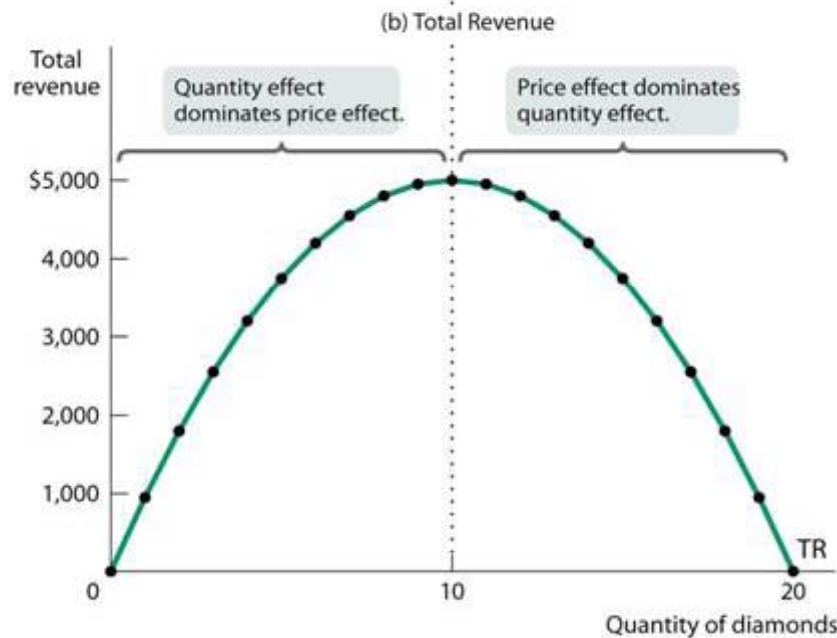
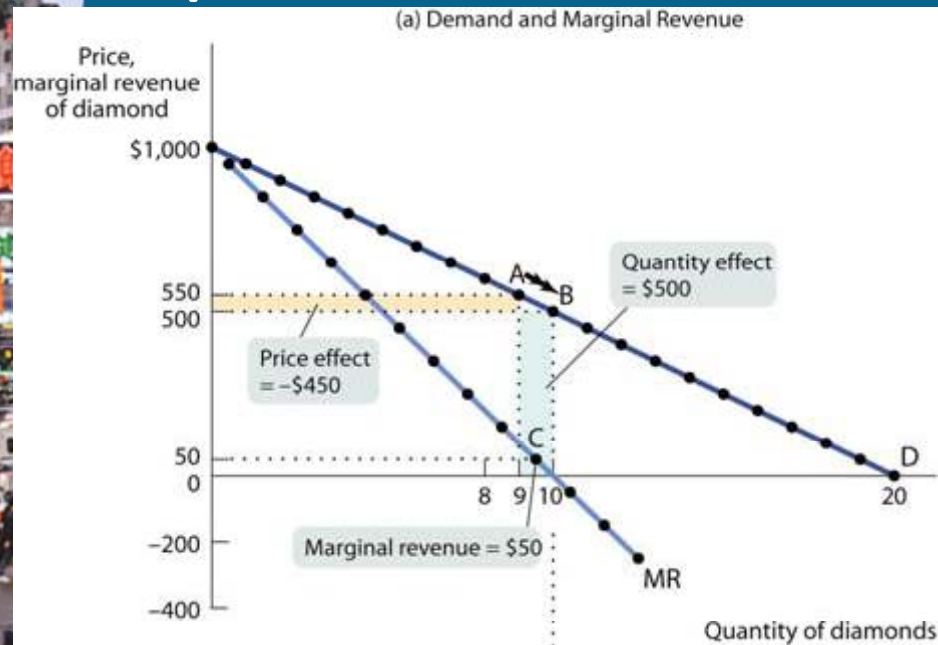
