

ECON 224, Professor Hogendorn

Problem Set 5 Answers

1. *Boatshoes2_a*. The FTC and DOJ are empowered to review mergers for anti-competitive effects under the Clayton Antitrust Act. The Act requires that merging firms not create an oligopolistic market structure that will hinder an efficient market outcome. The process is formalized through a filing under the Hart-Scott-Rodino Act, which also allow the authorities to follow up with further investigation if necessary. In this case there were no follow-up questions, but even so the HSR filing cost “millions of dollars” in lawyers’ fees according to Sperry’s CEO.

Using the HSR information and other market data, the authorities determine whether the merger will be anti-competitive. They calculate the diversion ratio, which tells what percent of Sperry customers would chose Sebago as their next-best choice of shoe if Sperry raised its price. In this merger, the diversion ratio was probably not too high given the many other choices of boat shoes, including smaller brands as well as the big four. But if we assume each firm has an equal market share, then a diversion ratio of 33% would be a natural choice. The authorities will also consider whether there are other firms that could potentially enter the boat shoe industry if Sperry and Sebago raised prices. They probably concluded that any shoe company could start a boat shoe line without difficulty, suggesting robust potential for entry.

In their HSR filings, Sperry and Sebago probably listed cost-reducing efficiencies from the merger, suggesting that total welfare might increase after the merger. But these arguments would only be persuasive if these efficiency gains were specific to this merger and

not just due to sharing fixed costs or ongoing technological change. In this example, the merged brands can combine resources to achieve economies of scale on both on the production and sales side, so those efficiencies might indeed be merger specific.

2. *HomeDepot_a.*

(a) $HHI = 70^2 + 30^2 = 5800$. $CR4 = 100\%$.

(b) There are at least three possible lines of argument:

- i. The firms are explicitly colluding. This is *per se* illegal under the Sherman Act, and could lead to stiff fines or jail time. It is difficult to prove, however, because it requires evidence of communication to fix prices.
 - ii. The firms are tacitly colluding. This is not *per se* illegal, but it is a bad form of industry conduct. If there were a merger proposal in the industry, the government could use tacit collusion as a reason for denying any further mergers.
 - iii. Home Depot may be so big that it effectively has a monopoly, and is setting a monopoly price. The government could potentially bring suit against Home Depot for misusing monopoly power under the Sherman Act. In the worst case for Home Depot, the company could be broken up. Probably a 70% market share would not be high enough to make this a good case, especially since there are a lot of alternative ways to buy the products these stores sell.
- (c) The main issue here is that Home Depot has a lot of fixed costs (store, parking lot, delivery logistics, etc.) that are spread over its output. That gives it economies of scale, the question is how much. If the economies of scale are substantial no matter what, then the AC curve slopes down forever and there is a normative natural monopoly. With enough demand,

it may be possible the firms achieve an oligopoly price p_2 that results in demand q_2 and is high enough to exceed $AC(\frac{1}{2}q_2)$. This is more costly than just having one big firm, although if demand is sifted far enough the the right, the difference in costs may be very small. This is probably where we are in real life, so that this industry is more of a positive natural duopoly.

(d) Several forms of regulation are possible:

- i. Under marginal cost pricing, Home Depot is required to set price equal to marginal cost. This removes any inefficiency; there is no deadweight loss. The problem is that with economies of scale, marginal cost is below average cost, so Home Depot cannot cover its fixed costs. There will be a need for a government subsidy or some other measure to keep Home Depot from going bankrupt.
- ii. Under average cost pricing, Home Depot would have its price regulated so equal average cost. The advantage is that Home Depot would then be self-liquidating – no subsidy would be needed. However, there would be some deadweight loss since quantity would be lower than under marginal cost pricing.

One way to implement average cost pricing is through rate of return regulation. This would attempt to determine Home Depot's marginal cost and its capital or "rate base." The price would then equal the marginal cost plus a "fair rate of return" on the rate base. The downside is that Home Depot would have an incentive to over-invest in capital in order to "pad the rate base." This is called the Averch-Johnson effect.

Another way to implement average cost pricing is through a price cap. This would attempt to determine Home De-

pot's average cost and then cap price at that level. Home Depot would have an incentive to figure out ways to cut costs, because they could keep the resulting profits. The regulatory might impose an additional X-factor in the rate base with the expectation that Home Depot could achieve some additional productivity gains each year just based on technological change.

- iii. The government could sell Home Depot a monopoly franchise. It could ask Home Depot to bid to offer the lowest possible prices, which would be equivalent to average cost pricing, or it could simply ask for the highest possible bid, which would be equivalent to monopoly pricing but with the monopoly profit going to the government.
3. False, the three segments are generation, transmission, and distribution. Generation is treated as a competitive industry for the most part. Transmission is regulated at the federal level and there are multi-state Independent System Operators that run the transmission grid as regulated monopolies. Distribution is regulated at the state level where there are local public utility companies that bring power to people's homes.