

International Evidence on Sticky Consumption Growth*

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Abstract

The debate over the degree of ‘stickiness’ in aggregate consumption growth (usually interpreted as reflecting consumption habits) has focused principally on the United States. This paper examines the evidence for all 13 advanced economies for which we could find the necessary data. Using two different econometric techniques that correct for the presence of measurement error, we find that the autocorrelation coefficient for consumption growth is above 0.5 almost everywhere, averaging about 0.7 across countries. In all economies, the sticky-consumption-growth model outperforms the random walk model of Hall (1978), and typically fits the aggregate consumption data better than the Campbell and Mankiw (1989) model with rule-of-thumb consumers. In a few cases, the sticky-consumption-growth and Campbell–Mankiw models work about equally well and cannot be statistically distinguished from each other.

Keywords: Sticky Expectations, Consumption Dynamics, Habit Formation

JEL classification: C6, D9, E2

Paper: <http://econ.jhu.edu/people/ccarroll/papers/cssIntlStickyC.pdf>

Archive: <http://econ.jhu.edu/people/ccarroll/papers/cssIntlStickyC.zip>

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Table 1: Consumption Dynamics—All Countries

Country	$\Delta \log C_t = \varsigma + \chi \mathbf{E}_{t-2}[\Delta \log C_{t-1}] + \eta \mathbf{E}_{t-2}[\Delta \log Y_t] + \alpha \mathbf{E}_{t-2}[A_{t-1}]$									
	Estimation with one regressor only					Estimation with all three regressors				
	χ	η	α	\bar{R}_c^2	χ	η	α	\bar{R}_c^2	OID	
G7 Countries										
Canada [†]	0.72***	0.32***	0.33	0.17	0.64***	0.05	0.11	0.85		
France [†]	0.61***	0.29***	0.04	0.03	0.44	0.19	-0.04	0.94		
Germany [†]	0.40*	0.72***	-0.36	0.05	0.16	0.66***	-0.17	0.81		
Italy [†]	0.65***	0.20**	-0.05	0.05	0.53**	0.13	-0.02	0.65		
United Kingdom [†]	0.83***	0.10	0.27*	0.12	1.00***	-0.17	0.01	0.95		
United States [†]	0.83***	0.54***	0.26*	0.17	0.55***	0.27*	0.02	0.95		
Mean G7	0.67***	0.36***	0.08	—	0.55**	0.19	-0.01	—		
Other Countries										
Australia [†]	0.54***	0.12	0.10	0.11	0.51**	0.03	0.01	0.63		
Belgium [†]	0.64***	0.34**	0.11	0.09	0.56**	0.12	0.01	0.72		
Denmark [†]	0.86***	0.43	-0.34	0.08	0.78***	0.27	-0.32	0.57		
Finland [†]	0.90***	0.61**	0.53	0.26	0.86***	0.07	-0.13	0.71		
Netherlands [†]	0.70***	0.09	0.21	0.00	0.53	-0.14	0.10	0.82		
Spain [†]	0.94***	0.79***	0.83***	0.38	0.71**	0.04	0.21	0.38		
Sweden [†]	0.83***	0.37**	0.58***	0.16	0.88***	0.32*	-0.25	0.39		
Mean Other	0.77***	0.39	0.29	—	0.69***	0.10	-0.05	—		

Instruments: L(2/4).un L(2/4).lr L(2/4).pceinfvol L(2/4).sent

Notes: Left Panel: Regressions were estimated with one regressor only. Right Panel: Regressions were estimated with all three regressors. Consumption variable: †: nondurables, semidurables and services consumption, ‡: total personal consumption expenditure, A: ratio of household financial wealth to income. {*, **, ***} = Statistical significance at {10, 5, 1} percent (using robust standard errors). \bar{R}_c^2 : Adjusted R^2 from the first-stage regression of consumption growth on instruments. OID: p-value from the Hansen's J statistic for overidentification.

