Bayesian Ridge Regression - Second Report

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Introduction

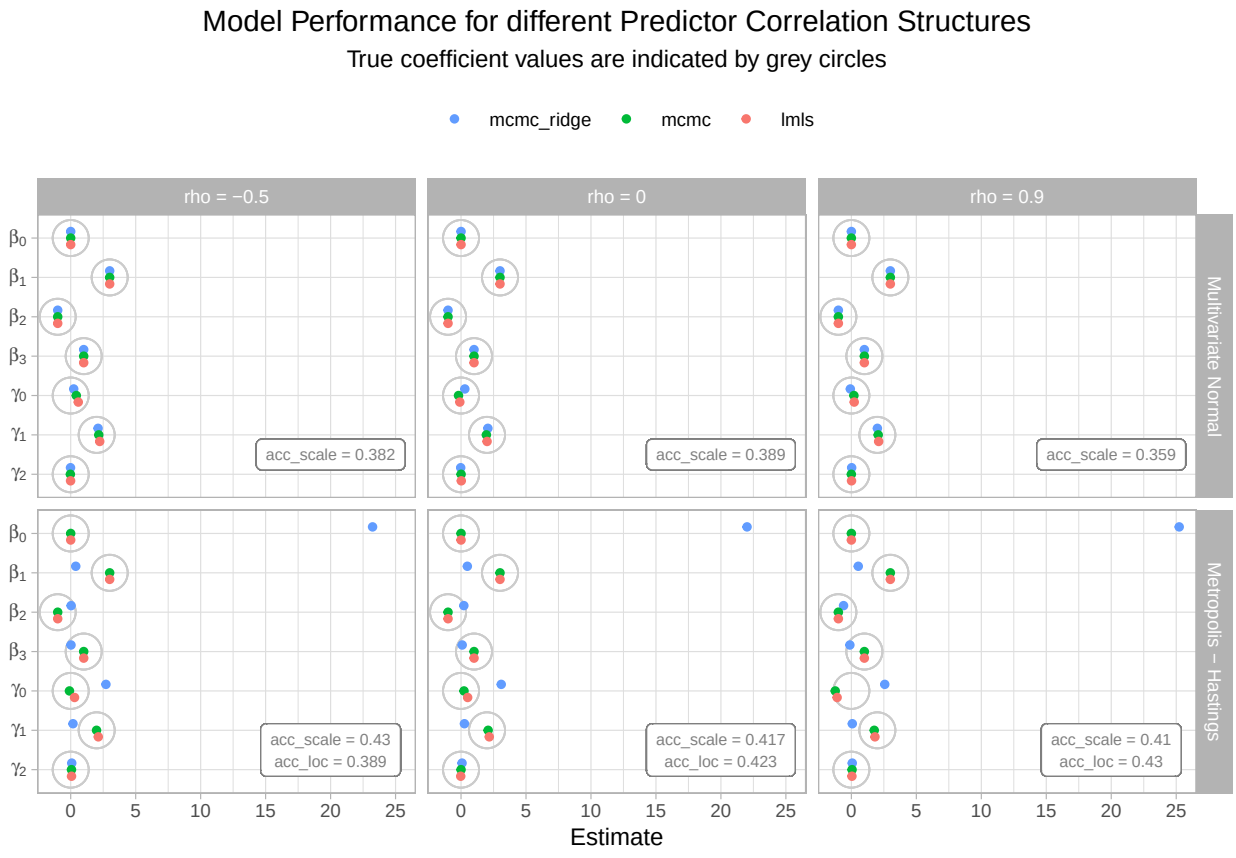
The value of `x` is 0.1.

