

Give Credit where Credit is due: Operational Risk goes Bayesian

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Abstract

Under the new regulatory standards Basel II and Solvency 2, many financial institutions adopt a Loss Distribution Approach (LDA) to estimate the operational risk capital charge.

Such an approach requires the combination of internal and external data with expert opinion in an adequate manner. In this article we present a consistent and unified way how this task can be fulfilled. The simultaneous consideration of the three different sources of information is done in a Bayesian inference model.

The main idea is to start with external market data which determines a prior estimate. This prior estimate is then modified according to internal observations and expert opinion leading to a posterior estimate. Risk measures as for instance Value-at-Risk and Expected Shortfall may then easily be inferred from this posterior knowledge.

Keywords: Advanced Measurement Approach, Basel II, Bayesian Inference, Loss Distribution Approach, Operational Risk, Quantitative Risk Management, Solvency 2.

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