



Nobody's perfect

Departures from perfect competition



Imperfect competition

- The essence of imperfect competition can be captured in two basic characteristics:

1.



2.

How do firms limit competition?



Product differentiation

- Goods that are different but considered somewhat substitutable by consumers
- Take, for example, a firm selling running shoes that is earning short-run profits
 -
 -
 -
- Clearly, the more substitutes available the less market power

Barriers to entry

- Something that prevents firms from entering
- 1. Control of a Scarce Resource or input**
- Can't produce a good if you don't have access to the needed inputs
 - -
 -
 -

Barriers to entry

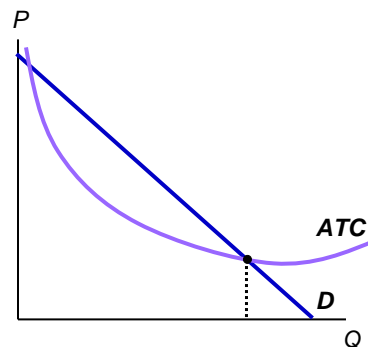
2. Economies of Scale

-
- Example, an oil refinery
 - \$500 million to build a refinery big enough to be efficient
 - This is certainly a barrier for most investors
-

Economies of scale

- A firm experiences *economies of scale* if its average total cost is always decreasing (over the relevant range).

-
-



Barriers to entry

3. Technological superiority

- Companies that maintain a consistent technological advantage may establish a monopoly
 -
- Success may not be because of technological advantage but because of *network externalities*
 -
 -

Barriers to entry

4. Government-created barriers

- Legally created monopolies.
- Most important arise from *patents* and *copyrights*.
 -
 -
- These are given to encourage innovation

Monopoly

... because you can

Monopoly

- A *monopolist* is the only producer of a good or service.
 -
 -
 -
- We'll continue to assume that:
 - The firm maximizes profits
 - Input markets are competitive
 - The firm has the same cost curves as in competition

Production decisions

- Production decisions are “how much” decisions.
- Produce output up to the point where $MR = MC$.
 - This *optimal output rule* has got to be true for any producer (perfectly competitive or not).
- The differences between perfect competition and a monopoly are that:
 -
 -
 -
 -

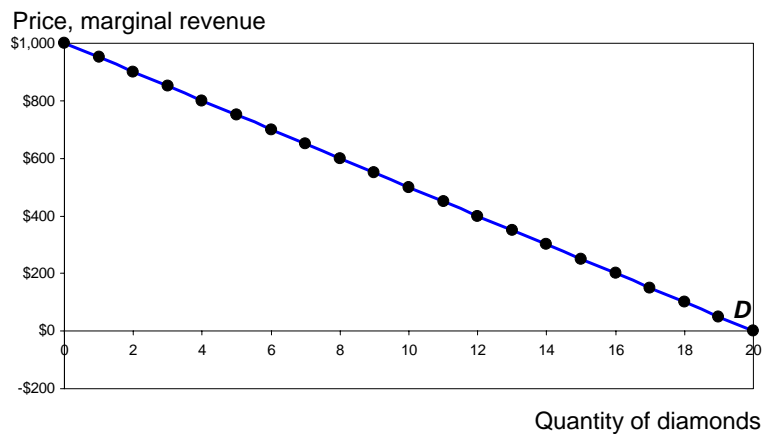
Production decisions

- Because the demand function is upward sloping for a monopolist marginal revenue no longer equals price
- Let's see what the marginal revenue curve looks like for a monopolist
- We'll start with a *single-price monopolist*.