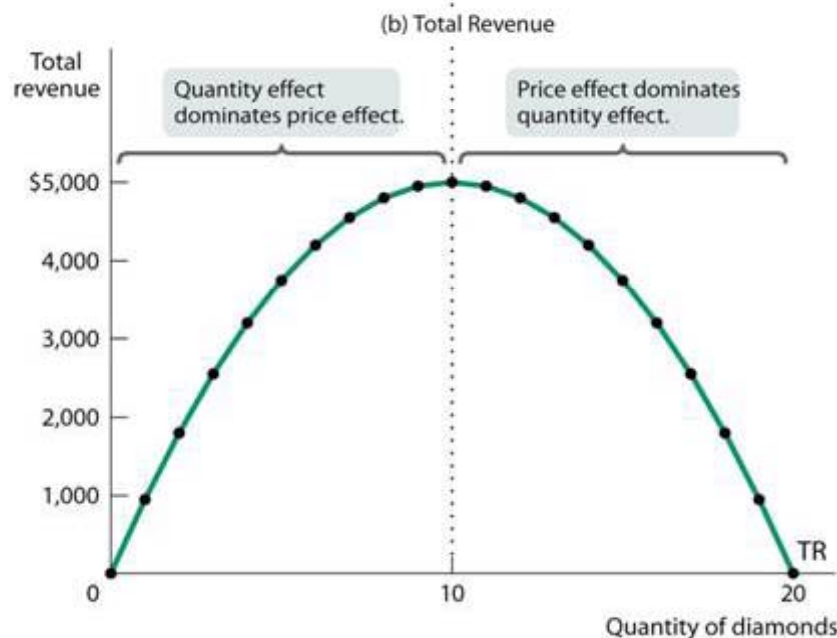
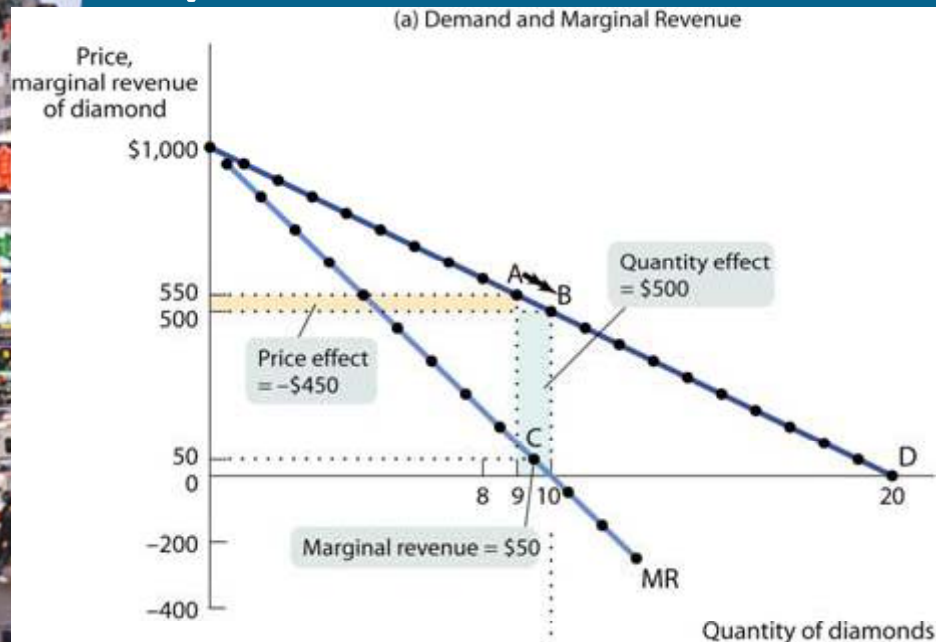


