Presentation to accompany

Principles of Microconomics, Fourth Edition

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Lecture 10

Previously…

- Firms in competitive markets
  - profit maximization
  - individual and market supply
  - entry, shutdown, exit

Today...

- Monopoly
  - Why they exist?
  - Pricing/decision-making
  - Welfare effects
  - Government response

- Price discrimination

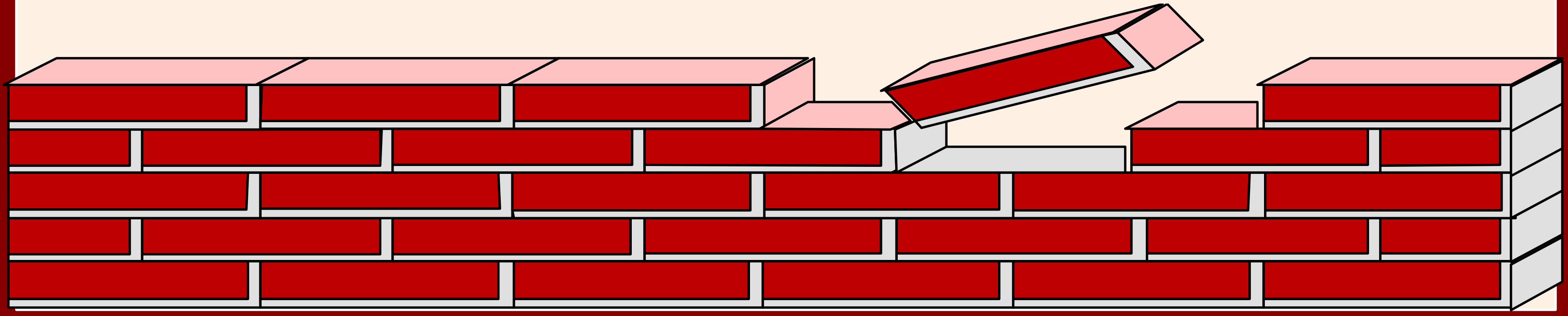
Monopoly

- While a competitive firm is a price taker, a monopoly firm is a price maker
- A firm is considered a monopoly if:
  - it is the sole seller of its product
  - its product does not have close substitutes
  - if there are barriers to entry

Monopoly

Barriers to entry have three sources:

- Ownership of a key resource
- The government gives a single firm the exclusive right to produce some good
- Costs of production make a single producer more efficient than a large number of producers



Monopoly

- Although exclusive ownership of a key resource is a potential source of monopoly, in practice monopolies rarely arise for this reason

