

Regulated Monopolies

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Eric Rasmusen, Department of Business Economics and Public Policy, Kelley School of Business, Indiana University. BU 438, 1309 E. 10th Street, Bloomington, Indiana, 47405-1701. (812) 855-9219. Fax: 812-855-3354. erasmuse@indiana.edu, <http://rasmusen.org>.

LOOK ON THE WEB FOR NEWS STORIES TO ADD COLOR

Anti-trust laws can't deal with all situations of monopoly. Consider the following scenario:

National Electric Company has been serving Niceville for many years. It buys power from various companies on the national power grid, and resells it to home and business customers in Niceville using the company's network of underground cables. National pays a lot to maintain its cable system, but it is a profitable company and it pays a 10

The new mayor of Niceville calls for the state Attorney-General to crack down on National's monopoly. "National is an obvious monopoly," he says. "They are making monopoly profits, and they should be broken up. If we had three different electrical companies competing, then service would be better and rates would be lower." National's CEO replies, "No— to break us up would be disastrous. It would result in destructive competition and negative profits for all three companies, because we would each try to cover our variable costs and ignore our fixed costs of maintaining our cable systems. And it would be silly to have each home served by three underground cables, when it only buys from one electric company at a time. Leave well enough alone."

The mayor has a point, of course. National is charging above marginal cost, so output is inefficiently low, as we've already discussed in the previous chapter. But the CEO has a point too. If there were three companies laying down and maintaining cable, costs would triple unnecessarily. So what should happen?

This question is important. Electricity is a big business. There are xxx electrical companies in the US. And it isn't just electricity where this kind of thing comes up. Think about water supply. Think about railroads. Think about mass transit. Think about schools. Think about steel mills. There are lots of situations where it seems as if it's more efficient to have one big company— or one big government agency— producing everything. In this chapter, we'll try to figure out whether "big is better" means we should

allow monopolies, but “Monopolies restrict output” means we should regulate them. It will turn out that we have to look carefully at each situation, and you’ll learn what to look for.

So— when should the government decide it is best for society to allow monopolies, but to regulate them?

Most of anti-trust law is devoted to preventing artificial monopolies—to prevent industries that would otherwise be competitive from acting as monopolies. If the government bans bad practices such as price agreements, then the market will settle down to the natural equilibrium that maximized social surplus, and companies will voluntarily choose to use efficient methods of production.

Such reasoning assumes, however, that the cost curves for the industry are U-shaped, so average cost first rises and then falls with output. If average cost falls with output, then the bigger the firm, the lower its average cost. Take a look at figure 1, which shows three different kinds of cost curves.

In figure 1(a) the average-cost curve is U-shaped. If every company has this cost-curve, then the cheapest way to produce 200 units of electricity is to have two different companies produce 100 each, rather than one company producing 200. If they each produce 100 and charge a price of 20. If one firm operated as a monopoly, it would produce less, charge more, and have higher costs than necessary. If two firms operated as a cartel, they would keep costs lower, but they would still choose to produce less than 200 so as to drive up the price and maximize their own profits. So antitrust law which encouraged entry and discouraged price cooperation would help move the the outcome closer to the ideal of two firms producing 100 each. If the two firms could not cooperate, their competition would not drive the price down all the way to 20 and output all the way to 200. Since there are only two of them, competition wouldn’t force prices all the way down to zero profits, but competition would at least limit their ability to operate inefficiently and to raise prices.

