ECON 5253 Problem Set 9

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1 Question No. 7

The original housing dataset has 15 variables in which 14 are X variables. However, in housing_training has a total of 75 variables, so the X variable difference is of about 60 variables.

2 Question No. 8

Optimal λ (penalty parameter) = 0.00356
In-sample RMSE = 0.220
Out-sample RMSE = 0.219

3 Question No. 9

Optimal λ (penalty parameter) = 0.0233
Out-sample RMSE = 0.192

4 Question No. 10

We cannot have a unique solution when predictors are more than observations. However, if we use RIDGE or LASSO regression, this problem can be catered to.

Overall, I think for both LASSO and RIDGE we have somewhat handled the problem of Bias-Variance Trade-off.