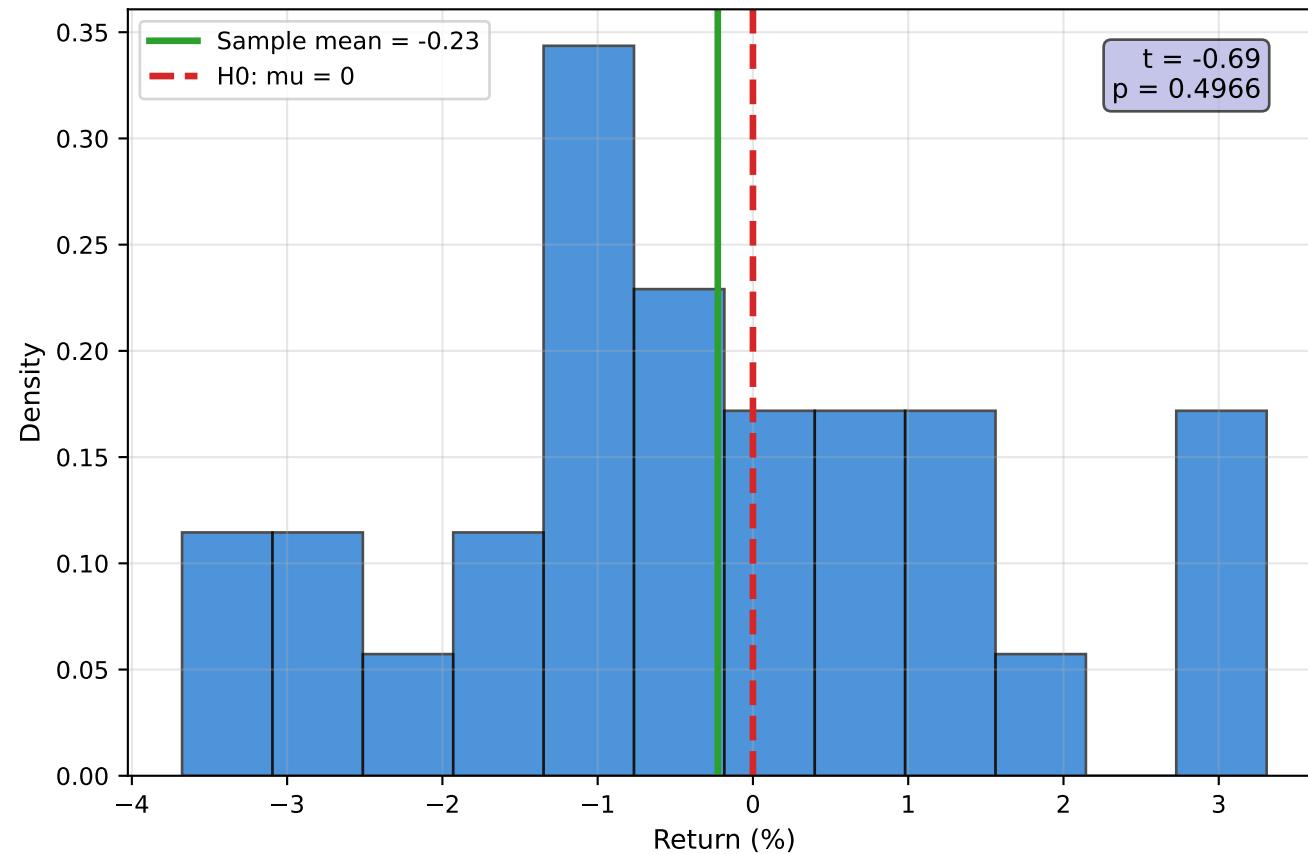
