Klick
Antitrust
Final Exam
Fall 2012

You may use your casebook, notes, and commercial outlines in the completion of this exam, but you may not confer with anyone else about it during the period December 14-December 21. You have 24 hours to complete the exam starting once you download it. Each question (1, 2, 3, and 4) is equally weighted subject to your choice in question 5. Good luck.

1. Assume a market is controlled by a three firm oligopoly where the market demand curve is given by p = 65 – 3Q and marginal cost is equal to 5.

   a. How much does each firm produce and at what price if they form a profit maximizing cartel where each firm acts identically?

The easiest way to do this is with a little calculus. A cartel will act like a monopolist, so we can calculate what a monopolist would do in this situation. We know that MR = MC is the profit maximizing condition, and a monopolist can treat the market demand as its demand. Revenue = price * quantity, so 65Q – 3(Q^2), so marginal revenue = 65 – 6Q. Setting 65 – 6Q = marginal cost = 5, we find Q = 10. Therefore, price will be 65 – (3*10) = 35 and each firm will produce Q/3 = 10/3 = 3 1/3.

You will find the same answer if you use the brute force method of examining profit for each output level

price	quantity	revenue	marginal revenue	cost	profit
62	1	62	62	5	57
59	2	118	56	10	108
56	3	168	50	15	153
53	4	212	44	20	192
50	5	250	38	25	225
47	6	282	32	30	252
44	7	308	26	35	273
41	8	328	20	40	288
38	9	342	14	45	297
35	**10**	**350**	**8**	**50**	**300**
32	11	352	2	55	297
29	12	348	-4	60	288

You wouldn't want to stop at 9 since by making 10, you could have MR > MC. You wouldn't want to go on to make 11 since MC > MR. You could have checked fractional values between 9 & 10 and between 10 & 11 and you would have seen that profit peaks at exactly Q = 10.

   b. What is the market price and total output if the firms do not collude but instead act like tacitly colluding oligopolists?

You could have looked for a fixed point wherein all the firms sell the same as each other given what the other ones are doing. That would give you the same outcome as if you use the Cournot output formula $q_i = \dfrac{a-c}{b(n+1)} = \dfrac{65-5}{3(3+1)} = \dfrac{60}{12} = 5$ which is the result for a single firm, therefore the market output is 5*3 = 15. At this output, the price will be 65 – 3*15 = 20.

    c. Calculate the deadweight loss in 1.a

If you were to draw a graph showing the difference between total surplus in a perfectly competitive market (where price = 5 and Q = 20) and in a monopolized market (where price = 35 and Q =10), you would see that the part of consumer surplus that disappears in the move to monopoly (i.e., is no longer consumer surplus and is not transferred into profit) is a triangle where the base is the difference between the competitive Q and the monopoly Q (20-10) and the height is the difference between the monopoly p and the competitive p (35-5). The area of a triangle is ½* base * height = 0.5 * 10 * 30 = $150 (the units are dollars since the units on the veritcal axis are $ per unit of output and the units on the horizontal axis are units of output).

    d. Intuitively, why is the deadweight loss smaller in 1.b than it is in 1.a?

In the cartel situation, the cartel entirely internalizes the fact that additional output lowers price. In the oligolpoly situation, each firm disregards the fact that when it increases its output, it lowers the price for the other firms. That is, it only partially internalizes the effect its sales has on price, leading each firm to produce more than it would if it were constrained to act as a unified monopolist.

    e. If there are no barriers to entry in this market and other firms can instantaneously enter the market, what output will each of the three firms currently in the market produce and why?

With no barriers to entry, price will be competed down to marginal cost. At price = 5, total output will be 20 since this is what the market demands at a price of 5. How that total output will be divided among firms is not clear beyond a general claim that each firm will produce 20/n where n is the number of firms in the market. One reasonable possibility would be that the existing firms simply satisfy the demand, so each will produce 20/3 = 6 2/3. The possibility of entry will constrain these firms from attempting to raise price.

2. Assume the market for jelly is monopolized by Smuckers because the firm has a strong reputation (i.e., for a reason that is not actionable under antitrust laws). Further assume that jelly is only used to make peanut butter and jelly sandwiches. The market for peanut butter involves the following firms:

Firm	Market Share
Smuckers	30%
Jif	25%
Skippy	10%
7 comparable smaller firms	35%

    a. Smuckers wants to buy Jif; what is the likely response of the antitrust authorities and why?

