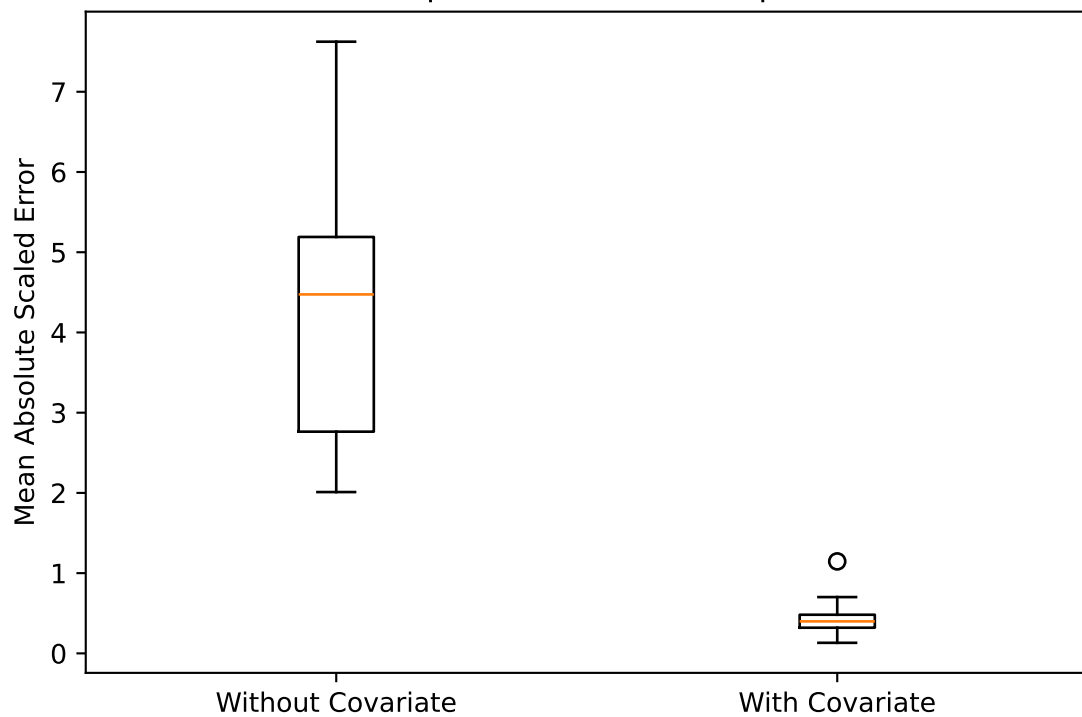
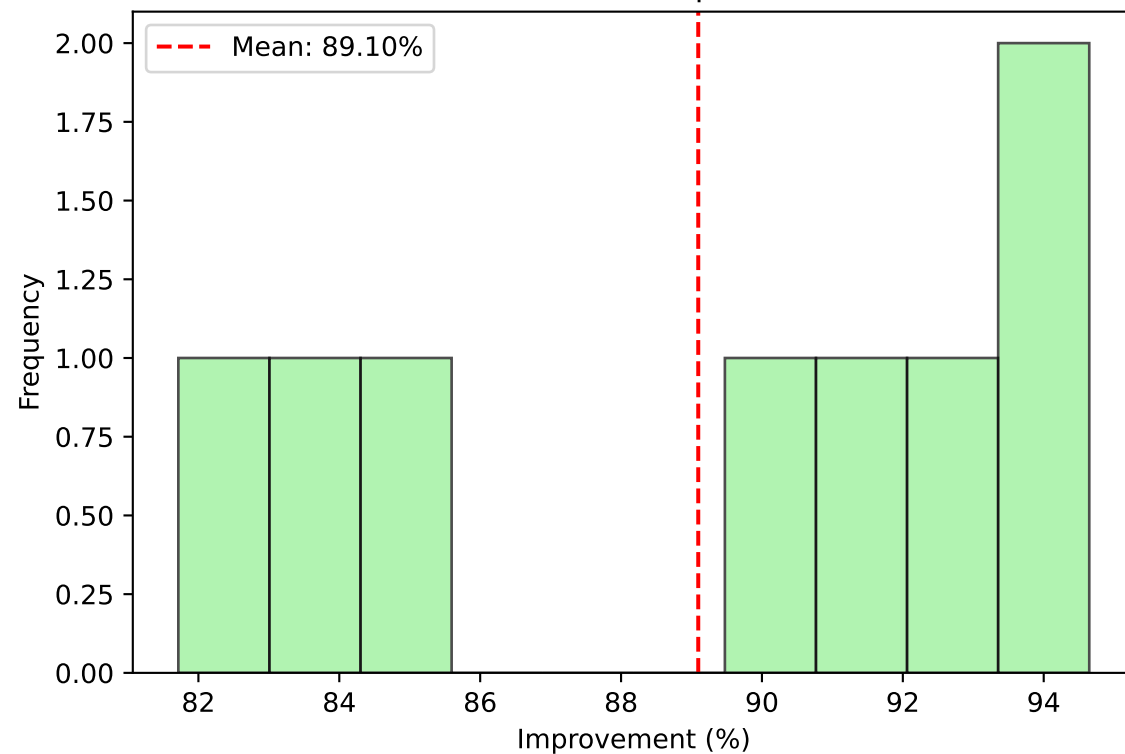


