

Econ 845 - Industrial Organization I.
Winter 2011
Homework No. 1

Due Date: February 7, 2011

Download the data set from the course web page. The data set “railway” is in ASCII format (.raw). The data set includes the variables in Table 1 of Porter (1983). The variable PO in Table 1 is pa in the data set. Also note that there are 13 months per year in the data since a month is defined by 4 weeks periods.

Question 1 (20 points)

Plot the price series (gr). Do you think that the data is consistent with the prediction by Green and Porter (1984) - regime switching occurs to deter the deviation from colluding strategy? Also, derive the summary statistics of gr., tqg, lakes, and pa and check whether their values coincide with those in Table 2 in Porter (1983). Discuss the results.

Question 2 (20 points)

Assuming that we observe the regimes from pa, conduct the two stage least squares estimation of demand and supply to replicate the results in Table 3. Make a table with estimated coefficients and standard errors. Discuss the results.

Explain why it is that we can estimate conduct parameter θ even though we do not have any data on cost?

Question 3 (20 points)

Assuming that the market is always competitive, conduct the two stage least squares estimation of demand and supply. Compare those results to those obtained in Question 2, and discuss the difference.

Question 4 (20 points)

Again, assume that we know the correct regime from pa. Conduct a full information maximum likelihood (jointly estimate the supply and demand equations). Report estimated coefficients and standard errors. Compare your results from those in the columns 3 and 4 in Table 3, which were implemented assuming that we do not observe regime switch data. Discuss the results.