Abstract

This thesis consists of three papers investigating asymmetric risk, especially downside risk, in empirical asset pricing. The first paper introduces quantile spectral beta, a measure of risk that quantifies the dependence between stock return and a risk factor in a particular part of the joint distribution over a given horizon. We apply the new measure to study the pricing of tail market risk and extreme volatility risk across asset classes. The second paper proposes a new factor pricing model. Instead of focusing on common factors that explain the cross-sectional mean or variance of stock returns, we propose a model that captures the common structure of cross-sectional quantiles. We show that the downside factors possess information relevant to predicting market returns. Moreover, exposure to the downside factors is compensated for in the cross-section of stock returns for U.S. firms. The third paper examines whether different measures of systematic asymmetric risk lead to risk premia because they represent linear exposure to the common factor structure or because of their nonlinear properties. Using instrumented principal component analysis, we show that these measures can be efficiently combined to generate abnormal returns that other factors cannot explain. However, some measures can also be used to capture linear exposures better.

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