University of Macerata
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Imperfect competition:

- Monopoly
- Oligopoly
- Monopolistic competition

REF. Chapter 9; Chapter 10.A e 10.B

Level of competition and efficiency

Perfect competition:

- available resources are allocated in the best possible way (allocative/Pareto efficiency, minimum prices and maximum output)

Imperfect competition:

- lower levels of efficiency: markets tend toward imperfect competition when there are "**barriers to entry**" that make it difficult for new competitors to enter an industry (lead to higher prices and lower quantities sold).
- Barriers to entry are factors that make it hard for new firms to enter an industry. When barriers are high, an industry may have few firms and limited pressure to compete.
- Common type of barrier to entry are: economies of scale, legal restrictions, high cost of entry, advertising, and product differentiation.

Imperfect competition

Most markets operate in imperfect competition.

What are the essential differences from perfect competition?

A company operating in one of the imperfectly competitive markets has the ability to influence the selling price by varying the quantities offered on the market without losing all customers (it does not face a horizontal demand curve for its product, but a demand curve with negative slope).

Demand curve

The firm can sell the Quantities it wishes, but it must "accept" the market price

The firm can choose the combination of Q and P.
But if competitors reduce P, the price applied by the firm will result relatively higher and it will face lower demand (e.g. lower price of *substitute goods*).

