.005 (0.014)		0.004 (0.014)
γ_{uC}							-0.321** (0.158)
\bar{R}^2	0.703	0.846	0.825	0.881	0.895	0.895	0.899
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
DW stat	0.305	0.686	0.500	0.863	0.936	0.933	0.980

Estimated: 8 Feb 2012, 12:22:42 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags.

Table 2: Preliminary regressions with time trend—Structural Model Fitted PSR

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{E}_t u_{t+4} + \gamma_t t + \gamma_{uC} (\mathbf{E}_t u_{t+4} \times CEA_t) + \varepsilon_t$$

Model	Time	Wealth	CEA	Un Risk	All 3	Baseline	Interact
γ_0	11.955*** (0.502)	21.438*** (1.107)	9.354*** (0.410)	8.422*** (0.160)	12.242*** (0.602)	12.509*** (0.532)	12.487*** (0.550)
γ_m		-2.327*** (0.251)			-0.790*** (0.120)	-0.848*** (0.105)	-0.936*** (0.108)
γ_{CEA}			-13.821*** (1.124)		-5.846*** (0.594)	-6.486*** (0.141)	-5.327*** (0.467)
γ_{Eu}				0.633*** (0.024)	0.328*** (0.035)	0.299*** (0.019)	0.369*** (0.030)
γ_t	-0.044*** (0.004)	-0.027*** (0.002)	0.040*** (0.007)	-0.048*** (0.001)	-0.005 (0.004)		0.000 (0.003)
γ_{uC}							-0.192*** (0.037)
\bar{R}^2	0.799	0.929	0.931	0.979	0.993	0.992	0.994
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
DW stat	0.053	0.220	0.095	0.387	0.721	0.714	0.994

Estimated: 5 Feb 2012, 18:01:13 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags.

Table 3: Preliminary regressions with time trend—Inflation-Adjusted Saving Rate

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{E}_t u_{t+4} + \gamma_t t + \gamma_{uC} (\mathbf{E}_t u_{t+4} \times CEA_t) + \varepsilon_t$$

Model	Time	Wealth	CEA	Un Risk	All 3	Baseline	Interact
γ_0	11.124*** (0.552)	21.169*** (1.333)	8.677*** (0.529)	7.680*** (0.417)	13.357*** (2.104)	13.411*** (1.796)	13.661*** (2.089)
γ_m		-2.459*** (0.299)			-1.151*** (0.413)	-1.163*** (0.341)	-1.333*** (0.453)
γ_{CEA}			-13.145*** (1.791)		-5.243*** (1.866)	-5.374*** (0.547)	-4.597*** (1.729)
γ_{Eu}				0.622*** (0.055)	0.269** (0.115)	0.264*** (0.074)	0.320*** (0.108)
γ_t	-0.040*** (0.005)	-0.022*** (0.003)	0.040*** (0.011)	-0.043*** (0.002)	-0.001 (0.014)		0.005 (0.014)
γ_{uC}							-0.239 (0.163)
\bar{R}^2	0.678	0.832	0.805	0.863	0.880	0.880	0.882
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
DW stat	0.333	0.728	0.534	0.881	0.961	0.960	0.983

Estimated: 5 Feb 2012, 18:00:25 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags.

Table 4: Preliminary regressions with time trend—Gross Household Saving/DI

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{E}_t u_{t+4} + \gamma_t t + \gamma_{uC} (\mathbf{E}_t u_{t+4} \times CEA_t) + \varepsilon_t$$

Model	Time	Wealth	CEA	Un Risk	All 3	Baseline	Interact
γ_0	13.694*** (0.633)	24.660*** (1.580)	10.861*** (0.592)	9.788*** (0.419)	14.960*** (2.203)	14.742*** (1.936)	15.397*** (2.164)
γ_m		-2.685*** (0.354)			-1.059** (0.436)	-1.011*** (0.371)	-1.319*** (0.462)
γ_{CEA}			-15.213*** (1.823)		-6.262*** (1.968)	-5.741*** (0.582)	-5.337*** (1.705)
γ_{Eu}				0.706*** (0.055)	0.341*** (0.114)	0.364*** (0.076)	0.414*** (0.105)
γ_t	-0.040*** (0.005)	-0.021*** (0.003)	0.052*** (0.011)	-0.044*** (0.002)	0.004 (0.014)		0.012 (0.013)
γ_{uC}							-0.342** (0.156)
\bar{R}^2	0.645	0.815	0.803	0.867	0.883	0.883	0.888
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
DW stat	0.267	0.599	0.464	0.830	0.884	0.887	0.926

Estimated: 5 Feb 2012, 18:02:05 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags.

