Earning the Right Premium on the Right Factor
in Portfolio Planning

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Abstract

The optimal portfolio as well as the maximal utility gain from trading stocks and derivatives depend on the risk factors and on the market prices of risk for these factors. We analyze this dependence for a CRRA-investor in a model setup with stochastic volatility as well as stochastic jumps in the stock price and its volatility. We consider a complete market as well as an incomplete market. We find that both the decomposition of the variance and the decomposition of the equity risk premium into a diffusion component and a jump risk component matter. Concerning the different elements of jump risk, we show that the investor prefers jump intensity risk and a premium for this risk to jump size risk and jump variance risk. We additionally find that the optimal exposure to jump risk changes completely depending on whether jump size risk, jump intensity risk, or jump variance risk are priced.

Keywords: stochastic volatility, jumps, market prices of risk, asset allocation, optimal exposures

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