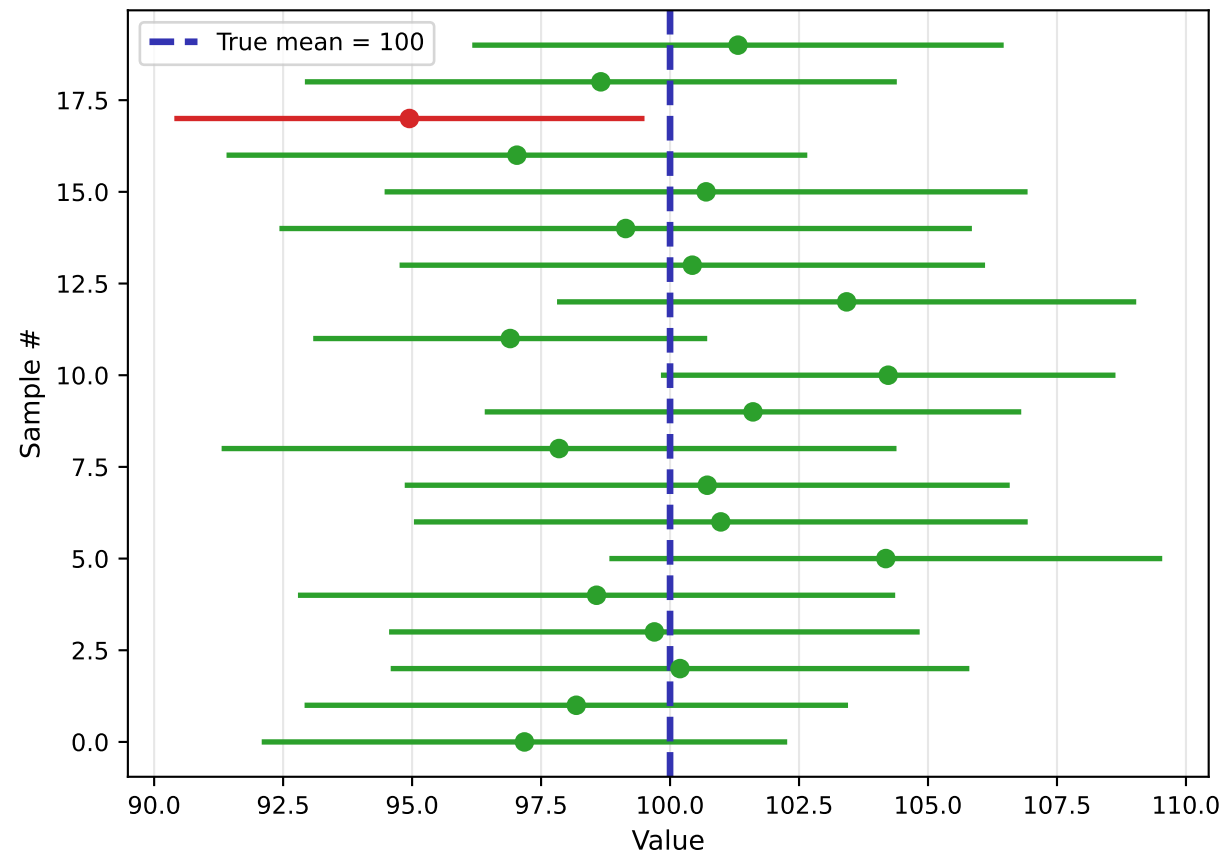
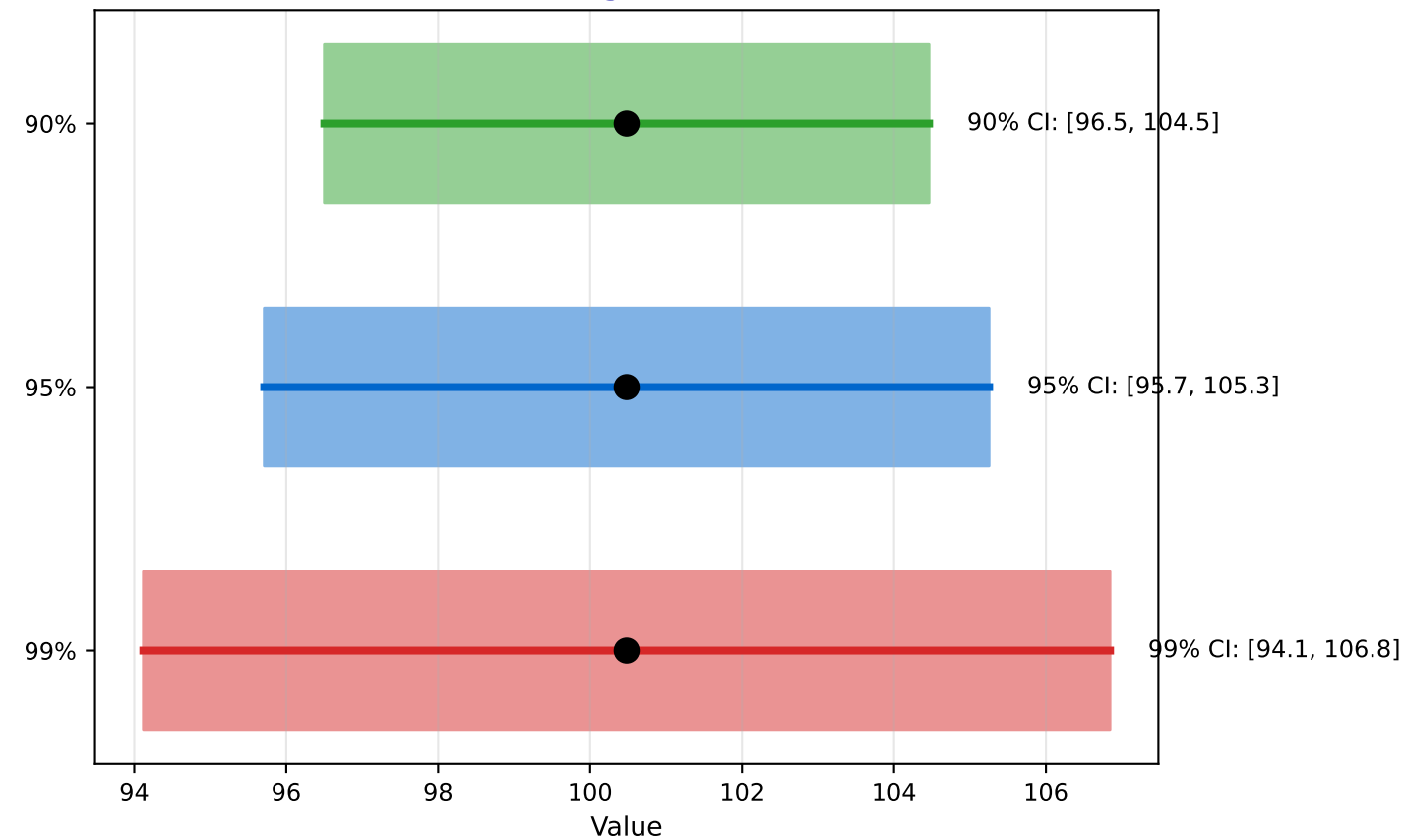