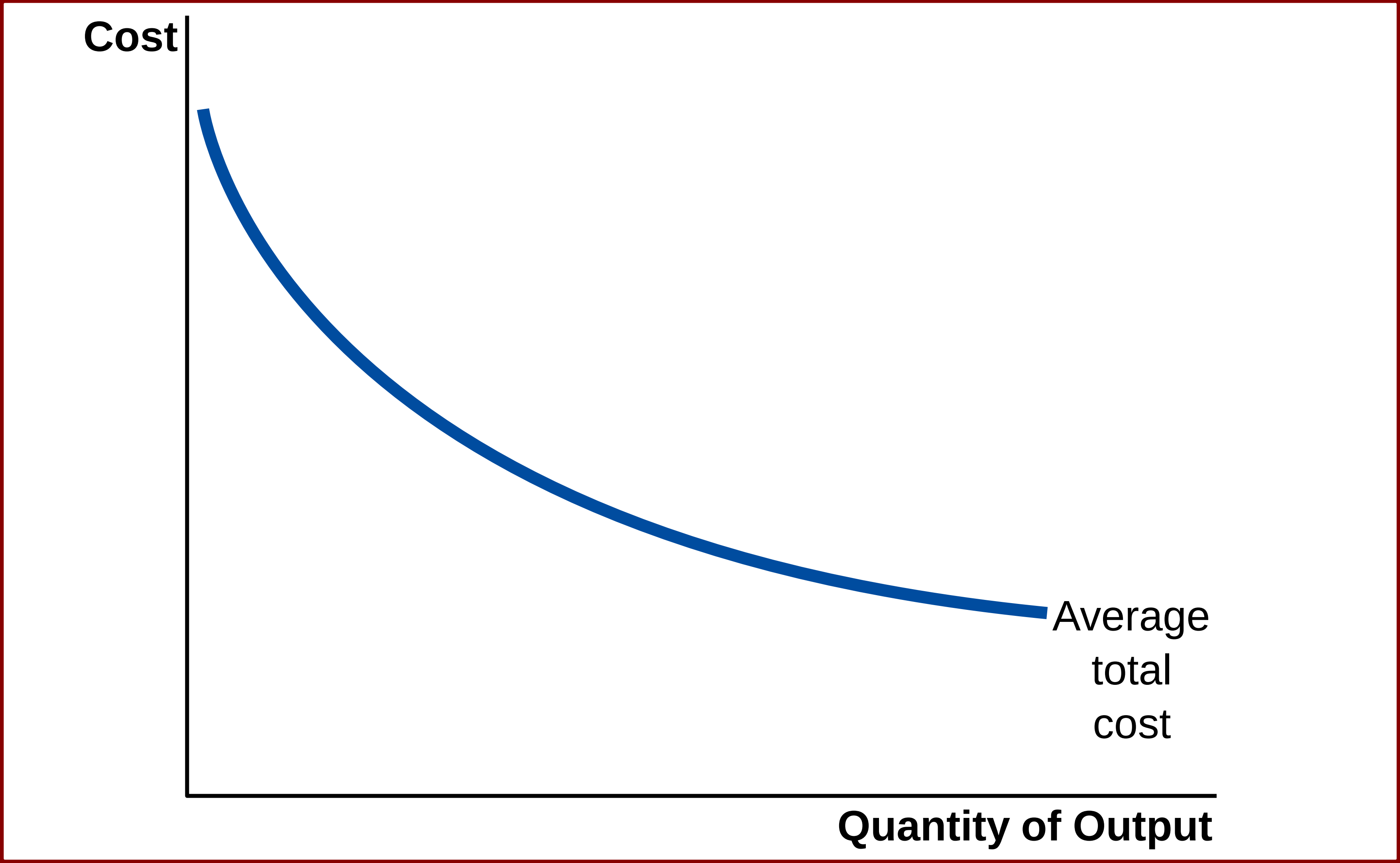
Monopoly

- Governments may restrict entry by giving a single firm the exclusive right to sell a particular good in certain markets
- Patent and copyright laws are two important examples of how government creates a monopoly to serve the public interest

Monopoly

- An industry is a natural monopoly when a single firm can supply a good or service to an entire market at a smaller cost than could two or more firms
- A natural monopoly arises when there are economies of scale over the relevant range of output

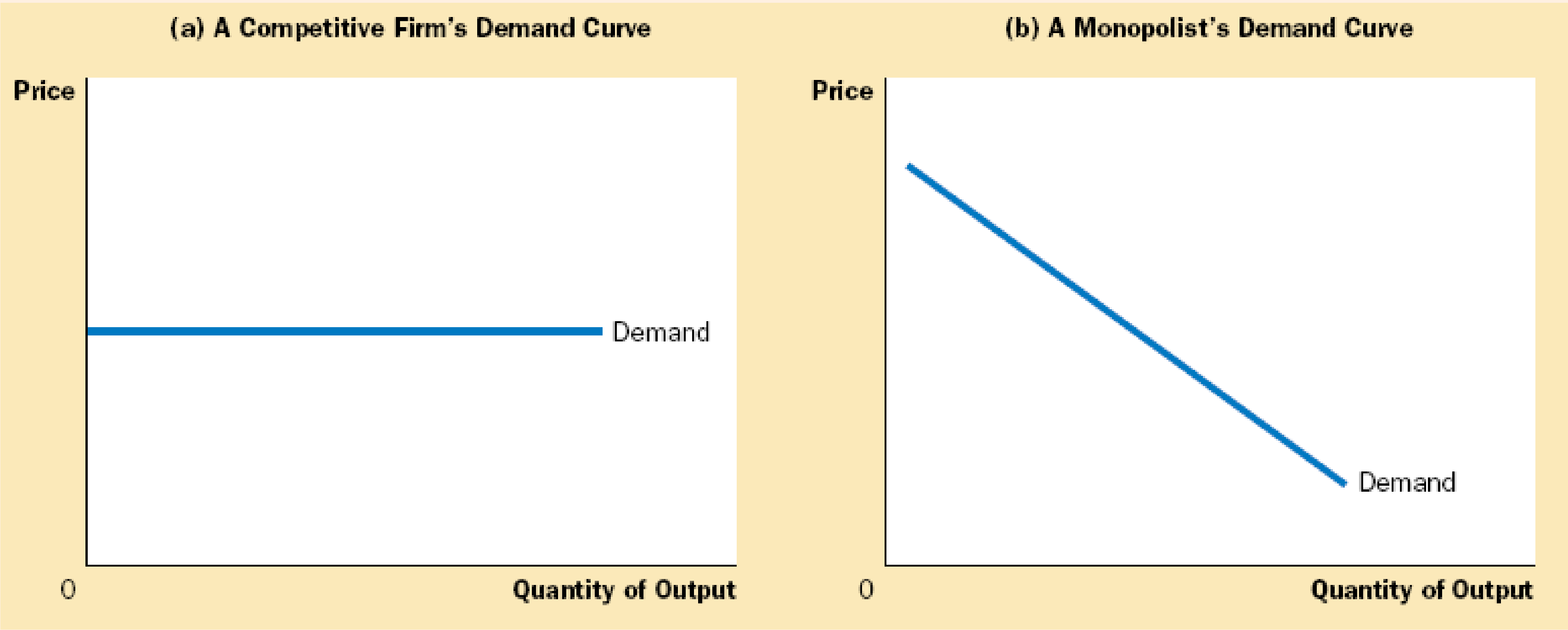
Monopoly



Monopoly vs Competition

- Monopoly
  - Is the sole producer
  - Faces a downward-sloping demand curve
  - Is a price maker
  - Reduces price to increase sales
- Competitive Firm
  - Is one of many producers
  - Faces a horizontal demand curve
  - Is a price taker
  - Sells as much or as little at same price

Monopoly vs Competition



Monopoly's Revenue

- Total Revenue: $P \times Q = TR$
- Average Revenue: $TR/Q = AR = P$
- Marginal Revenue: $\Delta\ TR/\Delta Q = MR$

Monopoly's Revenue

Quantity of Water (Q)	Price (P)	Total Revenue $(TR = P \times Q)$	Average Revenue $(AR = TR/Q)$	Marginal Revenue $(MR = \Delta TR/\Delta Q)$
0 gallons	$11	$ 0	—	
				$10
1	10	10	$10	
				8
2	9	18	9	
				6
3	8	24	8	
				4
4	7	28	7	
				2
5	6	30	6	
				0
6	5	30	5	
				−2
7	4	28	4	
				−4
8	3	24	3	