Table 5: Preliminary regressions with time trend—Net Private Saving/GDP

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{E}_t u_{t+4} + \gamma_t t + \gamma_{uC} (\mathbf{E}_t u_{t+4} \times CEA_t) + \varepsilon_t$$

Model	Time	Wealth	CEA	Un Risk	All 3	Baseline	Interact
γ_0	11.526*** (0.442)	19.938*** (1.349)	9.756*** (0.610)	9.335*** (0.671)	19.288*** (2.160)	17.965*** (1.777)	19.018*** (2.234)
γ_m		-2.059*** (0.349)			-2.001*** (0.453)	-1.714*** (0.349)	-1.840*** (0.479)
γ_{CEA}			-9.507*** (2.423)		-6.512*** (2.356)	-3.342*** (0.568)	-7.084*** (2.447)
γ_{Eu}				0.402*** (0.084)	-0.139 (0.118)	0.002 (0.077)	-0.184 (0.129)
γ_t	-0.032*** (0.004)	-0.017*** (0.004)	0.026* (0.015)	-0.035*** (0.003)	0.023 (0.017)		0.017 (0.016)
γ_{uC}							0.212 (0.187)
\bar{R}^2	0.643	0.800	0.740	0.768	0.829	0.825	0.832
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
DW stat	0.285	0.583	0.390	0.496	0.674	0.645	0.685

Estimated: 5 Feb 2012, 18:02:42 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags.

Table 6: Preliminary regressions with time trend—Gross Private Saving/GDP

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{E}_t u_{t+4} + \gamma_t t + \gamma_{uC} (\mathbf{E}_t u_{t+4} \times CEA_t) + \varepsilon_t$$

Model	Time	Wealth	CEA	Un Risk	All 3	Baseline	Interact
γ_0	19.295*** (0.613)	30.908*** (1.667)	16.464*** (0.573)	15.657*** (0.561)	25.176*** (2.603)	22.249*** (2.256)	25.484*** (2.507)
γ_m		-2.843*** (0.387)			-1.930*** (0.528)	-1.295*** (0.444)	-2.114*** (0.531)
γ_{CEA}			-15.209*** (2.109)		-8.796*** (2.248)	-1.789** (0.739)	-8.143*** (2.240)
γ_{Eu}				0.660*** (0.070)	0.068 (0.131)	0.381*** (0.087)	0.120 (0.135)
γ_t	-0.017*** (0.005)	0.004 (0.004)	0.075*** (0.013)	-0.021*** (0.003)	0.050*** (0.016)		0.056*** (0.016)
γ_{uC}							-0.242 (0.172)
\bar{R}^2	0.243	0.648	0.578	0.663	0.757	0.723	0.762
F stat p val	0.00100	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
DW stat	0.185	0.495	0.327	0.515	0.666	0.596	0.689

Estimated: 5 Feb 2012, 18:04:38 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags.

Table 7: Preliminary regressions with time trend—Flow of Funds SR Excluding Durables

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{E}_t u_{t+4} + \gamma_t t + \gamma_{uC} (\mathbf{E}_t u_{t+4} \times CEA_t) + \varepsilon_t$$

Model	Time	Wealth	CEA	Un Risk	All 3	Baseline	Interact
γ_0	15.194*** (0.920)	30.419*** (4.020)	11.953*** (1.115)	9.813*** (0.949)	15.778** (6.917)	18.836*** (5.982)	15.310** (7.085)
γ_m		-3.727*** (0.920)			-1.181 (1.401)	-1.845 (1.192)	-0.902 (1.477)
γ_{CEA}			-17.409*** (4.319)		-1.080 (5.103)	-8.404*** (1.471)	-2.070 (5.343)
γ_{Eu}				0.971*** (0.163)	0.729** (0.330)	0.402** (0.179)	0.651** (0.331)
γ_t	-0.063*** (0.009)	-0.036*** (0.007)	0.043 (0.026)	-0.069*** (0.006)	-0.052 (0.040)		-0.061 (0.043)
γ_{uC}							0.366 (0.489)
\bar{R}^2	0.419	0.503	0.471	0.526	0.524	0.522	0.523
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
DW stat	1.501	1.827	1.658	1.888	1.907	1.884	1.910

Estimated: 5 Feb 2012, 18:06:05 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags.

