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Coherent risk measures under filtered historical simulation

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Title:	**Coherent risk measures under filtered historical simulation**
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Abstract:	Recent studies have strongly criticised conventional VaR models for not providing a coherent risk measure. Acerbi provides the intuition for an entire family of coherent measures of risk known as "spectral risk measures" [Spectral measures of risk: A coherent representation of subjective risk aversion. Journal of Banking and Finance 26 (7) (2002) 1505–1518]. In this study we illustrate how the Filtered Historical Simulation [Barone-Adesi, G., Bourgoin, F., Giannopoulos, K., 1998. Don't look back. Risk 11, 100–104; Barone-Adesi, Giannopoulos, K., Vosper, L., 1999. VaR without correlations for non-linear portfolios. Journal of Futures Markets 19, 583–602], can provide an improved methodology for calculating the Expected Shortfall. Thereafter, we prove that these new risk measures are spectral and are coherent as well, following Acerbi. Furthermore, we provide the statistical error formula that allows to calculate the error for our model.