

Time-Varying Risk Exposure of Hedge Funds: A Regime-Switching Approach

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Abstract

This article aims to investigate risk exposure of hedge funds using switching regime beta models. This approach allows to analyze hedge fund tail event behavior and in particular the changes in hedge fund exposure conditional on different states of various risk factors. We find that in the normal state of the market, the exposure to risk factors could be very low but as soon as the market risk factor captured by S&P500 moves to a crisis state characterized by negative returns and high volatility, the exposure of hedge fund indexes to the S&P500 and other risk factors may change significantly. We further extend the regime switching model to allow for non-linearity in residuals and show that switching regime models are able to capture and forecast the evolution of the idiosyncratic risk factor in terms of changes from a low volatility regime to a distressed state that are not directly related to market risk factors.