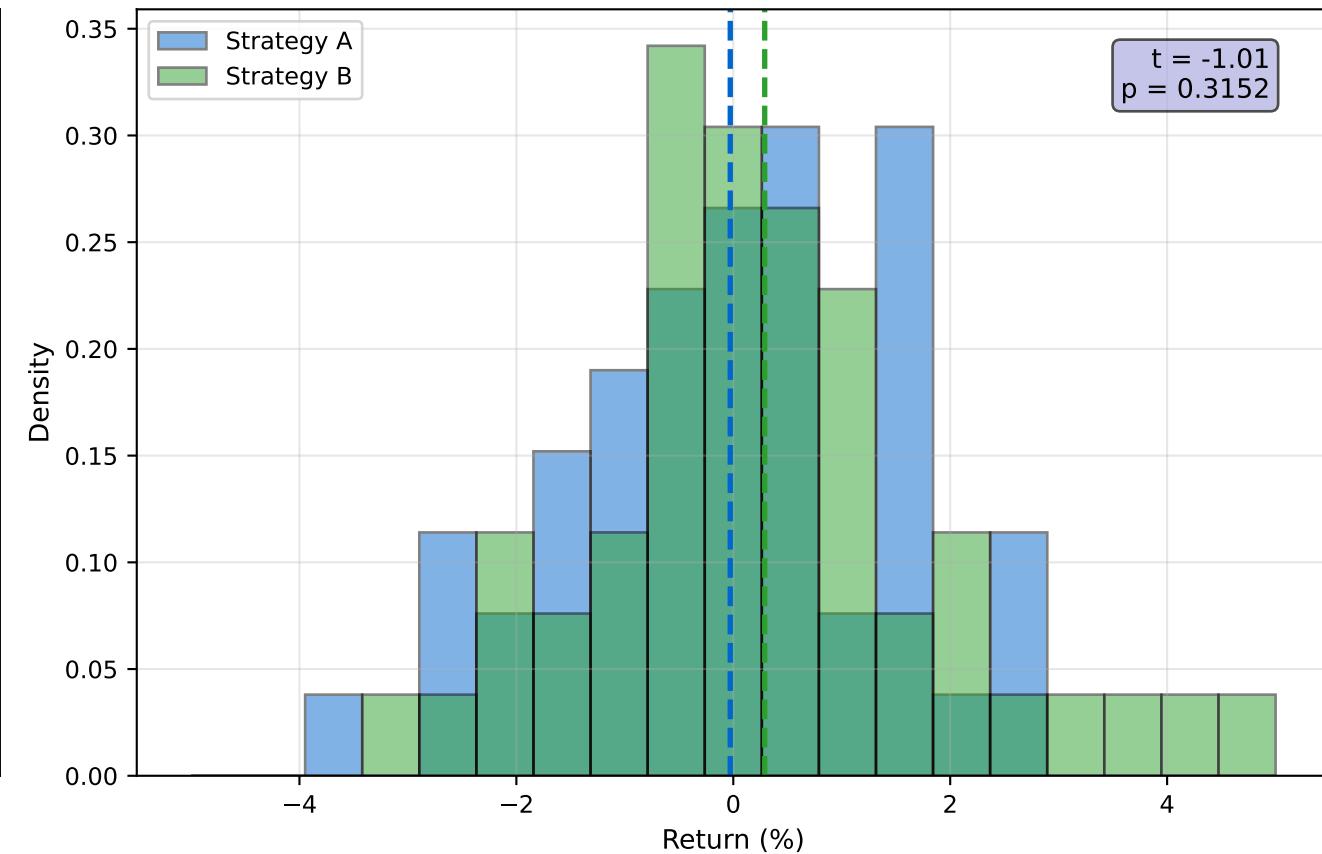


