

Universidad Carlos III de Madrid

MICROECONOMICS I

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SIXTH PART: MONOPOLY AND IMPERFECT COMPETITION

Monopoly (the market, not the board game...)

In the market environment called **monopoly** only one firm produces and sells the relevant good or service.

The basic reason behind a monopoly is the existence of *barriers to entry*:

- Because a key resource is owned by a single firm (e.g., diamonds in South Africa). Note that “substitutability” is crucial for market power.
- Because the government gives a single firm the exclusive right to operate (e.g., patents or copyright). This is the “efficient” part of the story...
- Because the cost curves make a single producer more efficient than many (e.g., electricity supply in a small town). We have a **natural monopoly**.

This is the most extreme case of imperfect competition (basically, absence of competition). The unique firm has **market power** (it is the market...) and can set the price it likes (of course, facing the constraint of market demand).

Monopolist's profit maximization

A monopolist, just like a competitive firm, aims at maximizing profits. Both take decisions by reasoning at the margin. So, both choose to produce the quantity at which marginal revenue equals marginal cost ($MR = MC$).

The key difference is represented by **marginal revenue**, which is equal to the price in a competitive market, but is not in monopoly.

Since a monopolist faces the entire (downward-sloping) demand curve, it knows that, by increasing its output, total revenues will change because of two effects:

1. the firm receives revenues from selling the additional output ($P\Delta Q$);
2. the price falls and revenues decrease for all the other units ($-Q\frac{\Delta P}{\Delta Q}$).

In a competitive market, we have only the first (*output*) effect, and $MR = P$. In monopoly, we have also the second (*price*) effect, and $MR < P$:

$$\Delta R = P - Q\Delta P \quad (\Delta Q = 1).$$

Monopolist's profit maximization (cont.)

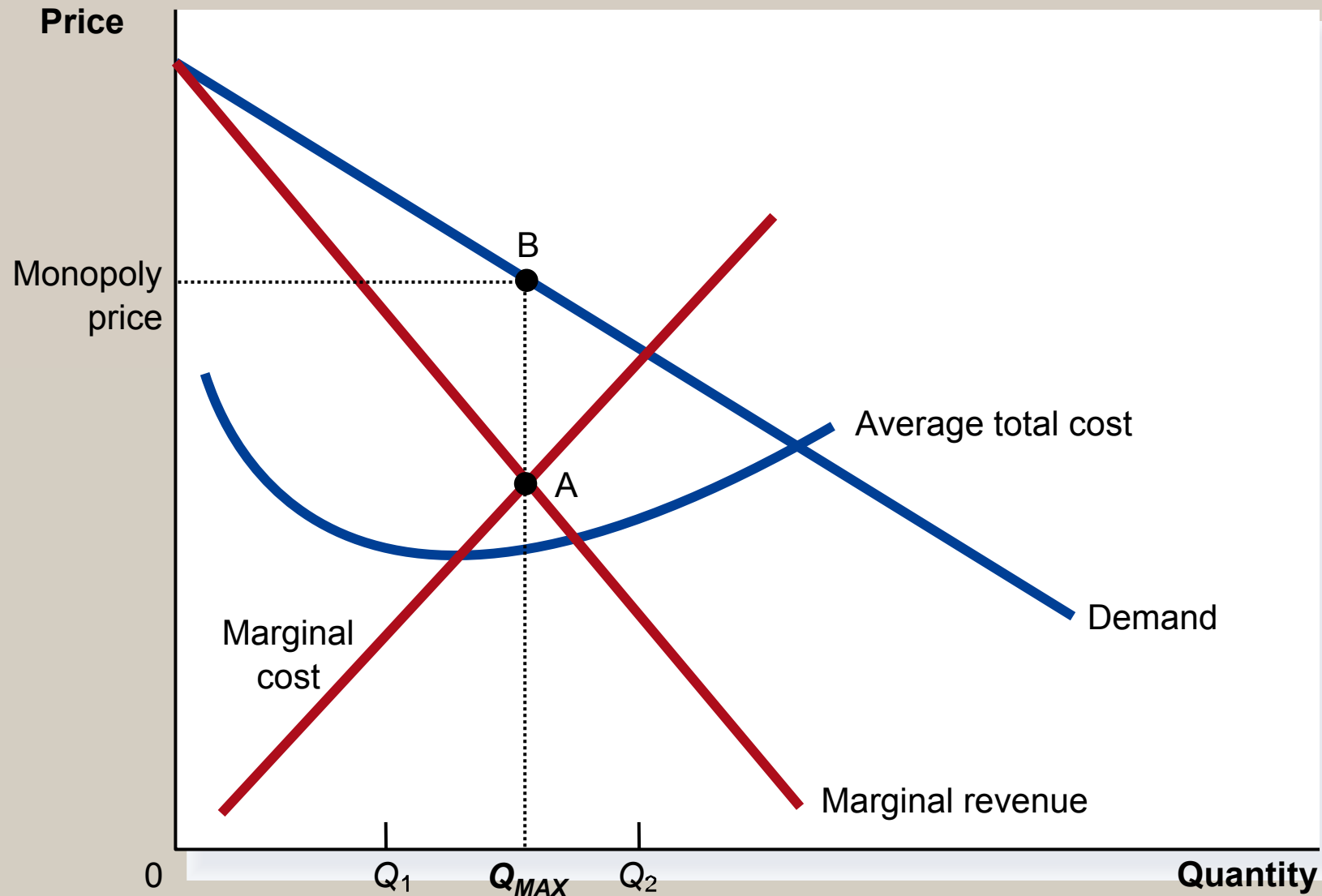
The monopolist's profit-maximizing output level is determined by the *intersection* of its marginal-revenue curve and its marginal-cost curve (see next graph).

