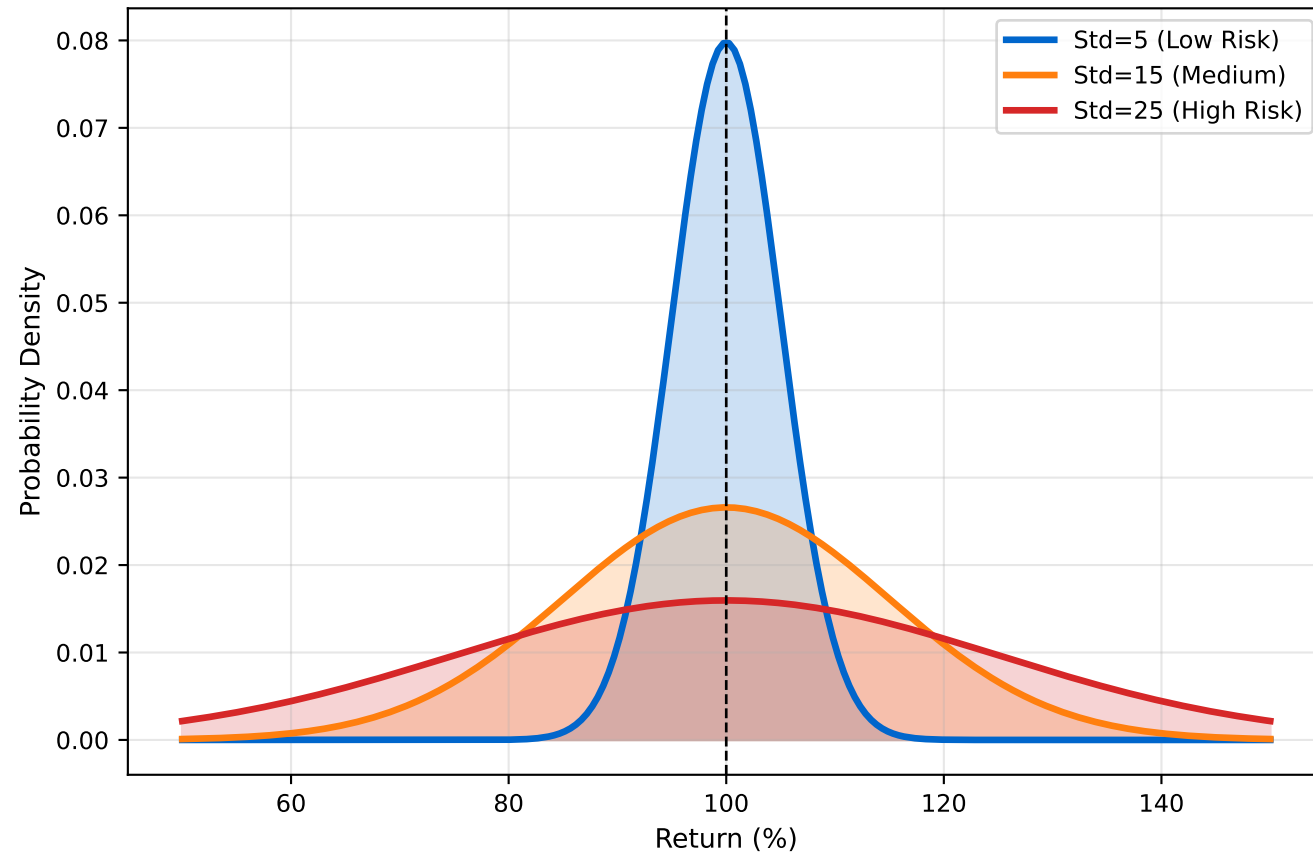