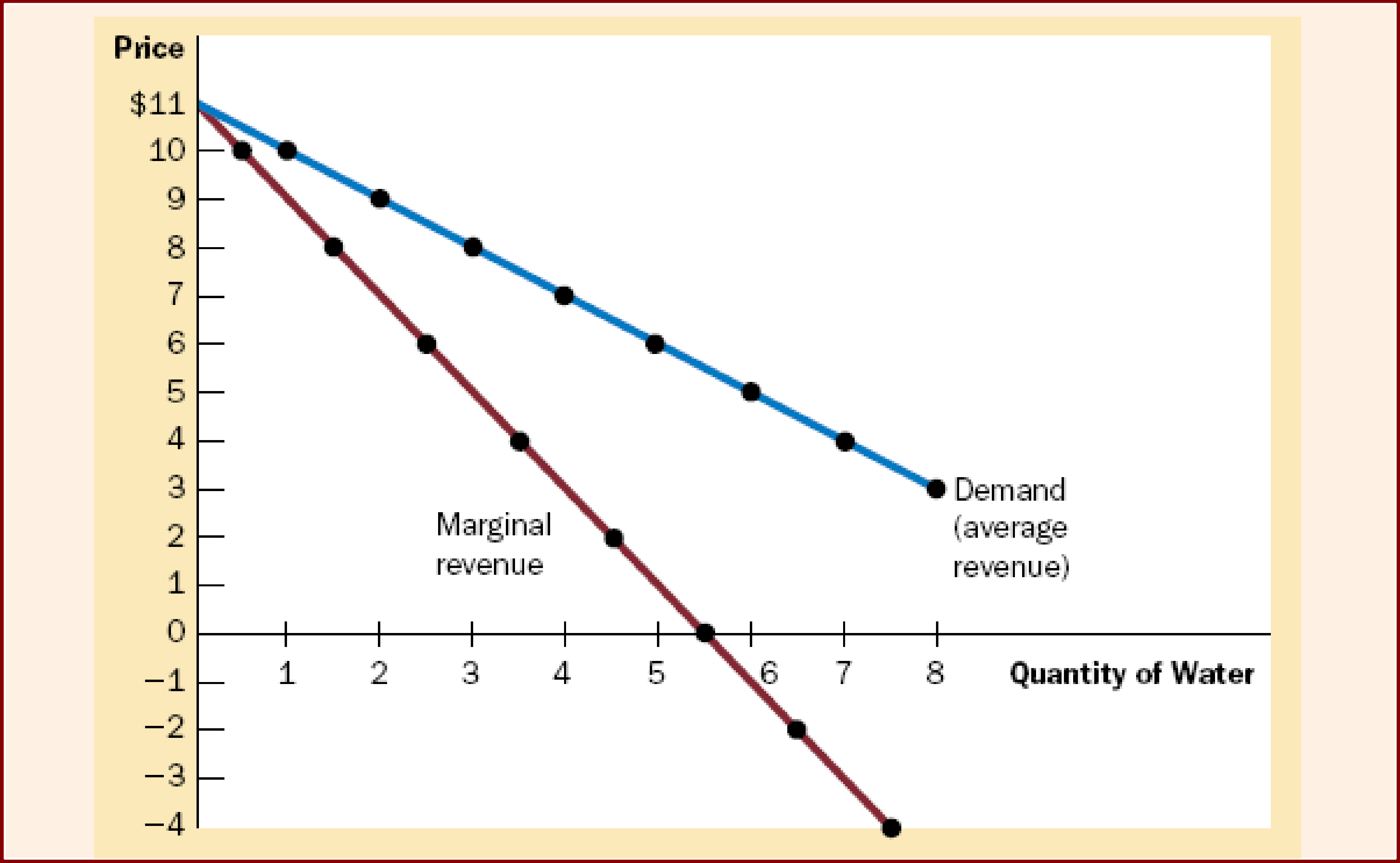
Monopoly's Marginal Revenue

A monopolist's marginal revenue is always less than the price of its good

- The demand curve is downward sloping
  When a monopoly drops the price to sell one more unit, the revenue received from previously sold units also decreases

- When a monopoly increases the amount it sells, it has two effects on total revenue ($P \times Q$)
  - The output effect—more output is sold, so Q is higher
  - The price effect—price falls, so P is lower

