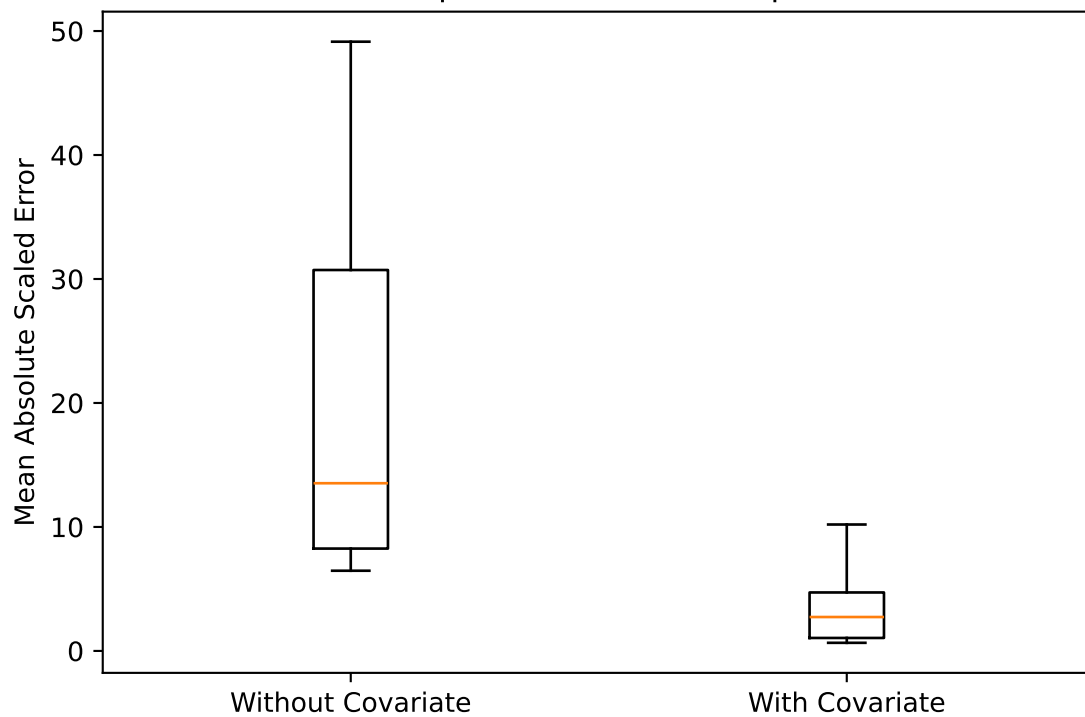
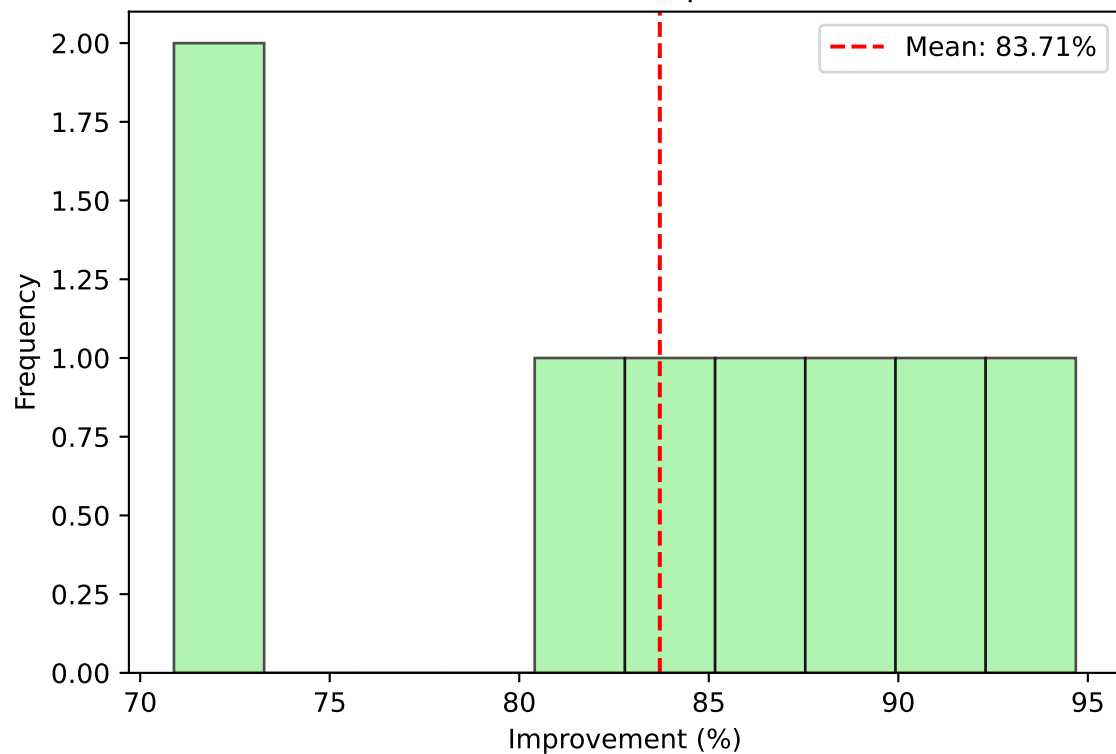


