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“Capital Minimization as a Hedging Criterion”  

The theory of two price markets of Cherny and Madan (2010) yields closed forms for bid and ask prices. Defining profits as the difference between the mid quote and the risk neutral expectation and capital as difference between the ask and the bid price one obtains precise expressions for these entities and thereby also returns. New expressions are developed for the bid and ask prices in terms of the sensitivity of the inverse distribution function to the quantile level. The latter turns out to be a measure of risk exposure at the quantile level. The theory is illustrated on unhedged exposures in the Black Merton Scholes model, followed by variance swaps and call options for variance gamma underliers. It is argued that markets should economize capital and furthermore the maximization of expected utility may involve an uneconomic use of capital. We further observe that stock positions should be revised downwards from zero delta in left skewed markets in response to the target gamma when minimizing capital commitments.