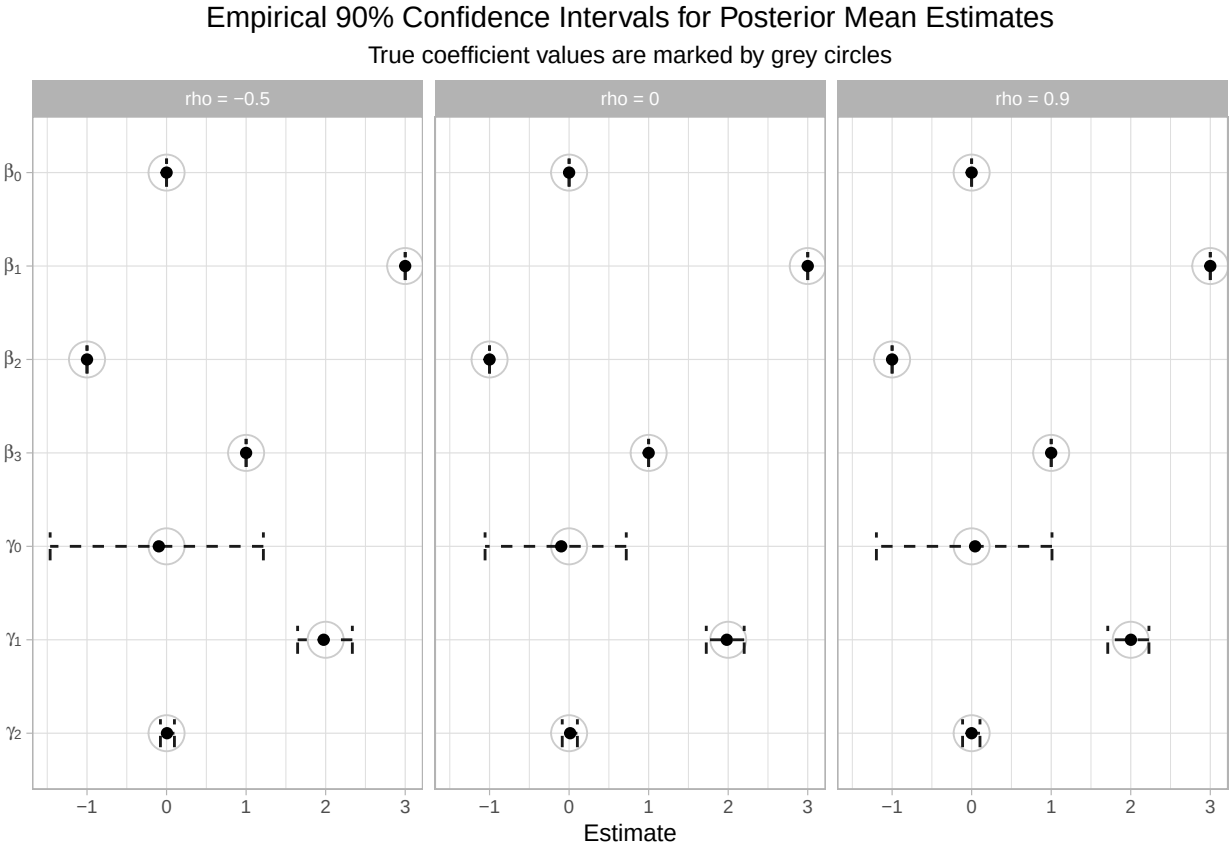
```
## [1] -0.1445521
```

```
# eval = FALSE
z <- mean(rnorm(100))
z
```

