

# Discussion of Georges Dionne and Hela Dahen - What about Underevaluating Operational Value at Risk in the Banking Sector

by  
Stefan Ruenzi

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# Motivation & Problem Setting

Goal: Develop a meaningful operational VaR

Problem:

- More realistic modelling of distribution of operational losses is required
  - Operational losses are infrequent, but often extreme
- Modelling is non-trivial

Standard Solution:

- Assumptions: lognormal severity distribution; frequency distribution Poisson
  - Neglects data that fall below the collecting threshold
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# 3-Step Approach

For each type of operational risk...

- damage to physical assets (DPA)
- clients, products, and business practices (CPBP)
- employment, practices, and workplace safety (EPWS)
- external fraud (EF)
- internal fraud (IF)
- execution, delivery, and process management (EDPM)

- 1 estimate the Severity Distribution
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    - 1 Further split body of distribution in left wing & center
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- 3 in all other cases (modelling body or splitting up in left wing & center) GB2 offers best results.
- 4 Optimal frequency choice for the frequency distribution varies across op risk types.
- 5 Op VaR based on Dionne/Dahen approach deviates significantly from standard approach op VaR.
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- Is the occurrence of various types of op risks correlated? And if so, how is/could this be taken into account by the Dionne/Dahen approach?
- Which component of the modelling brings the greatest advantage as compared to the standard approach (possible approach: Start with the most complex case (EDPM) and then check how op VaR changes if modelling is changed step-by-step for *this* type of risk)
- Can the distributional characteristics of the various risk types be explained by economic considerations? (distinction between risks related to agency problems and related to operating technology might provide a starting point; see Jarrow (2007)).

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What are potential (policy/regulatory) implications of the findings?

- How should collection thresholds be regulated?
  - Assume various, higher levels for  $s$  to determine the potential impact of the recording threshold.
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# Minor Suggestions, Questions, & Editorial Comments

- Jarrow (2007) argues that necessary economic capital for op risks is surprisingly large. Your method would indicate even higher required capital (as compared to the standard method). Is this of any concern or is the implied economic capital still reasonable?
- How sensitive do you think are the results to the specific bank data you use (are methods/results representative)?
- What is the specific  $s$  for the various op risk categories?
- Mention what GB2 stands for
- Daily data from Table 1b are not explicitly referred to in the text
- It could be mentioned on p. 18 that GB2 is again chosen based on the goodness of fit results (from Table A4c)
- In my version, there was no chapter 5.4
- Table with overview of results (which distribution for which risk type) and flow-chart (road map on how to best model distribution) would help readers unfamiliar with the topic.
- What motivates the selection of the four distributions tested (for the body of the severity distribution)? Are there other potential candidates?

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