Seventh Edition

Microeconomics I

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Wojciech Gerson (1831-1901)

Lecture

9

Monopoly

Chapter 15

In this chapter, look for the answers to these questions

- Why do monopolies arise?
- Why is $MR < P$ for a monopolist?
- How do monopolies choose their P and Q?
- How do monopolies affect society's well-being?
- What can the government do about monopolies?
- What is price discrimination?

Why Monopolies Arise

The main cause of monopolies is **barriers to entry**—other firms cannot enter the market.

Three sources of barriers to entry:

1. A single firm owns a key resource.

   E.g., DeBeers owns most of the world's diamond mines

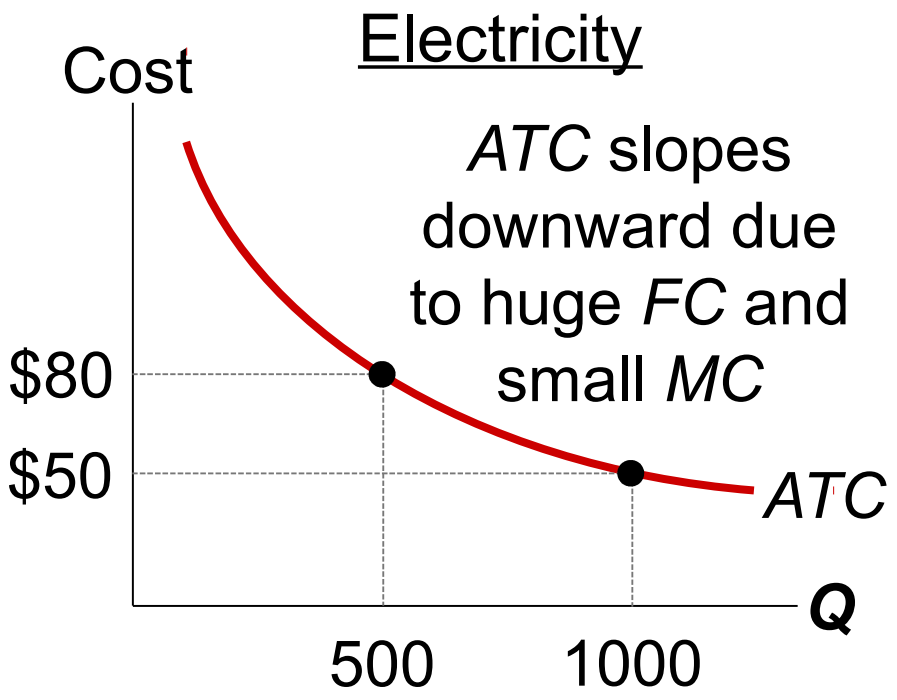
2. The govt gives a single firm the exclusive right to produce the good.

   E.g., patents, copyright laws

3. **Natural monopoly**: a single firm can produce the entire market ***Q*** at lower cost than could several firms.

Example: 1000 homes need electricity

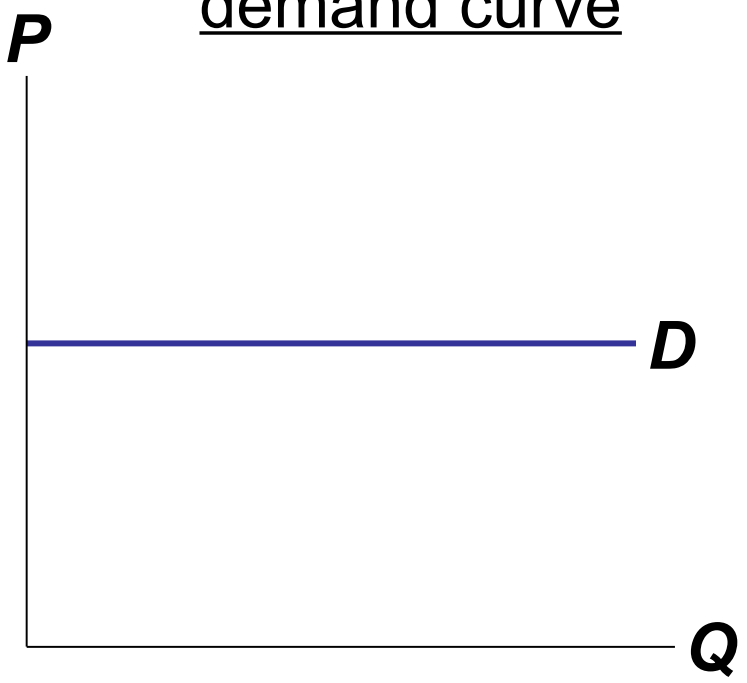
ATC is lower if one firm services all 1000 homes than if two firms each service 500 homes.



