

EE211

PRINCIPLES OF MICROECONOMICS

Topic 8 (Part 2):

Market Structure – Monopoly

Topics

- What is monopoly?
- Causes of monopoly
- Nature of demand, TR, AR, MR, and their relationship
- Short-run equilibrium
- Economic effects of monopoly
- Price discrimination

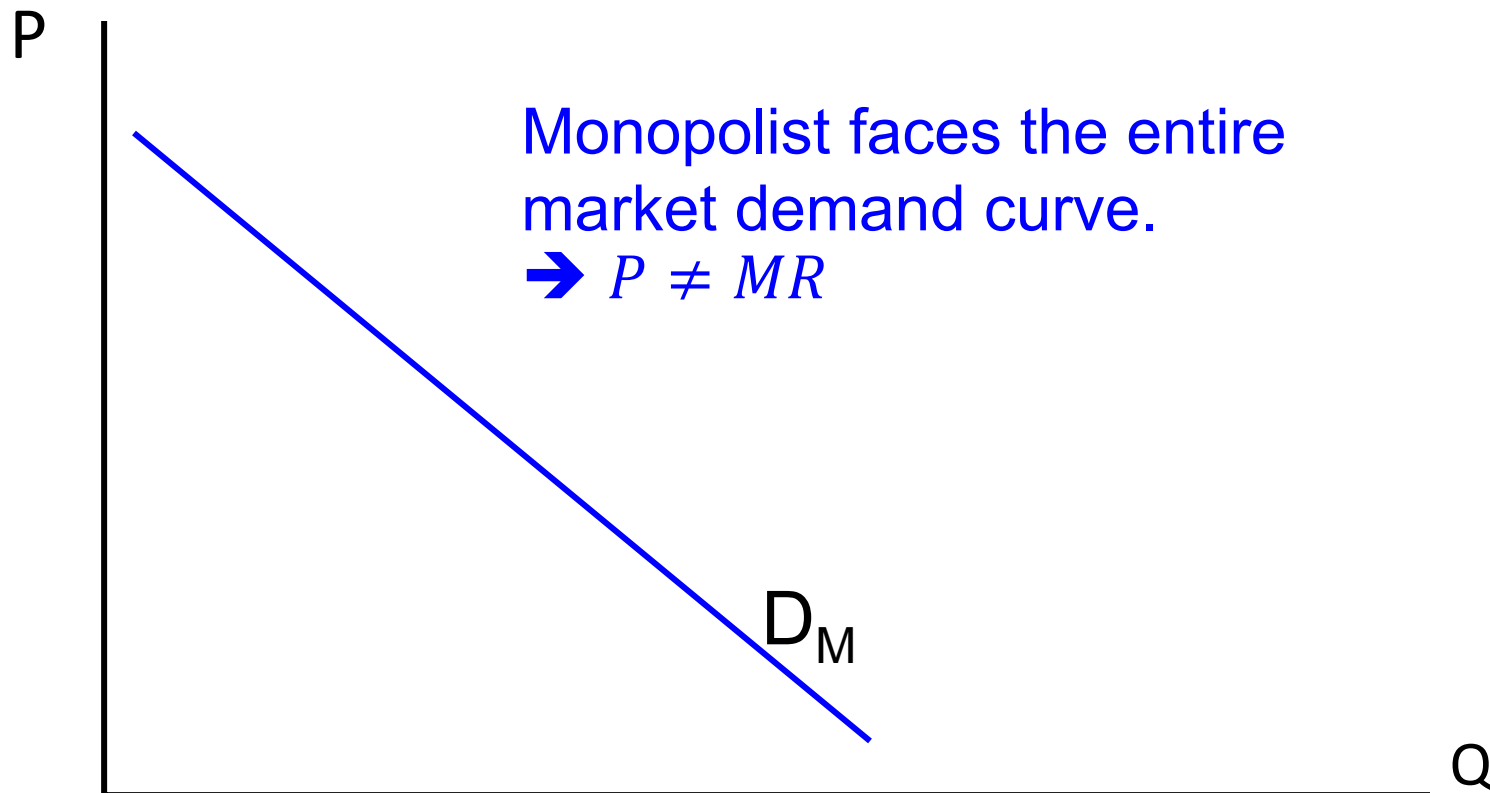
A Single Price Monopolist

- A **monopolist** is a firm that is the **only seller** of a product **without close substitutes**.
- Key difference from perfectly competitive firm: **A monopoly firm has market power**, the ability to influence the market price of the product it sells.
 - A monopolist faces a negatively sloped demand curve.
 - A monopolist is the “**price setter**”.