Covariate Study Summary: Ar1, Steps, Ramps

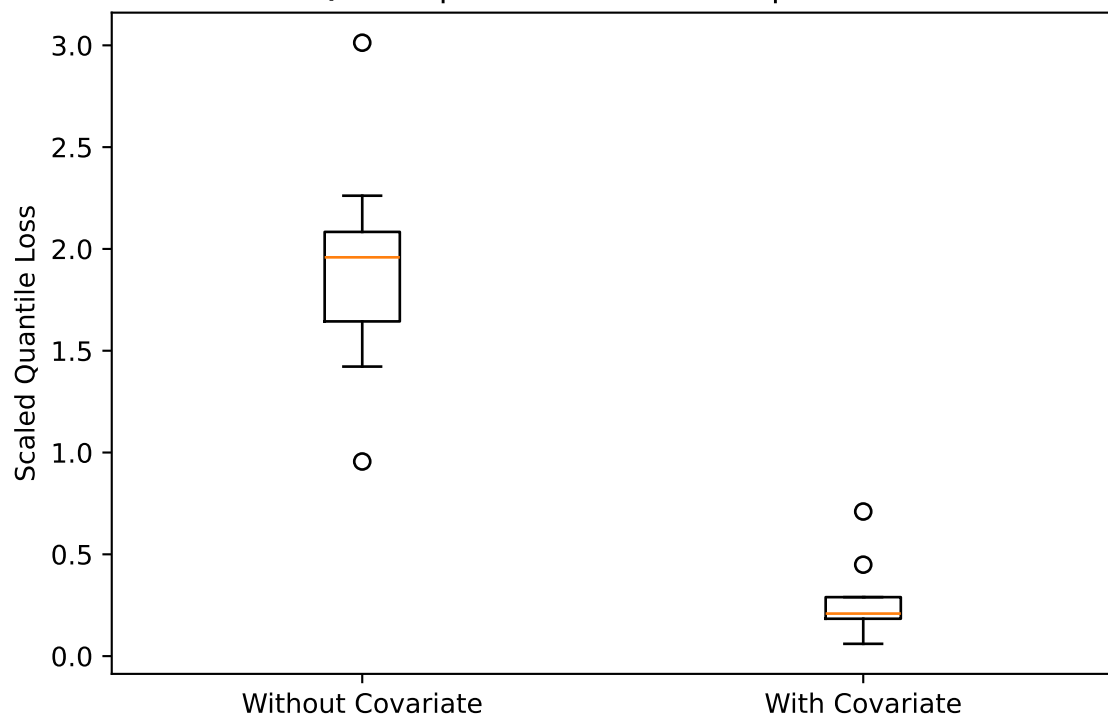
MASE Comparison Across All Experiments



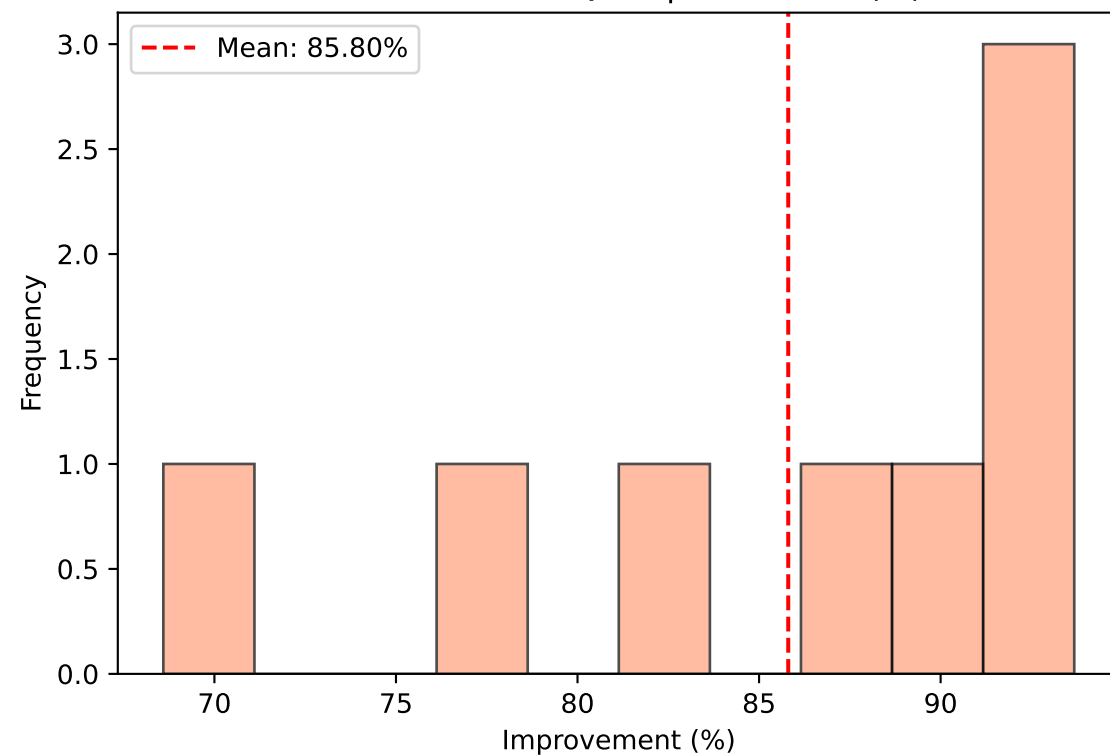
Distribution of MASE Improvements (%)



SQL Comparison Across All Experiments



Distribution of SQL Improvements (%)



Detailed Statistics

Covariate Study Detailed Results
Covariate Types: ar1, steps, ramps
Number of Experiments: 8

MASE Results:

- Without Covariate: 4.3778 ± 1.7977
- With Covariate: 0.4760 ± 0.2937
- Average Improvement: 89.10%
- Median Improvement: 90.40%

SQL Results:

- Without Covariate: 1.9140 ± 0.5640
- With Covariate: 0.2775 ± 0.1930
- Average Improvement: 85.80%
- Median Improvement: 88.64%

Study Parameters:

- Weight: 1.0
- Relation: additive
- Train Ratio: 0.6
- Covariate Weights: Randomized per experiment (Dirichlet distribution)

Best Performing Experiment (MASE):

- Experiment 3: 94.65% improvement

Worst Performing Experiment (MASE):

- Experiment 4: 81.72% improvement