Monopoly vs. Competition: Demand Curves

In a competitive market, the market demand curve slopes downward.
But the demand curve for any individual firm's product is horizontal at the market price.
The firm can increase ***Q*** without lowering ***P***,
so *MR* = ***P*** for the competitive firm.

A competitive firm's demand curve



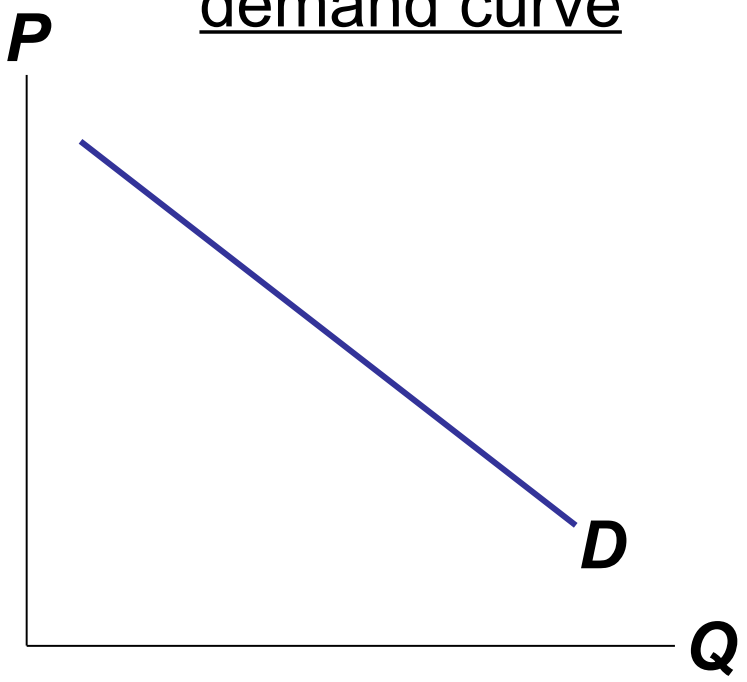
Monopoly vs. Competition: Demand Curves

A monopolist is the only seller, so it faces the market demand curve.

To sell a larger ***Q***, the firm must reduce ***P***.

Thus, *MR* ≠ ***P***.

A monopolist's demand curve



ACTIVE LEARNING 1

A monopoly's revenue

Common Grounds is the only seller of cappuccinos in town.

The table shows the market demand for cappuccinos.

Fill in the missing spaces of the table.

What is the relation between ***P*** and ***AR***? Between ***P*** and ***MR***?

Q	***P***	***TR***	***AR***	***MR***
0	$4.50		n.a.	
1	4.00			
2	3.50			
3	3.00			
4	2.50			
5	2.00			
6	1.50			