# T-Tests: Comparing Means

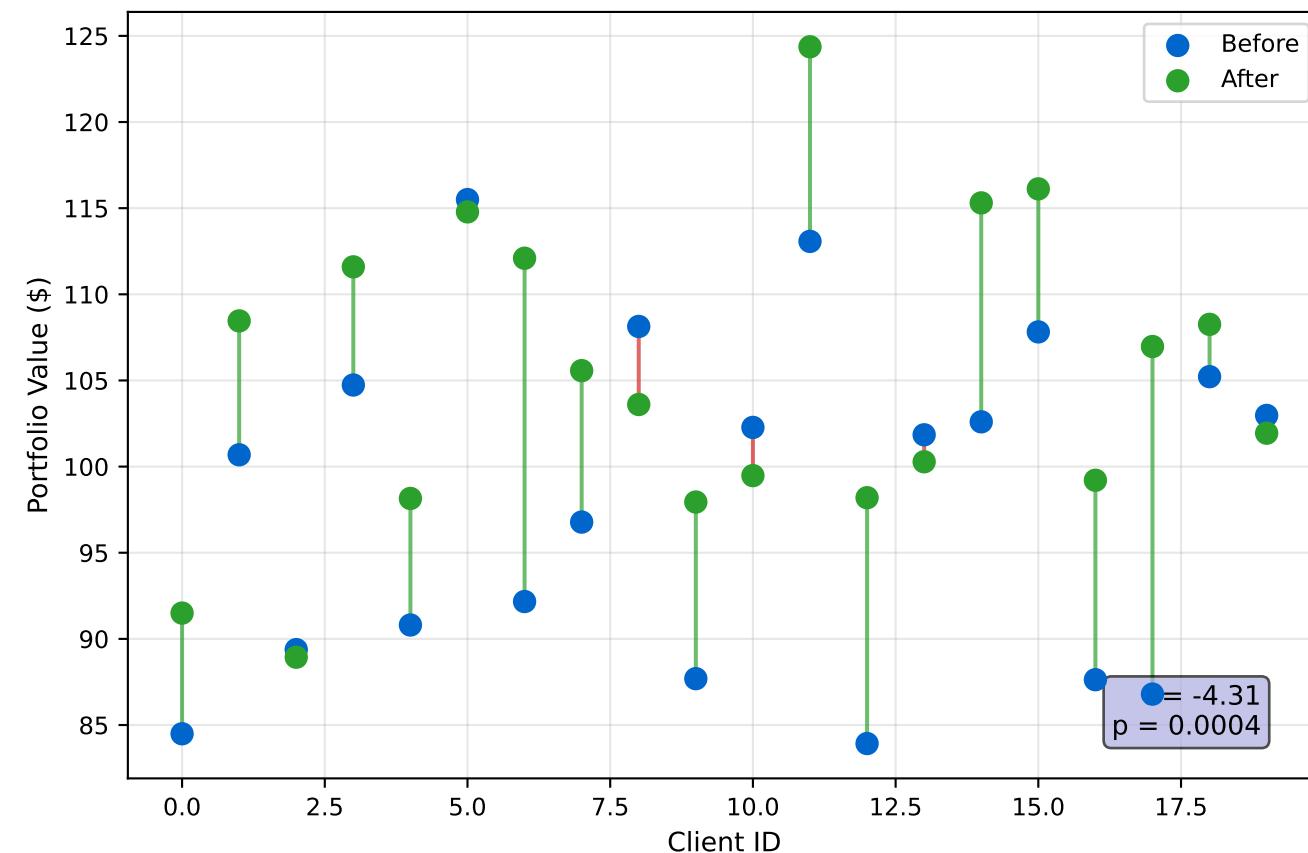
## One-Sample T-Test: Is mean != 0?



## Two-Sample T-Test: Are means different?



## Paired T-Test: Before vs After



## T-Test Summary

**One-Sample:** `stats.ttest_1samp(sample, mu0)`  
Compare sample mean to known value

**Two-Sample:** `stats.ttest_ind(sample1, sample2)`  
Compare means of two groups

**Paired:** `stats.ttest_rel(before, after)`  
Compare paired observations

**Welch:** `stats.ttest_ind(..., equal_var=False)`  
Unequal variances

Assumptions: Normal distribution (or large n > 30)

For non-normal: use Mann-Whitney U or Wilcoxon tests