Demand and marginal revenue

Price of diamond, P	Quantity of diamonds, Q	Total revenue $TR = P \cdot Q$	Marginal revenue $MR = \Delta TR / \Delta Q$
\$1,000	0	\$0	
950	1	950	
900	2	1,800	
850	3	2,550	
800	4	3,200	
750	5	3,750	
700	6	4,200	450
650	7	4,550	350
600	8	4,800	250
550	9	4,950	150
500	10	5,000	50
450	11	4,950	-50

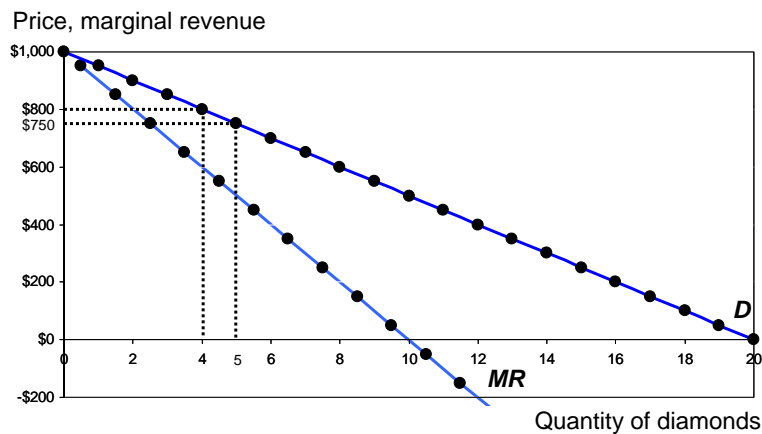
Demand and marginal revenue



Demand and marginal revenue

- Why is the marginal revenue of one more unit less than the price of that unit?
 - Because the monopolist is a *single-price monopolist*.
- By selling one more unit, there are two effects on revenue:
 -
 -
 -
 -

Demand and marginal revenue



Price and quantity effects

- As a monopolist produces one more unit, the price falls.
 - Or: as the price falls, the quantity demanded increases.
 - By how much does the quantity demanded increase?
 - How responsive is the quantity demanded to changes in the price?

Price and quantity effects

- Price elasticity of demand:
 - - The quantity effect is larger than the price effect.
 - As price falls, revenue increases (marginal revenue is positive).
 - - The price effect is larger than the quantity effect.
 - As price falls, revenue decreases (marginal revenue is negative).

Price and quantity effects

■ Example:

- As price falls from \$800 to \$750 ...
 -
- ... quantity increases from 4 to 5 ...
 -
- ... so the price elasticity of demand is:
 -
 - At that quantity, demand is elastic and therefore marginal revenue is positive.

Production decisions

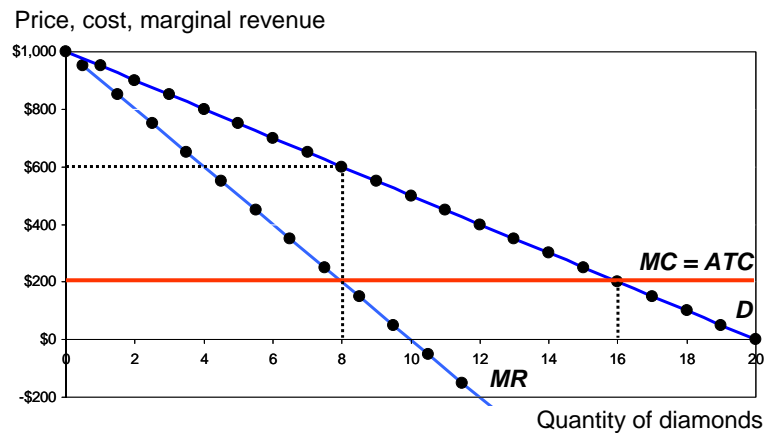
■ Optimal output rule:

- Produce output up to the point where $MR = MC$.
 - We know now that for a monopolist, $MR < P$.

■ Example:

- $FC = 0$,
- $MC = \$200$ (marginal cost is “constant”),
-

Production decisions



Monopoly and the supply curve

- - The supply curve shows the quantity supplied at an given price.
 - The monopolist chooses the price and the quantity herself at the same time.
- This is why the supply and demand framework is a framework for perfect competition only.