Causes of Monopoly

- The main cause of monopolies is **barriers to entry**.
- Three sources of barriers to entry:
 1. **Ownership of a key resource**
e.g. DeBeers
 2. **Permission or exclusive right** (granted by the government) to produce the good.
e.g. patents, copyright laws
 3. **Natural monopoly**: A single firm can produce the entire market Q at lower ATC than could several firms.
e.g. electricity, train

Nature of Demand



TR, AR, MR

- Suppose the demand curve in the market is given by:

$$P = 6 - Q.$$

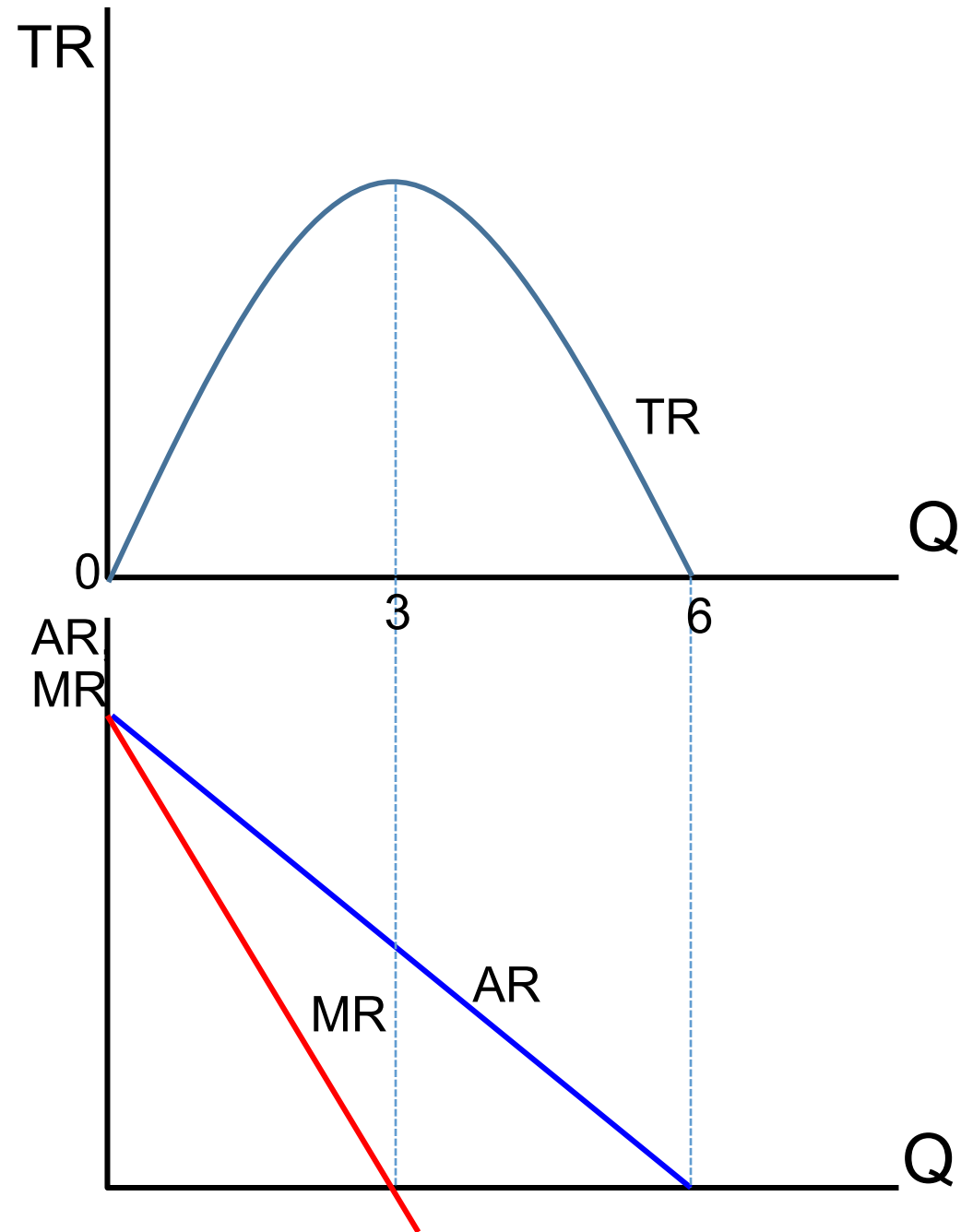
- $TR = P \times Q = (6 - Q)Q = 6Q - Q^2$

- $AR = \frac{TR}{Q} = \frac{6Q - Q^2}{Q} = 6 - Q = P$

- $MR = \frac{\Delta TR}{\Delta Q} = 6 - 2Q$

Example:
Let $P = 6 - Q$.

