

**Title:**

Lévy-VaR and Basle Multipliers

**Topic:**

Solvency, guarantees and risk capital

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**Abstract:**

The Basle Capital Accord issued from the Basle Committee on Banking supervision has imposed a multiplier between 3 and 4 on the bank's internal 10-day Value-at-Risk calculated for market risk exposure. This ad hoc factor has not been fully explained and is poorly justified by arguing that the standard classical models of stock price dynamics do not adequately capture actual market risks. In this paper, we tackle this issue by adopting a probabilistic framework based on Lévy processes with both finite and infinite activity, but with finite variation. We accommodate bank regulator concerns with several types of Lévy processes which allow to exhibit a factor 3 between Brownian-VaR and Lévy-VaR, and we show that the Lévy-VaR is more consistent with the reality of market risk. On the technical side our paper provides a new general Fourier formula that allows to compute VaR quickly and efficiently as soon as the characteristic function of the process under study is known, so for a wide class of stochastic processes. Our study can be of interest for the computation of Solvency Capital Requirements in the context of the preparation of Solvency 2.