# Covariate Study Summary: Random Walk

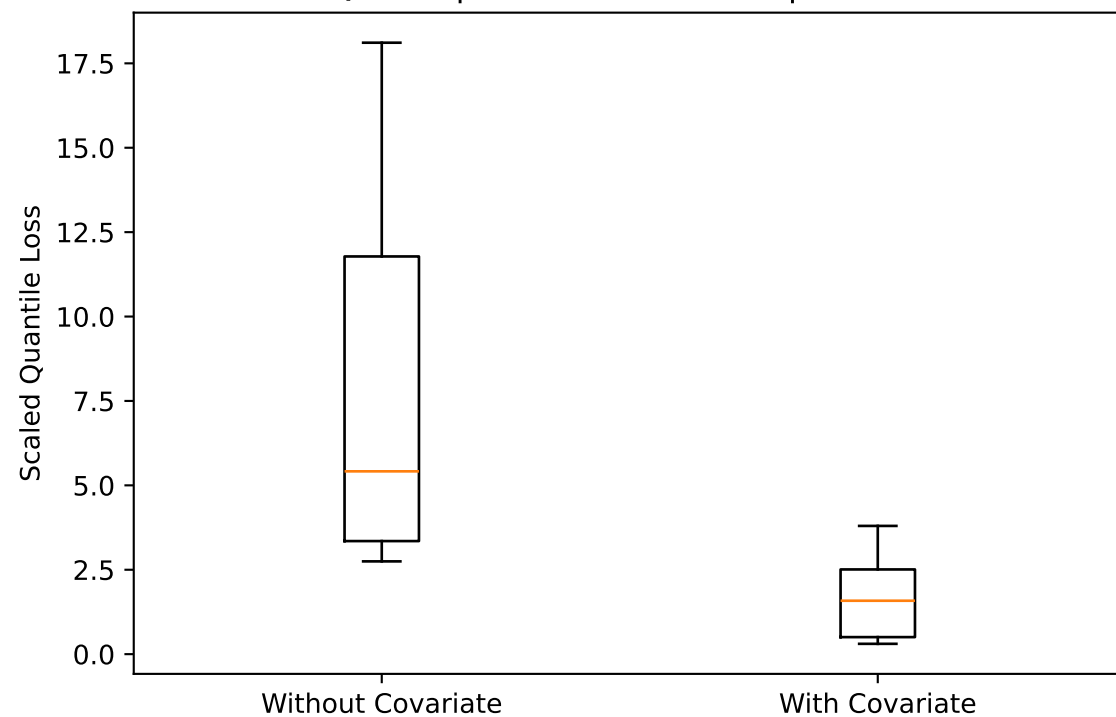
## MASE Comparison Across All Experiments