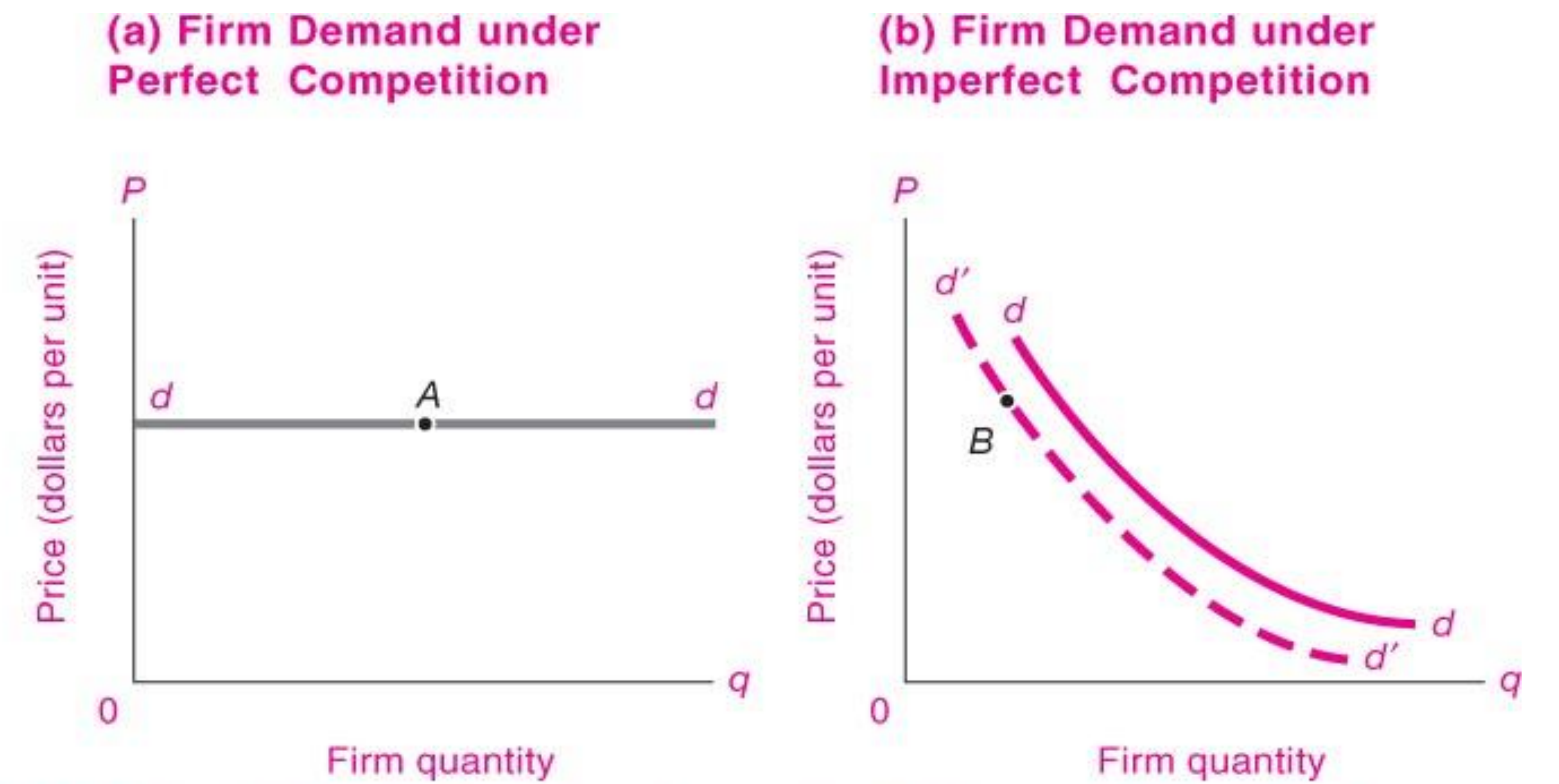


FIGURE 9-1. Acid Test for Imperfect Competition Is Downward Tilt of Firm's Demand Curve

Market structures

(different levels of "imperfection" and of possibility of influencing the market price)

Perfect competition - there is a large number of producers and no one can influence the price

Monopolistic competition - a large number of small producers are present on the market, with related and slightly differentiated products

Oligopoly - there are few companies, with similar or differentiated products

Monopoly - one firm produces all the output and controls prices completely

Types of Market Structures

Structure	Number of producers and degree of product differentiation	Part of economy where prevalent	Firm's degree of control over price
Perfect competition	Many producers; identical products	Financial markets and agricultural products	None
Imperfect competition			
Monopolistic competition	Many producers; many real or perceived differences in product	Retail trade (pizzas, beer, . . .), personal computers	Some
Oligopoly	Few producers; little or no difference in product	Steel, chemicals, . . .	
	Few producers; products are differentiated	Cars, word-processing software, . . .	
Monopoly	Single producer; product without close substitutes	Franchise monopolies (electricity, water); Microsoft Windows; patented drugs	Considerable

TABLE 9-1. Alternative Market Structures

Monopoly

There is only one company on the market. This is due to:

a. The nature of the product, which requires large investments in fixed structures (the *returns to scale* are increasing).
E.g. Natural monopoly, typical of public goods and services (distribution of water, gas, electricity ...). The price is "fixed" by governmental regulation

b. discovery of a new product (temporary monopoly)

c. discovery of a new production process with lower costs that eliminates competitors

d. possession of a fundamental productive resource

e. legal monopoly

Monopoly

Characteristics of the market

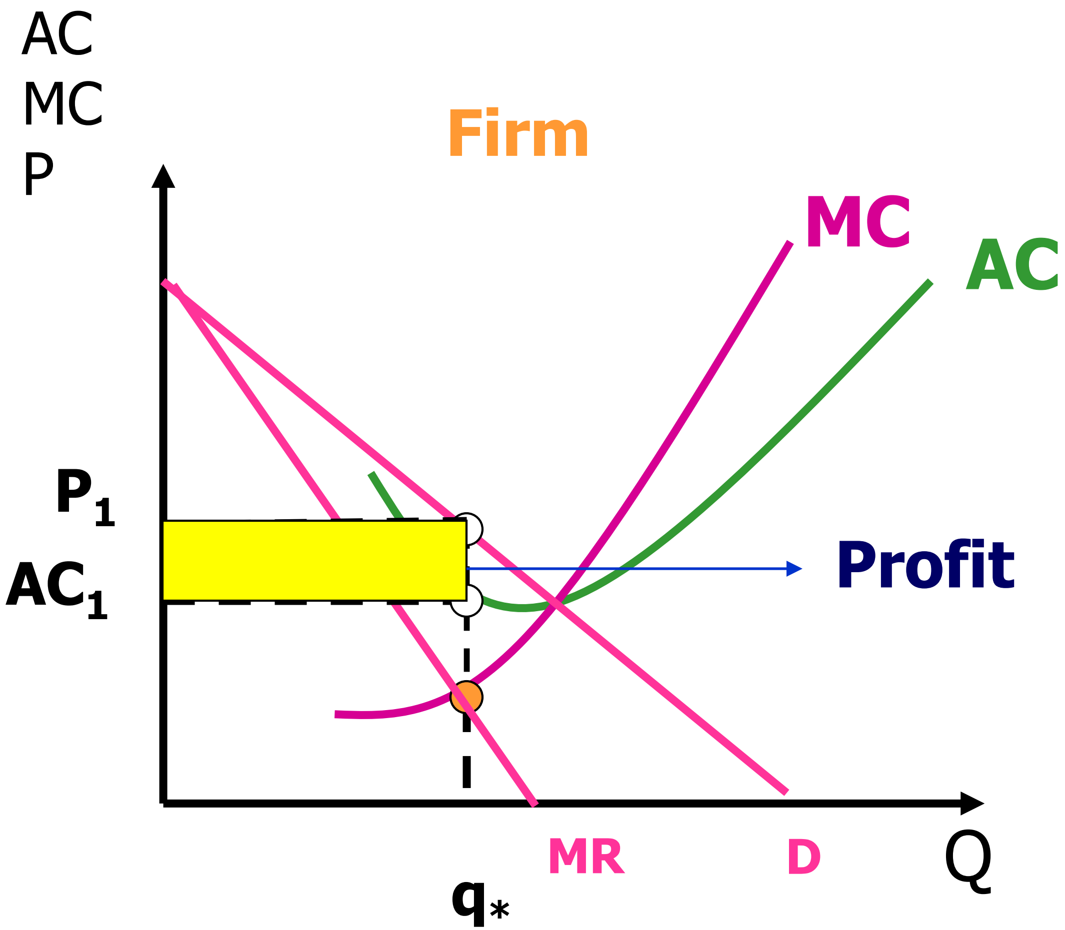
- the company faces a demand curve equal to that of the entire industry (aggregate);
- the company can set production prices or quantities.

