ON VOLATILITY SMILE AND AN INVESTMENT STRATEGY WITH EUROPEAN STYLE OUT-OF-THE-MONEY CALLS

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Abstract. A motivating question in this Quantitative Finance topic talk is whether a sensible investment strategy may systematically contain long positions in out-of-the-money European calls with a short expiry. We consider a very simple trading strategy for calls.

The main points of the paper being dicussed are the following. First, the presented trading strategy appears very lucrative in the Black-Scholes-Merton (BSM) framework. In fact, it is that to such an extent that the BSM model turns out to be, in a sense, incompatible with the Capital Asset Pricing Model (CAPM). Second, if one wishes to adapt these models together, then the adjustment of the consistent pricing rule (i.e. modifying state price densities) inevitably leads to some form of volatility smile, which is the main point of the paper. Moreover, these observations arise from purely structural considerations and only one hypothetical equity or equity index with many European options on it (such as S&P500) is required.

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