Table 8: Preliminary regressions with time trend—Flow of Funds SR including Durables

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{E}_t u_{t+4} + \gamma_t t + \gamma_{uC} (\mathbf{E}_t u_{t+4} \times CEA_t) + \varepsilon_t$$

Model	Time	Wealth	CEA	Un Risk	All 3	Baseline	Interact
γ_0	17.899*** (0.805)	29.121*** (3.744)	15.761*** (1.049)	14.390*** (0.984)	22.418*** (6.940)	25.107*** (5.716)	22.151*** (7.098)
γ_m		-2.748*** (0.867)			-1.592 (1.418)	-2.176* (1.142)	-1.432 (1.493)
γ_{CEA}			-11.484*** (3.903)		-1.825 (5.459)	-8.266*** (1.433)	-2.391 (5.711)
γ_{Eu}				0.635*** (0.163)	0.298 (0.344)	0.010 (0.174)	0.253 (0.344)
γ_t	-0.067*** (0.007)	-0.047*** (0.007)	0.003 (0.024)	-0.070*** (0.006)	-0.046 (0.042)		-0.051 (0.046)
γ_{uC}							0.209 (0.495)
\bar{R}^2	0.472	0.517	0.493	0.516	0.516	0.515	0.514
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
DW stat	1.665	1.876	1.747	1.851	1.883	1.869	1.883

Estimated: 5 Feb 2012, 18:05:32 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags.

Table 9: Constant target wealth models

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{Eu}_t u_{t+4} + \gamma_\sigma \sigma_t + \gamma_s s_{t-1} + \gamma_d d_t + \dots \\ \dots + \gamma_r r_t + \gamma_{GS} GS_t + \gamma_{CS} CS_t + \varepsilon_t$$

Model	Baseline	Uncertainty	Lagged s_{t-1}	Debt	Full Controls	Post-1980	IV
γ_0	14.043*** (1.819)	13.869*** (1.829)	5.016*** (1.459)	13.080*** (1.766)	16.155*** (1.608)	15.189** (6.326)	19.301*** (2.311)
γ_m	-1.183*** (0.347)	-1.211*** (0.363)	-0.307 (0.222)	-0.803** (0.360)	-1.304*** (0.308)	-1.503 (1.248)	-2.022*** (0.492)
γ_{CEA}	-6.121*** (0.573)	-5.967*** (0.648)	-2.874*** (0.531)	-5.399*** (0.732)	-6.242*** (0.628)	-4.999** (2.000)	-5.846*** (1.166)
γ_{Eu}	0.287*** (0.075)	0.282*** (0.094)	0.143*** (0.053)	0.345*** (0.071)	0.117 (0.088)	0.298** (0.136)	0.084 (0.133)
γ_σ		0.257 (0.466)					
γ_s			0.574*** (0.072)				
γ_d				-1.905 (1.162)			
γ_r					0.129*** (0.043)		
γ_{GS}					-0.121 (0.081)		
γ_{CS}					-0.310** (0.138)		
$\gamma_{0\text{post}80}$						-0.920 (6.625)	
$\gamma_{m\text{post}80}$						0.559 (1.289)	
$\gamma_{CEA\text{post}80}$						-2.350 (2.135)	
$\gamma_{Eu\text{post}80}$						-0.098 (0.162)	
\bar{R}^2	0.895	0.896	0.927	0.898	0.910	0.899	
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
F p val post 80						0.16665	
DW stat	0.933	0.940	2.134	0.924	0.954	0.967	
OID p val							0.740

Estimated: 14 Feb 2012, 18:27:03 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags. CEA is the Credit Easing Accumulated Index, GS is the government saving as a fraction of GDP, CS is the corporate saving as a fraction of GDP. In model IV, m , CEA and \mathbf{Eu} are instrumented with lags 1 and 2 of m , \mathbf{Eu} and the ? Index of Financial Liberalization; the sample for the IV model is 1973Q1–2005Q4. OID p val denotes the p-value from the Hansen’s J statistic for overidentification.

Table 10: Constant target wealth models—SR Explained by the Structural Model

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{Eu}_t u_{t+4} + \gamma_\sigma \sigma_t + \gamma_s s_{t-1} + \gamma_d d_t + \dots$$

$$\dots + \gamma_r r_t + \gamma_{GS} GS_t + \gamma_{CS} CS_t + \varepsilon_t$$

Model	Baseline	Uncertainty	Lagged s_{t-1}	Debt	Full Controls	Post-1980	IV
γ_0	12.509*** (0.532)	12.443*** (0.505)	6.903*** (0.555)	12.234*** (0.558)	12.012*** (0.534)	14.759*** (0.953)	13.390*** (0.640)
γ_m	-0.848*** (0.105)	-0.820*** (0.106)	-0.450*** (0.067)	-0.740*** (0.113)	-0.845*** (0.104)	-1.381*** (0.179)	-0.908*** (0.148)
γ_{CEA}	-6.486*** (0.141)	-6.543*** (0.168)	-3.754*** (0.233)	-6.280*** (0.184)	-6.387*** (0.158)	-5.741*** (0.321)	-6.843*** (0.285)
γ_{Eu}	0.299*** (0.019)	0.319*** (0.022)	0.184*** (0.015)	0.316*** (0.019)	0.354*** (0.024)	0.318*** (0.031)	0.245*** (0.022)
γ_σ		-0.146 (0.178)					
γ_s			0.430*** (0.034)				
γ_d				-0.544* (0.298)			
γ_r					-0.010 (0.015)		
γ_{GS}					0.042** (0.020)		
γ_{CS}					0.072* (0.037)		
$\gamma_{0\text{post}80}$						-2.727*** (1.041)	
$\gamma_{m\text{post}80}$						0.720*** (0.193)	
$\gamma_{CEA\text{post}80}$						-1.168*** (0.342)	
$\gamma_{Eu\text{post}80}$						-0.051 (0.036)	
\bar{R}^2	0.992	0.993	0.997	0.993	0.993	0.996	
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
F p val post 80						0.00000	
DW stat	0.714	0.726	1.340	0.696	0.863	1.238	
OID p val							0.753