Monopoly vs Competition

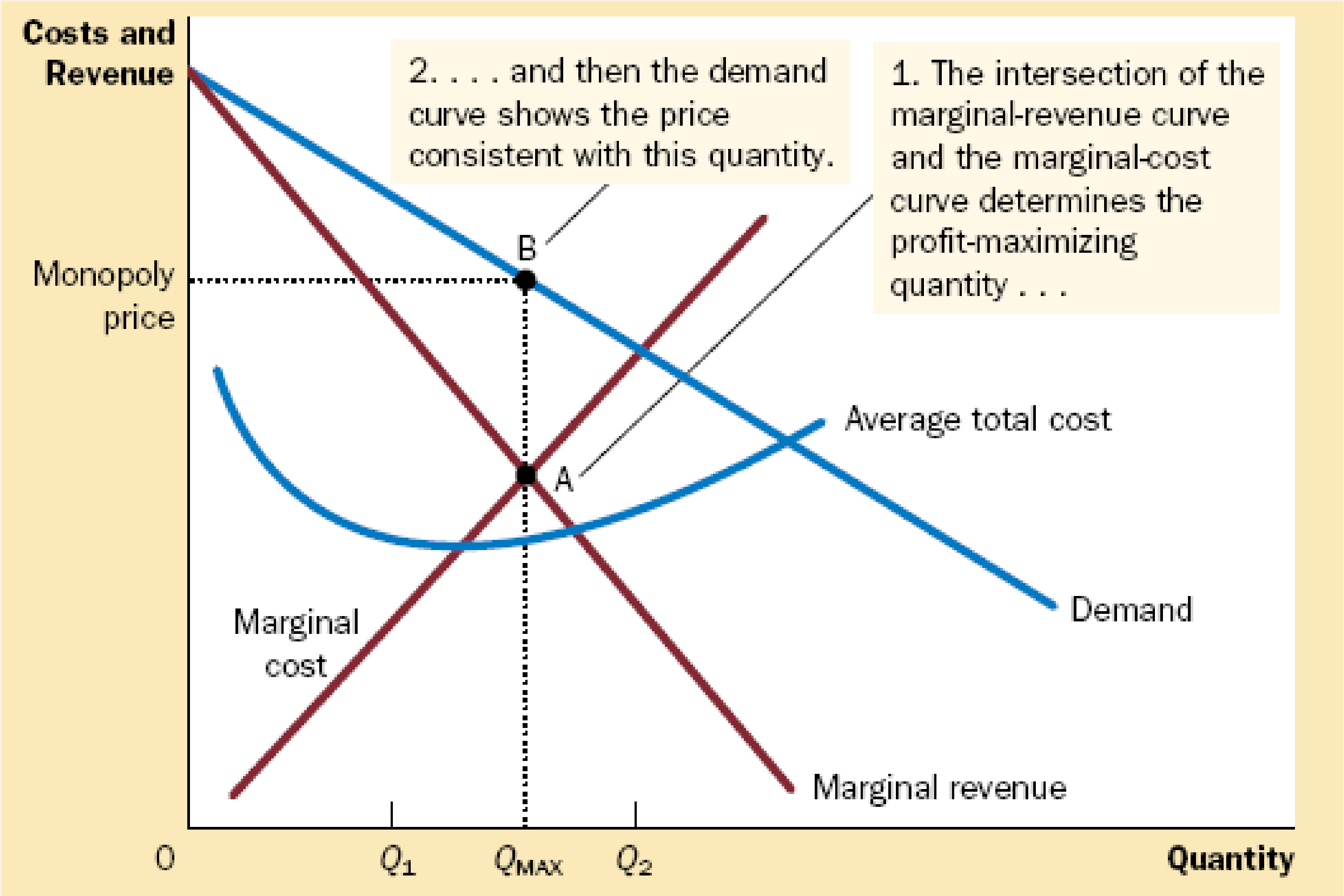


Profit Maximization

- A monopoly maximizes profit by producing the quantity at which marginal revenue equals marginal cost

- It then uses the demand curve to find the price that will induce consumers to buy that quantity

Profit Maximization



Profit Maximization

Comparing Monopoly and Competition

- For a competitive firm, price equals marginal cost: $P = MR = MC$
- For a monopoly firm, price exceeds marginal cost: $P > MR = MC$

Profit Maximization

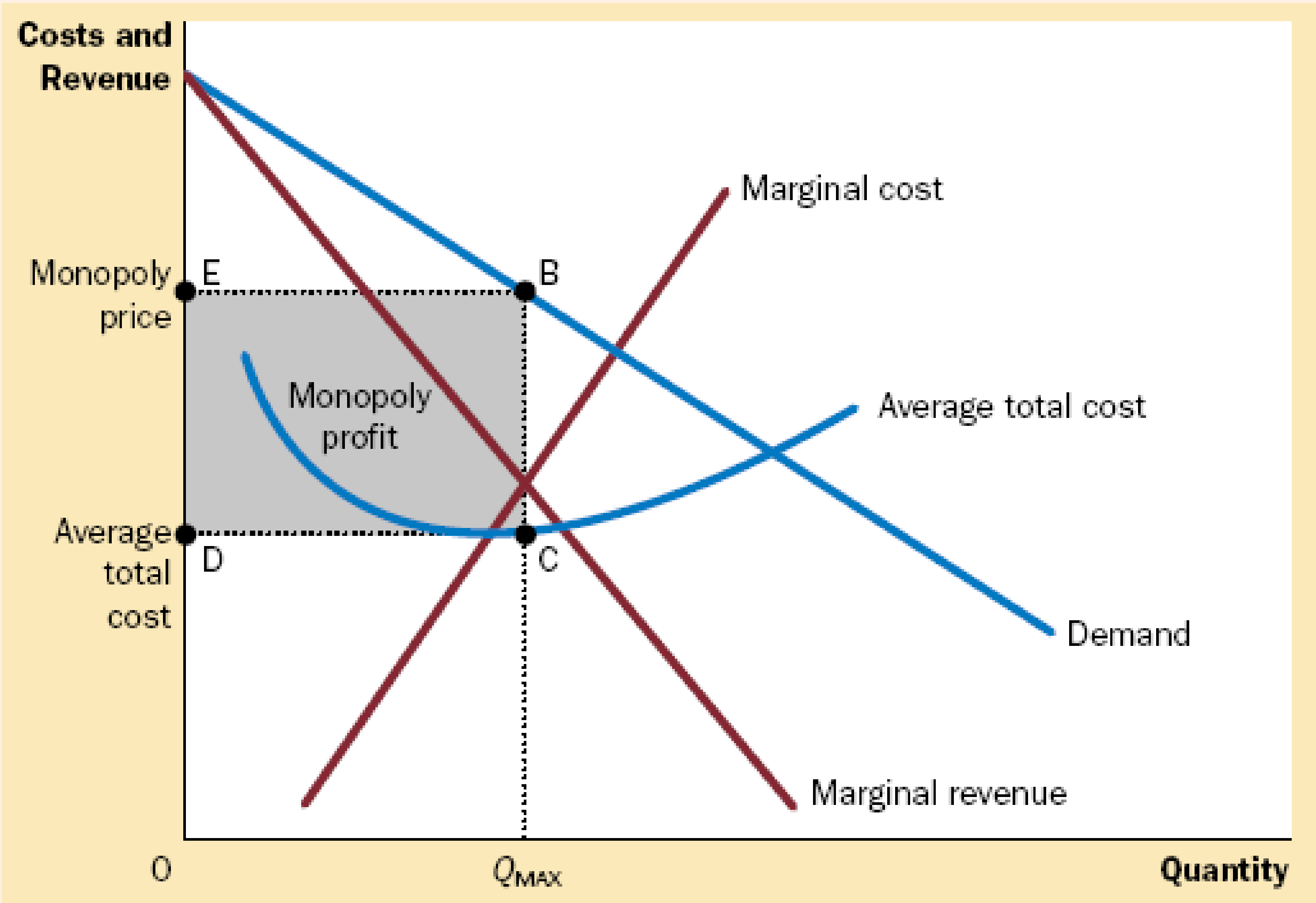
Profit equals total revenue minus total costs

