Discussion on Yu (2008): "The Long and the Short of Asset Prices: Using Long Run Consumption-Return Correlations to Test Asset Pricing Models"

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Theme

The paper

The correlation between consumption growth and stock return: low in high frequencies and high in low frequencies

Evidence distinguishes long-run risk model from external habit models

Theme

The discussion

Nice insight

More convincing [with better execution] needed

Outline

1 Summary

2 Methodology

3 In Defense of Campbell and Cochrane (1999)

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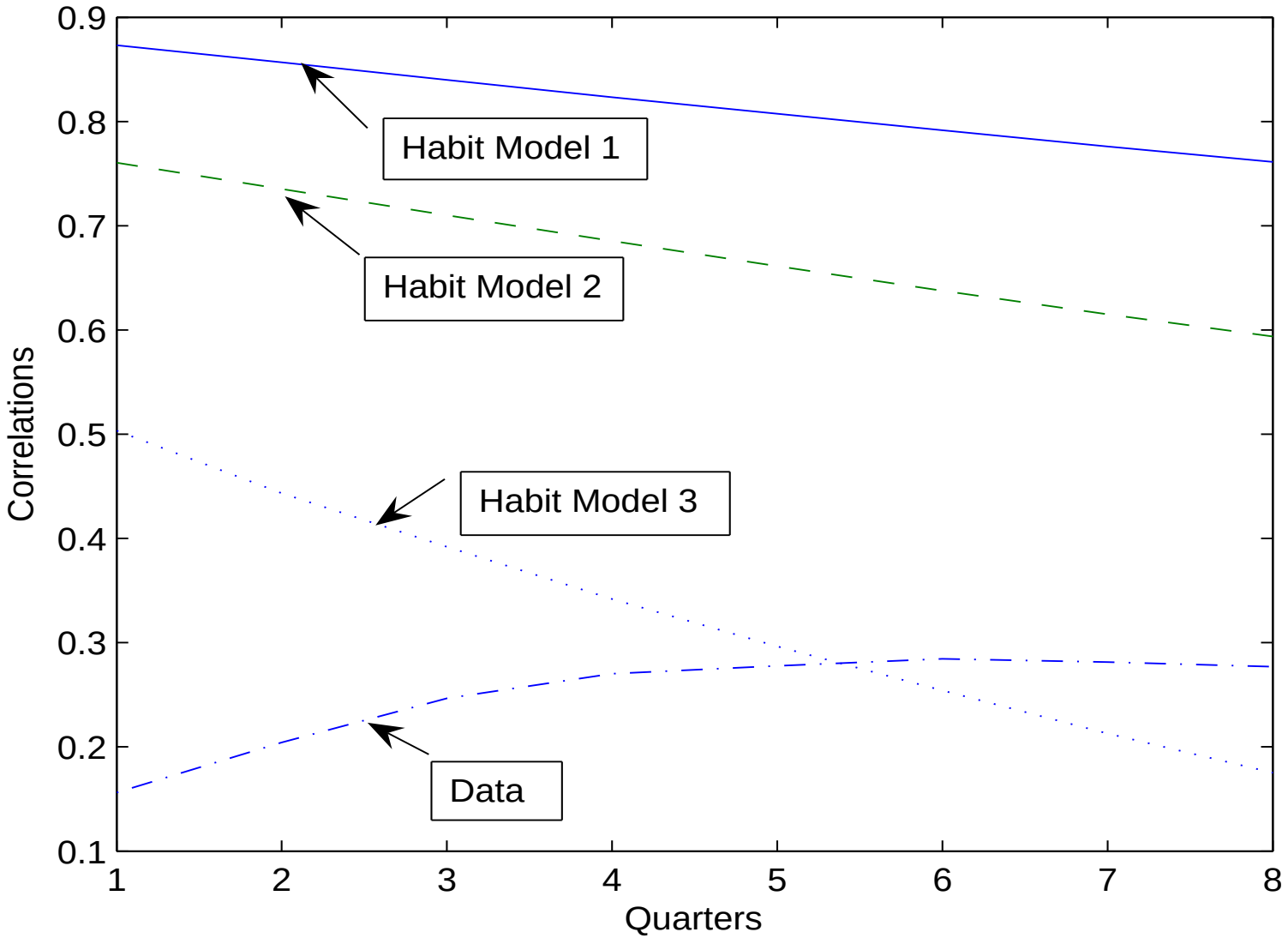
Summary

