

Statement of the formulas used to calculate performance and risk metrics:

Fund Statistics
Standard Deviation
Formula: $\sigma = \sqrt{(\sum (R_i - \bar{R})^2 / (N - 1))}$
σ → Standard deviation
R_i → Return in each period
\bar{R} → Average return
N → Number of periods
Sharpe Ratio
Formula: $\text{Sharpe} = (R_p - R_f) / \sigma_p$
• R_p → Portfolio return
• R_f → Risk-free rate
• σ_p → Standard deviation of portfolio returns
Beta
Formula: $\beta = \text{Cov}(R_p, R_m) / \text{Var}(R_m)$
β → Sensitivity of the fund to market movements
R_p → Portfolio return
R_m → Market return
Cov → Covariance between portfolio and market returns
Var → Variance of market returns
Tracking Error
Formula: $\text{TE} = \sqrt{(\sum (R_p - R_m)^2 / (N - 1))}$
TE → Tracking Error
R_p → Portfolio return
R_m → Market return
N → Number of periods
Information Ratio
Formula: $\text{IR} = (R_p - R_m) / \text{TE}$
IR → Information Ratio
R_p → Portfolio return
R_m → Market return
TE → Tracking Error
Alpha
Formula: $\text{Alpha} = \Delta R_p - \Delta R_m$
Alpha → Excess performance of the fund over the benchmark
ΔR_p → Change in portfolio return
ΔR_m → Change in market return