Profit = TR – TC

Profit = (TR/Q - TC/Q) $\times$ Q

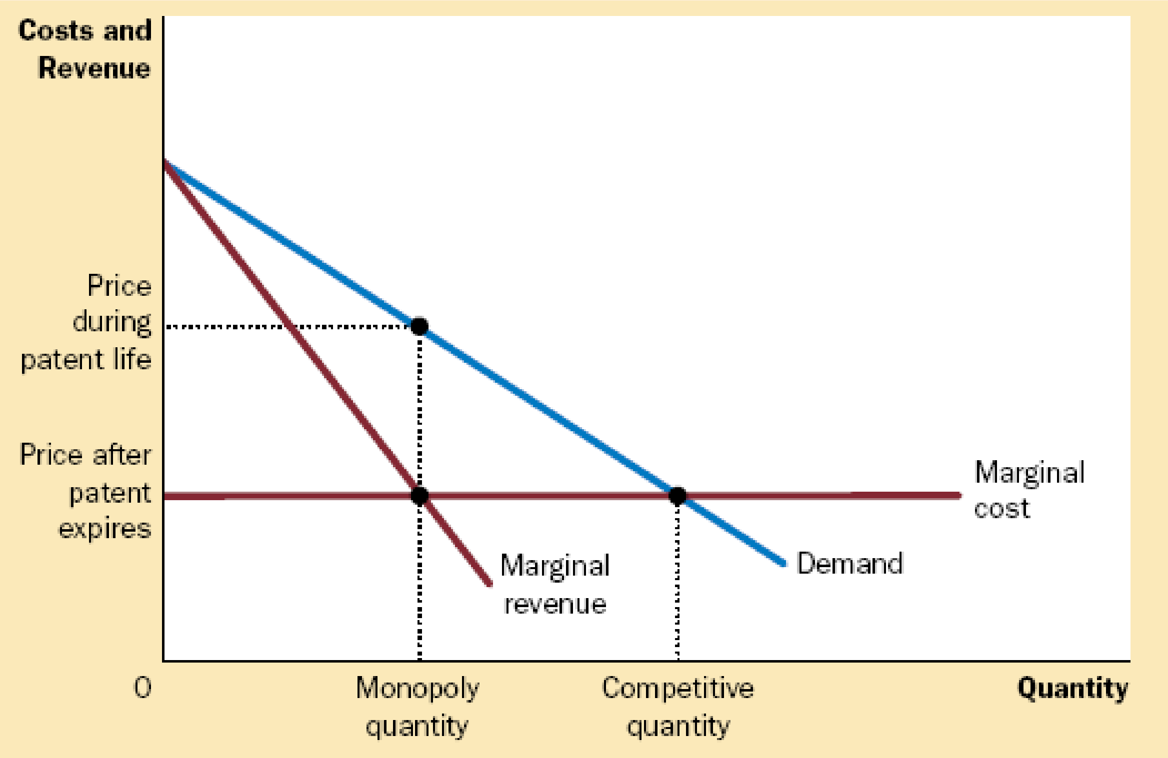
Profit = (P - ATC) $\times$ Q

Profit Maximization



Profit Maximization

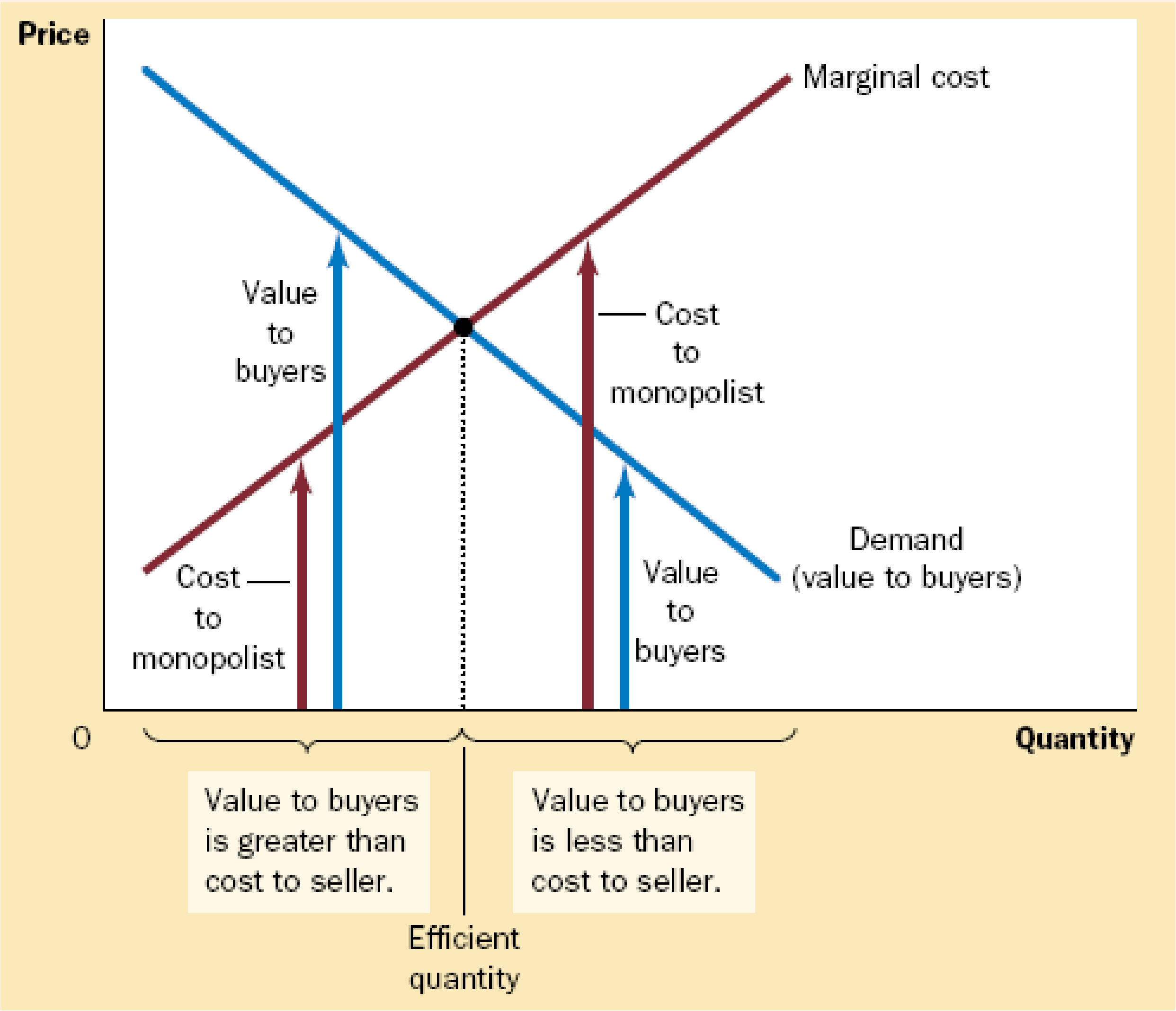
The monopolist will receive economic profits as long as price is greater than average total cost



Monopoly vs Competition

- In contrast to a competitive firm, the monopoly charges a price above the marginal cost
- From the standpoint of consumers, this high price makes monopoly undesirable
- However, from the standpoint of the owners of the firm, the high price makes monopoly very desirable