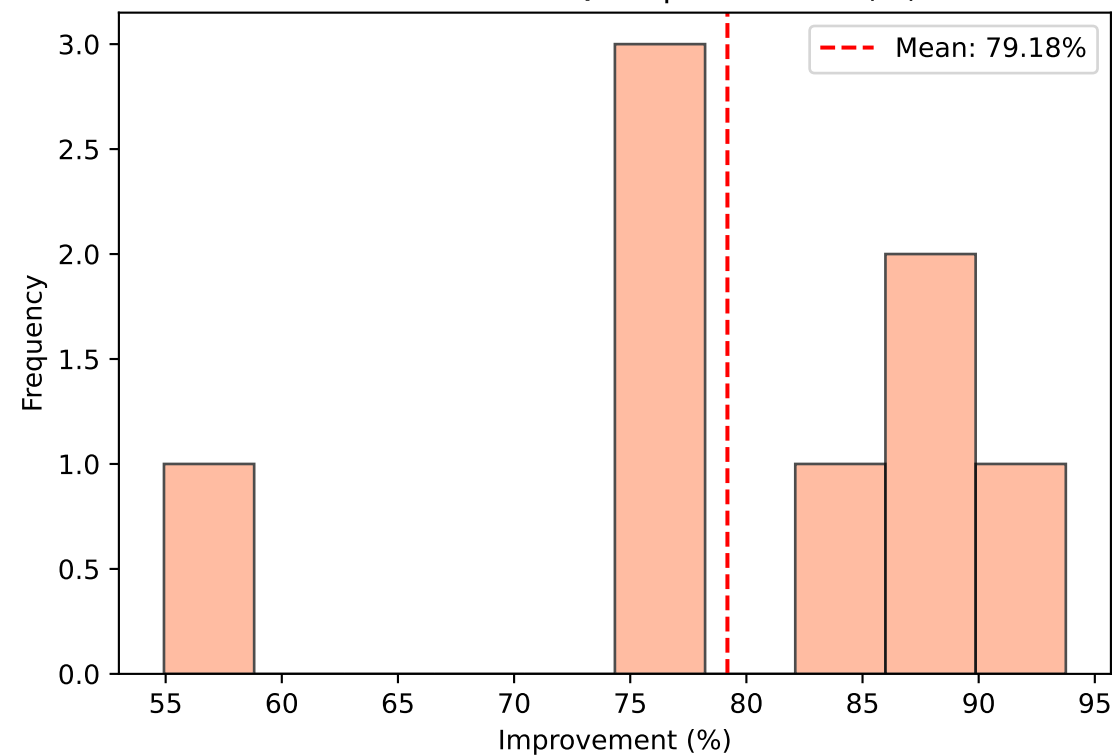
## Distribution of MASE Improvements (%)



## SQL Comparison Across All Experiments



## Distribution of SQL Improvements (%)



## Detailed Statistics

### Covariate Study Detailed Results

Covariate Types: random\_walk

Number of Experiments: 8

#### MASE Results:

- Without Covariate:  $20.5914 \pm 15.0338$
- With Covariate:  $3.4934 \pm 3.0810$
- Average Improvement: 83.71%
- Median Improvement: 85.03%

#### SQL Results:

- Without Covariate:  $8.0061 \pm 5.5901$
- With Covariate:  $1.6623 \pm 1.2453$
- Average Improvement: 79.18%
- Median Improvement: 80.40%

#### Study Parameters:

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

#### Best Performing Experiment (MASE):

- Experiment 7: 94.68% improvement

#### Worst Performing Experiment (MASE):

- Experiment 6: 70.89% improvement