

Homework Solutions

Applied Regression Analysis

WEEK 4

Exercise Three: Determine and Compare

Determine and compare the proportions of the total variation in Y explained by the straight-line regression on X and by the quadratic regression on X

We can determine the proportion of the total variation in Y explained by the regression models by the R^2 value within the STATA output of each fitted regression.

$$R^2_{\text{straight}} = 0.73 \quad R^2_{\text{quadratic}} = 0.957$$

The quadratic regression explains more of the total variation in Y than the straight-line regression.

Interpretation: 95.7% of the total variation in Y is explained by the quadratic regression on X, whereas only 73% of the total variation in Y is explained by the straight line regression on X.