In figure 1(b) the average-cost curve is falling over its entire length, and

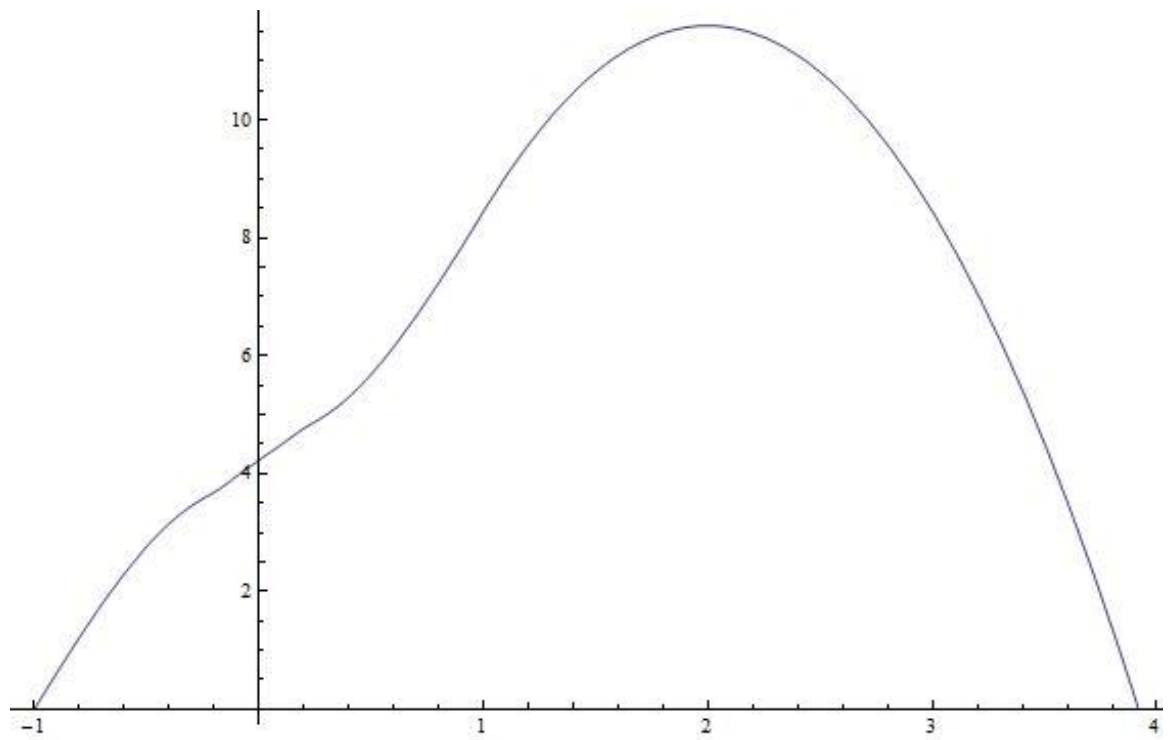


Figure 1: **Three Kinds of Cost Curves**

the marginal cost curve is flat. This means that the company has a large fixed cost, but constant marginal cost; it has to pay for overhead, but its extra production cost to produce an extra unit is always the same, no matter how much it produces.

In figure 1(c) the average-cost curve is, falling over its entire length, as in figure 1(b), but the marginal cost curve is also falling. Moreover, the average and marginal costs start out the same. This means that the firm has no fixed cost. We can see that because the average cost at low output is the same as the marginal cost. As the firm produces more output, though, the cost of each extra unit falls, so the average cost, as we average in the new cheaper units, is dragged down.

Thus, there are two reasons average cost can fall: because a fixed cost is averaged over more and more units, or because the marginal cost is falling. We say there are **economies of scale** whenever average cost falls with output. It's also possible to have a fixed cost and falling marginal cost—a good exercise is to think of how I would draw “figure 1(d)” to illustrate that.

Now let's get back to the monopoly problem. Let's use the industry in figure 1(c) for illustration. Suppose we have two firms in the industry, and we think about having them compete price down to marginal cost and split the market, our usual ideal. What would happen?

The problem is that our usual equilibrium conditions of price equalling marginal cost and zero profits are contradictory. Suppose the price equals marginal cost, and the firms split the market, at outputs of 50 each. For one thing, the price will be below average cost, so each firm will make a loss. For another thing, one of the firms would deviate by cutting its price, so it could increase its market share, since with the increased output, its marginal cost would be lower and it would profit from the extra sales. Whichever firm is bigger will have a cost advantage. So we would expect a costly war of attrition as the two firms each struggled along making losses in the hopes that the other firm would drop out, leaving it free to raise prices drastically as a monopoly.

In addition, our earlier finding that competition maximizes social surplus wouldn't apply. If you were a social planner, would you want to have two small firms split the market? No. Instead, because there are economies of scale, you would want one big firm to operate and produce the same output, but at lower cost.

Network Externalities

Economies of scale are a supply-side reason for economies of scale. There is also a demand-side reason: **network externalities**. Network externalities are present when buyers are willing to pay more for a product if they expect more other people to buy it too. Telephone service is a good example. It is useless to be the first person in the world to own a telephone—there is nobody else to call! The more people own telephones, the more valuable it is to own a telephone yourself. This was true in the early days of telephone, and it is true of cell phones today— if more of your friends have cellphones and are texting messages to each others, that increases your willingness to pay for a cellphone yourself.

Many information products are natural monopolies. Microsoft Windows dominates the operating system market because if everybody else uses Windows, you want to use it yourself. Even if it costs more, or doesn't work as well, more software applications will be written for it because it is so popular. Thus, there are network externalities. In addition, software in general has high fixed costs of production— the cost of developing it— and very low marginal cost— the cost of copying it and marketing it. We frequently see wars of attrition as companies introduce competing new products, knowing that whoever grabs the biggest market share at first will get the entire market.

Solutions to Natural Monopoly

There are several policies to deal with natural monopoly.