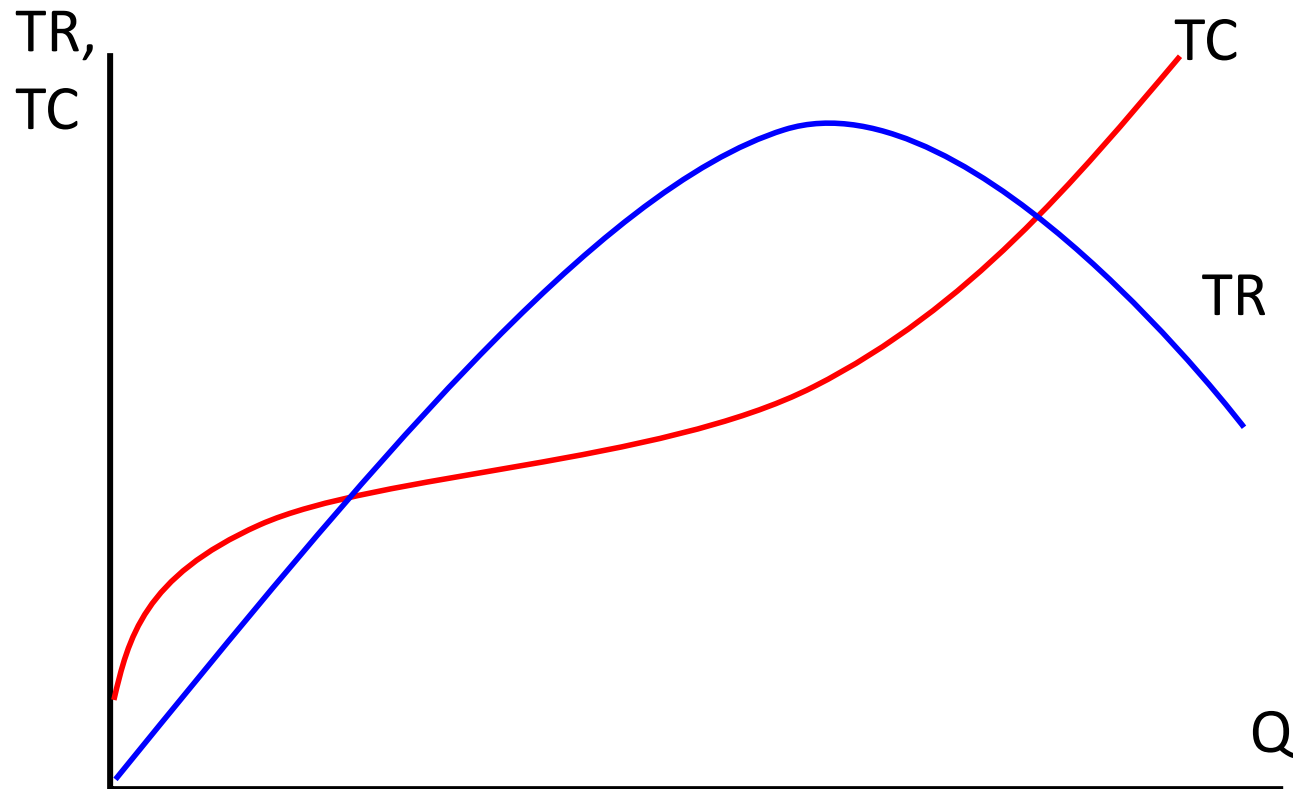
P	Q	TR	AR	MR
\$6	0	0	6	
\$5	1	5	5	5
\$4	2	8	4	3
\$3	3	9	3	1
\$2	4	8	2	-1
\$1	5	5	1	-3
\$0	6	0	0	-5



