Applied Economics ›
Volume 47, 2015 - Issue 8

Original Articles

What should the value of lambda be in the exponentially weighted moving average volatility model?

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Pages 853-860 | Published online: 24 Nov 2014

Cite this article https://doi.org/10.1080/00036846.2014.982853

Abstract

Forecasting volatility is fundamental to forecasting parametric models of value-at-risk. The exponentially weighted moving average (EWMA) volatility model is the recommended model for forecasting volatility by the Riskmetrics group. For monthly data, the lambda parameter of the EWMA model is recommended to be set to 0.97. In this study, we empirically investigate if this is the optimal value of lambda in terms of forecasting volatility. Employing monthly realized volatility as the benchmark for testing the value of lambda, it is found that a value of lambda of 0.97 is far from optimal. The tests are robust to a variety of test statistics. It is further found that the optimal value of lambda is time varying and should be based upon recent historical data. The article offers a practical method to increase the reliability and accuracy of value-at-risk forecasts that can be easily implemented within an Excel spreadsheet.

Keywords: EWMA volatility lambda value-at-risk

JEL Classification: C5 F37

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Notes

[1] See http://research.stlouisfed.org/fred2/series/SP500/downloaddata