ACTIVE LEARNING 1

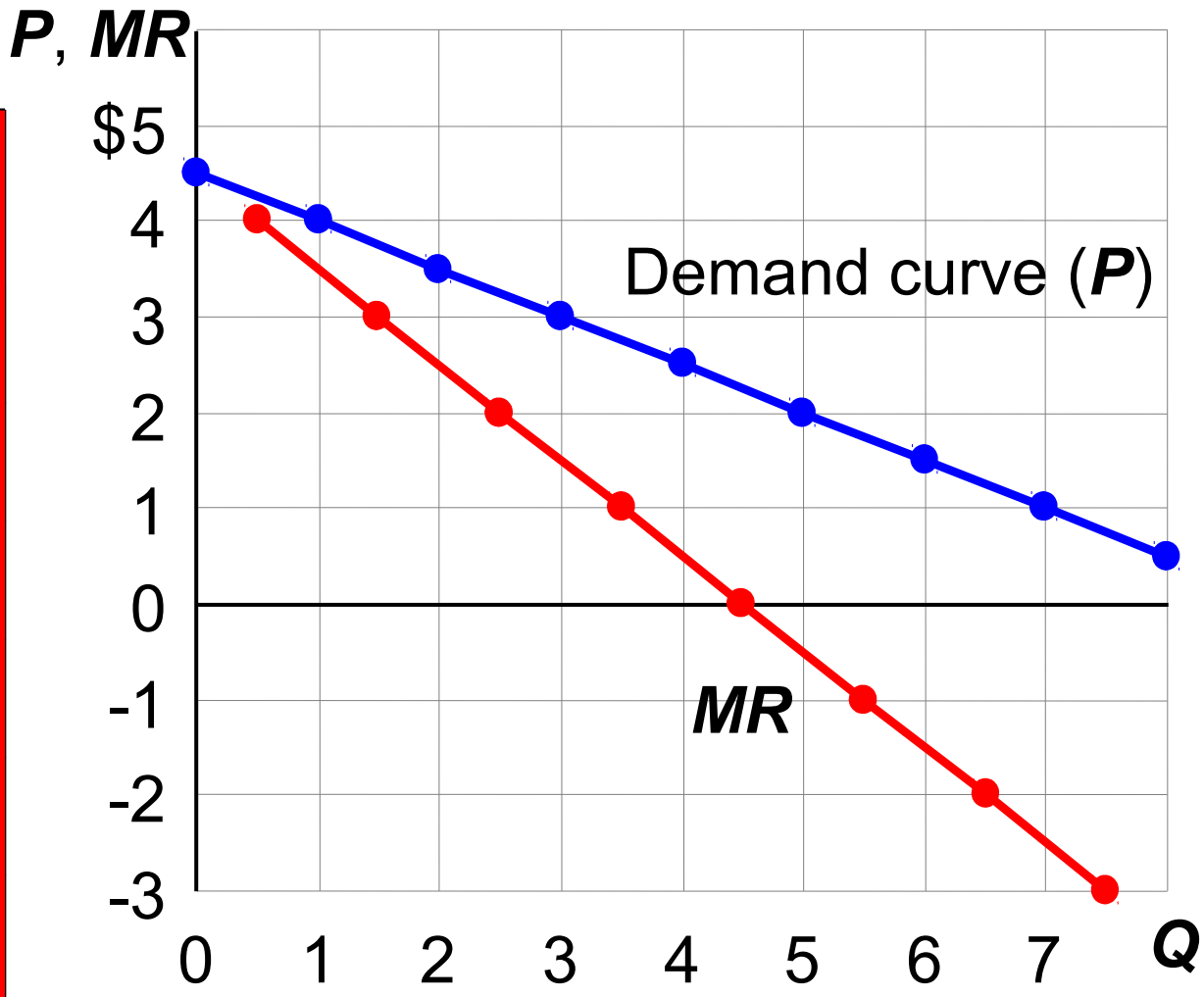
Answers

Here, ***P*** = ***AR***, same as for a competitive firm.

Here, ***MR*** < ***P***, whereas ***MR*** = ***P*** for a competitive firm.

Q	***P***	***TR***	***AR***	***MR***
0	$4.50	$ 0	n.a.	
				$4
1	4.00	4	$4.00	
				3
2	3.50	7	3.50	
				2
3	3.00	9	3.00	
				1
4	2.50	10	2.50	
				0
5	2.00	10	2.00	
				–1
6	1.50	9	1.50	