Since in a monopoly the price is above marginal revenue, in equilibrium the price is greater than the marginal cost.

- For a competitive firm: $MC = MR = P$.
- For a monopolist: $MC = MR < P$.

⇒ Note that the discrepancy between marginal revenue and price depends on the **elasticity of market demand**. The larger the elasticity (i.e., the flatter the demand curve), the smaller the discrepancy.

Profit Maximization for a Monopolist



The inefficiency of monopoly

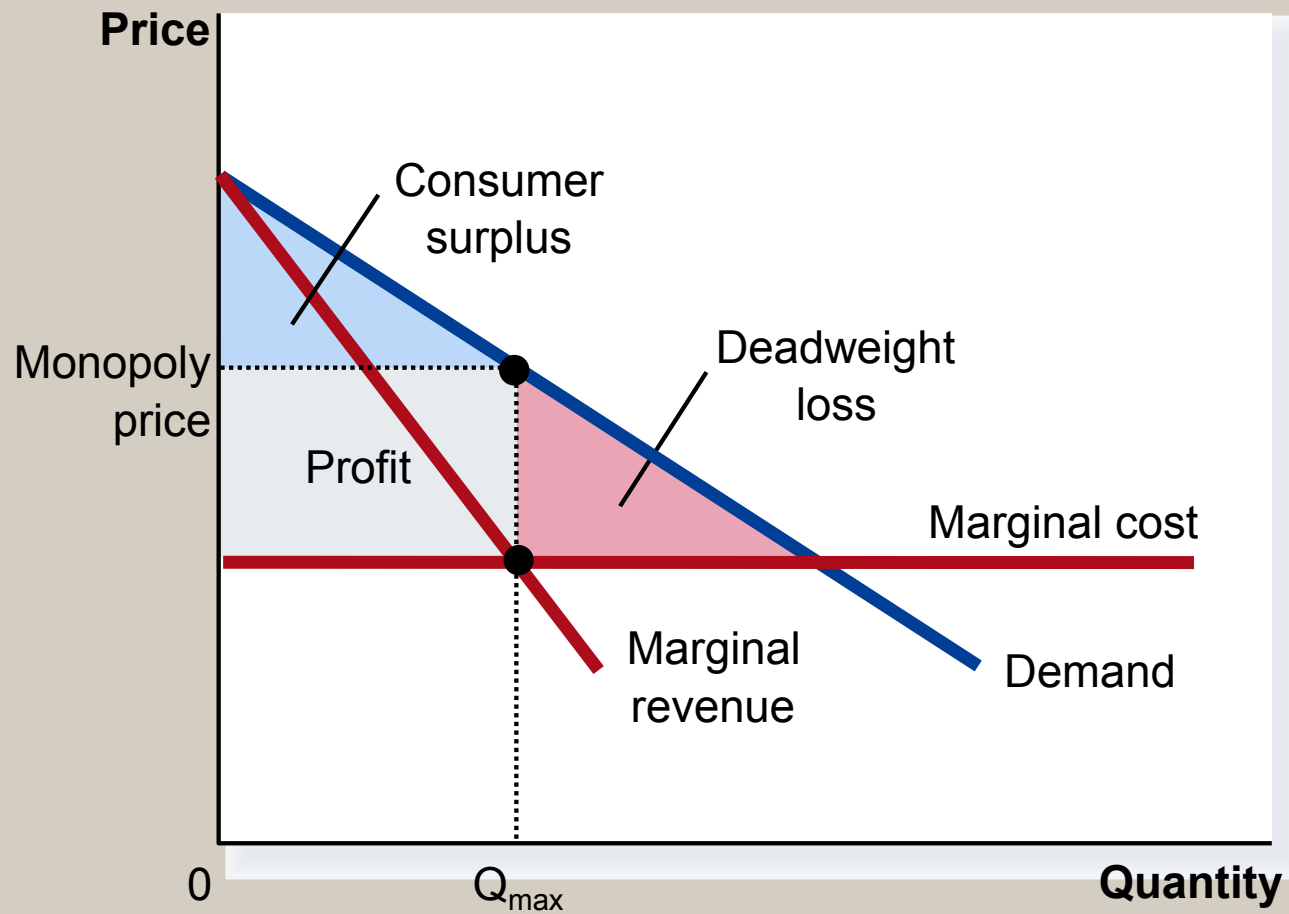
Does monopoly set the optimal output in terms of social welfare? The answer is no (see next graph).