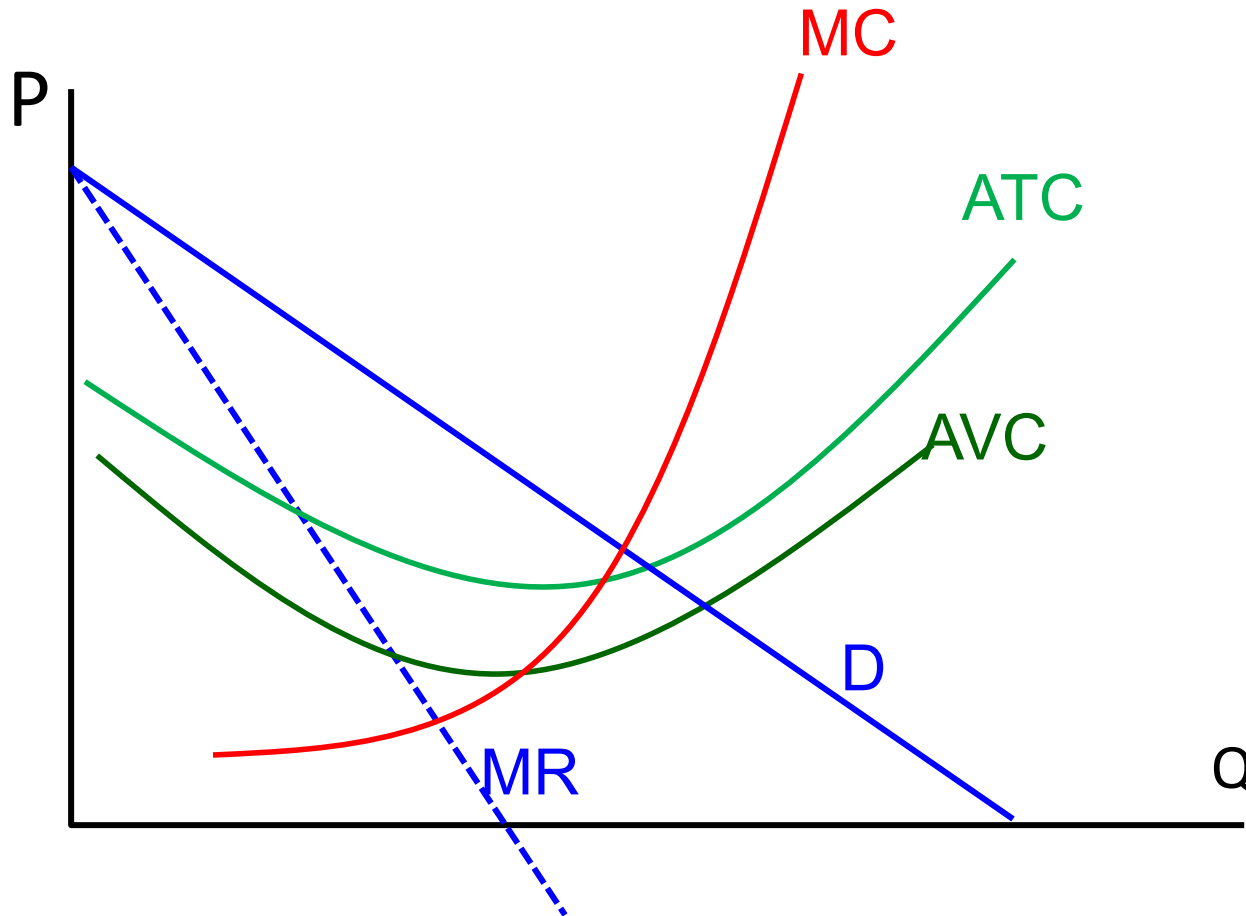
Short-Run Profit Maximization

- **Rule 1:** The firm should not produce at all unless its revenues exceed its variable cost (i.e. produce zero unit if $P < AVC$)
- **Rule 2:** If the firm does produce, it should produce a level of output such that its marginal revenue equals its marginal cost.

Profit Maximization



Monopoly Equilibrium in Short-Run



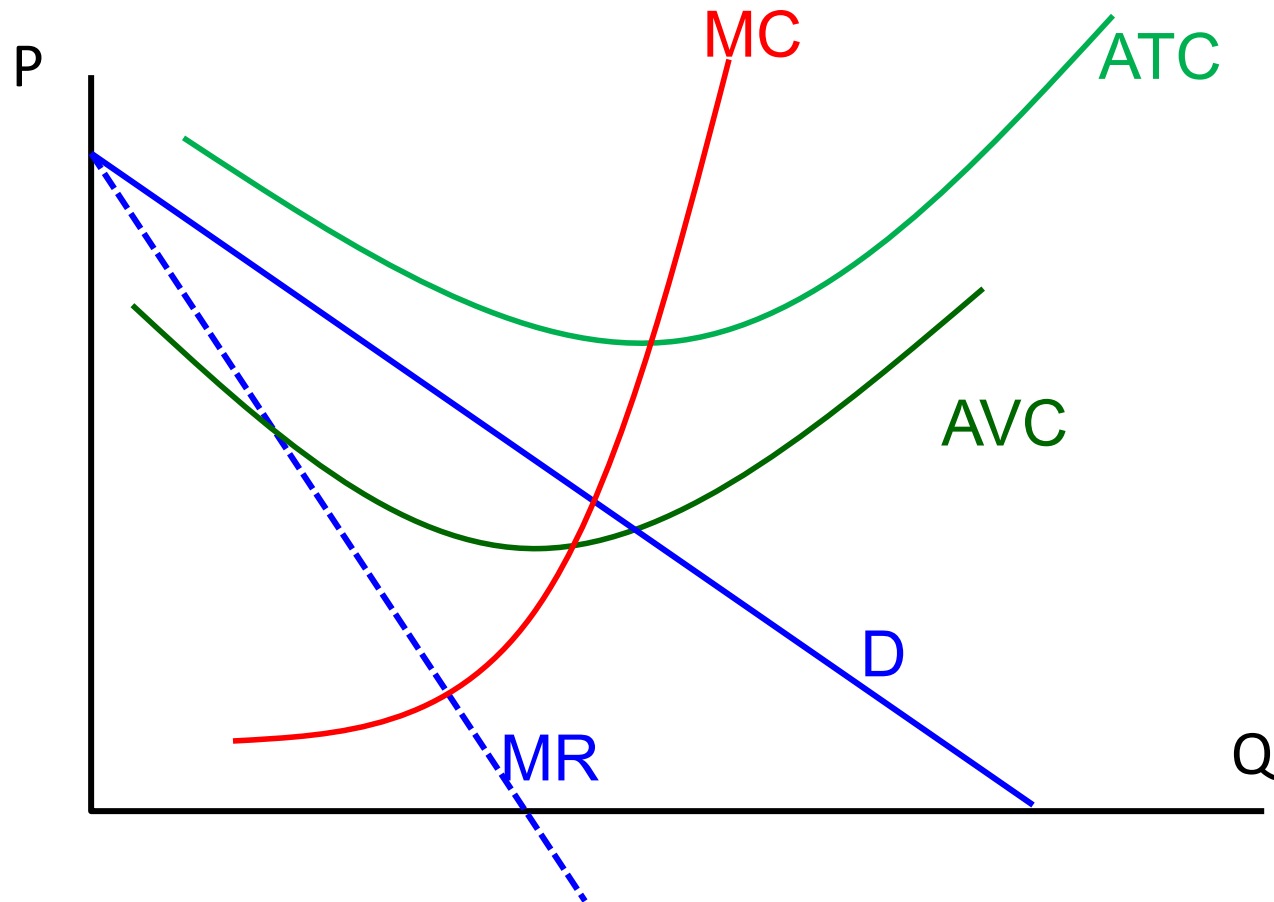
Monopolist's Profit

- Monopolist's profit:

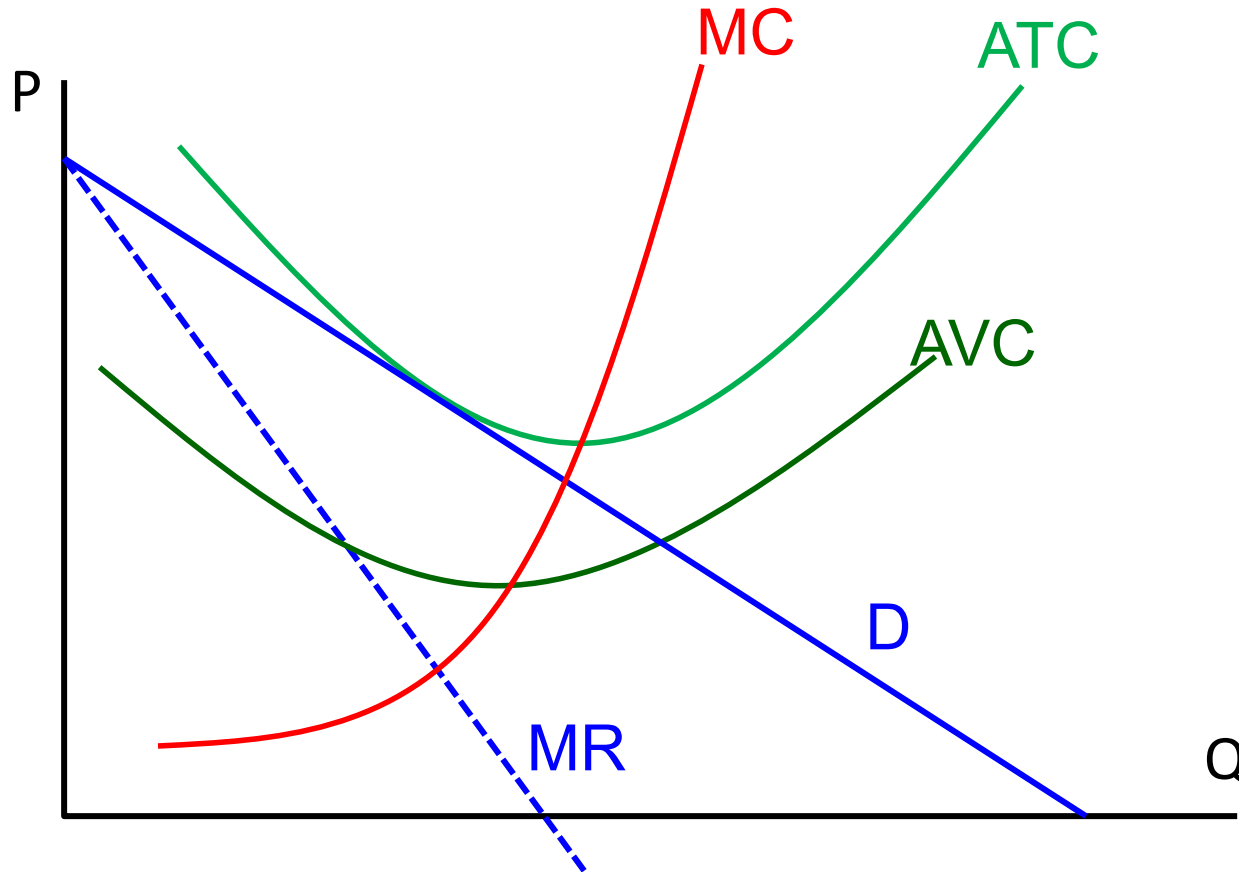
$$\pi_M = (P_M - ATC) \times Q_M$$

- Are the monopolist's profits always positive?
 - Not necessarily!
 - Monopolist can make a loss when $P < ATC$
 - As long as $P > AVC$ monopolist should continue producing Q_M because $TR > TVC$.

Negative Profits



Zero Economic Profits



Does a monopolist have a supply curve?

