

Accepted Manuscript

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Marc Gürtler , Martin Thomas Hibbeln , Piet Usselman

PII: S0378-4266(17)30054-7  
DOI: [10.1016/j.jbankfin.2017.03.004](https://doi.org/10.1016/j.jbankfin.2017.03.004)  
Reference: JBF 5107



To appear in: *Journal of Banking and Finance*

Received date: 14 January 2016  
Revised date: 17 February 2017  
Accepted date: 3 March 2017

Please cite this article as: Marc Gürtler , Martin Thomas Hibbeln , Piet Usselman , Exposure at Default Modeling – A Theoretical and Empirical Assessment of Estimation Approaches and Parameter Choice, *Journal of Banking and Finance* (2017), doi: [10.1016/j.jbankfin.2017.03.004](https://doi.org/10.1016/j.jbankfin.2017.03.004)

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# Exposure at Default Modeling – A Theoretical and Empirical Assessment of Estimation Approaches and Parameter Choice

Marc Gürtler <sup>a</sup>, Martin Thomas Hibbeln <sup>b</sup>, Piet Usselman <sup>a,\*</sup>

<sup>a</sup> *University of Braunschweig - Institute of Technology, Germany*

<sup>b</sup> *University of Duisburg-Essen, Germany*

## Abstract

Estimating the credit risk parameter exposure at default is important for banks from an internal risk management and a regulatory perspective. Several approaches are common in the literature and in practice. We theoretically and empirically analyze how the exposure at default should be modeled to obtain accurate estimates of the expected loss. Our empirical analysis is based on a large and unique dataset from a retail portfolio of a European bank. We demonstrate that some approaches can lead to substantially biased estimates of the expected loss and show that the generalized cohort approach is advantageous. Moreover, using in- and out-of-sample analyses, we empirically demonstrate that using the credit conversion factor is preferable to the loan equivalent factor, exposure at default factor, and direct exposure at default estimation to achieve high estimation accuracy.

*Keywords:* Credit risk, checking accounts, exposure at default, credit conversion factor, probability of default

*JEL classification:* G21, G28

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\* Corresponding author: Piet Usselman; Technische Universität Braunschweig; Abt-Jerusalem-Str. 7, 38106 Braunschweig, Germany; Phone: +49 531 391 2894; E-mail: p.usselman@tu-bs.de.

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