1. Just let it be an unregulated monopoly.
2. The government sells a license to be the unregulated monopoly in that industry.

3. Government ownership
4. Marginal-cost pricing plus a subsidy
5. Average-cost pricing

1. **Government ownership**

Socialism refers to a system of government in which the government produces goods and services. There are varying degrees of socialism. In practically all modern countries, the government provides roads. In most, it provides education, for free (grade schools) or for tuition (at state universities), often in competition with private-sector for-profit and non-profit companies. In some, the government owns airlines, steel mills, and stores, though with the fall of Communism in the 1990's and privatization in many countries that were partly socialist but not Communist this has become less common.

Government failure means that governments generally will not provide goods and services at as low costs as private companies, and they will be tempted to use laws and regulations to favor the government companies at the expense of private competitors. It has gone out of favor to have governments owning steel mills and car companies, though the U.S. government's bailouts of General Motors and Chrysler in 2009 may indicate a comeback.

In the case of industries that are not natural monopolies, private ownership is an easy policy decision. It avoids government failure either via inefficient government operation or inefficient government regulation. But in the case of a natural monopoly like electricity distribution, government ownership might be the lesser of evils. Perhaps costs will be higher than for a private company, but the government enterprise at least could set the price equal to marginal cost, and cover the resulting losses (since $P < AC$ in that case) using revenue from income taxes. The price would be xxx and the subsidy would equal area XXX in figure 2.

The very fact that the government can cover losses using tax revenue, however, should lead us to expect problems with cost and quality, and perhaps inefficiently low prices, and regulations to protect against low-cost

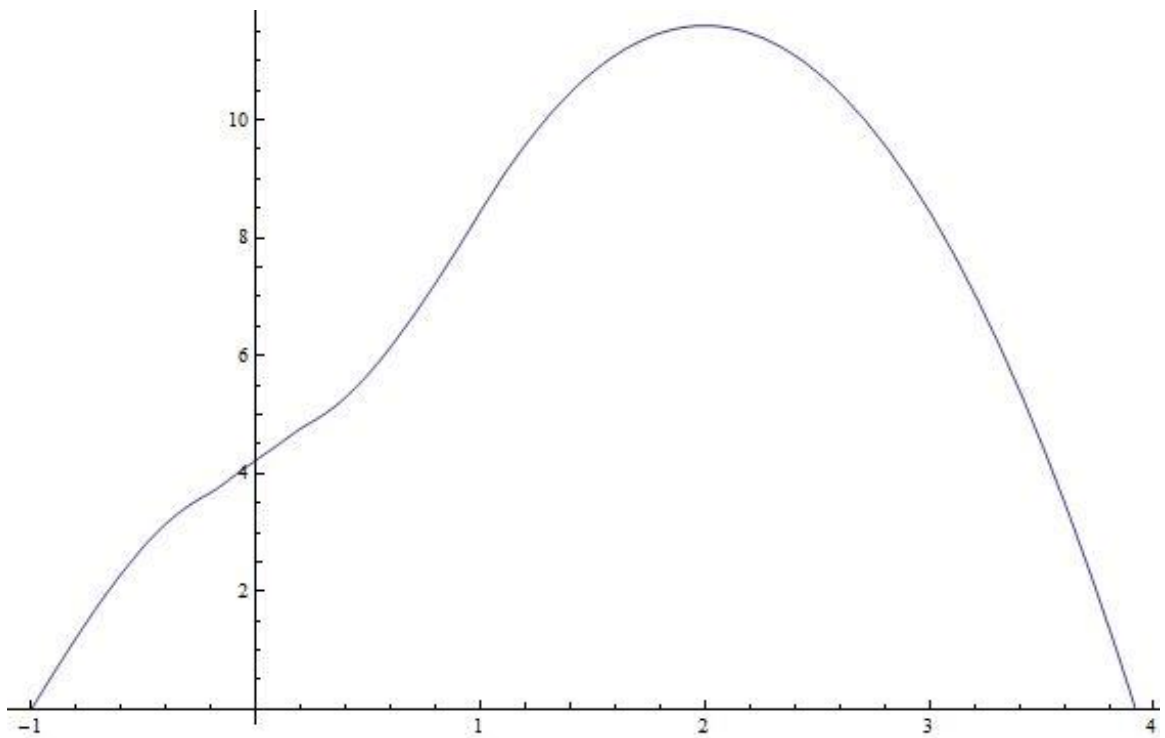


Figure 2: Regulated and Unregulated Natural Monopoly

private-sector competitors. Consider garbage collection, an industry that is government-owned in many cities. The government officials running the garbage operation may well find it easier to lobby for extra subsidies than to find ways to save costs or to incur the anger of unionized workers by trying to reduce pay. Remember, too, that those workers are also voters. The officials also can expect little reward for saving so much on costs that they can return part of the subsidy that is supposed to cover their loss. And if some competitor to city garbage collection is provided by private companies, the government will be tempted to ban those competitors so as to help the government company. A true natural monopoly would not need protection against entry unless its operating costs were far higher than that of potential competitors, but such might be the case. Thus, city regulations often ban competition from mom-and-pop garbage haulers.