A competitive firm

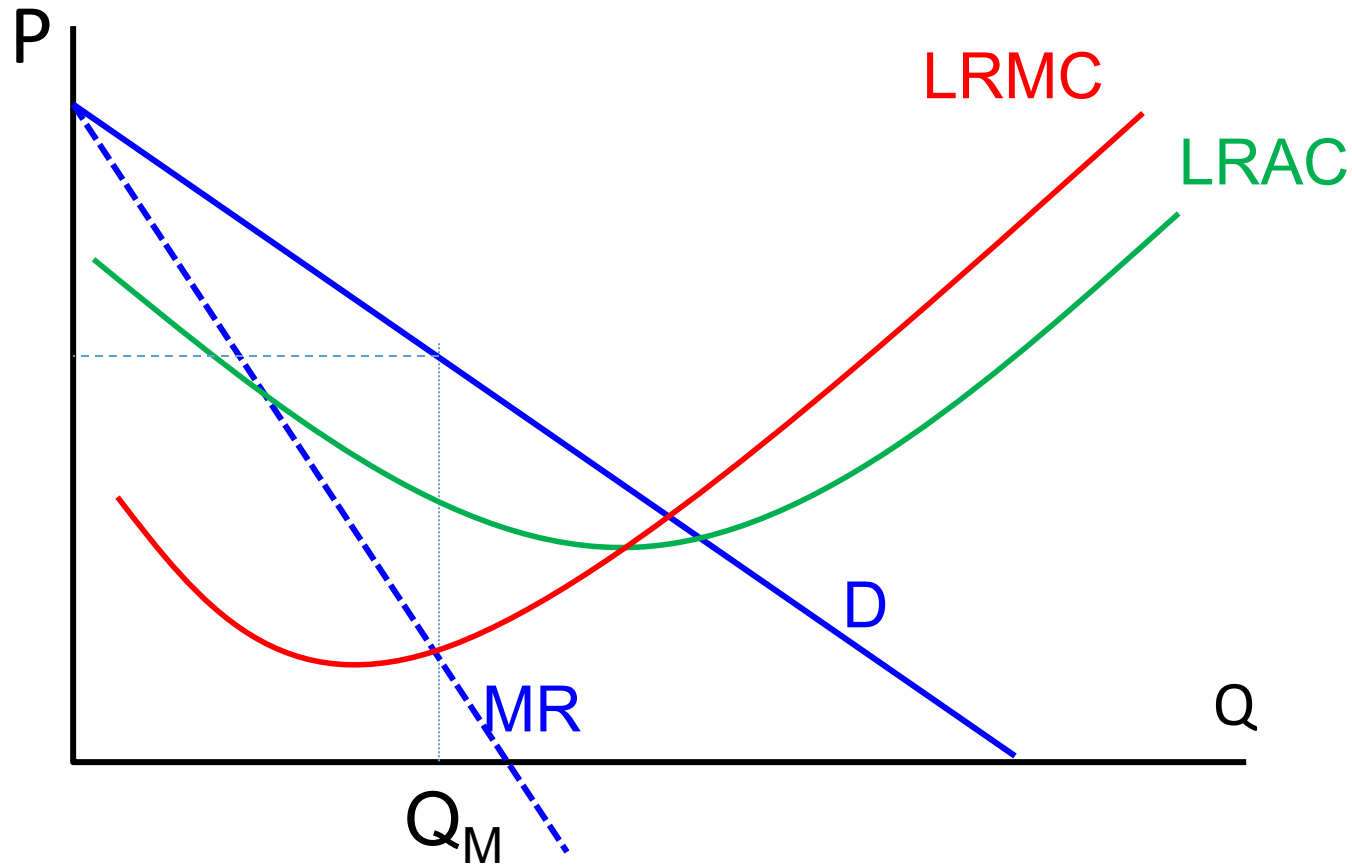
- takes P as given
- has a supply curve that shows how its Q depends on P

A monopoly firm

- is a “price-setter,” not a “price-taker”
- Q does not depend on P ;
rather, Q and P are jointly determined by MC & MR

Hence, there is no supply curve for monopoly.

