

Homework #10: Answers

Text questions, Chapter 12, problems 3-8.

3. A country can exert its monopoly power over an export good either by organizing its competitive producers into a single monopoly seller, or by imposing an export tax that corresponds to the monopoly's profit-maximizing markup of export price over its marginal cost. Which policy yields the higher level of welfare, and why?

If the competitive firms are organized into a monopolist, they will exploit Home consumers as well as Foreign consumers. In the case of an export tax (which is just the optimal tariff argument applied to the exportable sector), competition at home will still generate marginal cost pricing (at $MRS = MRT = FRT$). The latter case doesn't just yield higher welfare, it yields the welfare optimum.

4. Suppose that a nation could tackle a monopoly over imported goods either by persuading the World Court to transform the monopoly into a competitive industry or by banning imports of the monopoly's goods and giving the business instead to a domestic monopolist. Could the latter policy increase the nation's welfare? Why would it be inferior to the former?

As long as the Foreign monopolist can treat the Home market as separable from its markets in the rest of the world (i.e. it needn't worry about antidumping or arbitrage), and as long as the Home monopolist has the same marginal costs as the Foreign monopolist, the price-quantity outcome will be the same. However, the monopoly profits will stay in the Home country, thus national welfare will be increased. [In the more likely case that the Home monopolist has higher costs, the substitution of inefficient Home production for more efficient Foreign production could render the former policy inferior]. This is still welfare inferior to the competitive outcome: if the world price is equal to marginal cost, and the country is economically small, the former policy implements the optimum.

5. A trademark gives a legal monopoly over the brand name of a product. Controversies arise because counterfeits of trademarked goods are sold in international trade. Suppose that a Taiwanese counterfeit of a Swiss watch is imported to the United States and sold at a low price; it may or may not be equivalent to the Swiss product in physical quality. How is the US economic welfare affected by the practice? What difference would it make if the trademark's owner were American rather than Swiss?

If quality is equivalent, then US welfare increases unambiguously. The same is true if the trademark holder is American, since the counterfeit competition makes the market more competitive. The gain is greater if the monopolist is Swiss, since the profits are repatriated and, thus, don't enter into US welfare. Of course, if the trademark system is optimal, in the sense that it serves a useful economic purpose, the permission of counterfeits will have the general effect of undermining that system. If quality is lower, and it is difficult to distinguish the high from the low quality good, and there is demand for the high quality good, welfare will be reduced by driving the high quality good from the

market (a *lemons problem*).

6. Someone tells you that the United States needs an industrial policy to encourage fast-growing industries by subsidizing their exports and excluding competing imports. You know from your economics courses that private entrepreneurs tend to enter such industries only if they expect to earn positive profits. What market failure, if any, might then call for public policy to lend additional encouragement?

If the industry is, in fact, “fast growing” I can’t think of any reason to subsidize/protect the industry. A learning curve argument might do the trick, because the protection causes home consumers to substitute away from the Foreign good, and thus reduce their rate of learning, this underwrites a trade component in the policy.

7. A foreign manufacturer of a differentiated good is considering whether or not to export it to the United States. The manufacturer has a monopoly at home, but in the U.S. market it faces close competition and would have to sell at a price lower than the one that maximizes profits in its home market. Nonetheless, such export sales would be profitable for it. However, if it charges different prices at home and abroad, it is sure that its U.S. sales agency will be penalized heavily under U.S. antidumping laws. Explain why the manufacturer might choose, under those circumstances, not to export to the US at all.

Note that the antidumping constraint means that the monopolist must sell in both its Home market and the US at the same price (i.e. it cannot discriminate between markets). Furthermore, the question specifies that the firm, in unconstrained equilibrium, charges a higher price at home than in the US. Thus, if the Home market is sufficiently large that the lost profits due to price reduction on sales in its home market are larger than the new profits on sales in the US, it will choose not to sell in the US.

8. In 1988 the Ivory Coast, producers of one-third of the world’s cocoa, was upset by a decline of the world price from \$3.00 to \$1.50 a kilogram over the preceding two years. The fall had resulted from heavy planting of cocoa trees in the late 1970s. The president of the Ivory Coast announced that his country would sell no cocoa at a price less than \$2.00 a kilogram. Other cocoa-producing countries, however, were clearly willing to sell their available supplies at the world market price. Assume that the cocoa supply is fixed (in the short run) and that marketwide demand elasticity is one (that is, world sales must be reduced by 1 percent in order to effect a 1 percent increase in price). What fraction of the crop must the Ivory Coast hold off the market to make \$2.00 the equilibrium world price? What fraction must it withhold if the elasticity of demand is only one-half?

If the elasticity of demand is 1, then the percentage change in the quantity and percentage change in price are equal in magnitude. The decrease in price from \$3 to \$1.50 would then result in a 50% increase in the demand for the good. Similarly, to raise the price to \$2.00, the Ivory Coast must withhold 33% of the world cocoa supply, which is their share of world supply—i.e. they would have to cease production completely (or, at least, cease supplying the world market). If the demand elasticity is $\frac{1}{2}$, then only 16.5% of the world

supply must be withheld, i.e. half of their production.

Workbook problems: 5, 7, and 8.

