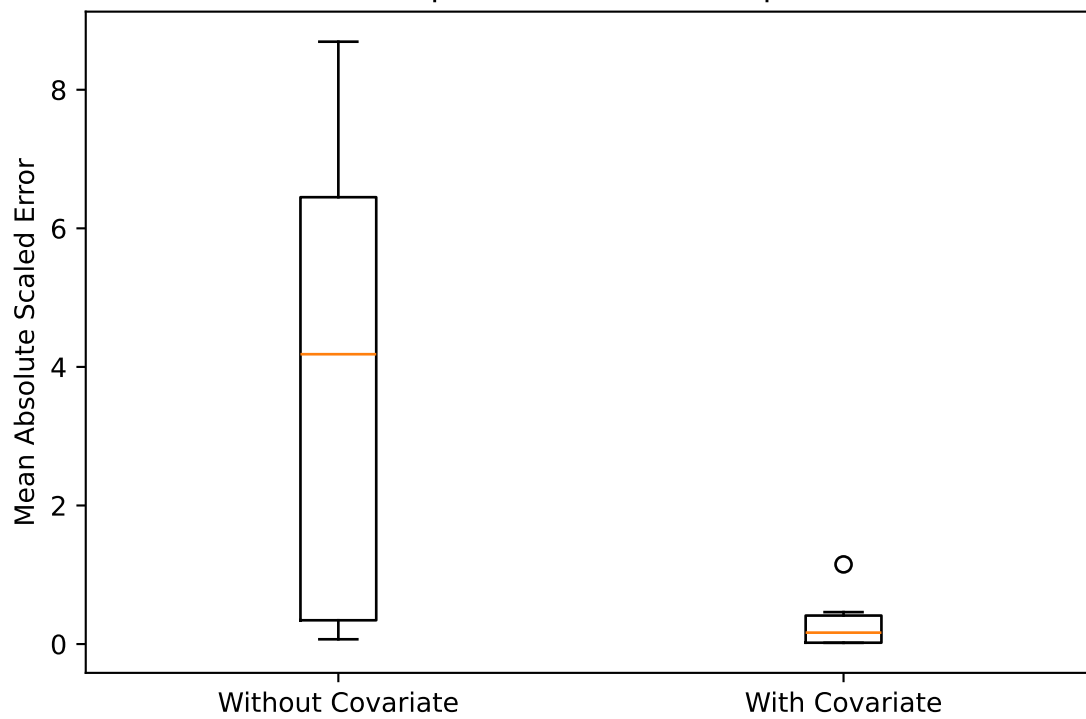
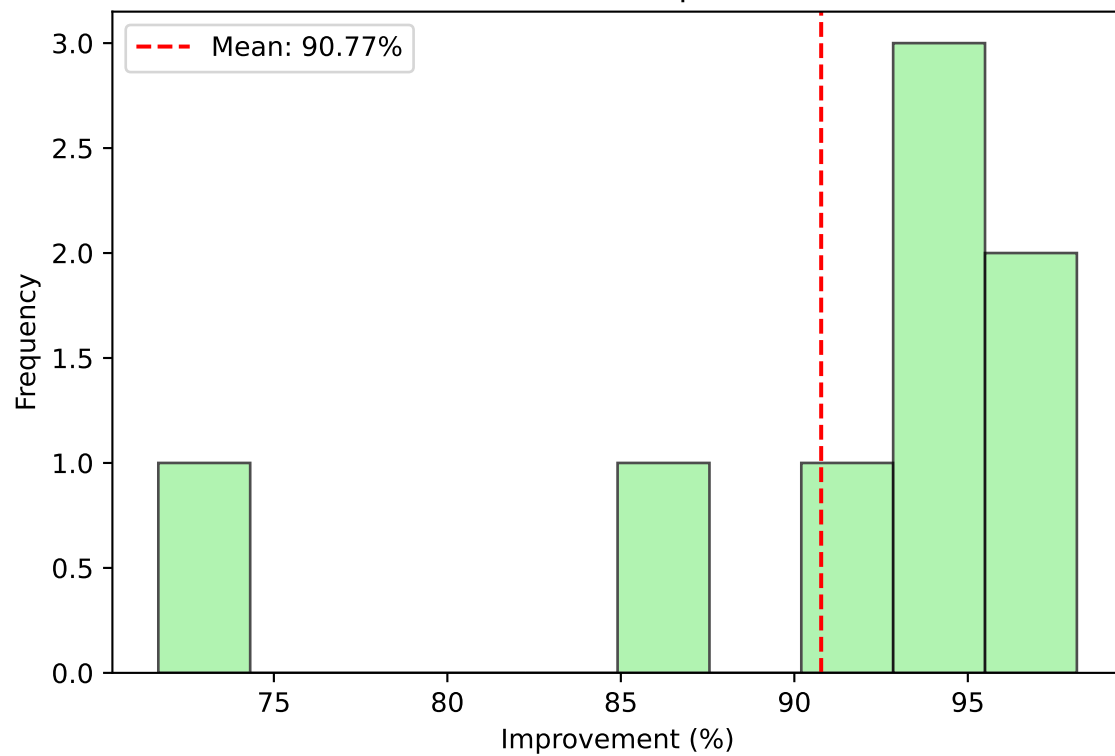


