Temple University

Department of Economics

Kernel Regression Homework

The questions come from Greene, Econometric Analysis, 7th edition.

1. Using the gasoline market data in Appendix Table F2.2, estimate the unknown coefficients of the following equation:
2. Estimate the unknowns using OLS. Report your results.
3. Reverting to levels in the data, estimate the unknowns using the Box-Cox transformations. Report your results.
4. Compare the findings in a. and b.
5. Estimate the parameters of the equation in question 1 using quantile regression. Fit the first, second and third quartiles. Test for symmetry in the conditional distribution of per capita gas expenditure. Discuss your results.
6. In this question consider a non-parametric approach. Use kernel regression to fit per capita gas expenditure to the menu of independent variables.
   1. First, estimate a kernel density to . Call this the unconditional density of . The band width and kernel are yours to choose.
   2. Do the regression estimation for the model for two different kernels and two different bandwidths. Report your results.
   3. Explain why you prefer one kernel – bandwidth pair over the others.