ROLLING WINDOW VaR: AN EVT APPROACH

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Please cite this article as:

Rusu, A., 2020. Rolling window VaR: an EVT approach. *Review of Economic Studies and Research Virgil Madgearu,* 13(2), pp.147-168.
doi: 10.24193/RVM.2020.13.66.

Article History:

Received: 5 September 2020
Accepted: 23 September 2020

Abstract: *In this study, a method of estimating value-at-risk is proposed. This method combines elements of extreme value theory (EVT), the APARCH model (Ding et al. 1993) and the rolling window method. The research was conducted using 20 stock market indexes worldwide during 2006-2019. Value-at-risk was estimated via 12 competing models which were evaluated using 5 tests. The back testing results indicate that the best model was the one which takes into consideration the asymmetric character of financial data (APARCH with skewed normal distribution), the Generalized Pareto Distribution for modeling the tail of the financial returns distribution and the rolling window approach. The methodologies discussed in this paper could provide a useful tool for both financial entities and regulatory authorities.*

Key words: *Value-at-risk; APARCH; Generalized Pareto Distribution; Back testing*
JEL Classification: *C58; G11; G15; G17*

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