Table 2: Consumption Dynamics—Groups of Countries (Simple Averages)

$$\Delta \log \mathbf{C}_t = \varsigma + \chi \mathbf{E}_{t-2}[\Delta \log \mathbf{C}_{t-1}] + \eta \mathbf{E}_{t-2}[\Delta \log \mathbf{Y}_t] + \alpha \mathbf{E}_{t-2}[A_{t-1}]$$

Country	Estimation with one regressor only			Estimation with all three regressors		
	χ	η	α	χ	η	α
All Countries	0.73*** (0.18)	0.38** (0.18)	0.19 (0.19)	0.63** (0.25)	0.14 (0.21)	−0.03 (0.16)
G7 Countries	0.67*** (0.18)	0.36*** (0.11)	0.08 (0.19)	0.55** (0.23)	0.19 (0.14)	−0.01 (0.12)
Anglo–Saxon	0.73*** (0.16)	0.27** (0.11)	0.24 (0.18)	0.68*** (0.22)	0.04 (0.14)	0.04 (0.12)
Euro Area	0.69*** (0.18)	0.43** (0.20)	0.19 (0.18)	0.54** (0.27)	0.15 (0.22)	−0.01 (0.13)
European Union	0.73*** (0.18)	0.39* (0.20)	0.18 (0.20)	0.65** (0.26)	0.15 (0.23)	−0.06 (0.17)

Instruments: `L(2/4).un` `L(2/4).lr` `L(2/4).pceinfvol` `L(2/4).sent`

Notes: Left Panel: Regressions were estimated with one regressor only. Right Panel: Regressions were estimated with all three regressors. Robust standard errors are in parentheses. $\{*, **, ***\}$ = Statistical significance at $\{10, 5, 1\}$ percent.

All countries: Canada, France, Germany, Italy, the United Kingdom, the United States, Australia, Belgium, Denmark, Finland, the Netherlands, Spain, Sweden. G7 countries: Canada, France, Germany, Italy, the United Kingdom, the United States. Anglo–Saxon Countries: Australia, Canada, the United Kingdom, the United States. Euro Area Countries: France, Germany, Italy, Belgium, Finland, the Netherlands, Spain. European Union: France, Germany, Italy, the United Kingdom, Belgium, Denmark, Finland, the Netherlands, Spain, Sweden.

Table 3: Consumption Dynamics—First-Stage Kalman Filter Estimates

$$\begin{aligned}\Delta \log C_t &= \Delta \log C_t^* + u_t + (\theta - 1)u_{t-1} - \theta u_{t-2}, \\ \Delta \log C_t^* &= c_0 + \chi \Delta \log C_{t-1}^* + v_t + \lambda_1(\chi)v_{t-1} + \lambda_2(\chi)v_{t-2}\end{aligned}$$

Country	Parameter Estimates				
	χ	θ	$\log \sigma_u^2$	$\log \sigma_v^2$	$\frac{\text{var}(\Delta \log \mathbf{C}_t^*)}{\text{var}(\Delta \log \mathbf{C}_t)}$
G7 Countries					
Canada [†]	0.78***	0.25**	−11.03***	−13.02***	0.18
France [†]	0.81***	−0.01	−11.42***	−14.00***	0.10
Germany [†]	0.83***	0.25*	−9.97***	−12.49***	0.14
Italy [†]	0.62***	−0.08	−12.04***	−12.26***	0.37
United Kingdom [†]	0.36***	−1.00	−12.21***	−10.79***	0.39
United States [†]	0.67***	0.30**	−12.26***	−12.58***	0.44
Other Countries					
Australia [‡]	0.49*	0.23	−10.78***	−11.50***	0.21
Belgium [‡]	0.70***	0.39***	−11.44***	−11.83***	0.45
Denmark [‡]	0.39*	−0.23	−10.38***	−9.85***	0.38
Finland [‡]	0.72***	0.20	−10.95***	−11.00***	0.55
Netherlands [‡]	0.90***	−0.08	−9.85***	−12.64***	0.18
Spain [‡]	0.84***	0.23	−12.08***	−11.39***	0.82
Sweden [‡]	0.67***	0.27*	−11.71***	−11.40***	0.60

Notes: Consumption variable: †: nondurables, semidurables and services consumption, ‡: total personal consumption expenditure. {*, **, ***} = Statistical significance at {10, 5, 1} percent. Samples for the Kalman filter estimation are as follows: Canada Q2:1961–Q4:2006, France Q2:1978–Q4:2006, Germany Q2:1970–Q4:2006, Italy Q2:1981–Q3:2006, United Kingdom Q2:1964–Q3:2006, United States Q2:1960–Q4:2006, Australia Q3:1965–Q4:2003, Belgium, Denmark, Finland and Sweden Q2:1961–Q2:2003, Netherlands Q2:1961–Q2:2004, and Spain Q3:1962–Q2:2003.