The HHI for this market is already quite high (30^2 + 25^2 + 10^2 + 7*5^2) = 1800 and with the proposed merger, it will be categorized as a highly concentrated industry according to the Horizontal Merger Guidelines (55^2 + 10^2 + 7*5^2 = 3300). Also, the increase in HHI is large. This will lead to the presumption that market power will be increased and therefore the merger will be challenged absent some very strong claims regarding efficiencies or the likelihood of market entry.

      b. If you are asked by Smuckers to provide arguments to persuade the antitrust authorities to approve the purchase, what would you say?

In this case, given the high HHI, normal claims about efficiencies and market entry will not be enough to rebut the presumption that the merger will harm consumers. The best argument for this merger hinges on the fact that Smuckers has a monopoly in jelly, a complementary product to peanut butter. Given this, Smuckers will be constrained from raising peanut butter prices since doing so will harm jelly sales, potentially leading to a reduction in total profits. Similarly, because of an increased interest in peanut butter, Smuckers may be led to reduce its jelly prices, improving the welfare of pb&j consumers. This is referred to as a reduction of the "double marginalization" problem. Much like in the tying context, you could argue that Smuckers already extracts all of the potential profits through its jelly monopoly, making its position in the peanut butter market largely irrelevant. On top of this, you could argue that there may be other efficiencies related to joint advertising, packaging, distribution, etc.

      c. Are there any counter arguments to the arguments provided in 2.b?

While jelly is only used with peanut butter (according to the question), peanut butter may be used without jelly, therefore the kind of "single monopoly profit" story often told in tying contexts may not apply here. If there is a significant market among those who use peanut butter without jelly, the claims made above will not generally hold and consumers, in the aggregate, could be worse off.

      d. What kinds of data would be useful in evaluating the arguments presented in 2.b and 2.c?

You would like to know the cross price elasticities between peanut butter and jelly, as well as data on the size of the various submarkets (i.e., those using pb but not jelly; those using both, etc). Additionally, you would like some data on the cost efficiencies associated with joint advertising, distribution, packaging, etc.

      e. If you wanted to make the argument that the market shares above were inaccurate because consumers view lots of other goods such as Nutella as substitutes for peanut butter, what kind of evidence would be relevant for making this determination?

The cross price elasticity between peanut butter and nutella.

   3. For each of the following statements, indicate true, false, or it depends. Provide the reasoning behind your answer, including what it depends on (if appropriate):

      a. Price discrimination harms economic welfare.

False: economic welfare is producer surplus plus consumer surplus. In markets that are not perfectly competitive (i.e., all real markets), output will be expanded with price discrimination, reducing deadweight loss. Though this increase in welfare will accrue to producers, it is an increase in economic welfare under standard definitions.

       b.   A full blown rule of reason analysis is the best approach to an antitrust dispute.

It depends: While a full rule of reason analysis will generally be able to reach the "correct" answer from an efficiency standpoint, doing so is not costless. The degree to which economic efficiency changes under the "correct" outcome as opposed to the outcome generated by a per se rule may be smaller than the administrative costs of the rule of reason analysis in expectation. In such cases, a per se rule would be superior to a rule of reason analysis.

       c.   The existence of many firms is a necessary condition for markets to generate allocative efficiency.

False: It is not a necessary condition as potential entry may be enough to constrain firms from raising price above marginal cost.

       d.   Product tying does not harm consumer welfare.

It depends: While the single monopoly profit idea is compelling (suggesting tying does not harm consumer welfare), it breaks down in some situations where there are some consumers who do not consume the main product but do consume the tied product, as the tying might drive suppliers out of the secondary market, allowing the tying firm to monopolize both markets.

       e.   Deadweight loss captures the entire loss of economic welfare due to monopoly.

False: As suggested by Tullock and later Posner, firms will invest resources in obtaining and maintaining their monopoly position. This so-called rent erosion implies that much of the profit captured by the monopolist is actually a loss to society.

4. Relative to the early years of US antitrust enforcement (i.e., the late 1800s through the post-Great Depression years) are there reasons to think that antitrust enforcement is more or less important for consumer welfare today? Spell out the reasoning behind your arguments and present both sides of the issue.

I more or less gave credit to any coherent non-ridiculous arguments here. My own favorite is that because broader trade is possible today (due to reduced trade restrictions/tariffs and due to reduced search and transportation costs), concerns about monopolization and collusive practices are significantly reduced, suggesting a smaller role for antitrust.

5. Choose one question (1, 2, 3, or 4) to count double (i.e., I will multiply the points you receive for that question by 2 and add that to the sum of your points for the other three questions) or indicate that you want each question to count the same (i.e., I will multiply the sum of your points by 5/4). Make your choice clear, or else you will automatically lose 20% of the potential points on your test.