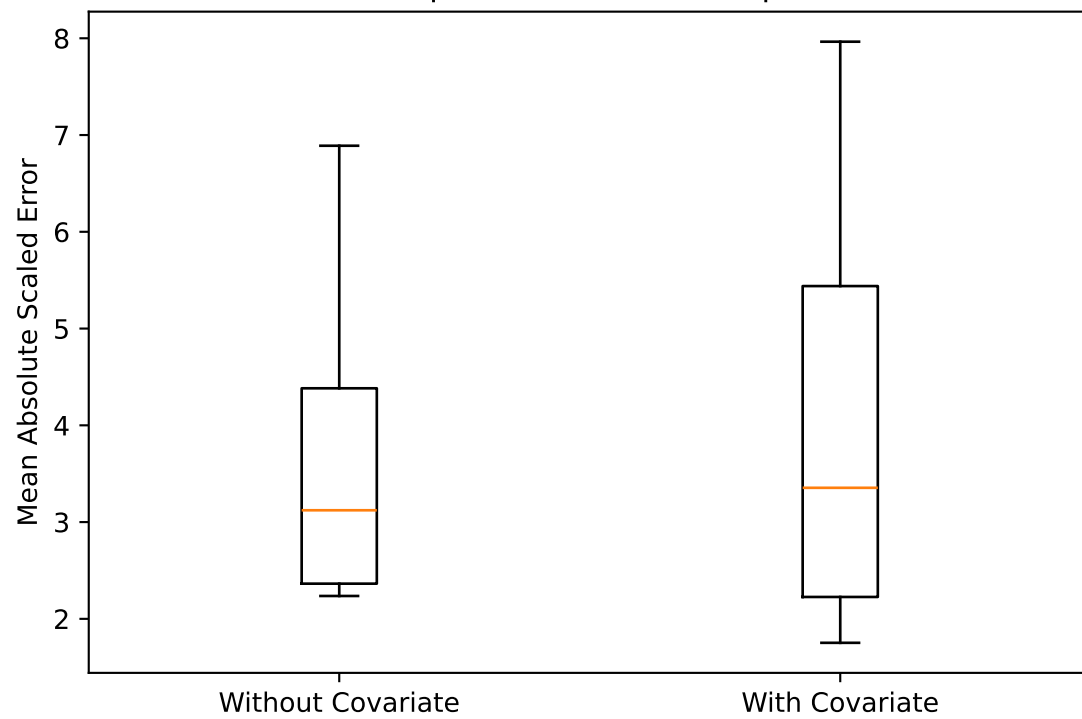
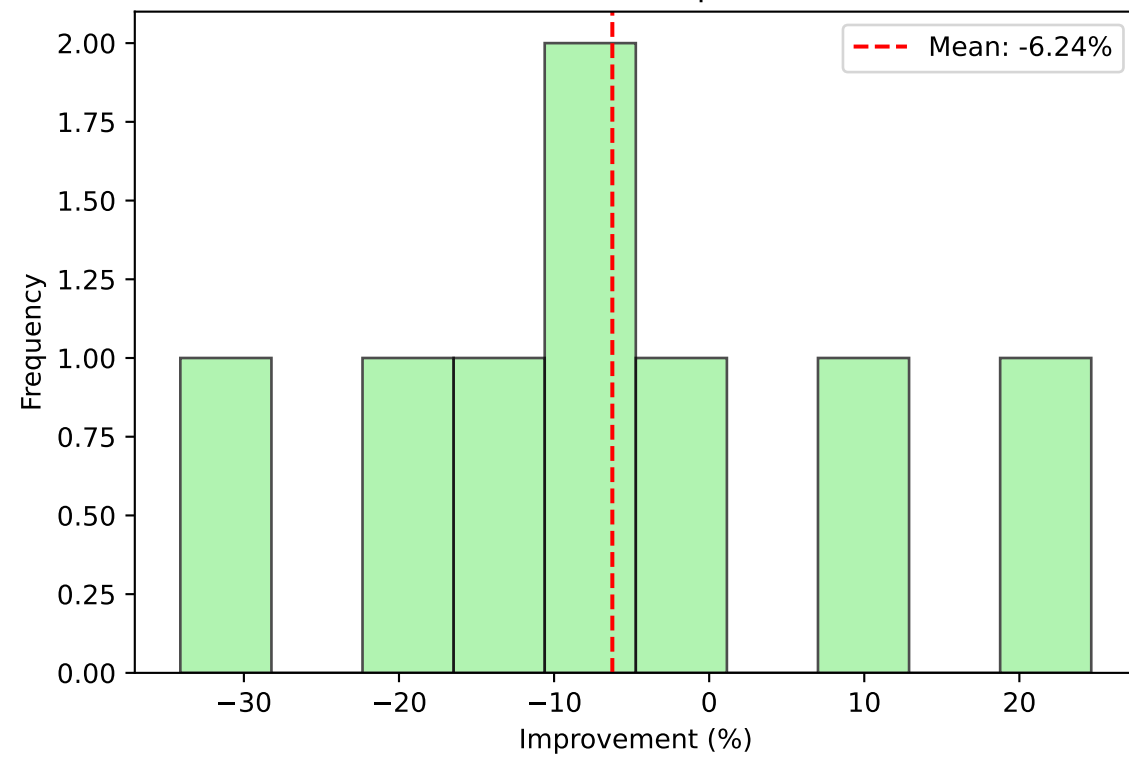


