

Applied Econometrics II
Dept of Economics, Carnegie Mellon University
73-360, Fall 2000-2001

Homework #4, due Friday, November 17

For this assignment, please use the hospital cost data, available on the web site. It is described there in the section entitled Datasets.

In the following, please show your work and use the statistical concepts we have learned, as relevant, in your answers.

Important:

- Please include the program and the output you used to generate your results, whether it be SAS or something else.
- Please remove from the dataset all observations which have missing values for any variable you will be using in the analysis.

We are interested in modelling hospital costs as a function of inpatient days, outpatient visits and time. Since we would like to measure elasticities, please use log-log regression (do not log time). Please measure time as the number of quarters since the first quarter in the data.

Please calculate the following:

- an estimate and 90% CI for the elasticity of costs w.r.t. outpatient visits.
- an estimate and 90% CI of “economies of scale” An measure of scale economies (the % that costs rise when outputs all rise by 1%) is the sum of the coefficients of the different outputs.

Please do both of these tasks assuming homoskedasticity and assuming heteroskedasticity. Which of the two sets of results is preferable and why (you are expected to do set up and perform some test to answer this part)?