Monopoly Equilibrium in Long-Run

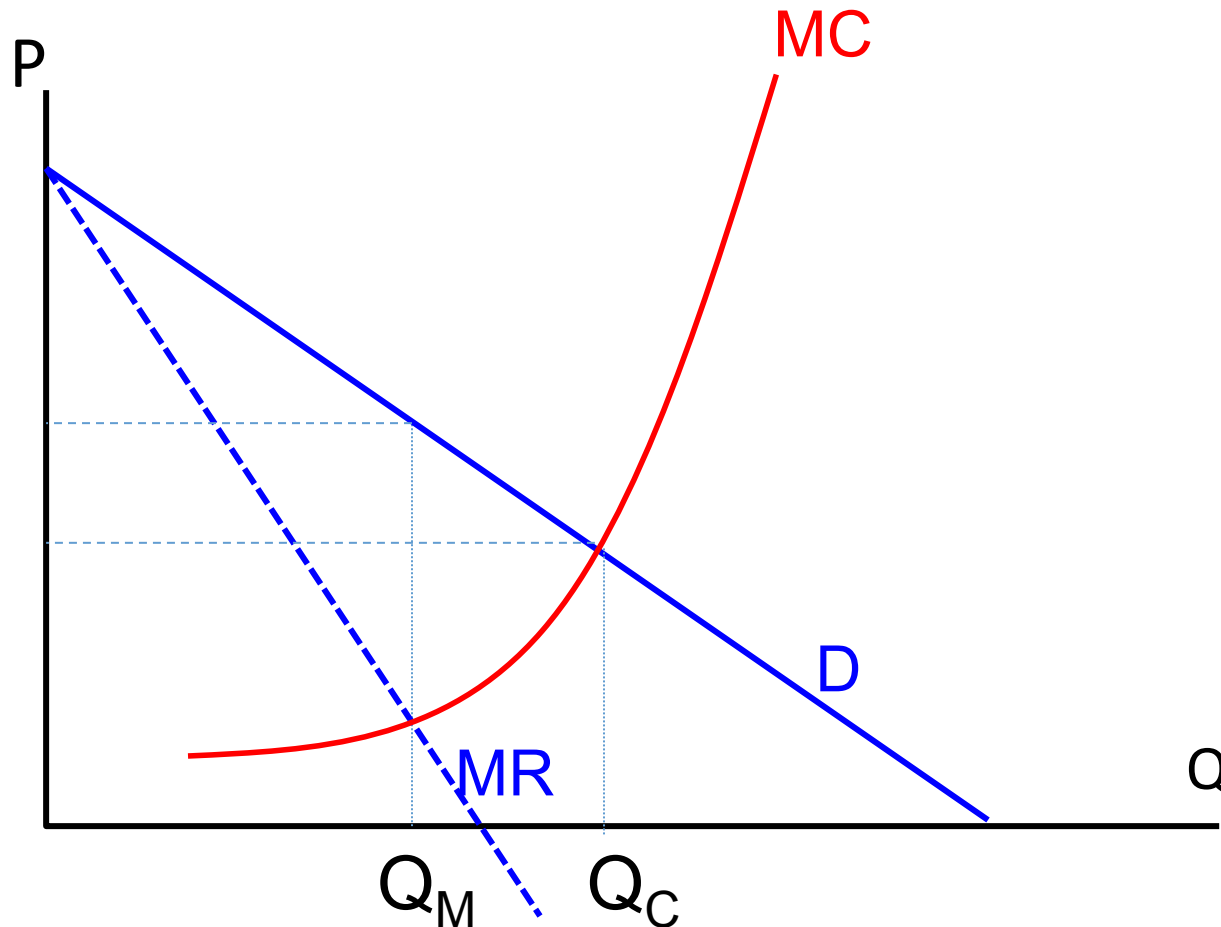


In LR, monopolist can maintain positive profit because there is no entry of new firms to compete in the market.

Market Efficiency

- The long-run equilibrium for monopoly:
 $MR = LRMC.$
- $P_M > MC$ (so, $Q_M > Q_C$) → Allocative inefficiency
- $P_M > \text{Minimum LRAC}$ → Productive inefficiency
- Hence, there is welfare loss to the society.

