

Risk and Performance Measure Standard Errors

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R in Finance Conference, 2017

Risk and Performance Measure Estimators are Random Variables

- The true values of risk and performance measures are almost never known
- Estimators are *random variables*
- Bias: Expected Value of Estimator - True Value, well understood
- Variance: Dispersion of the Estimators, often ignored

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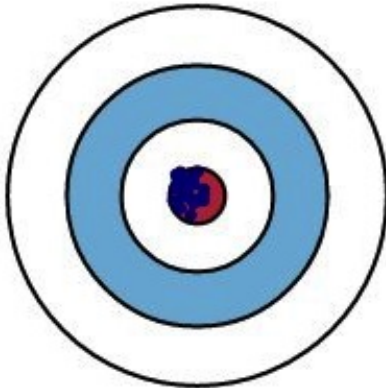
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SE is important, but often ignored

Low Variance



High Variance

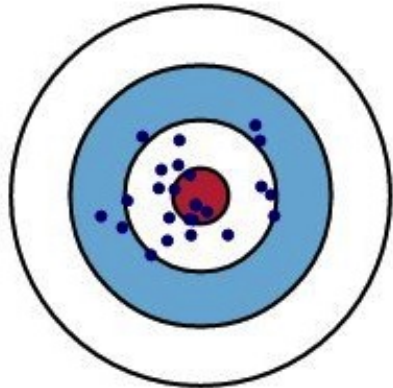


Figure: Bias and Variance of Estimators

Example with Hedge Fund Returns Data

##	ES	IFiid	IFcor	BOOTiid	BOOTcor
## CA	-0.049	(0.018)	(0.027)	(0.013)	(0.02)
## CTAG	-0.045	(0.004)	(0.004)	(0.004)	(0.004)
## DIS	-0.043	(0.013)	(0.013)	(0.011)	(0.013)
## EM	-0.089	(0.024)	(0.024)	(0.023)	(0.022)

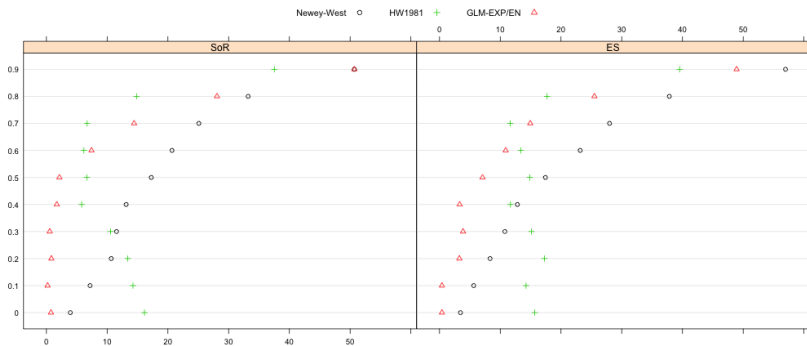


Figure: Absolute Percentage Difference of Estimated Standard Errors

Summary and Future Work

- We have introduced a new method to compute risk/performance estimator standard errors
- Available at <https://github.com/chenx26/EstimatorStandardError>
- Efficient Implementation with Rcpp in GSoC 2017

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