Sample Midterm Exam
ECON-465: Market Power and Public Policy

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October 19, 2016

> Answer the questions in the spaces provided on the question sheets. If you run out of room for an answer, continue on the back of the page. There are 3 long answer questions and 5 short answer questions in the back.

Name: _____

1. Market Structure and Evaluating Mergers

   Suppose that we have an industry that has the demand curve:

   $$Q^D = 10 - \frac{P}{2}$$

   And two firms that compete in quantities and have cost curves given by $C(Q) = 2Q^2$

   (a) (5 points) Suppose a single firm operates in this industry. What would it chose as quantities, prices, and what profit would it make?

   (b) (5 points) Suppose there are two firms operating in the industry, and competing in prices (a la Bertrand). What are equilibrium quantities and prices?

   (c) (5 points) Suppose that the industry forms a trade association to promote it's products (think cheese from California if you need an example to focus on — happy cows are collusive cows). Demand is given by:

   $$Q^D = 10 - \frac{P}{2} + \frac{a_1 + a_2}{2}$$

   Where a_1 and a_2 are advertising by firms a_1 and a_2, which comes at a cost of $C(a) = a^2$. Firms compete in quantities as before, with the same marginal cost curves.

   The trade association argues that it should allowed to coordinate pricing, since otherwise it will lead to a situation where there is no advertising. Is this true? Discuss the tradeoffs of having an industry-wide pricing board. (Hint: you don't need to go through the algebra here, just argue the intuition of the model)

2. Vertical Markets

Consider a retailer serving a market with a demand curve given by:

$$Q = 10 - 2P$$

The retailer (R) purchases the input at price w from an upstream manufacturer M. The manufacturer has a cost function of $C(Q) = 2Q$.

(a) (10 points) What is the retail price p, wholesale price w, and quantity sold in this market? What are profits for the retailer and manufacturer?

(b) (5 points) Now suppose that the retailer R makes take-it-or leave it offers w to the manufacturer, specifying the price at which they will purchase the good. The manufacturer can then supply as much, or as little of the good as she chooses. What is the outcome of this scenario in terms of retail price p, wholesale price w, and quantity sold in this market? What are profits for the retailer and manufacturer?

(c) (5 points) The antitrust authority is now considering a merger between the upstream and down-stream firms. What are the effects of this merger if the manufacturer choose the price to sell its good, versus the case where the retailer makes take it or leave it offers? Would you approve it if you did not know who makes offers to whom?

(d) (5 points) A second retailer R_2 now enters, and both retailers compete in prices in the downstream retail market. Suppose as well that the manufacturer chooses the price w that it will sell its good. What is the retail price p, wholesale price w, and quantity sold in this market? What are profits for the retailers?

(e) (5 points) Now a second manufacturer enters, which we call E for entrant (the old manufacturer is now called I for incumbent). This new firm has a cost function $C^I(Q) = Q$. Both manufacturers compete in wholesale prices. What is the retail price p, wholesale price w, and quantity sold in this market?

(f) (5 points) Finally, suppose that both the incumbent and entrant manufacturers (E and I) can offer exclusionary contracts at prices t^I and t^E to both of the retailers. What will be the "bribes" t in this scenario? How do things change compared to the situation you looked at in the previous question?