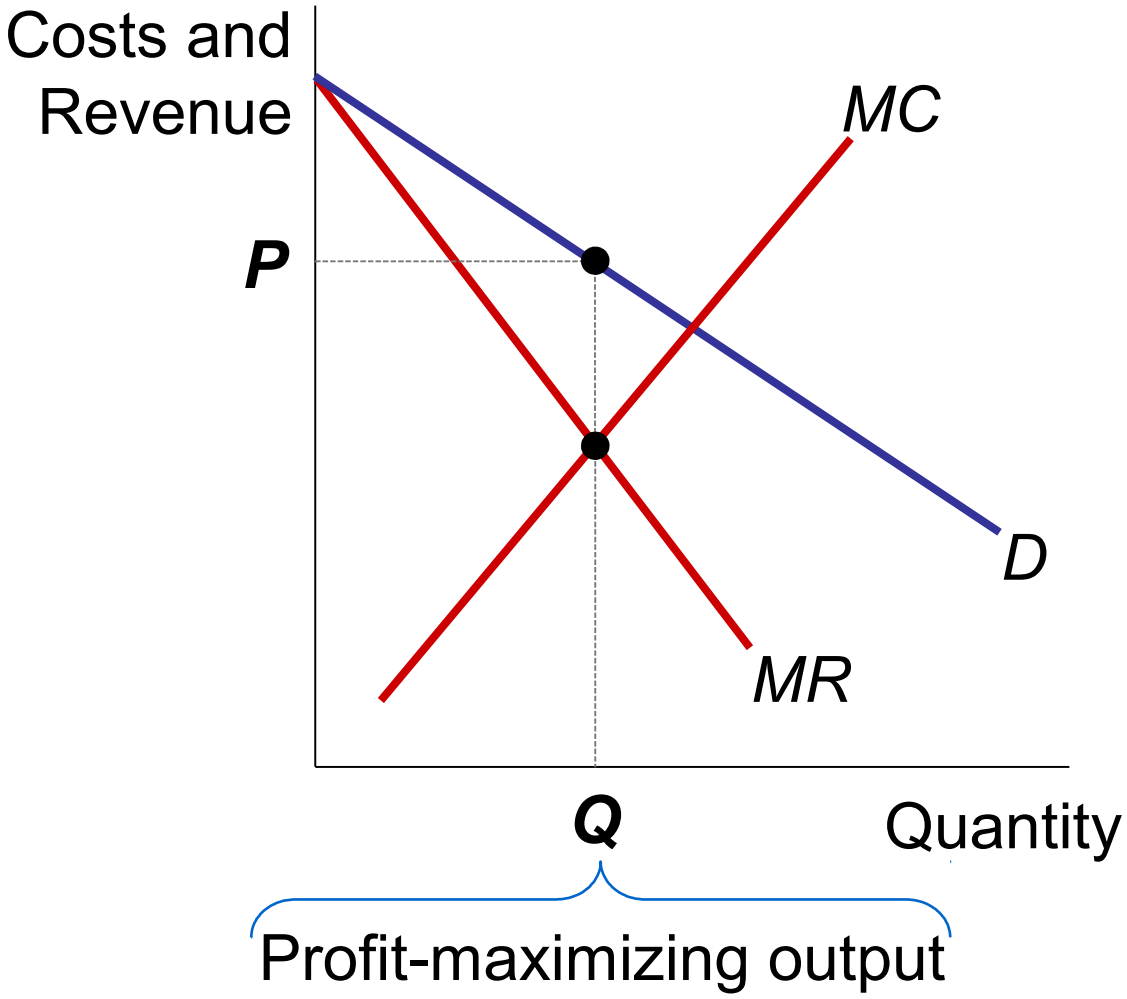
Q	P	MR
0	$4.50	
		$4
1	4.00	
		3
2	3.50	
		2
3	3.00	
		1
4	2.50	
		0
5	2.00	
		–1
6	1.50	



Understanding the Monopolist's MR

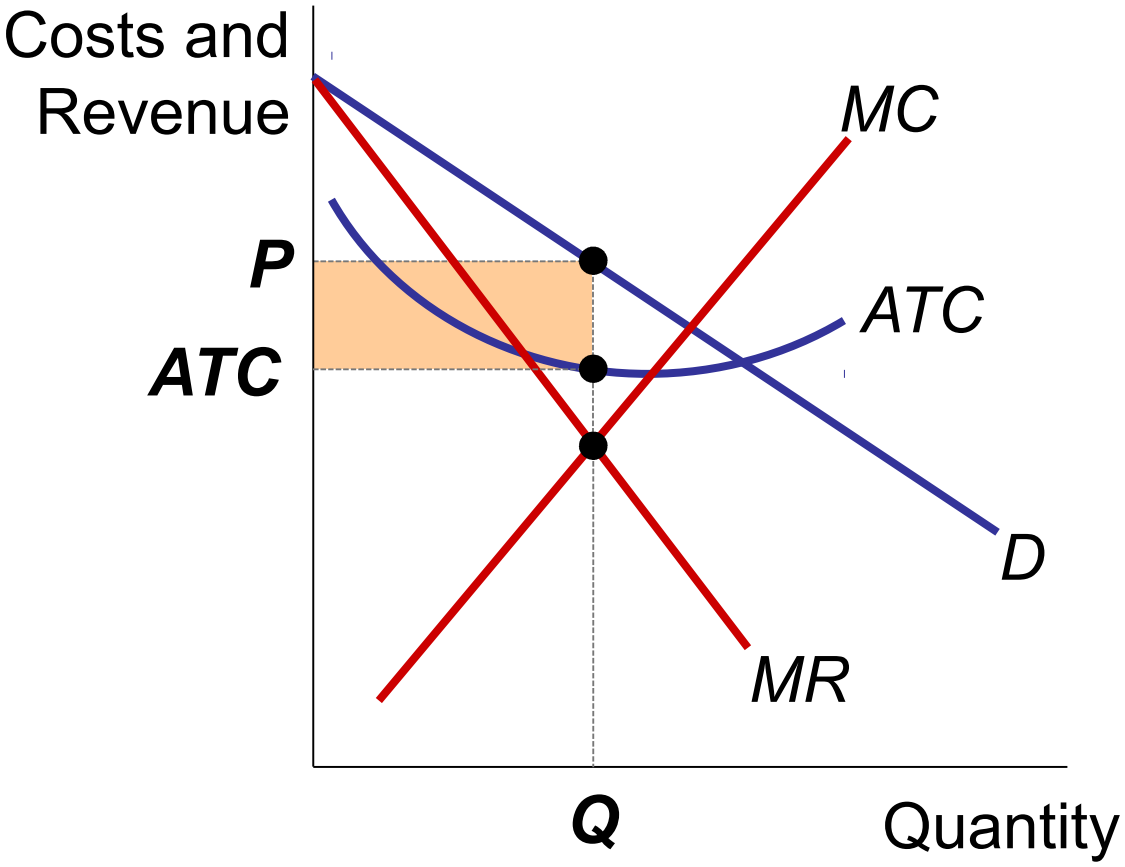
- Increasing ***Q*** has two effects on revenue:
  - ***Output effect***: higher output raises revenue
  - ***Price effect***: lower price reduces revenue
- To sell a larger ***Q***, the monopolist must reduce the price on all the units it sells.
- Hence, *MR* < ***P***
- *MR* could even be negative if the price effect exceeds the output effect (e.g., when Common Grounds increases ***Q*** from 5 to 6).