Government ownership is actually in widespread use in the United States for public utilities. Notable examples are the Tennessee Valley Authority, and water and garbage collection in many cities.

Maybe reduce
this to 3-year
periods.

2. Unregulated monopoly

Now let's go to the opposite extreme. Just because there is market failure does not mean that the government should regulate the industry. What will happen if the government does nothing? As just discussed, there may be a war of attrition as several companies battle it out to be the surviving monopoly. Once it is clear which company will survive, it will operate as a monopoly. As figure 2 shows, it will use the standard rule of maximizing profit by choosing quantity to equate marginal revenue to marginal cost, which happens at a quantity of 30 and a price of 10. That is less than the quantity which maximizes social surplus, 50, which consumers would buy if the price equalled 4, the marginal cost at $Q=50$.

The bad things about not regulating are the usual bad things about monopoly: too little trade because the monopoly wants to force up the price, rentseeking to acquire the monopoly (that war of attrition), and possible op-

Table 14.3
Productivity Measures for the Australian Airline Industry

Year	Tons of Freight and Mail Carried per Employee	Passengers Carried per Employee	Revenue Earned per Employee
<i>Ansett Airline (Private Firm)</i>			
1958-59	10.69	282	\$7,172
1959-60	10.77	309	7,758
1960-61	10.96	337	8,679
1961-62	10.84	331	8,425
1962-63	11.09	316	8,510
1963-64	11.06	324	9,071
1964-65	12.14	352	9,705
1965-66	11.08	354	10,479
1966-67	10.34	348	10,829
1967-68	9.57	363	12,080
1968-69	9.54	392	13,185
1969-70	9.35	414	14,118
1970-71	8.75	417	15,558
1971-72	8.82	437	17,280
1972-73	9.07	468	17,829
1973-74	10.02	532	21,461
Average	10.25	373	12,009
<i>Trans-Australian Airlines (Public Firm)</i>			
1958-59	4.42	217	\$6,104
1959-60	4.57	259	7,016
1960-61	4.52	228	7,052
1961-62	4.64	246	7,367
1962-63	4.69	255	7,726
1963-64	4.83	274	8,093
1964-65	5.02	287	8,553
1965-66	4.88	294	9,072
1966-67	5.11	316	9,954
1967-68	5.41	337	11,033
1968-69	5.34	356	11,734
1969-70	5.80	390	13,146
1970-71	5.70	399	14,522
1971-72	5.63	414	15,644
1972-73	5.62	449	16,541
1973-74	6.06	496	19,183
Average	5.14	326	10,740

Source: David Davies, "Property Rights and Economic Efficiency: The Australian Airline Revisited," *Journal of Law and Economics* 20 (April 1977). Data are from Ansett Transport Industries, Ltd., Annual Report, 1958-1974, and Trans-Australian Airlines Annual Report, 1958-1974.

Figure 3: A Public Airline versus a Private Airline

erating inefficiency because the company that has the monopoly might have higher costs than a potential rival. In addition, a lot of the social surplus would go to the seller instead of to buyers, which is bad if you value the welfare of consumers more than of sellers, or if you don't like the idea of monopolists being rewarded for bad behavior.

The good thing about not regulating is that it avoids the possibility of government failure. As we will see shortly in talking about the other policies towards natural monopoly, it is easy for the government to make the wrong choices, and also tempting when so much money is at stake. We have to balance the costs of market failure against the dangers of government failure.

This may explain why governments follow the “do nothing” policy with information industries that are natural monopolies. The downside of monopoly is not so great when the product is a software application instead of electricity, because software is an innovative industry where new products are constantly appearing. Microsoft may have a natural monopoly, with high profits, from MS-Word, but consumers do have access to other word-processing applications and Microsoft always faces the threat of some superior word-processing application being developed. Also, price regulation is a slow and cumbersome process, and the mere administration of it would be difficult with such a differentiated product as software. Finally, monopoly profits are actually a good thing in innovative industries, because we want to encourage companies to create new products by giving them the prize of monopoly profits.

Electricity distribution is different. There is innovation, but it's in the production technology, not the product. Electrons are electrons. Demand is inelastic—insensitive to price, with a steep demand curve. Hence, a monopoly has a lot of market power, a lot of profits, and a lot of political power. Leaving the monopoly unregulated is a bad idea.