Since the demand curve reflects the marginal value of the good to consumers, and the marginal-cost curve reflects the marginal value to producers, the socially optimal quantity is found where the demand and marginal-cost curves intersect.

The quantity chosen by the monopolist is lower than this optimal level (the price is higher). There is a **deadweight loss**, due to the fact that additional gains from trade are not exploited.

⇒ Other (possible) shortcomings of monopolies: 1) managerial slack; 2) reduced R&D (no dynamic incentives); 3) rent seeking.

The Deadweight Loss of Monopoly



The incentive for price discrimination

Exactly because some gains from trade are not exploited, there is an incentive for the monopolist to discriminate the price with respect to different consumers.

Examples: 1) economics textbooks in the US or Europe; 2) hardcover books vs. paperbacks; 3) airline discounts during weekends; 4) discount coupons.

Exercise: Nanni, an economics professor, just wrote a revolutionary textbook in economics (or at least he believes so...). For him, the opportunity cost of writing the book is 2,000 euros. The marginal cost of printing a copy is zero. He can force his 100 students to buy the book as long as the price does not exceed 40 euros. But there are also other consumers (mostly Nanni's relatives and friends) who'd like to buy the book at a price of 3 euros.

1. Assuming that Nanni cannot discriminate between different consumers, what's the profit-maximizing price (quantity) for him? Is there a deadweight loss?
2. Assuming that he can discriminate between his students (in Spain) and other consumers (in Italy), what's his preferred pricing policy? Deadweight loss?

But if monopolies are inefficient... why so many people are fighting to have them?

“The merger between Connex and Killen will use economies of scale, and result in cheaper products for consumers...”

*From SYRIANA (2005) – By Stephen Gaghan –
With George Clooney, Matt Damon, Jeffrey Wright*



- Benevolent answer: after all, they may be more efficient than perfect competition, if there are economies of scale over the relevant range of output (**natural monopoly**).
- Not-so-benevolent answer: you’ll always find someone who tells you that there are economies of scale, in order to justify **monopoly rents** (that hurt consumers and reduce social welfare).

Economies of scale and natural monopolies

Other cases of imperfect competition and anti-trust policy