1. The profit-maximizing ***Q*** is where *MR* = *MC*.
2. Find ***P*** from the demand curve at this ***Q***.



As with a competitive firm, the monopolist's profit equals

(***P*** – ***ATC***) x ***Q***



A Monopoly Does Not Have an S Curve

A competitive firm

- takes ***P*** as given
- has a supply curve that shows how its ***Q*** depends on ***P***.

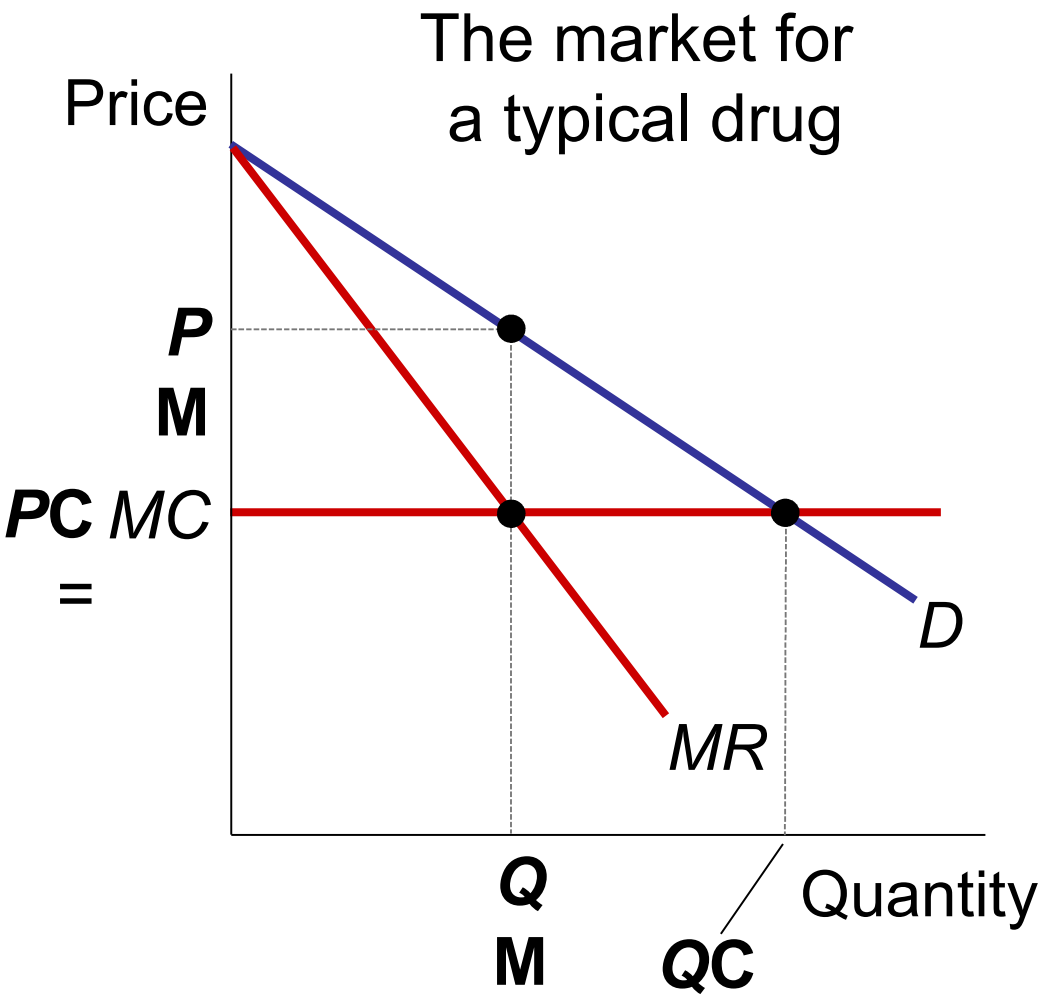
A monopoly firm

- is a "price-maker," not a "price-taker"
- ***Q*** does not depend on ***P***;
  Q and ***P*** are jointly determined by *MC*, *MR*, and the demand curve.