3. Franchise Bidding

Monopolies have high profits, and restrict sales. If we're willing to accept the restriction of sales, we can deal with the high profits by just taking them

away. The government could do this by taxing the electricity monopoly enough to take away its profits. That, however, raises the question of how the government knows how much to tax the monopoly. It could examine the monopoly's books, or tax the dividends it pays.

A clever solution, known as **franchise bidding** is to sell the right to be the monopoly by auction. The Niceville government could announce that whichever company paid the biggest lump sum at an auction would have the exclusive right to sell electricity in Niceville. This turns the rentseeking to good use. If all potential companies had the same costs, they would all bid amount A in figure 2, and the government would choose one of them as a tiebreaker. The company would charge the monopoly price, but its net profit, after subtracting the auction payment, would be zero. And there would be no destructive war of attrition.

Even better, if one firm had lower costs than the others, it would be willing to bid higher. So this method would select the lowest-cost company.

A variant on this is to have each company's bid take the form of the price it would charge for electricity. The company that won would not have to pay anything to the government, but it would have to charge buyers the electricity price it submitted in the auction. Again, this would select the lowest-price seller. In Figure 2, the price would be 23, equal to average cost so that the profit was zero. No company would offer a lower price, since it would make negative profits, and any company that tried to offer a higher price would be underbid.

Of course, once one company is established, if the license comes up for renewal that company will have a big advantage in the auction. Thus, it makes more sense for new products such as cable TV was in the 1980's than for old products such as electricity.

Maybe reduce
this to 3-year
periods.

4. Marginal-cost pricing plus a subsidy

In preference to government ownership, we could have private ownership,

Table 14.4
Major Privatizations in the United Kingdom

Organization	Year of First Share Sale	Industry
British Petroleum	1979	Oil
National Enterprise Board Investment	1980	Various
British Aerospace	1981	Aerospace
Cable & Wireless	1981	Telecoms
Amersham International	1982	Scientific goods
National Freight Corporation	1982	Road transport
Britoil	1982	Oil
British Rail Hotels	1983	Hotels
Associated British Ports	1983	Ports
British Leyland (Rover)	1984	Automobile producer
British Telecom (BT)	1984	Telecoms
Enterprise Oil	1984	Oil
Sealink	1984	Sea transport
British Shipbuilders & Naval Dockyards	1985	Ship building
National Bus Company	1986	Transport
British Gas	1986	Gas
Rolls-Royce	1987	Aero-engines
British Airports Authority	1987	Airports
British Airways	1987	Airlines
Royal Ordnance Factories	1987	Armaments
British Steel	1988	Steel
Water	1989	Water
Electricity distribution	1990	Electricity
Electricity generation	1991	Electricity
Trust Ports	1992	Ports
Coal industry	1995	Coal
Railways	1995–97	Railways
Nuclear energy	1996	Electricity

Source: Stephen Martin and David Parker, *The Impact of Privatisation: Ownership and Corporate Performance in the UK* (London: Routledge, 1997).

Figure 4: Privatization in Great Britain

with a regulation requiring the private company to set the price at marginal cost. The private company would operate so as to maximise profits, which means it would try to minimize its costs for a given level of output. The price regulation would prevent it from restraining output to increase the price to the monopoly level, and the subsidy would take care of the fact that then the price would be less than average cost. In figure 2, this would look just like government ownership: the price would be xxx and the subsidy would equal area XXX. But we would hope that costs would not rise because of government failure.

Government failure is still a problem, though. The private company would want to minimize costs, but it would like to pretend that its costs are high so it can get a bigger subsidy to cover its supposed losses. Like the government-owned enterprise, its CEO might find that the most effective use of his time is not to make a good product at a low cost, but to lobby the government for additional help. Direct corruption would also be a concern, since the necessity of some subsidy provides a cover to a government official to funnel extra money to someone who bribes him.

5. Average-cost pricing

Finally we come to the system most used for electricity in the United States: private monopolies whose price is regulated to roughly equal their average cost. The disadvantage of this scheme is that it results in a price higher than the ideal one: $P=AC$ instead of $P=MC$, amount $P=xxx$ in figure 2 rather than $P=xx$. Thus, there remains the triangle welfare loss XXX, because the company could produce more electricity and customers would be willing to pay the extra cost. But average-cost pricing has the advantage that we don't need a government subsidy any more. The government might still allow too generous a price, but at least no cash transfer is made from government to private business. The enterprise is self financed.

