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*DOWD (2000)*  
*REWARD-TO-VALUE-AT-RISK RATIO*

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*Description of the Measure:*

Based on a quantile model, Dowd (2000) introduces a performance measure that adjusts the expected excess return of the investor's portfolio by the  $\alpha$ -Value-at-Risk ( $\alpha$ -VaR) of the portfolio return distributions.

*Interpretation:*

This ratio allows the investor to gauge the performance of the managed portfolio rescaled by a measure of extreme risk, instead of total risk.

Note that the Value-at-Risk is widely used in finance and insurance for capital and risk management. However, in recent years, it has been criticized following Artzner *et al.* (1999) who showed that VaR does not have, theoretically, all the four coherence properties (translation invariance, monotonicity, sub-additivity, positive homogeneity). Those properties are required for any "good" risk measure. In particular, VaR does not respect the sub-additivity principle.

*Formula:*

$$RVaR_p = [E(r_p) - r_f] \times |VaR_{r_p, \alpha}|^{-1}.$$

*References:*

Dowd K., (2000), "Adjusting for Risk: An improved Sharpe Ratio, *International Review of Economics and Finance* 9(3), 209–222.