

Applied Econometrics II
Heinz School, Carnegie Mellon University
90-771, Spring 2004-5

Homework #1, due Friday, February 11, 2005

Using the coalgas dataset from the course website, we are going to build a model of the natural gas market in the US. As is the case for coal, the domestic production of natural gas is highly geographically concentrated in the US, and the costs of shipping natural gas (in this case via pipelines) is quite high and increasing in distance from the supplying states.

Natural gas is used both to generate electricity and directly to heat homes (as well as in chemical plants and in other industrial applications).

1. Please estimate demand and supply for natural gas using OLS. Be sure to explain which variables you are including in your models and why. Evaluate the slopes of the demand and supply curves (are they in the “right” direction, significant, what elasticities do they imply).
2. Please redo these analyses using two stage least squares.
3. Please redo the analyses in 2 accounting for the fact that coal is a substitute for natural gas in the generation of electricity.
4. Who will pay a 10% tax on natural gas?
5. Is the 10% tax likely to affect the market for coal? Why or why not?