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We propose a long-run risk model with stochastic volatility, a time-varying mean reversion level of volatility, and jumps in the state variables. The special feature of our model is that the jump intensity is not affine in the conditional variance but driven by a separate process. We show that this separation of jump risk from volatility risk is needed to match the empirically weak link between the level and the slope of the implied volatility smile for S&P 500 options.

Level and Slope of Volatility Smiles in Long-Run Risk Models

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