## PS9 McGuire

## Kevin McGuire

## March 31, 2020

- 5. 404 x 450
- 6.  $\lambda=0.01293624,$  in-sample RMSE = 0.1683082, out of sample RMSE = 0.1978367
- 7.  $\lambda=0.03984809,$  in-sample RMSE = 0.1721749, out of sample RMSE = 0.1569189
- 8.  $\lambda=0.007618288,~\alpha=0.547997,$  in-sample RMSE = 0.167498, out of sample RMSE = 0.1629696. LASSO would be slightly preferable to Ridge.
- 9. The elastic net model offers the most balanced tradeoff, with the other two models each having bias in opposite directions. Using linear regression would not be possible due to the complexity of the data.