Estimated: 5 Feb 2012, 18:25:05 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags. CEA is the Credit Easing Accumulated Index, GS is the government saving as a fraction of GDP, CS is the corporate saving as a fraction of GDP. In model IV, m , CEA and \mathbf{Eu} are instrumented with lags 1 and 2 of m , \mathbf{Eu} and the ? Index of Financial Liberalization; the sample for the IV model is 1973Q1–2005Q4. OID p val denotes the p-value from the Hansen’s J statistic for overidentification.

Table 11: Constant target wealth models—PSR Adjusted for Inflation

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{Eu}_t u_{t+4} + \gamma_\sigma \sigma_t + \gamma_s s_{t-1} + \gamma_d d_t + \dots$$

$$\dots + \gamma_r r_t + \gamma_{GS} GS_t + \gamma_{CS} CS_t + \varepsilon_t$$

Model	Baseline	Uncertainty	Lagged s_{t-1}	Debt	Full Controls	Post-1980	IV
γ_0	13.411*** (1.796)	13.211*** (1.795)	5.090*** (1.437)	12.627*** (1.712)	15.281*** (1.539)	14.075** (6.955)	19.079*** (2.470)
γ_m	-1.163*** (0.341)	-1.150*** (0.349)	-0.341 (0.219)	-0.854** (0.348)	-1.192*** (0.286)	-1.336 (1.376)	-2.291*** (0.526)
γ_{CEA}	-5.374*** (0.547)	-5.338*** (0.615)	-2.629*** (0.504)	-4.786*** (0.712)	-5.719*** (0.595)	-5.336*** (2.040)	-4.121*** (1.218)
γ_{Eu}	0.264*** (0.074)	0.277*** (0.090)	0.137*** (0.051)	0.310*** (0.071)	0.044 (0.087)	0.265* (0.145)	0.126 (0.141)
γ_σ		0.044 (0.458)					
γ_s			0.555*** (0.074)				
γ_d				-1.552 (1.134)			
γ_r					0.144*** (0.040)		
γ_{GS}					-0.182** (0.078)		
γ_{CS}					-0.291** (0.135)		
$\gamma_{0\text{post}80}$						-0.094 (7.224)	
$\gamma_{m\text{post}80}$						0.282 (1.412)	
$\gamma_{CEA\text{post}80}$						-0.957 (2.181)	
$\gamma_{Eu\text{post}80}$						-0.070 (0.169)	
\bar{R}^2	0.880	0.881	0.914	0.882	0.901	0.882	
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
F p val post 80						0.50779	
DW stat	0.960	0.969	2.076	0.952	0.954	0.980	
OID p val							0.716

Estimated: 5 Feb 2012, 18:24:08 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags. CEA is the Credit Easing Accumulated Index, GS is the government saving as a fraction of GDP, CS is the corporate saving as a fraction of GDP. In model IV, m , CEA and \mathbf{Eu} are instrumented with lags 1 and 2 of m , \mathbf{Eu} and the ? Index of Financial Liberalization; the sample for the IV model is 1973Q1–2005Q4. OID p val denotes the p-value from the Hansen’s J statistic for overidentification.

Table 12: Constant target wealth models—Gross Household SR/DI

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{Eu}_t u_{t+4} + \gamma_\sigma \sigma_t + \gamma_s s_{t-1} + \gamma_d d_t + \dots$$