# A Monopolist's Demand, Total Revenue, and Marginal Revenue Curves



Price of diamond $P$	Quantity of diamonds $Q$	Total revenue $TR = P \times Q$	Marginal revenue $MR = \Delta TR / \Delta Q$
\$1,000	0	\$0	
950	1	950	\$950
900	2	1,800	850
850	3	2,550	750
800	4	3,200	650
750	5	3,750	550
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
400	12	4,800	-150
350	13	4,550	-250
300	14	4,200	-350
250	15	3,750	-450
200	16	3,200	-550
150	17	2,550	-650
100	18	1,800	-750
50	19	950	-850
0	20	0	-950

# A Monopolist's Demand, Total Revenue, and Marginal Revenue Curves



Inverse demand function  
(demand curve) monopolist:

$$P = P(Q) = 1000 - 50Q$$

Total revenue (function of  $Q$ )

$$TR = P(Q) \cdot Q$$

$$= (1000 - 50Q) Q$$

Marginal revenue (MR)

$$MR = dTR/dQ = dP/dQ \cdot Q + P$$

$$= 1000 - 100Q$$

$$MR = 0 \Leftrightarrow Q = 10$$

Price  
effect

Quantity  
effect

## The Monopolist's Profit-Maximizing Output and Price

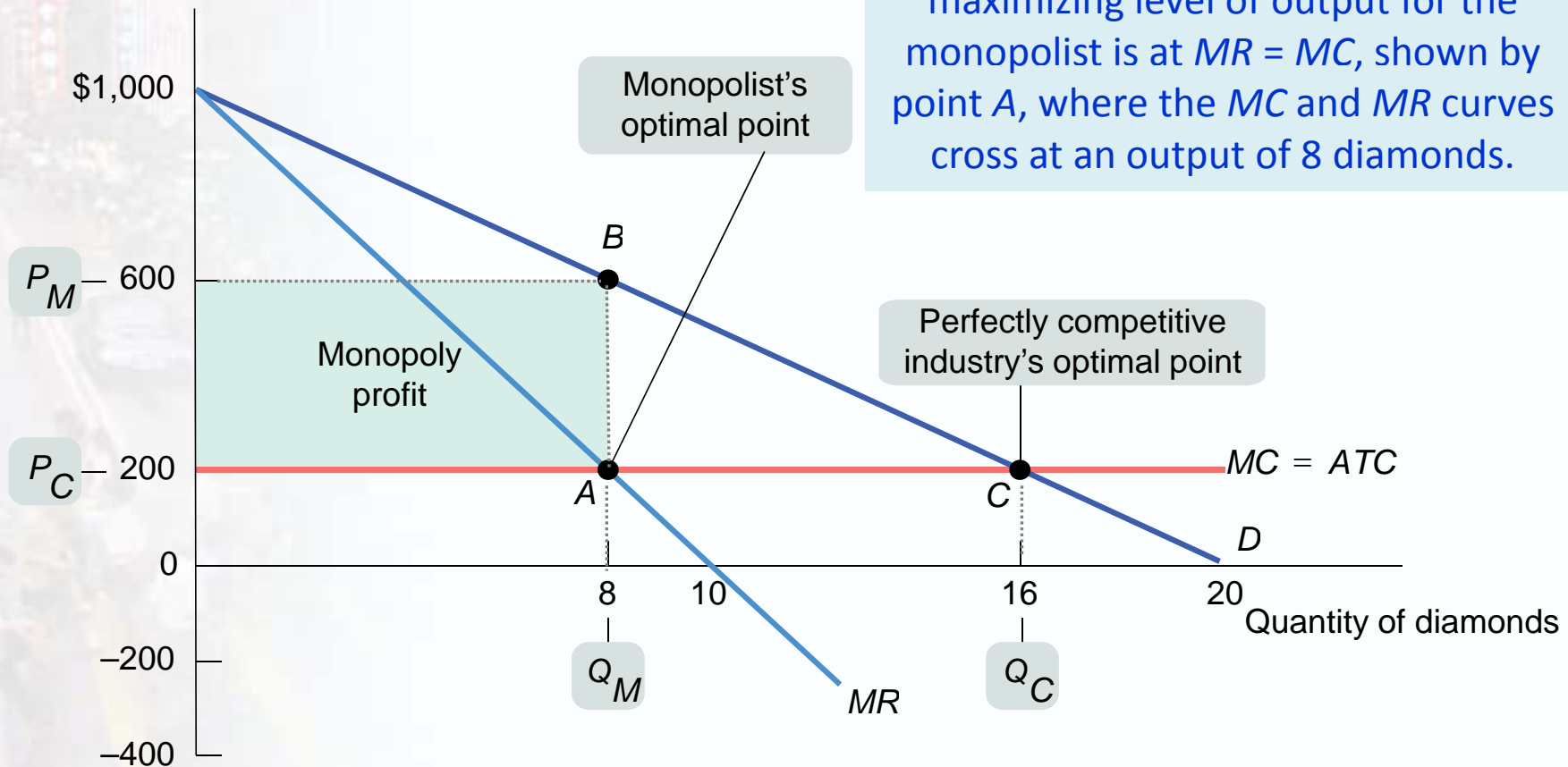
- To maximize profit [ $\Pi(Q) = TR(Q) - TC(Q)$ ], the monopolist compares marginal cost with marginal revenue.
- If marginal revenue exceeds marginal cost, De Beers increases profit by producing more; if marginal revenue is less than marginal cost, De Beers increases profit by producing less.
- So the monopolist maximizes its profit by using the optimal output rule:
  - At the monopolist's profit-maximizing quantity of output:

$$\Pi'(Q) = TR'(Q) - TC'(Q)$$

$$MR = MC$$

# The Monopolist's Profit-Maximizing Output and Price

Price, cost, marginal revenue of demand



**The optimal output rule:** The profit maximizing level of output for the monopolist is at  $MR = MC$ , shown by point A, where the  $MC$  and  $MR$  curves cross at an output of 8 diamonds.

$$MR = 1000 - 100Q; \quad MC = 200$$
$$MR = MC \Leftrightarrow 1000 - 100Q = 200$$
$$\Rightarrow Q_M = 8$$

# Regulated Natural Monopoly: Wasserpreise und zweigliedrige Tarife

- Durchschnittskostenregulierung: Steigende Preise bei sinkender Nachfrage
- Zweiteilige (zweigliedrige) Tarife: Grundgebühr + verbrauchsabhängige Nutzungsgebühr