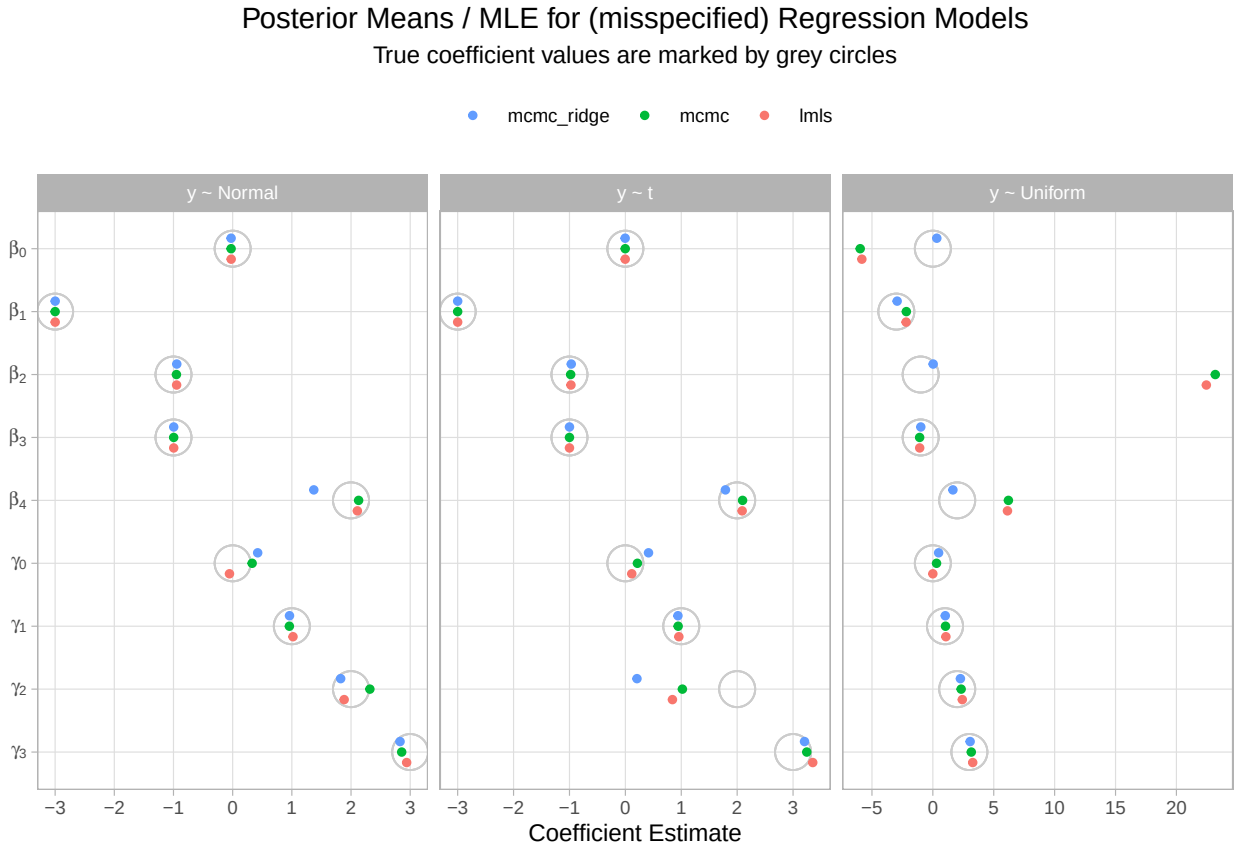
1 Simulation Studies

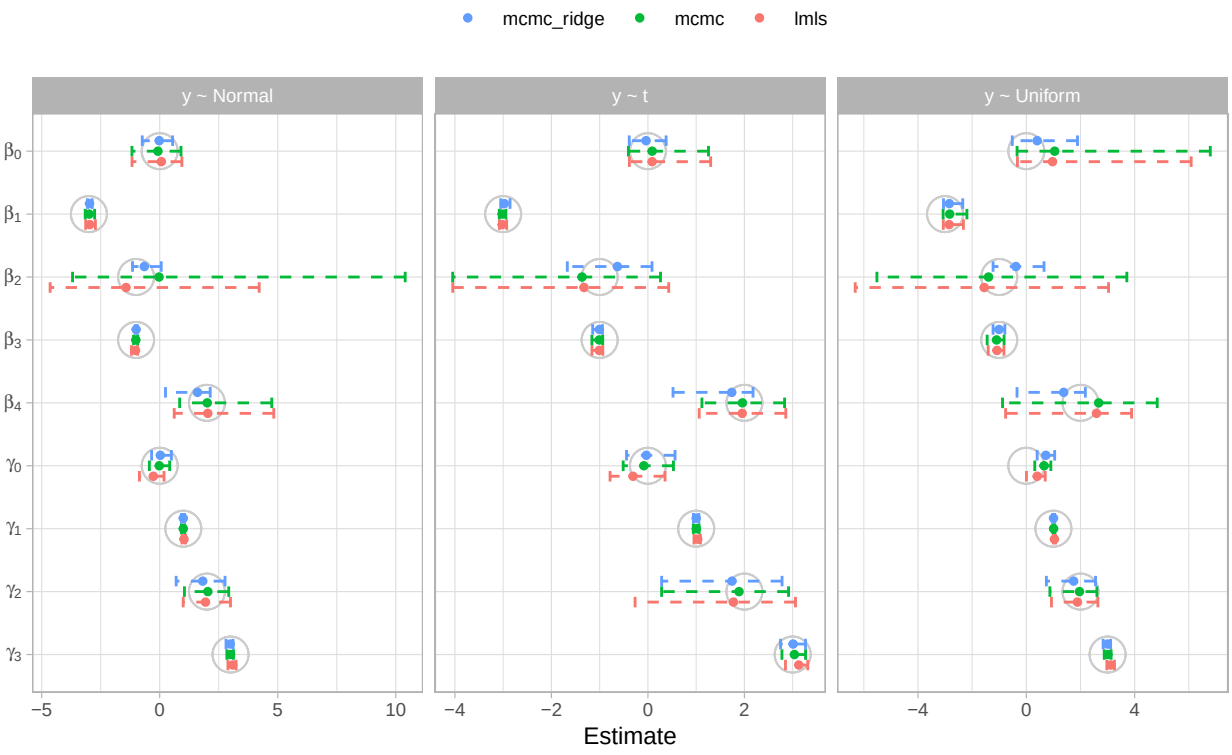
1.1 Correlated Predictor Variables



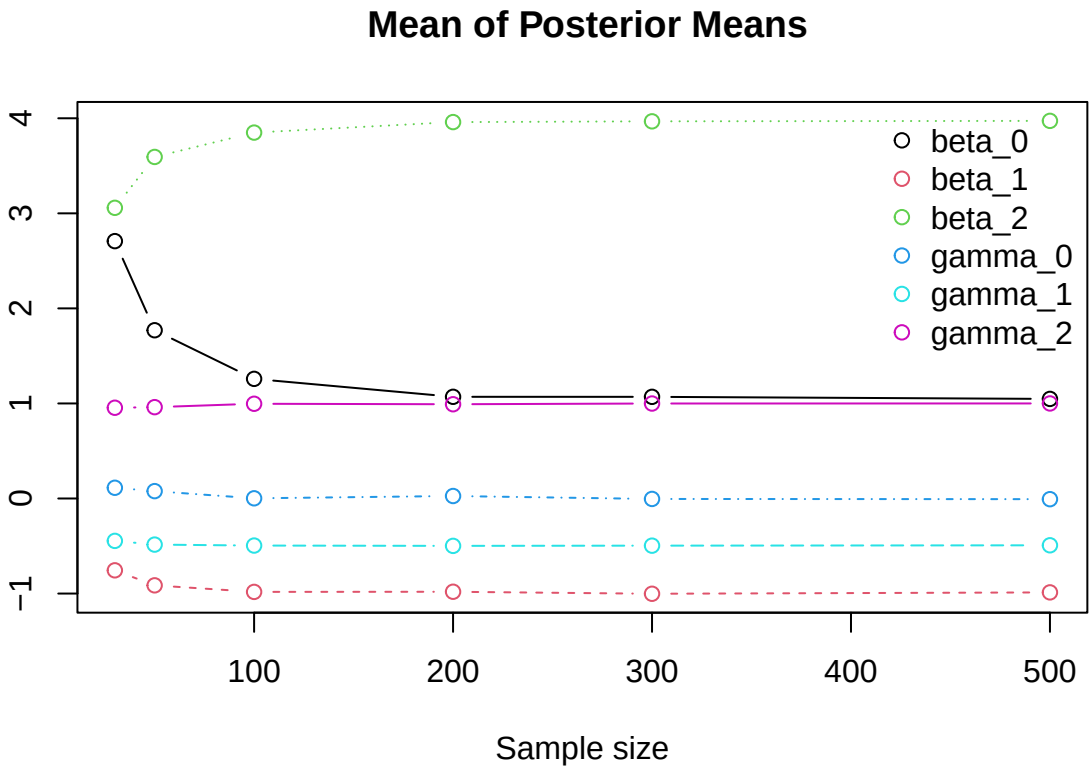

Empirical 90% Confidence Intervals for Posterior Mean Estimates
True coefficient values are marked by grey circles
rho = −0.5
rho = 0
rho = 0.9
β0
β1
β2
β3
γ0
γ1
γ2
−1
0
1
2
3
Estimate