The company also has an incentive to keep its costs low, because the actual way average-cost pricing is implemented is to set a price every few years that aims at equalling average cost, but which is fixed even if the

companies costs go higher or lower. Thus, in figure 2 the company is allowed to charge $P=xxx$, but if the company finds some way to reduce costs so that $AC \downarrow xxx$, it can keep the profits. Or, if it can find some way to increase the demand for electricity so that sales at $P = xxx$ come to equal $Q=xxx$ instead of the $Q=yyy$ shown in the figure, it can also make positive profits.

Next we'll see how the government figures out which price equals average cost.

A Rate Case

The general idea of average-cost pricing is to find a price which equals average cost. Here's how it's done.

First, the state legislature sets up a public utility commission. This is a committee of about five members who vote on what price to grant the electrical and other regulated utilities in the state. In some states, the members are elected. In others, they are appointed by the governor, but cannot be fired by him.

In Indiana in 2010, for example, the commissioners are as shown in Table XXX.

Once the utility commission is set up, the utility company applies for permission to charge a particular set of prices. This actually isn't just one single price for electricity; it is a whole schedule of prices. There can be one price for businesses, and one for homes. There can be one price for daytime, and one for night. There can one price for the small-quantity user and another for high volume.

HERE PUT AN ACTUAL SCHEUDLE

The utility company presents its case for why these prices can be expected to yield zero profits. Importantly, by "zero profits" here we mean zero economic profits. The company must be allowed to cover its cost of capital, just as any private company must do. The crucial equation in **rate-of-return regulation** is

$$\sum_{i=1}^m price_i * Eoutput_i(price_i) = E \sum_{j=1}^n price_j * input_j + R * (Rate Base) \quad (1)$$

Let's look at the terms in this equation carefully. The commission needs to choose m different prices for the company's m different products, $price_1, price_2, \dots, price_m$. "Product" might mean a customer category— "home electricity", for example. The company's sales of product i , $output_i$, will be a function of the price of i . The left-hand-side of the equation, $\sum_{i=1}^m price_i * Eoutput_i(price_i)$, equals the company's expected revenue, where the E represents the fact that we have to estimate what the output will be for a given price because demand curves shift over time.

The right-hand side of the equation is the company's expected costs. The first component of the costs is $E \sum_{j=1}^n price_j * input_j$, the prices of the various inputs such as coal, labor, and equipment depreciation.

Here, I need a detailed example. I need to look at the web for this stuff.

The commission does not have to accept the prices the company offers. The commission will decide for itself whether the company's estimates of revenue and costs are reasonable. The commission will also decide whether every capital expenditure really is justified, and should be put in the rate base. There have been some big denials. A notable example is the Diablo Canyon Nuclear Plant.

Ramsey Pricing

Suppose National comes back to the mayor and says,

"Mayor, we've settled into the new regulatory regime, and we're not going to try to get rid of it. We do, however, wish that the regulation weren't so rigid. Right now, the regulatory commission sets a price for each product that gives us a fair return on that product. So, of course we have a fair return overall. But wouldn't it be okay if we made a profit on some products, so long as it was balanced by a loss on others?"

The mayor is very suspicious, because he knows that companies try to come up with fancy scheme to fool the government. But the CEO actually has a point. Social surplus can be increased by raising some prices, if other

I need to figure out how this actually works. I think the rate base includes capital less depreciation, and includes capital financed by debt, and that debt costs are NOT in the middle term. Find the story.

prices are lowered at the same time. The idea is to raise prices on goods whose quantity demanded is insensitive to price, while reducing prices on goods whose quantity demanded is sensitive. That would give us an increase in the quantity demanded of goods, while not allowing profits overall to stay at zero. The idea is called **Ramsey pricing**.

¹

Suppose the company sells business electricity (B) and home electricity (H), with a total cost of

$$TC = 1800 + 20B + 20H$$

and the demand curves are

$$B = 100 - P_b$$

and

$$H = 120 - 2P_h.$$

Note that in figure 5, homes have a steeper demand curve, with greater elasticity of demand (that is, price sensitivity of demand).

If the firm charges a price equal to marginal cost, $P = \$20$, it will sell 80 units of each good and suffer a loss of \$1,800. There would be zero triangle loss, of course.

Instead, the firm could raise both prices to $P_b = P_h = \$37$, and break even, selling 63 units of B and 46 units of H. It would be receiving net revenue of \$1,071 ($= 63 * (37 - 20)$) from B and \$736 ($= 46 * (37 - 20)$) from H, which when summed would about cover the fixed cost of \$1,800. The triangle losses of social surplus would be \$144.5 ($= .5 * (80 - 63) * (37 - 20)$) from B and \$289 ($= .5 * (80 - 46) * (37 - 20)$) from H, a total loss of \$433.5.

