

Preparing for class 6: References for Comparing risk measures

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Comparing risk measures

- There is no direct measure of risk which makes comparing alternative risk measures difficult.
How can you tell you have the best measure?
- One starting point: a good measure of risk must be useful to forecast VaR accurately.
- Testing VaR forecast performance requires a statistical framework.
Standard rules: good forecast errors (model against observed) must (a) be close to zero and (b) have the smallest MSE.
- Complication in risk/volatility measures:
 - 1 volatility is known to have dependencies.
 - 2 Forecast performance differ depending upon the context.
- Alternative framework: good risk measures must generate “optimal portfolios” (measured by Sharpe’s Ratio).

- VaR comparisons

- ① P. F. Christoffersen, “Evaluating interval forecasts”, *International Economic Review*, 1998, 39: 841–862.
- ② J. A. Lopez, “Methods for evaluating Value-at-Risk estimates”, *Federal Reserve Bank of San Francisco Economic Review*, 1999, 2: 3-17.
- ③ M. Sarma, A. Shah and S. Thomas, “Selection of Value-at-Risk models”, *Journal of Forecasting*, 2003, 22: 337-358.

- Portfolio optimisation comparisons

- ① L. K. C. Chan, J. Karceski and J. Lakonishok, “On portfolio optimisation: Forecasting covariances and choosing the risk model”, *The Review of Financial Studies*, 1999, 12 (5): 937-974.
- ② R. F. Engle and K. Sheppard, “Evaluating the specification of covariance models for large portfolios”, *Working Paper*, 2008.