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Problem Set #1

Due September 12, 2000

1. Tirole exercise 1, p. 26.

2. A buyer and a supplier negotiate on a project. Both know that the cost of the project to the supplier is 1. The supplier knows that the buyer's valuation of the project is uniformly distributed over $[2, 4]$.

(a) If the supplier has bargaining power (*i.e.* she makes a take-it-or-leave-it offer to the buyer) what price will she set? How do the expected gains from trade (profit + consumer surplus) compare with the expected gains from trade if the supplier knew the buyer's valuation?

(b) If the buyer has bargaining power what price will he set? What are the expected gains from trade in this case?

(c) The supplier has bargaining power and makes sequential price offers to the buyer over two periods. The discount factor is δ. What price will the supplier set in the two periods? How do these prices change as δ increases?

3. The following questions concern Paul Joskow's paper "Contract Duration and Relationship-Specific Investments: Empirical Evidence from Coal Markets."

(a) Briefly describe the variables Joskow uses to capture asset specifity and how he argues that they reflect aspects of specificity? Any comments on whether the measures are good?

(b) In column 1 of Table 3 Joskow reports that the coefficients on QUANTITY, MINE-MOUTH, MIDWEST, and WEST in his linear specification are 0.43, 16.33, 3.43, and 5.36, respectively. How should we interpret the magnitudes of these coefficients, and do they fit well with which types of asset specificity you would have expected to be most important? In column 3 of the table the coefficients on the four variables in the log specification are all between 0.50 and 0.62. What do the magnitudes of these coefficients mean and are the implications on relative importance the same ones you drew from column 1?

(c) The dependent variable in Joskow's base specification is the duration of the coal supply contract in years. In what ways could it be argued that this is not an ideal measure of whether a relationship is governed by a "long term contract," as the term is used in our theoretical models.

(d) Why is it a potential problem that not all contracts were signed at the same time and what does Joskow do about it?