
Volatility
Historical Returns?
No
Implied Vol.
Forward-based
Model-based
Yes, Historical
How are historical returns weighted?
Equal (Un-) Weighted Returns
Constant Volatility: GBM → BSM.
Does not model heavy tails.
Linda Allen STDEV & Jorion's Moving Average (MA)
More Weight Given to Recent Returns
ARCH(m)
Time-varying Volatility
GARCH(1,1)
EWMA
RiskMetrics™
Long-run Average
Lagged Variance
Lagged Return^2
Tim-vary variance = unconditional heavy tails
Forecasts Vol
Does not forecast*
A-GARCH
Non-normal GARCH
Economic State (kernel function)
Multivariate density estimation (MDE)
Was day like (not like) today? Give more (less) weight!