# Covariate Study Summary: Linear Trend

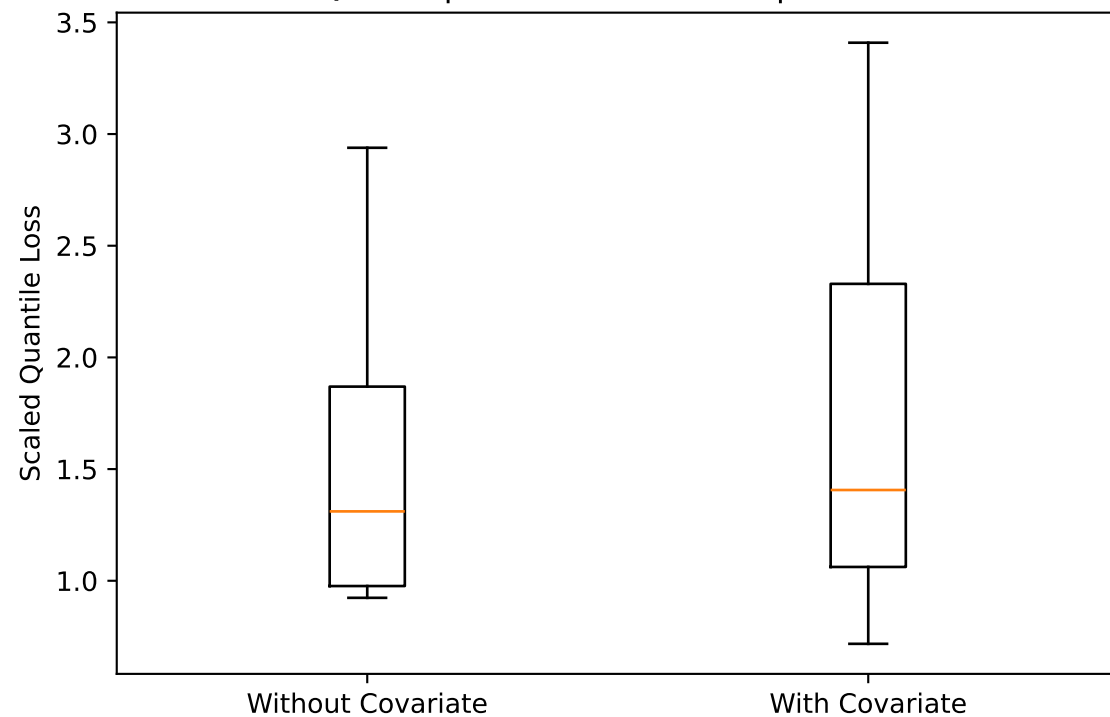
## MASE Comparison Across All Experiments