# Covariate Study Summary: Ramps

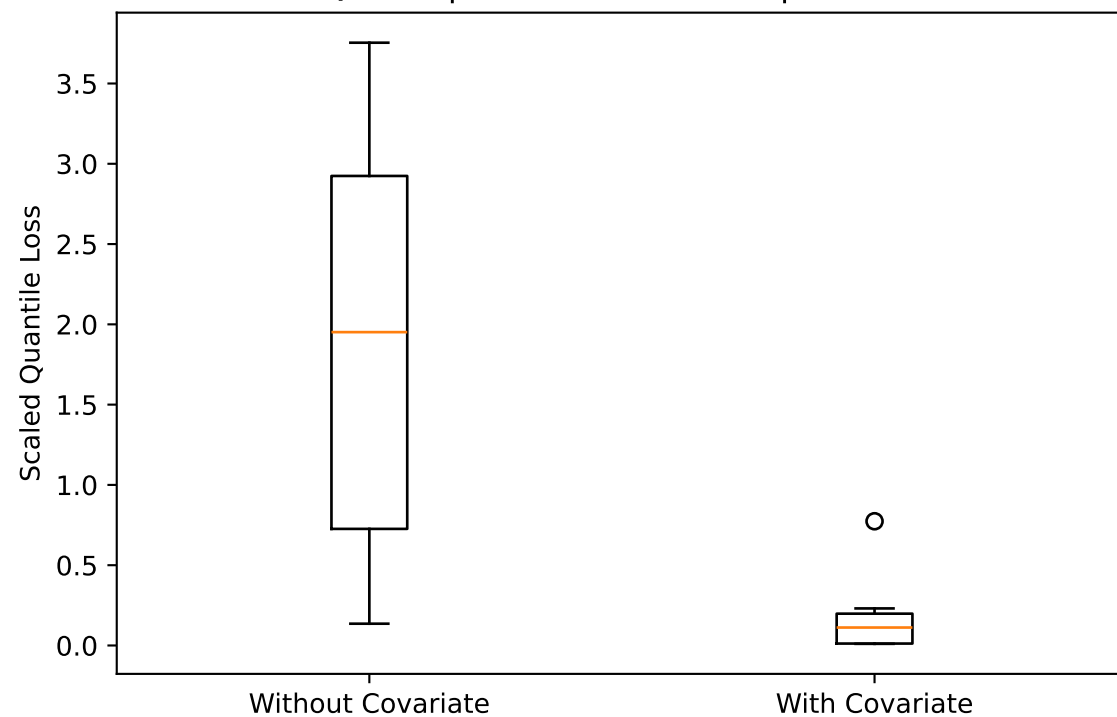
## MASE Comparison Across All Experiments



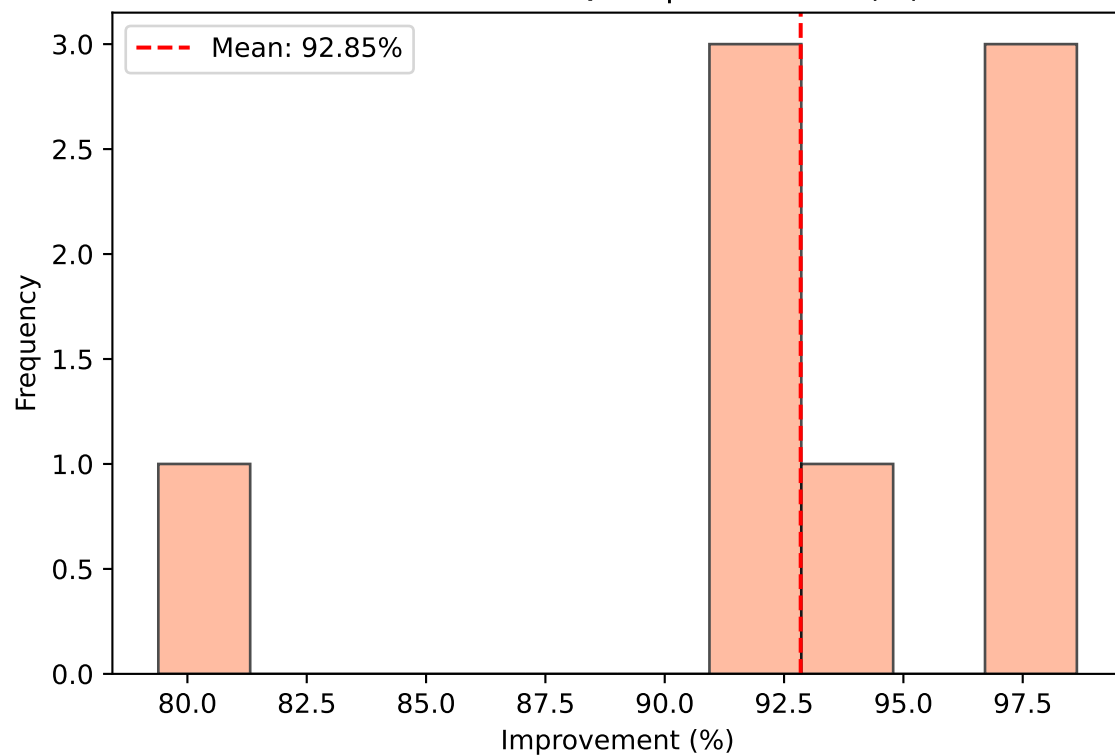
## Distribution of MASE Improvements (%)



## SQL Comparison Across All Experiments



## Distribution of SQL Improvements (%)



## Detailed Statistics

### Covariate Study Detailed Results

Covariate Types: ramps

Number of Experiments: 8

#### MASE Results:

- Without Covariate:  $3.8849 \pm 3.1462$
- With Covariate:  $0.2990 \pm 0.3621$
- Average Improvement: 90.77%
- Median Improvement: 93.62%

#### SQL Results:

- Without Covariate:  $1.8682 \pm 1.2367$
- With Covariate:  $0.1811 \pm 0.2398$
- Average Improvement: 92.85%
- Median Improvement: 93.07%

#### Study Parameters:

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

#### Best Performing Experiment (MASE):

- Experiment 4: 98.14% improvement

#### Worst Performing Experiment (MASE):

- Experiment 3: 71.67% improvement