Hence, no supply curve for monopoly.

Patents on new drugs give a temporary monopoly to the seller.

When the patent expires, the market becomes competitive, generics appear.



The Welfare Cost of Monopoly

- Recall: In a competitive market equilibrium, ***P*** = *MC* and total surplus is maximized.
- In the monopoly eq'm, ***P*** > *MR* = *MC*
  - The value to buyers of an additional unit (***P***) exceeds the cost of the resources needed to produce that unit (*MC*).
  - The monopoly ***Q*** is too low – could increase total surplus with a larger ***Q***.
  - Thus, monopoly results in a deadweight loss.

Competitive eq'm:

quantity = **QC**

P = *MC*

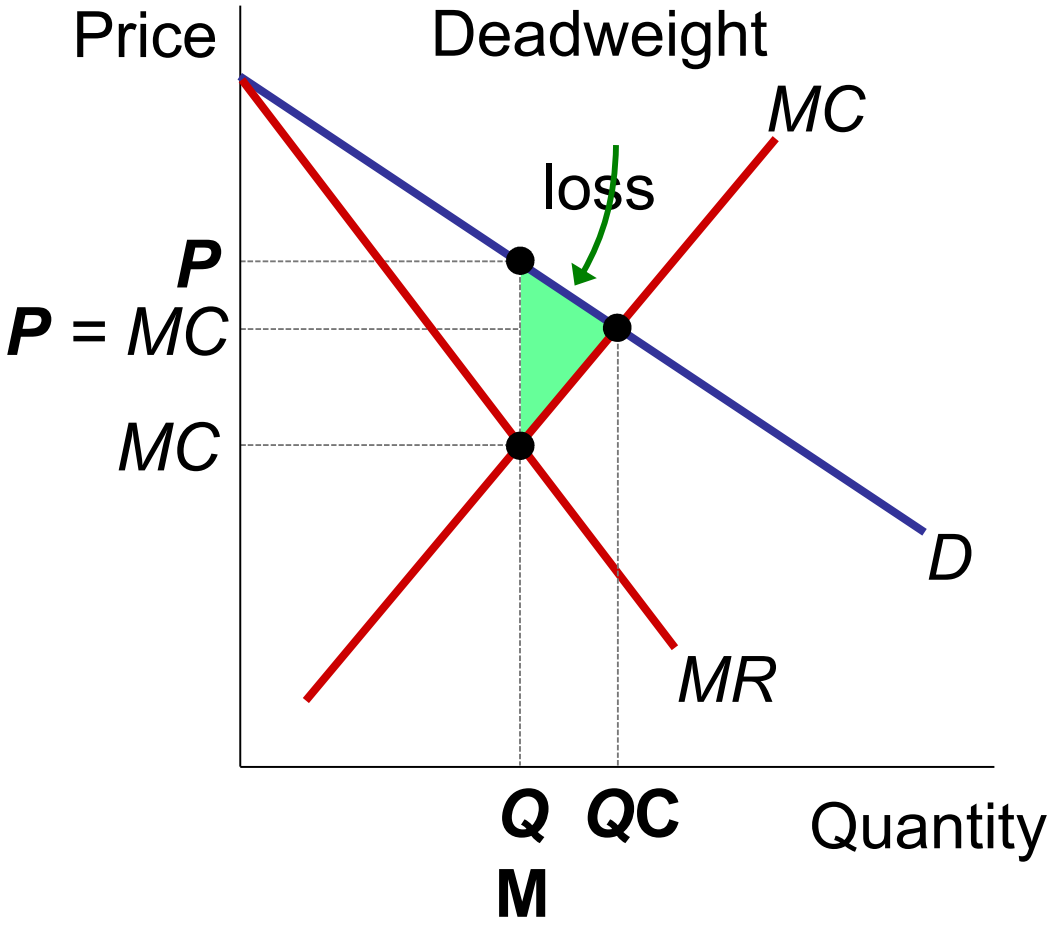
total surplus is maximized

Monopoly eq'm:

quantity = **QM**

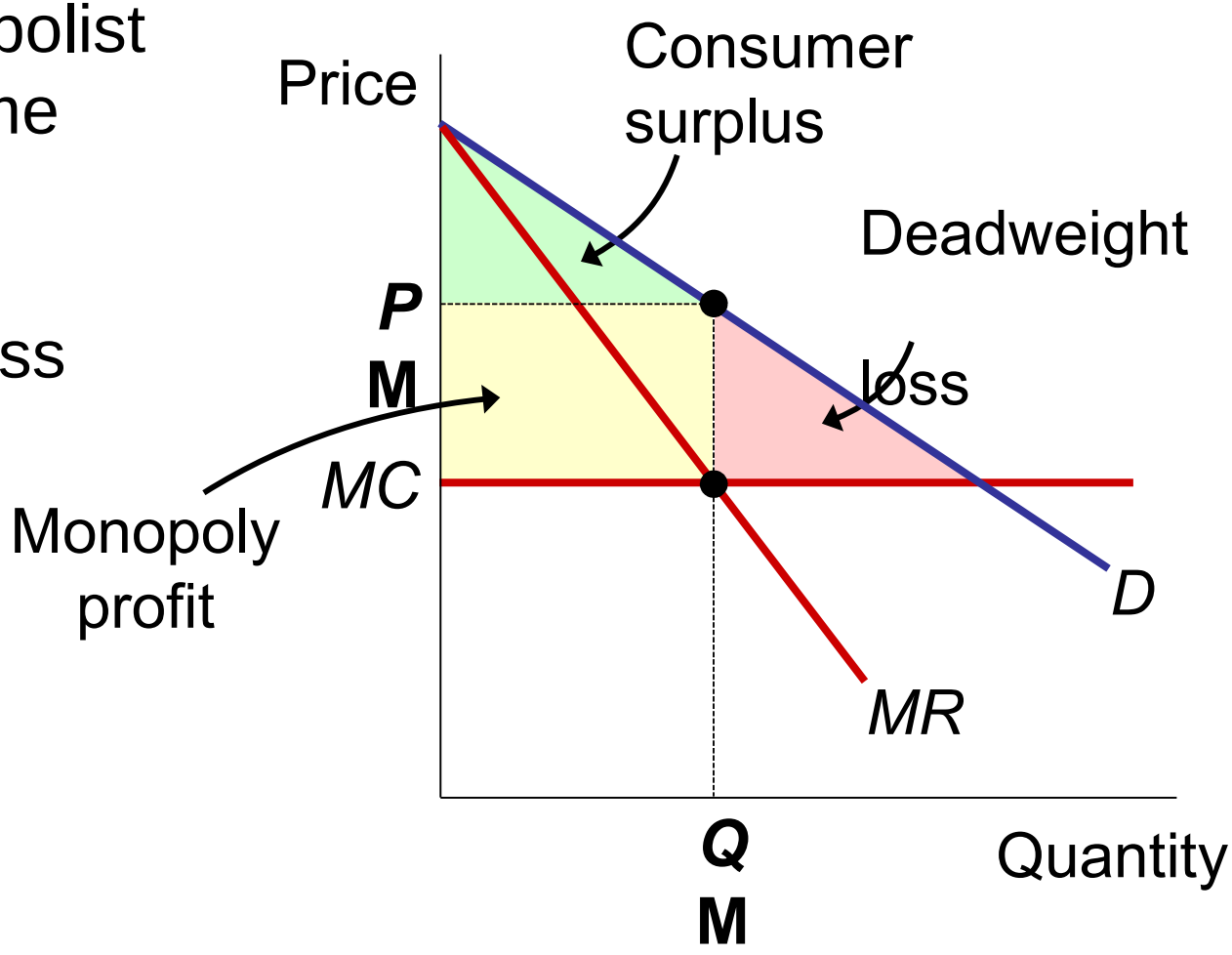
P > *MC*

deadweight loss



Perfect Price Discrimination vs. Single Price Monopoly

Here, the monopolist charges the same price (***P*M**) to all buyers.
A deadweight loss results.