$$\dots + \gamma_r r_t + \gamma_{GS} GS_t + \gamma_{CS} CS_t + \varepsilon_t$$

Model	Baseline	Uncertainty	Lagged s_{t-1}	Debt	Full Controls	Post-1980	IV
γ_0	14.742*** (1.936)	14.601*** (1.962)	5.001*** (1.537)	14.198*** (1.864)	16.621*** (1.688)	17.276*** (5.885)	20.397*** (2.311)
γ_m	-1.011*** (0.371)	-1.057*** (0.386)	-0.222 (0.225)	-0.797** (0.375)	-1.108*** (0.334)	-1.582 (1.162)	-1.848*** (0.486)
γ_{CEA}	-5.741*** (0.582)	-5.546*** (0.652)	-2.527*** (0.483)	-5.333*** (0.763)	-5.885*** (0.634)	-3.699** (1.884)	-5.789*** (1.077)
γ_{Eu}	0.364*** (0.076)	0.349*** (0.093)	0.159*** (0.054)	0.397*** (0.074)	0.201** (0.093)	0.309** (0.131)	0.123 (0.126)
γ_σ		0.339 (0.472)					
γ_s			0.603*** (0.069)				
γ_d				-1.076 (1.175)			
γ_r					0.127*** (0.044)		
γ_{GS}					-0.121 (0.086)		
γ_{CS}					-0.280* (0.147)		
$\gamma_{0\text{post}80}$						-2.769 (6.257)	
$\gamma_{m\text{post}80}$						0.886 (1.216)	
$\gamma_{CEA\text{post}80}$						-3.329 (2.026)	
$\gamma_{Eu\text{post}80}$						-0.016 (0.160)	
\bar{R}^2	0.883	0.885	0.922	0.884	0.898	0.889	
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
F p val post 80						0.10433	
DW stat	0.887	0.893	2.095	0.879	0.869	0.918	
OID p val							0.648

Estimated: 5 Feb 2012, 18:26:27 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags. CEA is the Credit Easing Accumulated Index, GS is the government saving as a fraction of GDP, CS is the corporate saving as a fraction of GDP. In model IV, m , CEA and \mathbf{Eu} are instrumented with lags 1 and 2 of m , \mathbf{Eu} and the ? Index of Financial Liberalization; the sample for the IV model is 1973Q1–2005Q4. OID p val denotes the p-value from the Hansen's J statistic for overidentification.

Table 13: Constant target wealth models—Net Private SR/GDP

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{Eu}_t u_{t+4} + \gamma_\sigma \sigma_t + \gamma_s s_{t-1} + \gamma_d d_t + \dots$$

$$\dots + \gamma_r r_t + \gamma_{GS} GS_t + \gamma_{CS} CS_t + \varepsilon_t$$

Model	Baseline	Uncertainty	Lagged s_{t-1}	Debt	Full Controls	Post-1980	IV
γ_0	17.965*** (1.777)	18.302*** (1.722)	4.824*** (1.266)	19.005*** (1.796)	11.999*** (1.151)	19.808** (7.890)	21.544*** (3.479)
γ_m	-1.714*** (0.349)	-1.562*** (0.351)	-0.453*** (0.170)	-2.123*** (0.419)	-1.024*** (0.217)	-1.925 (1.531)	-2.400*** (0.779)
γ_{CEA}	-3.342*** (0.568)	-3.977*** (0.623)	-1.029*** (0.315)	-4.122*** (0.786)	-4.143*** (0.454)	-1.361 (2.329)	-2.777** (1.332)
γ_{Eu}	0.002 (0.077)	0.020 (0.084)	0.040 (0.038)	-0.060 (0.072)	0.079 (0.064)	-0.196 (0.190)	-0.101 (0.106)
γ_σ		-0.838* (0.449)					
γ_s			0.704*** (0.057)				
γ_d				2.058 (1.325)			
γ_r					0.107*** (0.033)		
γ_{GS}					-0.123** (0.059)		
γ_{CS}					0.720*** (0.099)		
$\gamma_{0\text{post}80}$						-3.052 (8.180)	
$\gamma_{m\text{post}80}$						0.230 (1.575)	
$\gamma_{CEA\text{post}80}$						-1.374 (2.502)	
$\gamma_{Eu\text{post}80}$						0.302 (0.217)	
\bar{R}^2	0.825	0.857	0.914	0.830	0.914	0.830	
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
F p val post 80						0.44258	
DW stat	0.645	0.786	2.137	0.715	0.949	0.696	
OID p val							0.336

Estimated: 5 Feb 2012, 18:27:21 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags. CEA is the Credit Easing Accumulated Index, GS is the government saving as a fraction of GDP, CS is the corporate saving as a fraction of GDP. In model IV, m , CEA and \mathbf{Eu} are instrumented with lags 1 and 2 of m , \mathbf{Eu} and the ? Index of Financial Liberalization; the sample for the IV model is 1973Q1–2005Q4. OID p val denotes the p-value from the Hansen's J statistic for overidentification.