As you can see, the same price increase give us less extra revenue and more triangle loss from good H than from good B. The problem is that the quantity demanded falls so much more from H, because it is more price

¹Here use an example from Chapter 11 of Vernon-Viscusi-Harrington.

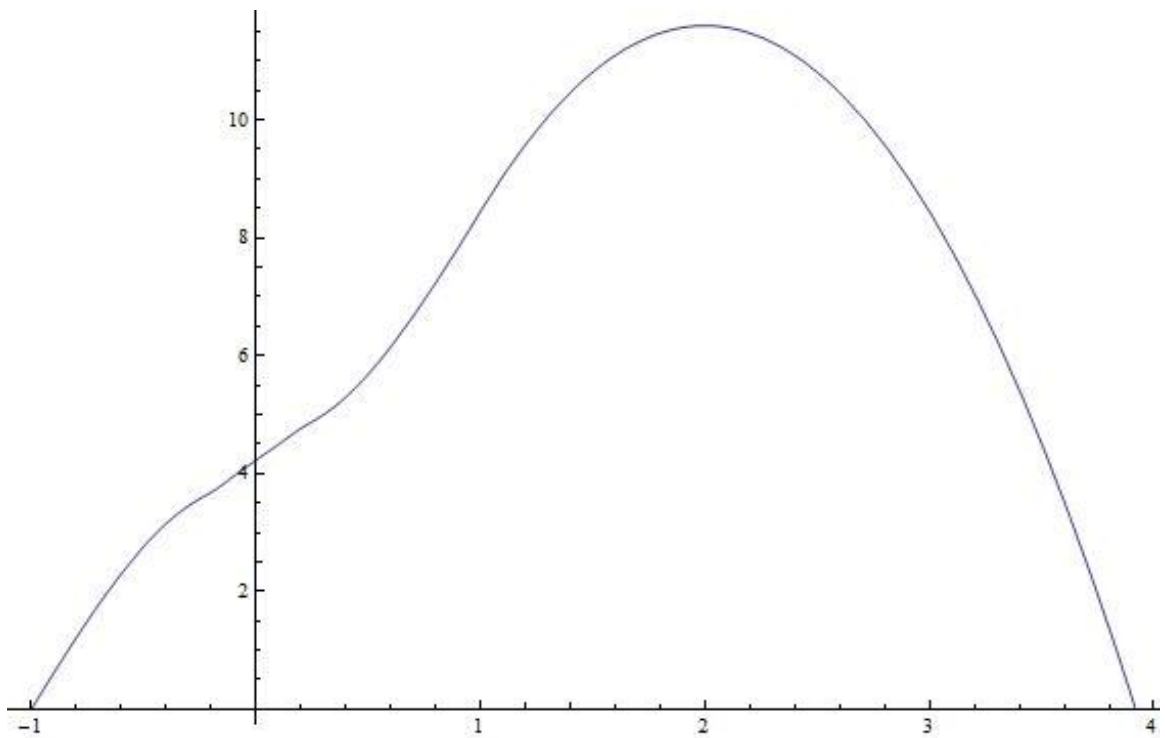


Figure 5: Ramsey Pricing

sensitive. The solution is obvious: don't increase the price of H so much above marginal cost, but increase the price of B even more to recoup the lost profit.

Instead, though, we could have prices of $P_b = \$40$ and $P_h = \$30$, and get the same \$1,800 with less welfare loss. The company would get net revenue of \$1,200 (= 60 *(\$40-\$20)) from B and \$600 (= 60 *(\$30-\$20)) from H, which when summed would cover the fixed cost of \$1,800. The triangle losses of social surplus would be \$200 (= .5* (80-60)*(\$40-\$20)) from B and \$100 (= .5* (80-60)*(\$30-\$20)) from H, a total loss of just \$300.

The equation that determines the optimum is known as the **Ramsey rule**. Recall that the elasticity of demand is the price-sensitivity of demand:

$$\text{Elasticity of demand} = \frac{\% \text{Change in quantity demanded}}{\% \text{Change in price}} \quad (2)$$

The Ramsey rule (which I will not prove here— just accept it on faith) requires prices of both goods $i = 1, 2$ to be set so:

$$\frac{\text{Price}_i - \text{MC}_i}{\text{Price}_i} = \frac{\text{Revenue Need}}{\text{Elasticity}_i} \quad (3)$$

This says to raise the price the most above marginal cost for the good with the more inelastic demand— and it says how much, too.

If the company doesn't need to make any profit to survive, Then Revenue-Need=0 and price equals marginal cost for each good. The example used just two goods, but the Ramsey rule applies even if there are 3 or more goods— just make sure each has its price increased above marginal cost in inverse proportion to its elasticity of demand.