Figure 1: Measured and “True” Consumption Growth—G7 Countries

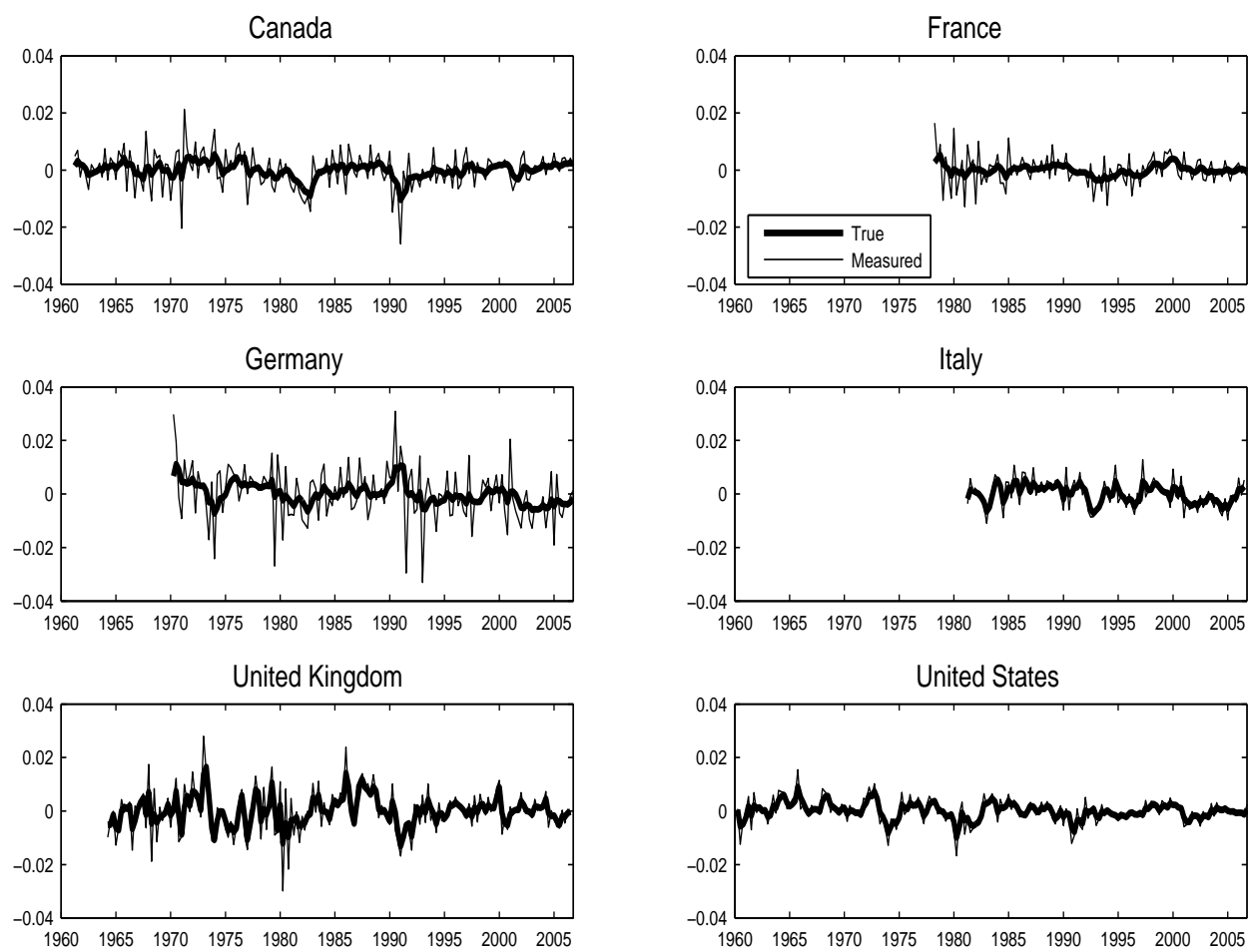


Figure 2: Measured and “True” Consumption Growth—Other Countries