Table 14: Constant target wealth models—Gross Private SR/GDP

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{Eu}_t u_{t+4} + \gamma_\sigma \sigma_t + \gamma_s s_{t-1} + \gamma_d d_t + \dots$$

$$\dots + \gamma_r r_t + \gamma_{GS} GS_t + \gamma_{CS} CS_t + \varepsilon_t$$

Model	Baseline	Uncertainty	Lagged s_{t-1}	Debt	Full Controls	Post-1980	IV
γ_0	22.249*** (2.256)	22.422*** (2.274)	5.428*** (1.271)	22.753*** (2.295)	16.775*** (1.431)	30.325*** (6.977)	26.230*** (3.851)
γ_m	-1.295*** (0.444)	-1.180*** (0.445)	-0.257* (0.155)	-1.493*** (0.478)	-0.727** (0.289)	-2.699** (1.333)	-2.017** (0.845)
γ_{CEA}	-1.789** (0.739)	-2.236*** (0.776)	-0.617** (0.266)	-2.167** (0.954)	-2.356*** (0.571)	3.508* (2.127)	-1.379 (1.446)
γ_{Eu}	0.381*** (0.087)	0.402*** (0.113)	0.151*** (0.042)	0.351*** (0.098)	0.473*** (0.080)	-0.086 (0.189)	0.275** (0.134)
γ_σ		-0.614 (0.572)					
γ_s			0.724*** (0.052)				
γ_d				0.998 (1.241)			
γ_r					0.200*** (0.040)		
γ_{GS}					-0.097 (0.066)		
γ_{CS}					0.646*** (0.118)		
$\gamma_{0\text{post}80}$						-9.652 (7.350)	
$\gamma_{m\text{post}80}$						1.886 (1.392)	
$\gamma_{CEA\text{post}80}$						-6.771*** (2.300)	
$\gamma_{Eu\text{post}80}$						0.496** (0.219)	
\bar{R}^2	0.723	0.734	0.883	0.723	0.847	0.758	
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
F p val post 80						0.00252	
DW stat	0.596	0.627	2.183	0.613	0.838	0.680	
OID p val							0.311

Estimated: 5 Feb 2012, 18:28:06 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags. CEA is the Credit Easing Accumulated Index, GS is the government saving as a fraction of GDP, CS is the corporate saving as a fraction of GDP. In model IV, m , CEA and \mathbf{Eu} are instrumented with lags 1 and 2 of m , \mathbf{Eu} and the ? Index of Financial Liberalization; the sample for the IV model is 1973Q1–2005Q4. OID p val denotes the p-value from the Hansen's J statistic for overidentification.

Table 15: Constant target wealth models—Flow of Funds SR Excluding Durables

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{Eu}_t u_{t+4} + \gamma_\sigma \sigma_t + \gamma_s s_{t-1} + \gamma_d d_t + \dots$$

$$\dots + \gamma_r r_t + \gamma_{GS} GS_t + \gamma_{CS} CS_t + \varepsilon_t$$

Model	Baseline	Uncertainty	Lagged s_{t-1}	Debt	Full Controls	Post-1980	IV
γ_0	18.836*** (5.982)	18.473*** (6.019)	17.209*** (6.573)	17.423*** (6.509)	19.785*** (4.954)	3.797 (16.066)	33.920*** (6.540)
γ_m	-1.845 (1.192)	-1.249 (1.192)	-1.663 (1.219)	-1.288 (1.533)	-1.404 (1.047)	1.288 (3.168)	-5.507*** (1.447)
γ_{CEA}	-8.404*** (1.471)	-10.149*** (1.666)	-7.857*** (1.306)	-7.343*** (1.997)	-10.000*** (1.561)	-0.827 (5.122)	-2.901 (2.935)
γ_{Eu}	0.402** (0.179)	0.655*** (0.249)	0.382** (0.166)	0.486*** (0.173)	-0.150 (0.234)	0.288 (0.345)	0.344 (0.270)
γ_σ		-2.994*** (1.115)					
γ_s			0.072 (0.093)				
γ_d				-2.799 (4.056)			
γ_r					0.375*** (0.102)		
γ_{GS}					-0.582*** (0.204)		
γ_{CS}					-0.278 (0.416)		
$\gamma_{0\text{post}80}$						16.383 (17.597)	
$\gamma_{m\text{post}80}$						-3.068 (3.476)	
$\gamma_{CEA\text{post}80}$						-9.350 (5.717)	
$\gamma_{Eu\text{post}80}$						0.064 (0.434)	
\bar{R}^2	0.522	0.540	0.522	0.521	0.552	0.523	
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
F p val post 80						0.12716	
DW stat	1.884	1.929	2.033	1.878	1.996	1.909	
OID p val							0.360

Estimated: 5 Feb 2012, 18:30:26 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags. CEA is the Credit Easing Accumulated Index, GS is the government saving as a fraction of GDP, CS is the corporate saving as a fraction of GDP. In model IV, m , CEA and \mathbf{Eu} are instrumented with lags 1 and 2 of m , \mathbf{Eu} and the ? Index of Financial Liberalization; the sample for the IV model is 1973Q1–2005Q4. OID p val denotes the p-value from the Hansen’s J statistic for overidentification.

