

Improving the asset pricing ability of the Consumption-Capital Asset Pricing Model?

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Abstract

This paper compares the asset pricing ability of the traditional consumption based capital asset pricing model to models from two strands of literature attempting to improve on the poor empirical results of the C-CAPM. One strand is based on the intertemporal asset pricing model of Campbell (1993, 1996) and Campbell and Vuolteenaho (2004). The model takes the traditional C-CAPM as its starting point, but substitutes all references to consumption out, as empirical consumption data is assumed to be error ridden.

The other strand to be investigated is based on the premise that the C-CAPM is only able to price assets conditionally as suggested by Cochrane (1996) and Lettau and Ludvigson (2001b). The unconditional C-CAPM is rewritten as a scaled factor model using the approximate log consumption-wealth ratio *cay*, developed by Lettau and Ludvigson (2001a), as scaling variable.

The models are estimated on US data and the resulting pricing errors are compared using average pricing errors and a number of composite pricing error measures. The conditional C-CAPM and the two beta I-CAPM of Campbell and Vuolteenaho (2004) result in pricing errors of approximately the same size, both average and composite. Thus, there is no unambiguous solution to the pricing ability problems of the C-CAPM. Models from both the alternative literature strands are found to outperform the traditional C-CAPM on average pricing errors. However, when weighting pricing errors by the full variance-covariance matrix of returns or the moment matrix of returns, the traditional C-CAPM actually outperforms the models from both the two new literature strands.

JEL classification: G12

Keywords: C-CAPM, intertemporal asset pricing, conditional asset pricing, pricing errors.