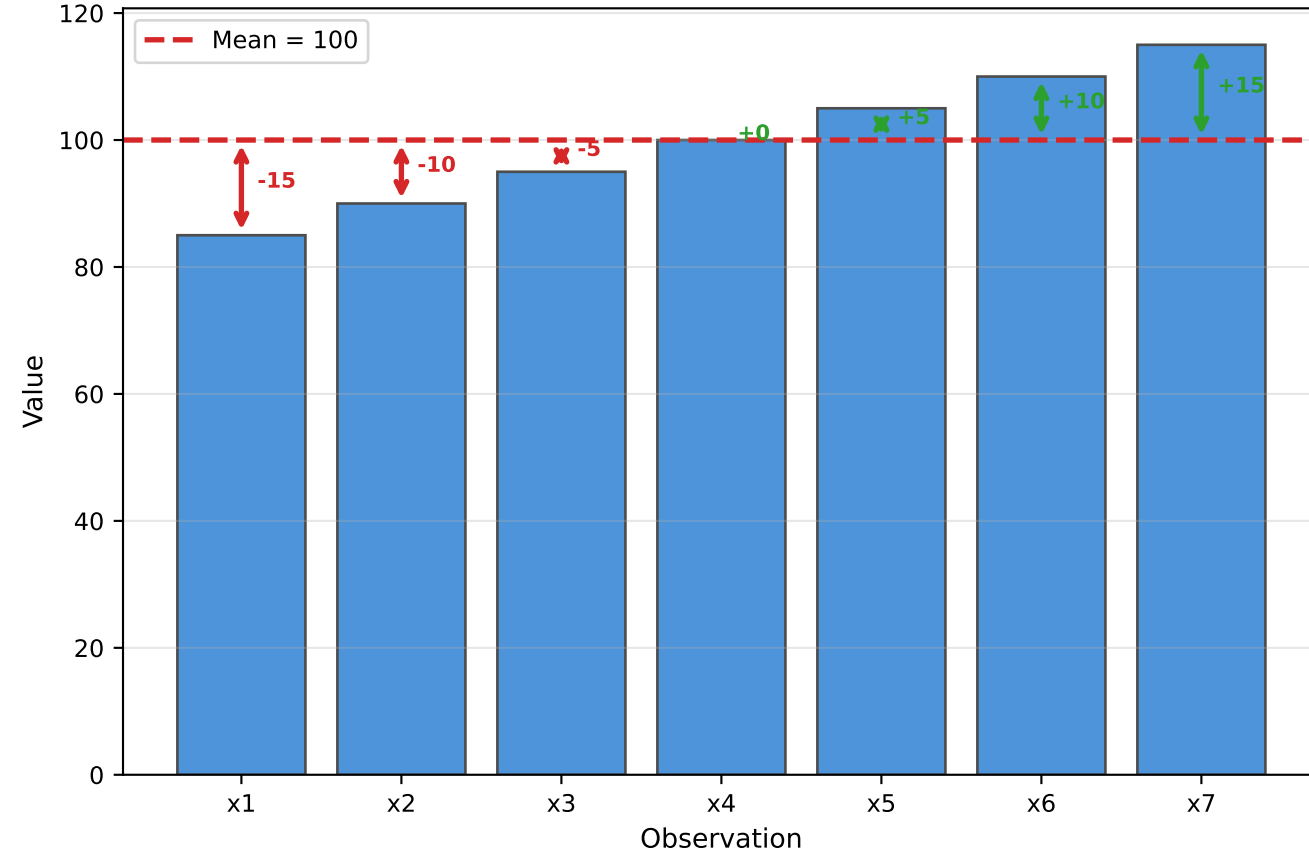