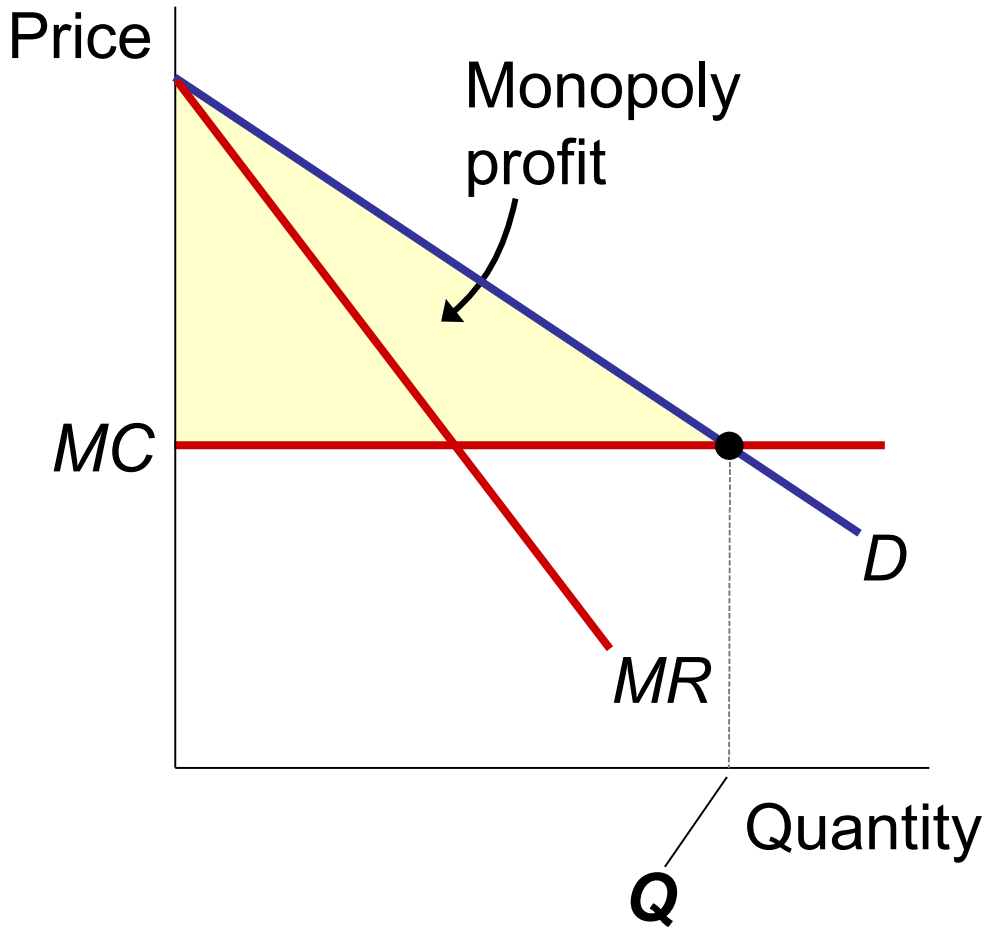
Perfect Price Discrimination vs. Single Price Monopoly

Here, the monopolist produces the competitive quantity, but charges each buyer his or her WTP.

This is called **perfect price discrimination**.

The monopolist captures all CS as profit.

But there's no DWL.



Need-based financial aid

Low income families have lower WTP for their children's college education.

Schools price-discriminate by offering need-based aid to low income families.

Quantity discounts

A buyer's WTP often declines with additional units, so firms charge less per unit for large quantities than small ones.

Example: A movie theater charges $4 for a small popcorn and $5 for a large one that's twice as big.

Public Policy Toward Monopolies

Increasing competition with antitrust laws

Ban some anticompetitive practices,
allow govt to break up monopolies.

e.g., Sherman Antitrust Act (1890),
Clayton Act (1914)

Regulation

Govt agencies set the monopolist's price.

For natural monopolies, *MC* < *ATC* at all ***Q***,
so marginal cost pricing would result in losses.

If so, regulators might subsidize the monopolist or set ***P*** = *ATC* for zero economic profit.

Public Policy Toward Monopolies

Public ownership

Example: U.S. Postal Service

Problem: Public ownership is usually less efficient since no profit motive to minimize costs

Doing nothing

The foregoing policies all have drawbacks,
so the best policy may be no policy.

CONCLUSION: The Prevalence of Monopoly

Summary

- A monopoly firm is the sole seller in its market. Monopolies arise due to **barriers to entry**, including: government-granted monopolies, the control of a key resource, or economies of scale over the entire range of output.
- A monopoly firm faces a **downward-sloping demand curve** for its product. As a result, it must reduce price to sell a larger quantity, which causes marginal revenue to fall below price.

Summary

- Monopoly firms **maximize profits** by producing the quantity where **MR=MC**. But since **MR<P**, the monopoly **price>MC**, leading to a **deadweight loss**.
- Monopoly firms (and others with market power) try to raise their profits by charging higher prices

  to consumers with higher willingness to pay. This practice is called **price discrimination**.

Summary

- Policymakers may respond by regulating monopolies, using antitrust laws to promote competition, or by taking over the monopoly and running it. Due to problems with each of these options, the best option may be to take no action.