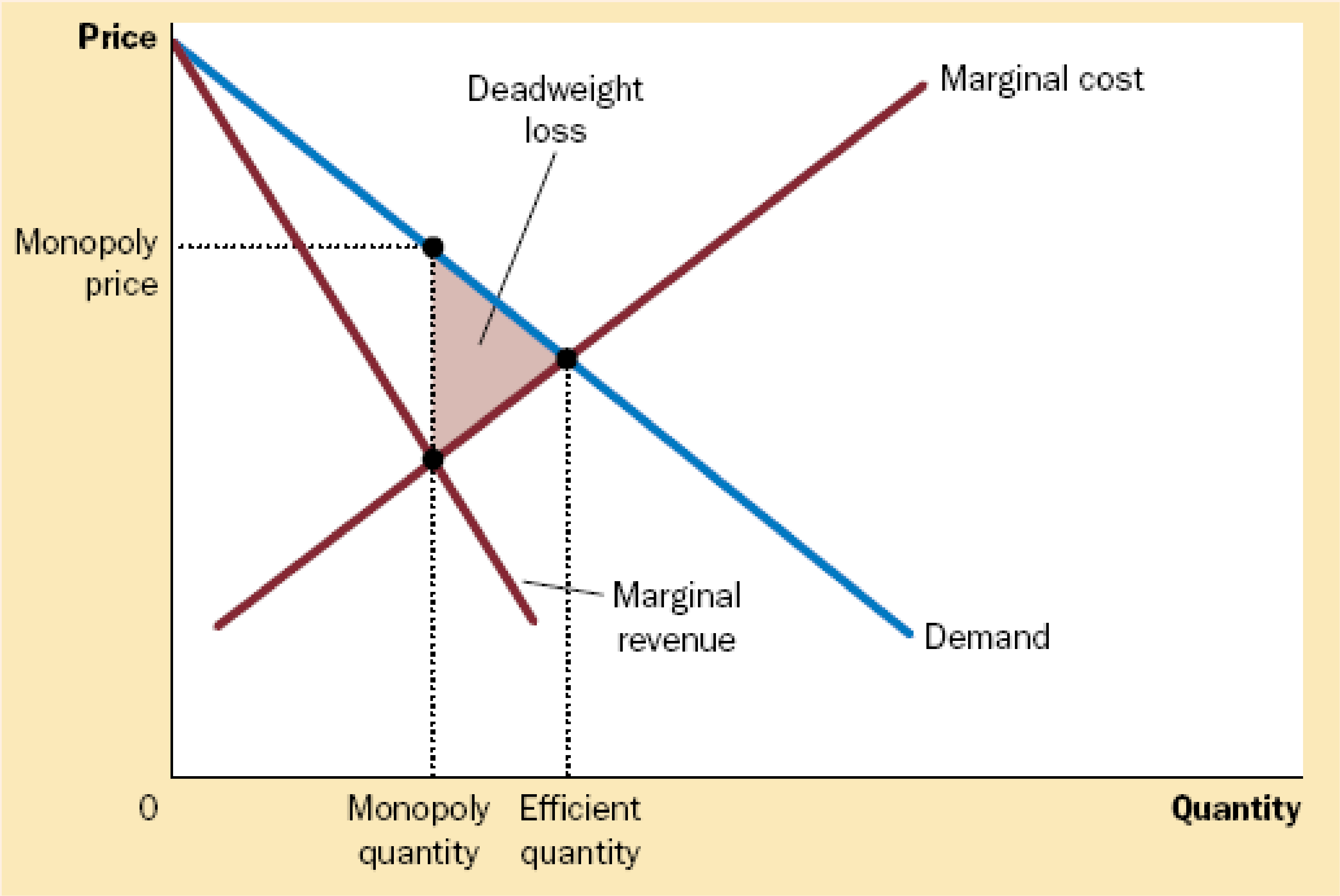
Monopoly vs Competition



Deadweight Loss

- Because a monopoly sets its price above marginal cost, it places a wedge between the consumer’s willingness to pay and the producer’s cost
- This wedge causes the quantity sold to fall short of the social optimum

Deadweight Loss



Deadweight Loss

The Inefficiency of Monopoly:

- The monopolist produces *less than* the socially efficient quantity of output
- The deadweight loss caused by a monopoly is similar to the deadweight loss caused by a tax
- The difference between the two cases is that the government gets the revenue from a tax, whereas a private firm gets the monopoly profit

