How Should Investors Respond to Changes in Volatility?

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Abstract
They should reduce their equity position. We study the portfolio problem of a long-horizon investor that allocates between a risk-less and a risky asset in an environment where both volatility and expected returns are time-varying. We find that investors, regardless of their horizon, should substantially decrease risk exposure after an increase in volatility. Ignoring variation in volatility leads to large utility losses (on the order of 35% of lifetime utility) and these losses grow with horizon. The utility benefits of volatility timing are significantly larger than those coming from expected return timing (i.e., from return predictability) for all investment horizons we consider, particularly when parameter uncertainty is taken into account. We approximate the optimal volatility timing portfolio and find that a simple two fund strategy holds: all investors, regardless of horizon, will choose constant weights on a buy-and-hold portfolio and a volatility timing portfolio that scales the risky-asset exposure by the inverse of expected variance. We then show robustness to cases where the degree of mean-reversion in stock returns co-moves with volatility over time.

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