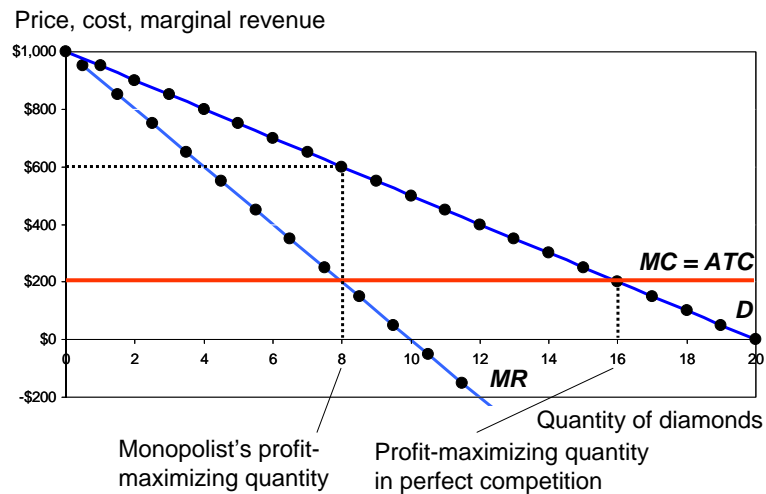
Monopoly profit

- A monopolist can make (positive) profit.
 - Yeah – so what's new? A perfectly competitive producer can too – in the short run.
-

Monopoly and efficiency

- There is the same kind of inefficiency we found when prices were artificially distorted (price floors, price ceilings, taxes):
 -
 - Mutually beneficial transactions do not take place.
 - Deadweight loss is a measure of the value of those transactions.
 - Deadweight loss is the loss of total surplus.

Monopoly and efficiency



Monopoly and policy

- Given that monopoly is inefficient should governments prevent monopoly?
-
- If not, then it is clearly optimal to break up the monopoly
- This is usually done by creating laws that attempt to ensure a degree of competition

Competition law in Canada

- *Combine Laws* (1889)

- ☐ To prevent firms from combining into one unit or acting as one unit



- *Competition Act* (1986)



- ☐ All mergers are subject to review of the Competition Bureau

Natural monopoly and policy

- Should natural monopoly based on economies of scale also be prevented?



- ☐ Thus, governments often regulate through...

“Public ownership”



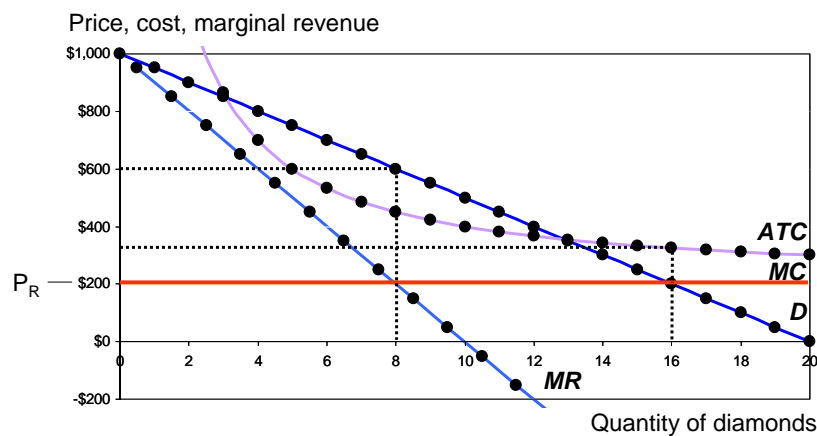
- However, these firms tend to be inefficient for other reasons

Natural monopoly and policy

"Regulation"

- - Often use both public ownership and regulation
- Because the monopolist charges a price above marginal cost we don't get the negative outcomes associated with price ceilings under perfect competition
- Let's look at an example
-