Public Policy

Government responds to the problem of monopoly in one of four ways:

- Making monopolized industries more competitive
- Regulating the behavior of monopolies
- Turning some private monopolies into public enterprises
- Doing nothing at all

Public Policy

Antitrust laws are a collection of statutes aimed at curbing monopoly power

Antitrust laws give government various ways to promote competition:

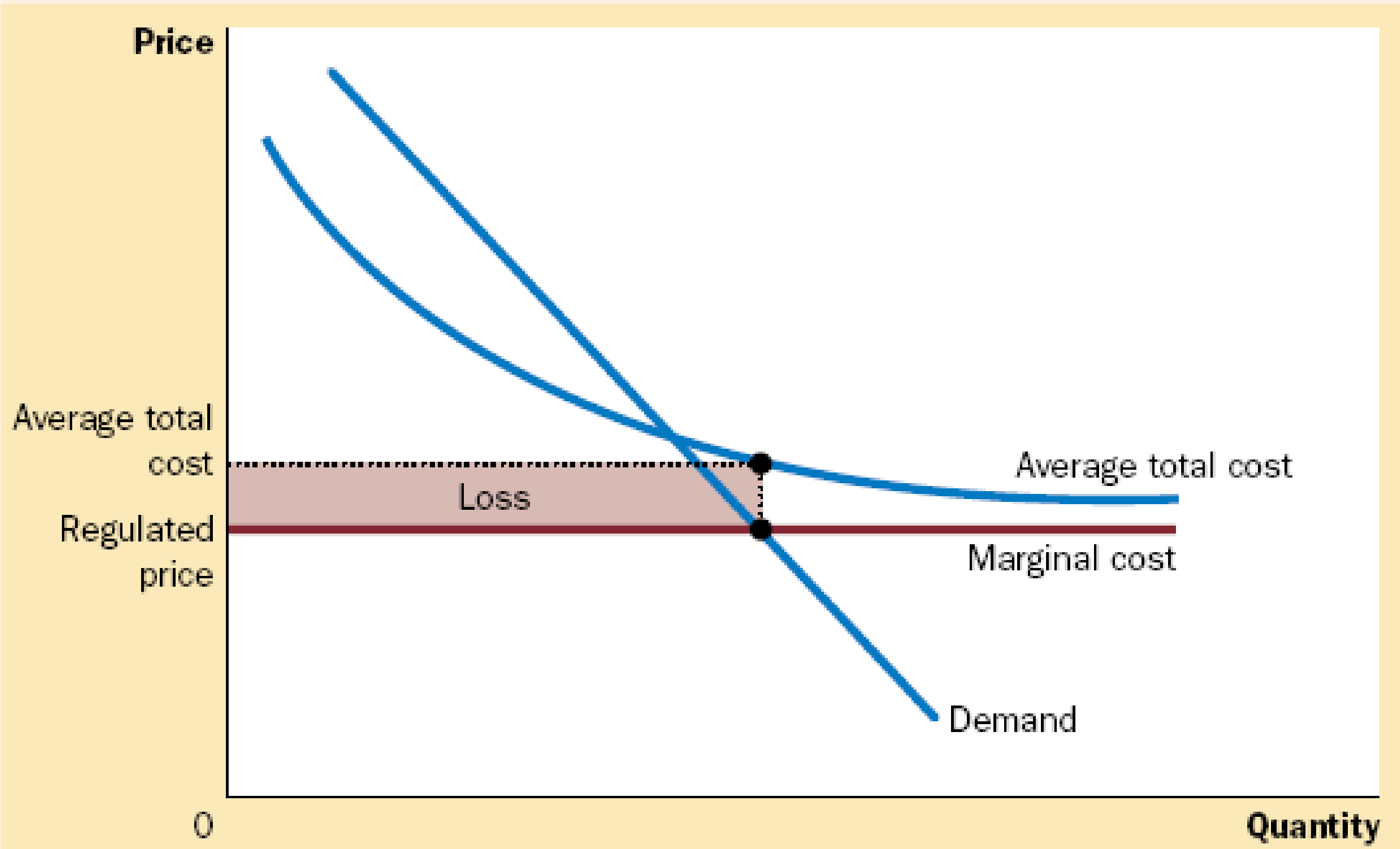
- They allow government to prevent mergers
- They allow government to break up companies
- They prevent companies from performing activities that make markets less competitive

