Study of nonlinear Value at Risk using quadratic forms

Bachelor Thesis

at the

Swiss Banking Institute (ISB)
of the University of Zürich

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Handing date: January 11th 2008

Executive Summary

This thesis shows that the use of second order approximation (delta-gamma method) to the relation between asset values and risk factors gives better results than simple linear approximation (delta-normal method). Using quadratic forms is computer intensive. It can be shown that the delta-gamma method follows a non-central chi-squared distribution. Applying now the saddlepoint approximation offers a way to increase the speed of the calculations without loss of accuracy.