5. *Dumping*: The International Trade Commission ruled in March 1989 that Japanese companies had dumped 3.5 inch microdisks at “dumping margins” of 28% to 51% in the United States.

a. Is there a unique way to compute the margin?

This is a tricky question. The law specifies a hierarchy. The preferred method is to compare the price in the exporter’s market to that in the US; *if this is not possible*, the law specifies comparison to an equivalent third market; *if that is not possible*, the law specifies the use of constructed value. Thus, strictly speaking, the answer to this question is *yes*: the unique way to compute the margin is to use the highest feasible method specified in the hierarchy.

b. If the United States had levied anti-dumping duties on these disks, who in the United States would have gained and who would have lost?

The authors specify a partial equilibrium answer: consumers lose, producers gain. It should be noted that there are also general equilibrium implications. If the US is economically large, and trade is initially relatively free (i.e. the US is levying too small a tariff from a welfare point of view), net welfare can rise. However, it is extremely unlikely that the optimal tariff is in the 28-51% range. Thus, too high a tariff needs to be compared to too low a tariff.

c. Which groups in Japan would have gained and which would have lost from a U.S. anti-dumping duty?

This depends. If Japanese producers are competitive, *they* neither lose nor gain (i.e. there are zero economic profits). If the US is economically large in the market for 3.5” disks, the price of disks on the world market will fall, so Japanese terms-of-trade deteriorate, reducing Japanese income and, thus, welfare. Distributional effects follow sector in short-run and factor-ownership in the long-run.

7. *Undoing Barriers to Entry—A Tradeoff*: To Keep goods with potential military use away from certain countries, U.S. law requires that high-performance computers, including some personal computers, be licensed for export regardless of what nation is the importer.

a. Who, in the U.S., bears the cost from this policy?

In the first (partial equilibrium) instance, the producers who are denied access to certain markets, and who face additional costs in all export markets bear some of these costs. Note that these costs will act like an export tax. Thus, the change in relative price will induce income distribution effects of the usual short- and long-run sort. In addition, if the

US is economically large in this market, Foreign consumers will bear some of these costs.

b. What are the costs for allies in Europe and Japan?

We have just noticed that the terms-of-trade effects induced by this policy are a first cost to importers of this policy. A second cost relates to increased cost of national defense by our allies.

c. How does the licensing affect the U.S. trade balance?

Of course, in every model with which we have worked this term, it has no effect on the trade *balance*. That is, our models have always *assumed balanced trade*.

A report by the National Academy of Sciences recommended that these controls be relaxed on personal computers and strengthened on supercomputers. The Academy proposed that the controls on personal computers were “unenforceable.”

d. Can you suggest some reasons why they are “unenforceable”?

As relatively standardized products, sold through a multitude of distribution channels worldwide, if Foreign governments won't enforce US restriction on non-US distributors (or even on US distributors outside the US), it will be virtually impossible to enforce such restrictions.

The National Academy of Sciences argued that U.S. reluctance to share technology with allies had caused loss in U.S. competitiveness.

e. In a world where R&D is costly, what is the effect of these export licensing rules on the structure of the world computer industry?

Costly R&D is presumably taken to imply fixed costs and, thus, decreasing marginal costs (i.e. increasing returns to scale). Restricting access to certain buyers will raise the costs of US firms, making them less competitive. As a result, Foreign firms will expand at the expense of US firms. In addition, US firms may begin to locate their activities outside the US. In either case, the share of US production in world output will fall.

8. *The Friendly Skies*: Air travel in Europe is expensive compared to flying in the United States. The most important reason is regulation in each country that greatly favors one “national” airline. The airline receives monopoly rights on the most lucrative national routes, thereby shutting out competing national carriers. In addition, competition on routes between major European cities is avoided by price- and quantity-fixing agreements between major “national” airlines.

Air France is one such “national” carrier, and according to *The Wall Street Journal* was accused of “squeezing the last drops out of the fruits of protectionism.” The carrier was considering increasing its share in Air Inter, which flew mostly domestic French routes, and it was increasing

its presence in a national ticket distribution network.

- a. What would be the effect on prices if Air France acquired Air Inter?

Because the market power of Air France would increase, we would expect prices on French domestic routes to increase.

- b. A former employee of Air France was quoted as saying, "Air France has more resources ... than it thinks." What did he mean by that? Was it consistent with the market structure?

This sounds like a statement that Air France is producing its product (i.e. air travel services) inefficiently. This is consistent with an imperfectly competitive market structure, since perfect competition would not permit such inefficiency.

- c. In 1989, the British government allowed the largest British carrier, British Airways, to acquire the second largest, British Caledonia. And the French Government reallocated more profitable domestic routes away from small carriers toward Air France. For which event were the governments preparing themselves and their national carriers?

By allowing national firms to increase in size, and thus market power, the governments were presumably preparing for increased integration of European markets—"Europe 92". That is, in the expectation of access to larger markets, the increased size of domestic firms is presumed to increase their share of imperfectly competitive profits.

- d. What is your prognosis for the structure of the European airline industry over the next 20 years?

As with the US after deregulation of the airline industry, the main prediction would seem to be increased concentration, increased price competition, more efficient production, and possibly decreased safety.