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Efficient estimation of firm-specific betas and its benefits for asset pricing tests and portfolio choice

We improve both the specification and estimation of firm-specific betas. Time variation in betas is modeled by combining a parametric specification based on economic theory with a non-parametric approach based on data-driven filters. We increase the precision of individual beta estimates by setting up a hierarchical Bayesian panel data model that imposes a common structure on parameters. We show that these accurate beta estimates lead to a large increase in the cross-sectional explanatory power of the conditional CAPM. Using the betas to forecast the covariance matrix of returns also results in a significant improvement in the out-of-sample performance of minimum variance portfolios.

(This is joint work with M. Cosemans, P. Schotman and R. Bauer.)