

# CCAPM with Time-varying Parameters: Some Evidence from Japan\*

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## Abstract

We investigate the structural stability of consumption based asset pricing model (CCAPM) with the power utility function using the parameter instability test of Guay and Lamarche (2010), and estimating generalized empirical likelihood (GEL) method; the empirical results suggest instability of the CCAPM in the Japanese financial markets. Assuming both the two parameters in the model, the degree of risk aversion and the time discount rate, vary with time, we test the parameter constancy using the method of Hansen (1990) for GEL, and estimate the time-varying parameters considering our non-linear state space model as a simultaneous equation system and using the method developed by Ito (2007) and the GEL estimators.

*JEL classification numbers:* C58; G12; E21

*Keywords:* Time-varying Estimation; CCAPM; Structural Stability; GEL; Kalman Smoothing

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