Discussion of:

"The fourth-quarter consumption growth rate: A pure-macro, not-estimated stock return predictor that works in-sample and out-of-sample"

by

Stig V. Moller, and Jesper Rangvid

Caio Almeida

Getulio Vargas Foundation

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Main Results

- Analyze the time series properties of the fourth-quarter consumption growth rate as a predictor of expected excess returns on stocks.
  - This variable works better than all the previously adopted predictors both in-sample and out-of-sample.
  - Out-of-sample it predicts better than the updated historical mean of excess returns (Goyal and Welch (2008)).
- Several robustness tests are performed to convince the readers that the measure is in fact effective.
- The measure is motivated by an alignment between consumption and investment decisions in the fourth quarter.

How useful are the results obtained in this paper?

- The authors obtain a pure macroeconomic variable that forecasts future stock returns. Can we make use of that?
  - 1) Can we profit using their measure to time the market?
    - Propose portfolios based on their consumption measure but taking into account market transaction costs.
  - 2) Use this particular consumption growth rate to possibly improve results obtained by existing models:
    - Estimate the consumption-wealth ratio (cay) model of Lettau and Ludvigson (2001).
    - Estimation of the long-run consumption risk model (current project by Bansal, Kiku and Yaron (2010)).
  - 3) Make use of theory to give further strength to the predictability evidence.
    - Use the standard SDF approach on consumption based models to derive further relation between expected returns and the consumption growth rate.

Should we expect a linear relationship between consumption growth and expected returns?

- In this paper, predictive regressions suppose a linear relationship.
- However, from the Euler equation of a traditional CCAPM model we obtain:

$$E_t(R^e_{t+1}) = -R^f_t * cov_t((\frac{c_{t+1}}{c_t})^\gamma, R^e_{t+1}) \quad (1)$$

- Therefore basic theory suggests a nonlinear relationship between consumption growth and expected returns.
- Considering nonlinear case may improve even more the R^2's.
  - Cost: introduction of a risk-aversion parameter to be estimated.
  - One possibility: Test predictability with some fixed values for the risk-aversion coefficient based on a grid.

Nonparametric nonlinear consumption-based SDFs

- Almeida and Garcia (2008) propose a generalization of the Hansen and Jagannathan (HJ, 1991) approach based on convex discrepancy measures.
- Given a set of basis assets R, while the linear projections of HJ obtained a linear SDF on basis assets that would price those assets...
- The SDFs obtained by Almeida and Garcia are hyperbolic functions of basis assets:

$$\hat{m}_{MD}(R) = \beta * \left(1 + \gamma \hat{\lambda}'_{opt} \left(R - \frac{1}{a}\right)\right)^{\frac{1}{\gamma}} \tag{2}$$

- One possibility to test for nonlinearities would be to use this approach considering the fourth-quarter consumption growth rate as a primitive return.
- Our discrepancy measures are parameterized by γ, which has an interpretation of average risk-aversion coefficient.

Robustness of Results

- In-sample tests should be performed recursively.
  - Considering a number of sub-samples reassures that the finding is not particular to the period analyzed.
  - The dynamics of expected returns on equities could be changing across time therefore changing significance of the f-c-g-r as predictor.
  - Evidence: When start the o-o-s analysis in the 1990s, the predictability results are much less effective.
- More careful comparison with the cay measure of Lettau and Ludvigson (2001).
  - Re-estimate the cointegration vector recursively.
  - Use the fourth-quarter consumption measure to estimate cay.
  - Compare differences in R^2's by bootstrap.