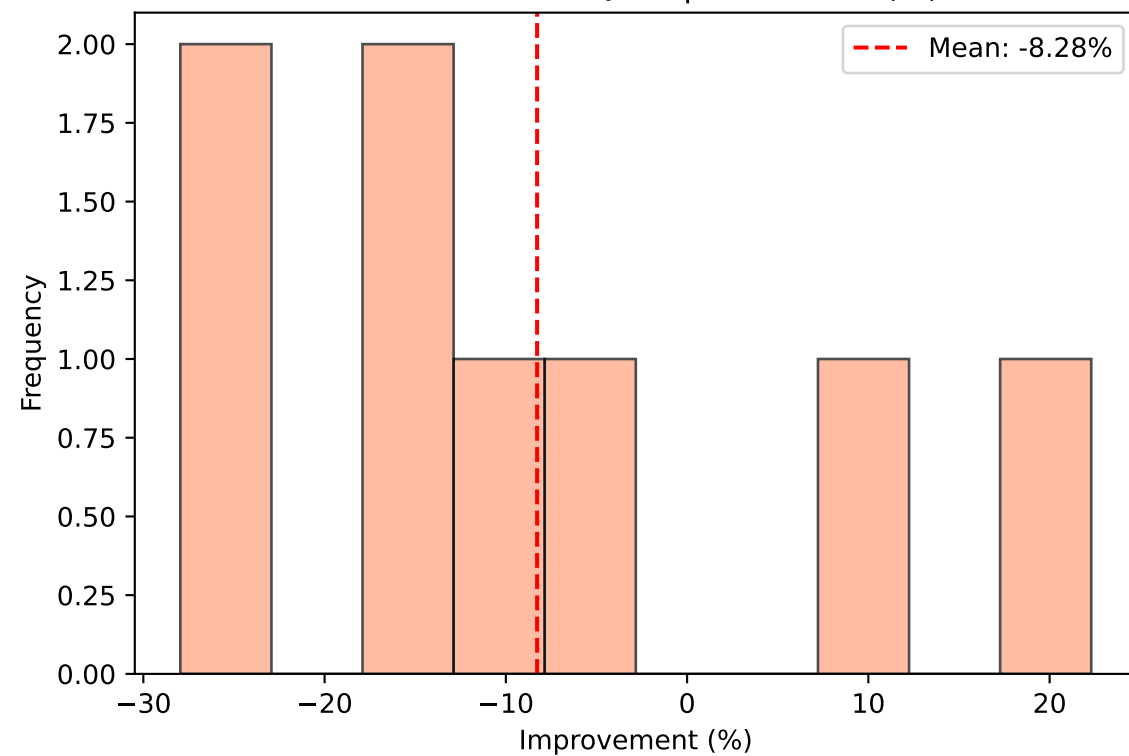
## Distribution of MASE Improvements (%)



## SQL Comparison Across All Experiments



## Distribution of SQL Improvements (%)



## Detailed Statistics

### Covariate Study Detailed Results

Covariate Types: linear\_trend

Number of Experiments: 8

#### MASE Results:

- Without Covariate:  $3.6914 \pm 1.5815$
- With Covariate:  $4.1146 \pm 2.2315$
- Average Improvement: -6.24%
- Median Improvement: -7.29%

#### SQL Results:

- Without Covariate:  $1.5639 \pm 0.6952$
- With Covariate:  $1.7620 \pm 0.9412$
- Average Improvement: -8.28%
- Median Improvement: -13.36%

#### Study Parameters:

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

#### Best Performing Experiment (MASE):

- Experiment 5: 24.63% improvement

#### Worst Performing Experiment (MASE):

- Experiment 7: -34.10% improvement