Table 16: Constant target wealth models—Flow of Funds SR Including Durables

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{CEA} CEA_t + \gamma_{Eu} \mathbf{Eu}_t u_{t+4} + \gamma_\sigma \sigma_t + \gamma_s s_{t-1} + \gamma_d d_t + \dots$$

$$\dots + \gamma_r r_t + \gamma_{GS} GS_t + \gamma_{CS} CS_t + \varepsilon_t$$

Model	Baseline	Uncertainty	Lagged s_{t-1}	Debt	Full Controls	Post-1980	IV
γ_0	25.107*** (5.716)	24.658*** (5.753)	22.930*** (6.504)	23.194*** (6.310)	25.300*** (5.102)	3.569 (18.187)	40.602*** (6.888)
γ_m	-2.176* (1.142)	-1.512 (1.153)	-1.962* (1.171)	-1.422 (1.491)	-1.677 (1.027)	2.117 (3.580)	-5.876*** (1.546)
γ_{CEA}	-8.266*** (1.433)	-10.188*** (1.603)	-7.695*** (1.311)	-6.830*** (1.917)	-9.876*** (1.475)	2.612 (5.716)	-2.630 (3.097)
γ_{Eu}	0.010 (0.174)	0.294 (0.243)	0.019 (0.169)	0.125 (0.171)	-0.511** (0.252)	0.038 (0.374)	-0.084 (0.273)
γ_σ		-3.301*** (1.086)					
γ_s			0.075 (0.092)				
γ_d				-3.788 (3.969)			
γ_r					0.395*** (0.096)		
γ_{GS}					-0.576*** (0.204)		
γ_{CS}					-0.184 (0.414)		
$\gamma_{0\text{post}80}$						22.816 (19.401)	
$\gamma_{m\text{post}80}$						-4.081 (3.819)	
$\gamma_{CEA\text{post}80}$						-13.194** (6.364)	
$\gamma_{Eu\text{post}80}$						-0.126 (0.455)	
\bar{R}^2	0.515	0.536	0.515	0.516	0.548	0.519	
F stat p val	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
F p val post 80						0.17716	
DW stat	1.869	1.924	2.026	1.864	2.000	1.900	
OID p val							0.576

Estimated: 5 Feb 2012, 18:28:51 Notes: Estimation sample: 1966Q2–2011Q1. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Newey–West standard errors, 4 lags. CEA is the Credit Easing Accumulated Index, GS is the government saving as a fraction of GDP, CS is the corporate saving as a fraction of GDP. In model IV, m , CEA and \mathbf{Eu} are instrumented with lags 1 and 2 of m , \mathbf{Eu} and the ? Index of Financial Liberalization; the sample for the IV model is 1973Q1–2005Q4. OID p val denotes the p-value from the Hansen’s J statistic for overidentification.