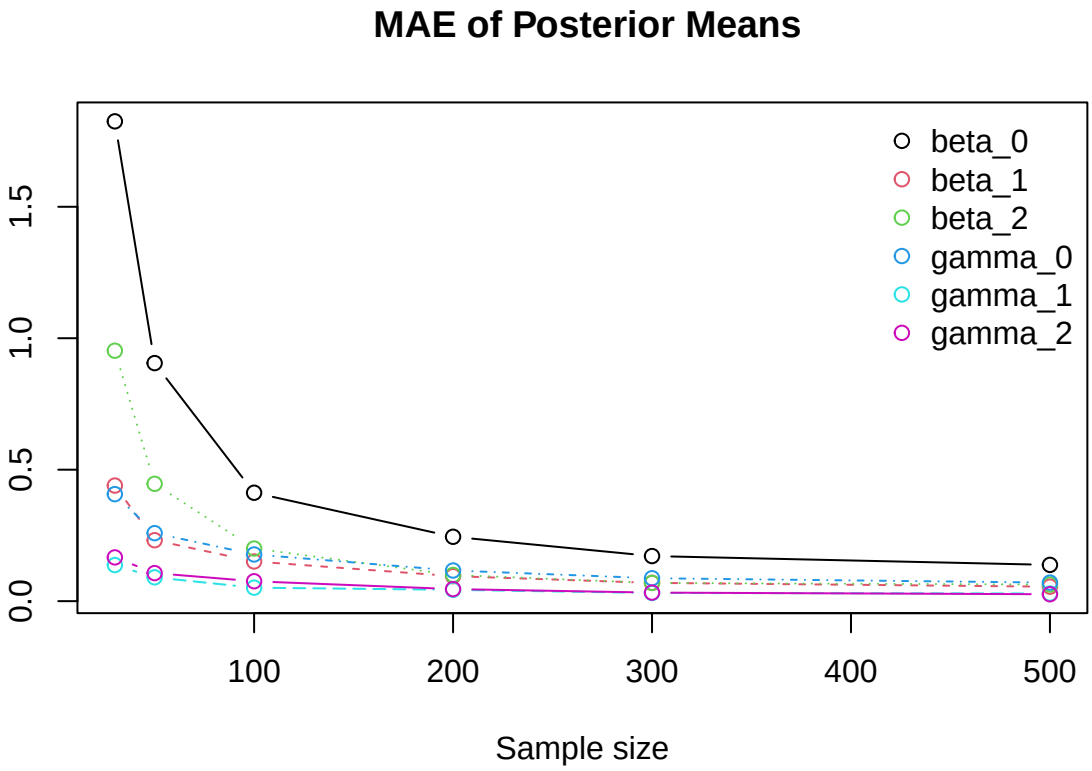
1.2 Challenging the Model Assumptions

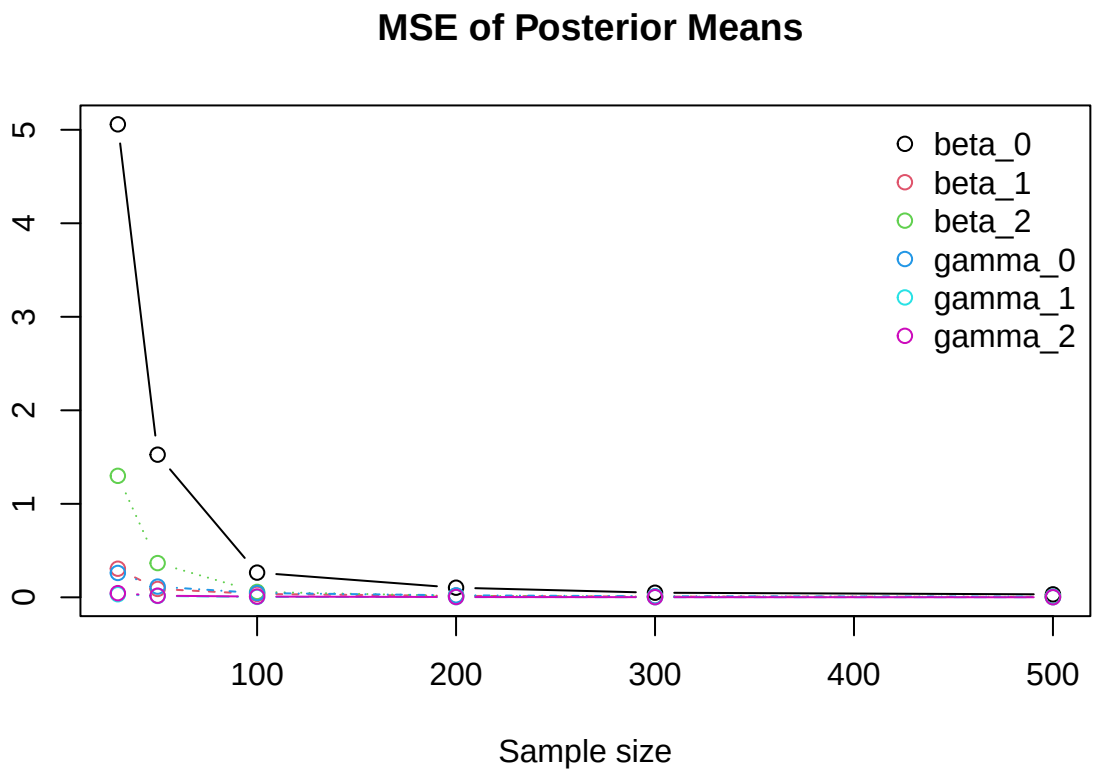



Empirical 90% Confidence Intervals for Posterior Mean Estimates
True coefficient values are marked by grey circles
mcmc_ridge
mcmc
lmls
y ~ Normal
y ~ t
y ~ Uniform
β0
β1
β2
β3
β4
γ0
γ1
γ2
γ3
−5
0
5
10
−4
−2
0
2
−4
0
4
Estimate

1.3 Sample Size




MAE of Posterior Means
beta_0
beta_1
beta_2
gamma_0
gamma_1
gamma_2
0.0
0.5
1.0
1.5
100
200
300
400
500
Sample size



1.4 Number of Simulations

1.5 Hyperparameters

Next Steps