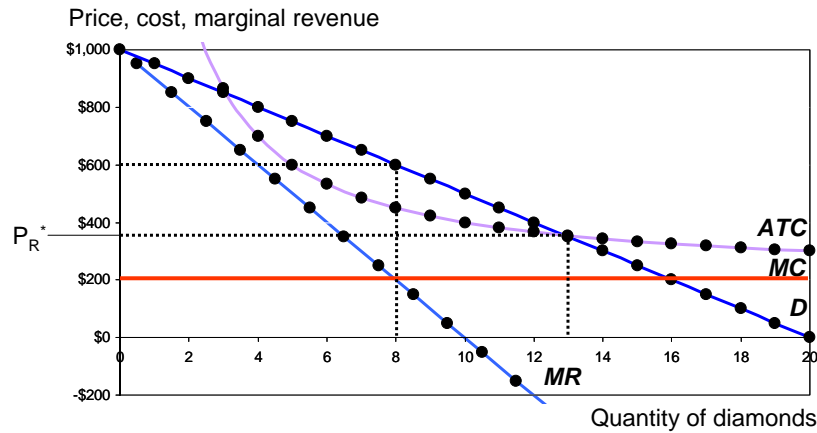
Natural monopoly and regulation 1



Natural monopoly and regulation 2

The graph illustrates the economic behavior of a natural monopoly in the diamond market. The vertical axis represents Price, cost, and marginal revenue (P_R^*), ranging from -\$200 to \$1,000. The horizontal axis represents the Quantity of diamonds, ranging from 0 to 20. Three curves are plotted: Demand (D), Marginal Revenue (MR), and Average Total Cost (ATC). The Demand curve (D) is a downward-sloping blue line. The Marginal Revenue curve (MR) is a steeper downward-sloping blue line. The Average Total Cost curve (ATC) is a U-shaped purple line. A horizontal red line represents the Marginal Cost (MC) at \$200. The intersection of MR and MC determines the profit-maximizing quantity of 12 diamonds. At this quantity, the price on the Demand curve is \$360, which is the regulated price P_R^* . The ATC at this quantity is \$380, and the MC is \$200. The graph shows that the monopoly price is higher than the regulated price, and the regulated price is higher than the marginal cost.

Quantity of diamonds	Demand (D)	Marginal Revenue (MR)	Average Total Cost (ATC)	Marginal Cost (MC)
0	\$1,000	\$1,000	\$1,000	\$200
2	\$900	\$720	\$850	\$200
4	\$800	\$480	\$700	\$200
6	\$700	\$240	\$550	\$200
8	\$600	\$0	\$450	\$200
10	\$500	-\$240	\$400	\$200
12	\$400	-\$480	\$380	\$200
14	\$350	-\$560	\$360	\$200
16	\$320	-\$600	\$340	\$200
18	\$300	-\$620	\$330	\$200
20	\$280	-\$640	\$320	\$200



The assessment

- When there is monopoly, the unregulated “market” outcome is inefficient.
 - Government intervention (regulation, i.e. a price ceiling) may improve efficiency.
 -
 -
 -

- 16



Monopoly: price discrimination

What your student ID can do

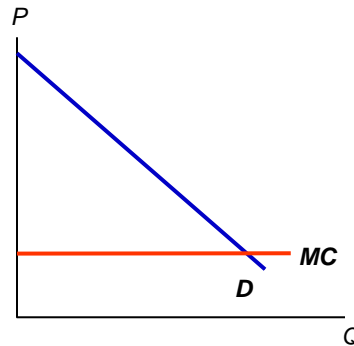


Price discrimination

- A *price-discriminating* monopolist is one that can charge different prices ...
 - ... to different consumers
 -
 - ... for different quantities consumers buy
 -
 - ... to different consumers and for different quantities each consumer buys
 -
- In what follows we'll assume that each consumer only has use for at most one unit of the good.
 - So second-degree price discrimination is irrelevant, and there is no distinction between first and third-degree price discrimination.

Price discrimination

- If there are two groups of consumers (e.g. students and non-students), the monopolist can gain from price-discrimination (student discount).
- The more different prices the monopolist can charge, the greater her profit.
- *Perfect price discrimination*: the monopolist charges a different price to each consumer.



Perfect price discrimination

- Perfect price discrimination is efficient.