Figure 1: Alternative Saving Rates I.—Inflation Adjustment

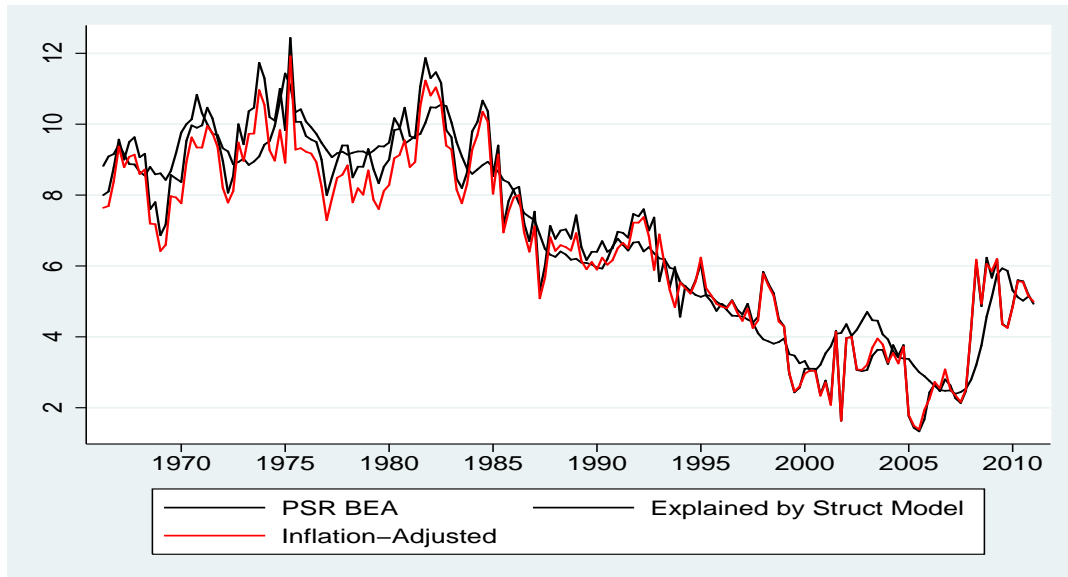


Figure 2: Alternative Saving Rates II.—Net/Gross Personal/Private

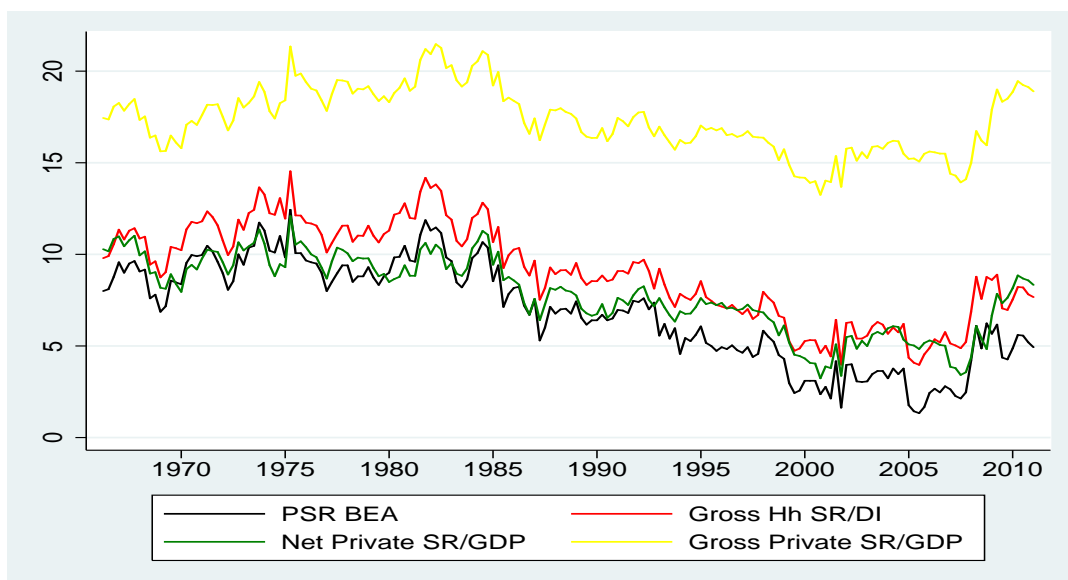
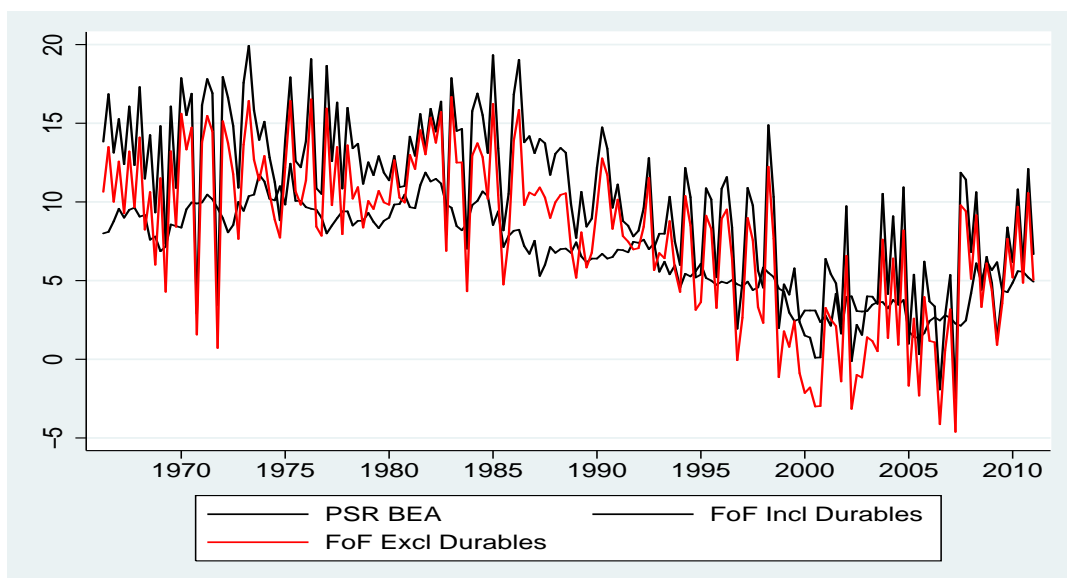


Figure 3: Alternative Saving Rates III.—Flow of Funds Saving Rates



1 Figures from the Paper