## Confidence Intervals

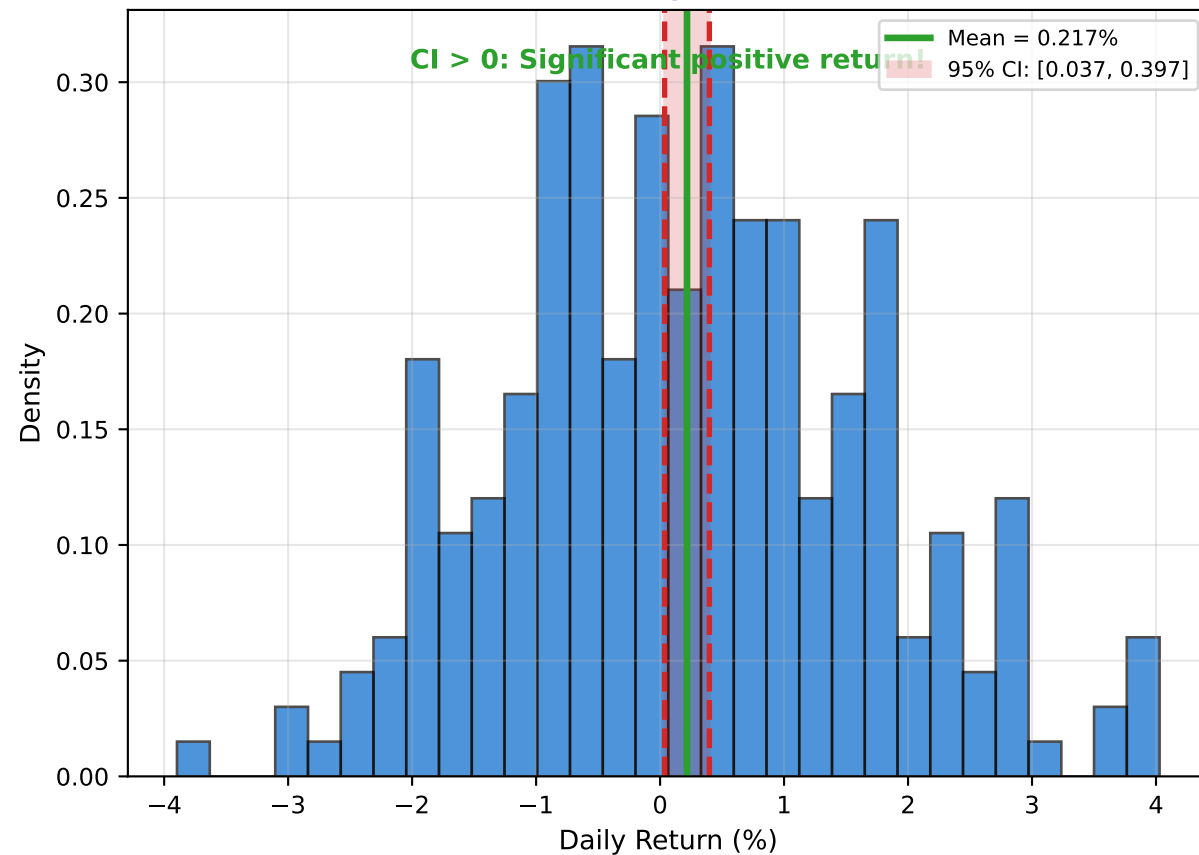
95% CIs: 19/20 contain true mean



Wider CI = Higher Confidence



95% CI for Daily Return Mean



## Confidence Interval Formula

$$CI = \text{sample\_mean} \pm t\_critical * (\text{std} / \text{sqrt}(n))$$

### 95% CI means:

If we repeated sampling 100 times,  
~95 of the CIs would contain the true mean

### CI width depends on:

1. Confidence level (higher = wider)
2. Sample size (larger = narrower)
3. Variability (higher = wider)

### CI vs p-value:

If 95% CI excludes H0 value,  
then p-value < 0.05