The basic result from Figure 1



Summary

Intuition I

In Campbell-Cochrane (1999):

$$\text{Past consumption growth} \downarrow \quad \Rightarrow \quad \text{Risk aversion} \uparrow \quad \Rightarrow$$

$$\text{Expected stock returns} \uparrow \quad \Rightarrow \quad \text{Future stock returns} \uparrow$$

p. 3: "Given a long enough horizon this negative covariation between expected excess returns and past consumption growth will drive correlations down, potentially even below zero" (my emphasis).

Summary

Intuition II

In Bansal-Yaron (2004):

$$\text{Long run consumption growth} \uparrow \quad \Rightarrow \quad \text{Expected stock returns} \uparrow$$

$$\Rightarrow \quad \text{Future stock returns} \uparrow$$

p. 3: "Hence, as the horizon increases the correlation between consumption and returns also increases."

[Parker and Julliard (2005): slow adjustment in consumption due to measurement errors, adjustment costs, information constraints, nonseparability of marginal utility of consumption from labor or housing]

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Methodology

Computational experiments

Log-linearization: useless for risk premiums in nonlinear asset pricing models

Use well-designed computational experiments as the main research tool

- Macroeconomists are ahead of us: High-order perturbation, projection, discrete state-space, finite-difference, PEA, finite-element

The central question: Can the simulated two-standard-errors bound for the correlations in Habit Model 3 encompass the empirical correlations?

- Empirical correlations have standard errors, especially in long horizons!

Methodology

Measurement

Prescott (1986): we should handle simulated data in the exactly same way as empiricists handle real data

Measurement errors in consumption increase the standard errors

Also should take care of time-aggregation in consumption

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Simulations

TABLE 7

CORRELATION BETWEEN CONSUMPTION GROWTH AND STOCK RETURNS

	Monthly Model		Annual Model		Data Sample		
Correlation	Consumption Claim	Dividend Claim	Consumption Claim	Dividend Claim	Quarterly Postwar	Annual Postwar	Annual Long
$r^e_t, \Delta c_{t-2}$	.00	.00	−.16	−.13	−.05	−.16	−.05
$r^e_t, \Delta c_{t-1}$	.00	.00	−.19	−.15	−.10	−.34	−.08
$r^e_t, \Delta c_t$	.93	.79	.47	.40	.12	−.05	.09
$r^e_t, \Delta c_{t+1}$	.00	.00	.50	.42	.19	.37	.49
$r^e_t, \Delta c_{t-2}$	.00	.00	.00	.00	.15	−.26	.05

In Defense of Campbell and Cochrane (1999)

Quotes

Campbell-Cochrane (1999, p. 233): "time-aggregation produces a strong positive correlation between returns and subsequent consumption growth and a negative correlation between returns and previous consumption growth, the same sign pattern that we see in the data."

"Adding state variables and accounting for lags and errors in the data collection are likely to further help to account for the correlations of consumption with asset returns."

[Yu (2008) adds one more state variable into the model]

In Defense of Campbell and Cochrane (1999)

Unfinished businesses

p. 9. Footnote 8: "If the [Campbell-Cochrane] model is simulated at the monthly frequency, and time-averaged to the quarterly frequency, the correlation could increase from the first quarter to the second quarter, and then decrease monotonically as the horizon increases."

p. 10. Footnote 9: "As we increase horizon further, the cumulative correlations start to slowly decline in the data which is the same with the habit model. However, the standard error is large as horizons increase."

In Defense of Campbell and Cochrane (1999)

Metric of performance

What does Figure 1 look like for the Bansal and Yaron (2004) model?

I would only focus on the Bansal and Yaron model in Section 3

Tricky to compare the performance of two non-nesting models

Conclusion

The discussion

Cool insight

Use computational experiments to a tool for model evaluation