

Economics 102 : Analysis of Economic Data Cameron U.C.-Davis
EXTRA QUESTION FOR MIDTERM 2 PREPARATION
MULTIPLE REGRESSION QUESTION
From Final Exam Question 3 Fall 2021

3.(a) A one horsepower increase is associated with a 0.00717 increase in miles per gallon (holding the other variables constant).

(b) `curbwt` and `dEUR` are statistically significant at 5%.

(s) $H_0 : \beta_2 = 0, \dots, \beta_7 = 0$ against $H_a : \text{At least one of } \beta_2, \dots, \beta_7 \neq 0$.

From the regression output $F = 67.99$ has p value of $0.0000 < .05$.

Reject H_0 . Conclude that the regressors are jointly significant at level 0.05.

(d) `test curbwt torque accel dEUR dASIA`

(e) The computer output does not give \bar{R}^2 .

So use $s_e = \sqrt{\frac{1}{n-k} \sum_{i=1}^n (y_i - \hat{y}_i)^2}$ which also has a penalty for model size.

Favors larger model as RMSE $2.1329 < 2.998$.