The Iterated Tail Conditional Expectation for the Log-Elliptical Loss Process^{*}

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Abstract

This paper derives the analytic form of the Iterated Tail Conditional Expectation (ITCE) risk measure in the case of a log-elliptical loss process. The ITCE has been suggested by Hardy and Wirch (2003) as a dynamic risk measure designed to cover multi-period loss processes. This risk measure allows for explicit allowance of losses to evolve over time and the idea is to apply a repeated calculation of the static Tail Conditional Expectation (TCE) risk measure by backwards induction. Hardy and Wirch (2003) derived the case of the log-Normal loss process. In this paper, we are able to exploit the properties of the elliptical distributions similar to the Normal distribution in order to derive an explicit form in computing the iterated TCE. In particular, the *cumulative generator* defined in an earlier paper by Landsman and Valdez (2003) plays an important role in the process of developing these explicit forms.

References

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^{*}Keywords: log-elliptical distributions, tail conditional expectations, dynamic risk measures, and coherent risk measures.