Government Regulation

Government may regulate the prices that the monopoly charges:

- The allocation of resources will be efficient if price is set to equal marginal cost

Public Policy



Public Policy

REGULATION:

- In practice, regulators will allow monopolists to keep some of the benefits from lower costs in the form of higher profit, a practice that requires some departure from marginal-cost pricing

PUBLIC OWNERSHIP

- Rather than regulating a *natural monopoly* that is run by a private firm, the government can run the monopoly itself (e.g. in the United States, the government runs the Postal Service)

Public Policy

DOING NOTHING

- Government can do nothing at all if the market failure is deemed small compared to the imperfections of public policies

Price Discrimination

Price discrimination is the business practice of selling the same good at different prices to different customers, even though the costs for producing for the two customers are the same

Price discrimination is not possible when a good is sold in a competitive market since there are many firms all selling at the market price. In order to price discriminate, the firm must have some market power

Price Discrimination

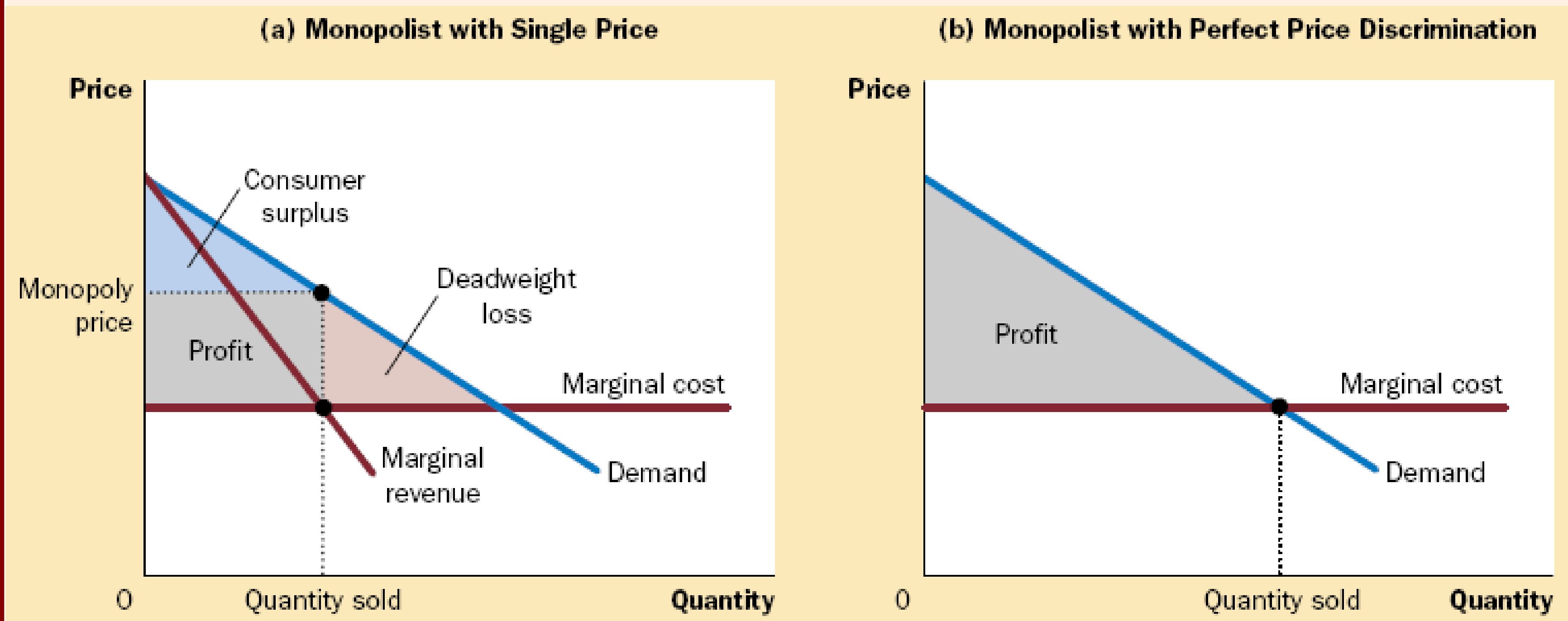
Perfect Price Discrimination:

- refers to the situation when the monopolist knows exactly the willingness to pay of each customer and can charge each customer a different price

Two important effects of price discrimination:

- it can increase the monopolist's profits
- it can reduce deadweight loss

Price Discrimination



Price Discrimination

Examples of Price Discrimination:

- Movie tickets
- Airline prices
- Discount coupons
- Financial aid
- Quantity discounts

Summary I

A monopoly is a firm that is the sole seller in its market

It faces a downward-sloping demand curve for its product

A monopoly's marginal revenue is always below the price of its good

Summary II

Like a competitive firm, a monopoly maximizes profit by producing the quantity at which marginal cost and marginal revenue are equal

Unlike a competitive firm, its price exceeds its marginal revenue, so its price exceeds marginal cost

A monopolist's profit-maximizing level of output is below the level that maximizes the sum of consumer and producer surplus

Summary III

A monopoly causes deadweight losses similar to the deadweight losses caused by taxes

Policymakers can respond to the inefficiencies of monopoly behavior with antitrust laws, regulation of prices, or by turning the monopoly into a government-run enterprise.

If the market failure is deemed small, policymakers may decide to do nothing at all

Summary IV

Monopolists can raise their profits by charging different prices to different buyers based on their willingness to pay

Price discrimination can raise economic welfare and lessen deadweight losses