Measures of Dispersion

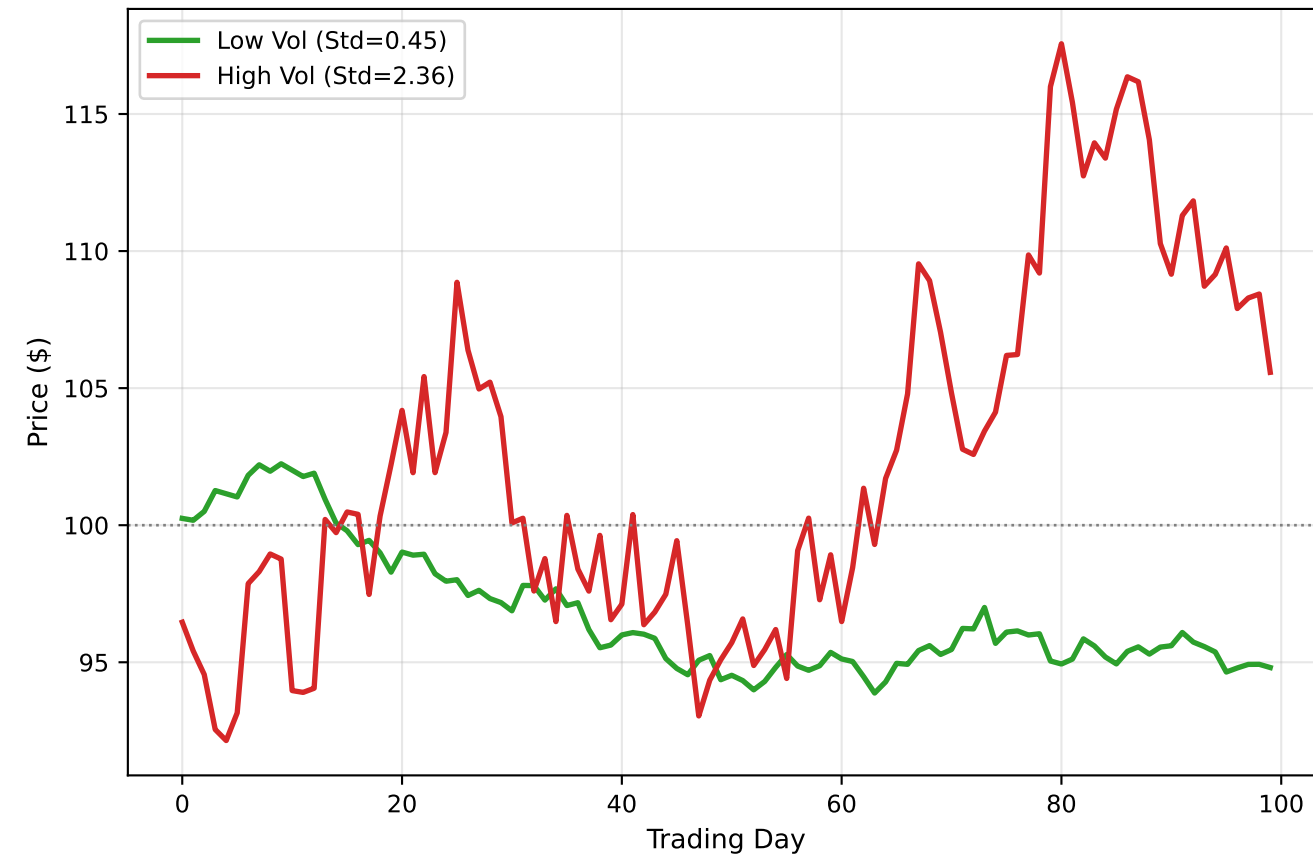
Same Mean (100), Different Standard Deviations



Deviations from Mean (Var = 100)



Two Stocks: Same Starting Point, Different Volatility



Dispersion Measures

Range: $\max(x) - \min(x)$
Simplest measure, sensitive to outliers

Variance (population): $\text{Var} = (1/N) * \sum((x_i - \text{mean})^2)$
Average squared deviation

Standard Deviation: $\text{Std} = \sqrt{\text{Var}}$
Same units as data

Coefficient of Variation: $\text{CV} = \text{Std} / \text{Mean}$
Relative dispersion

In Finance: Std Dev = Volatility = Risk