Government Failure: Industries that Pretend to be Natural Monopolies or that Shouldn't Survive

Naturally, when there is an argument that justifies heavy government control over lots of wealth, there will be people trying to abuse that argument. First, there will be people who want the government to have an excuse to

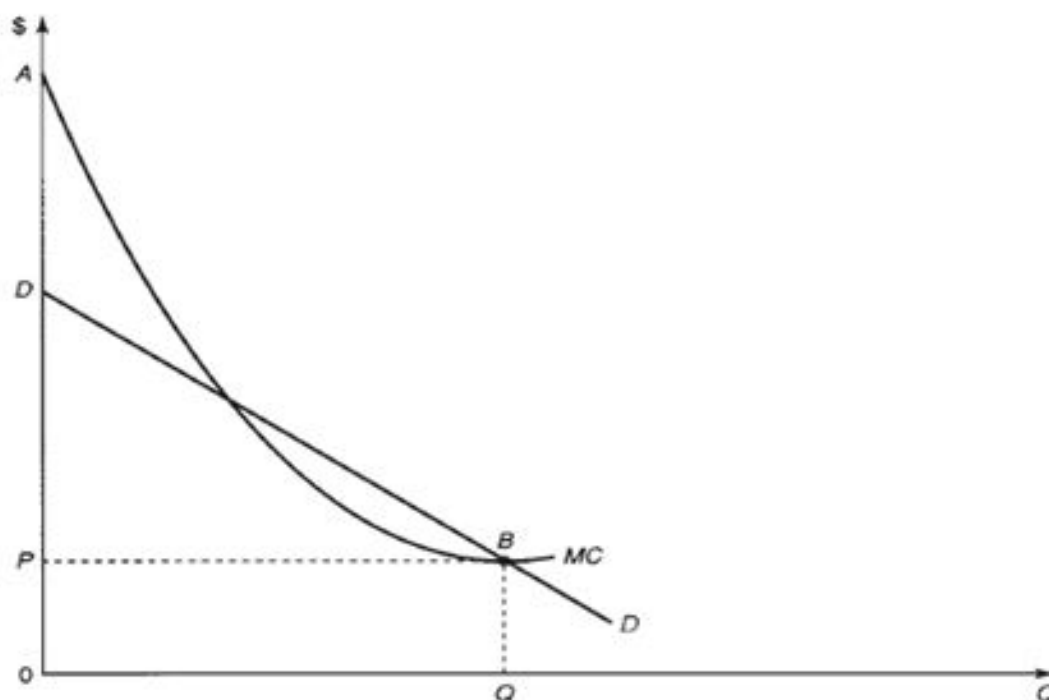


Figure 11.7
Natural Monopoly with Costs Exceeding Benefits

Figure 6: An Industry that Should Die

increase its power. On the other hand, there will be people who want to use the government to increase the profits of their industry.

Airline regulation is a good example.

Education is another example.

Garbage disposal is another example.

The Unviable Monopoly

Another problem is that sometimes an industry that is a natural monopoly couldn't survive even as an unregulated monopoly. The product just isn't much wanted. In figure 6, the average cost curve is always below the demand curve, so there is no price-quantity pair which generates positive profits.

This is a tough business to be in. A company might find itself in this

position if demand used to be higher, though— say, at D_2 — but its product became outmoded. A railroad, for example, might start off as a profitable natural monopoly in 1900, with its rates strictly regulated by the government so as not to give it exorbitant profits. By 2000, however, trucks and cars gave railroads plenty of competition, shifting demand back to D_1 . Raising prices is not the answer— that would just reduce the quantity sold even more. But the company might appeal to the government for a subsidy, offering to sell at $P=MC$ so long as its losses were covered. The social surplus would be negative, however. It would equal area *ZZZZ*.

Patents and Copyrights

Sometimes monopoly is socially useful, because it gives incentives for creation of new goods. Consider a company which invents a new anti-cancer drug. That company must spend lots of money

Questions You Should Be Able to Answer

Why won't competition work in a natural monopoly industry?

What would be the advantages and disadvantages of authorizing the federal government to set the price of the Microsoft Windows operating system?

JUST GO OVER THE ENTIRE CHAPTER AND PULL ONE QUESTION FROM EACH PARAGRAPH.

PUT ONE OF THESE ON EACH TEST

Terms to Know

Natural monopoly

Patent

Copyright

Ramsey pricing

Homework Questions

1. Spring Mill State Park in Indiana has a cave, a pioneer village, and lots of woods. Should the government operate it itself, or turn it over to a private manager? Should the admission price equal the marginal cost of each visitor, or should it try to cover the operating costs of the park?

2. Give an AC, MC equation. Ask for subsidy, average cost pricing, etc.