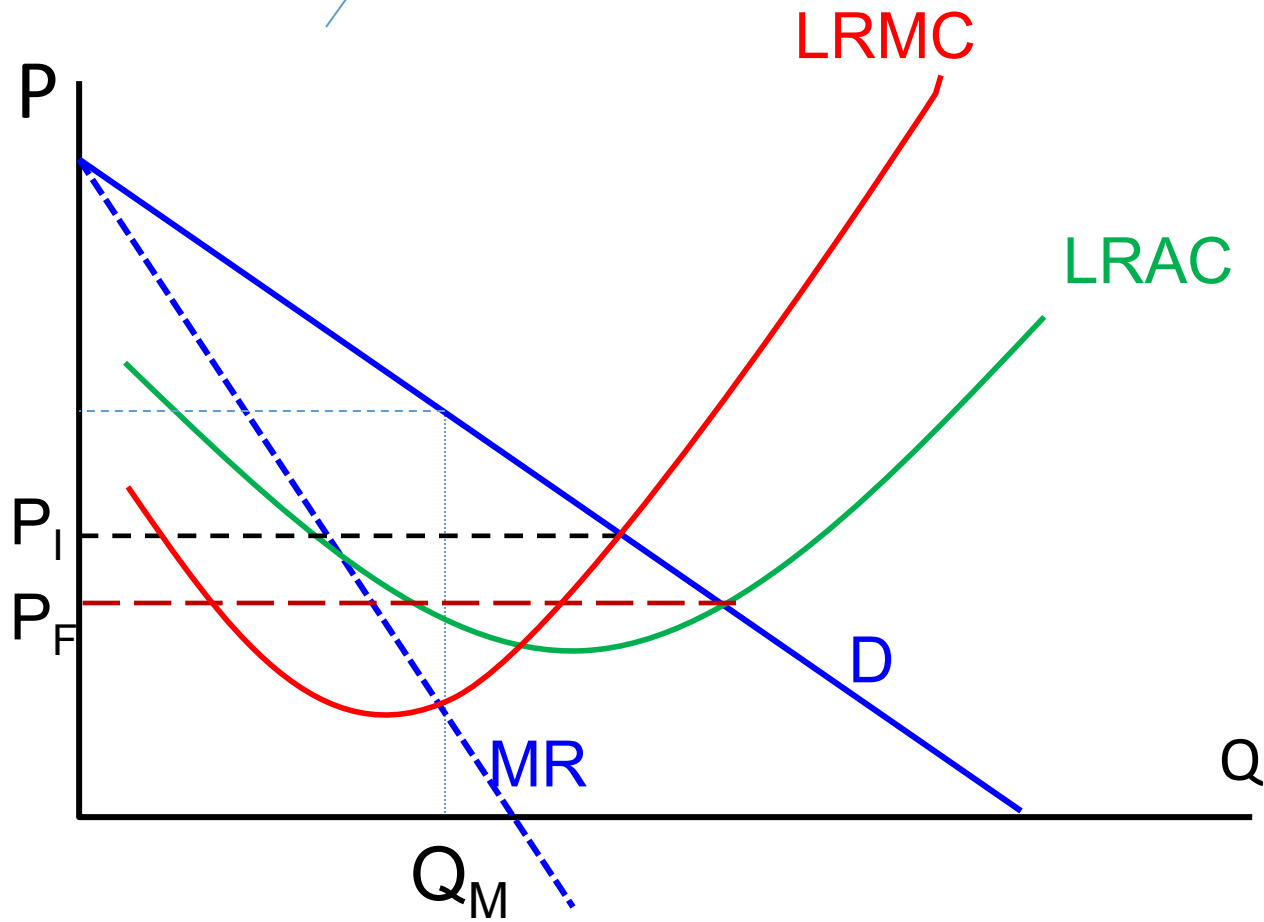
Economic Effects of A Monopoly



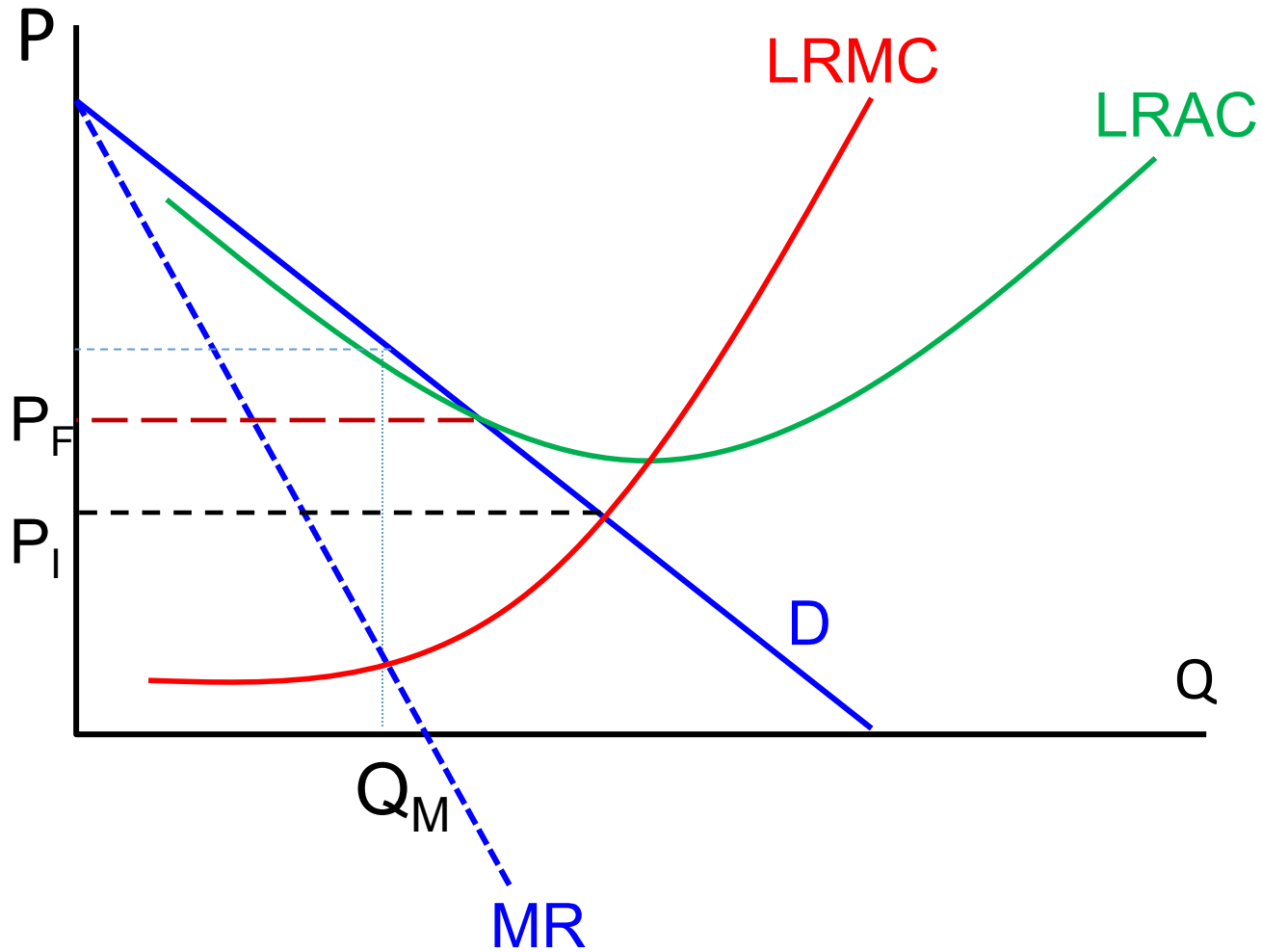
Regulated Monopoly

- The government can reduce inefficiency by forcing the monopolist to produce more.
- 2 options:
 1. Ideal price: $P_I = LRMC$
 2. Fair price: $P_F = LRAC$

$$P_I > P_F$$



$$P_I < P_F$$



Natural Monopoly

The case where economies of scale creates a barrier to entry.