Company objectives

1. Maximize product specificities to maintain monopoly
2. Promote dimensional growth through:
    - the maximization of sales (Total Revenues);
    - profit maximization (TR - Total Cost).

Monopoly

Max Profit: MR = MC



Implications

In monopoly there is no sense to distinguish between the demand curve for the firm and for industry, since the monopolist faces the demand curve of the entire market and chooses the convenient point of demand where to operate (it determines P or Q).

There is no difference between the short and long run (no new businesses entry due to barriers to entry).

Compared to the equilibrium of perfect competition, fewer quantities are produced, sold at higher prices (main distortion).

Distortions - Loss of well-being for the community

The monopolist

- does not have to worry about producing in the most technically efficient way (it maximizes profits without minimizing costs)
- defends its position by strengthening barriers to entry with specific investments (advertising to build customer loyalty, lobbying to ensure legal protection, etc ...)
- is not stimulated to innovate and improve

Conclusions

Monopoly leads to an equilibrium which is:

- of economic efficiency (Max profit)
- NOT of technical efficiency (it does not produce where MC = AC, i.e. at the minimum level of average costs). There is no incentive to achieve the optimal production scale.
- NOT of Pareto efficiency (there is a loss of social well-being)

Oligopoly

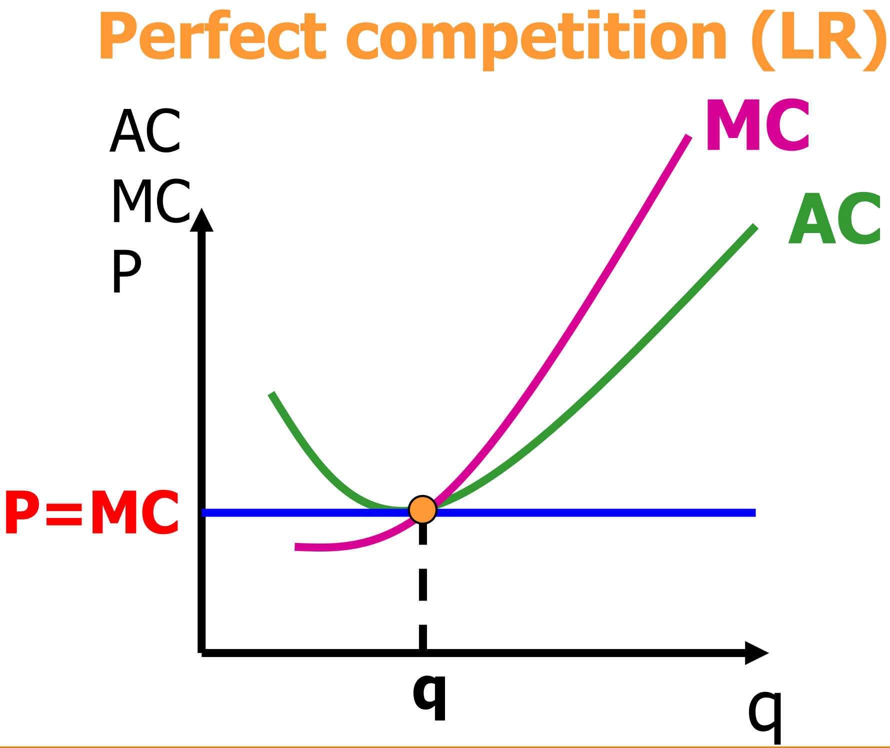
- Market characterized by high market concentration: few producers control the majority part of the market => market power

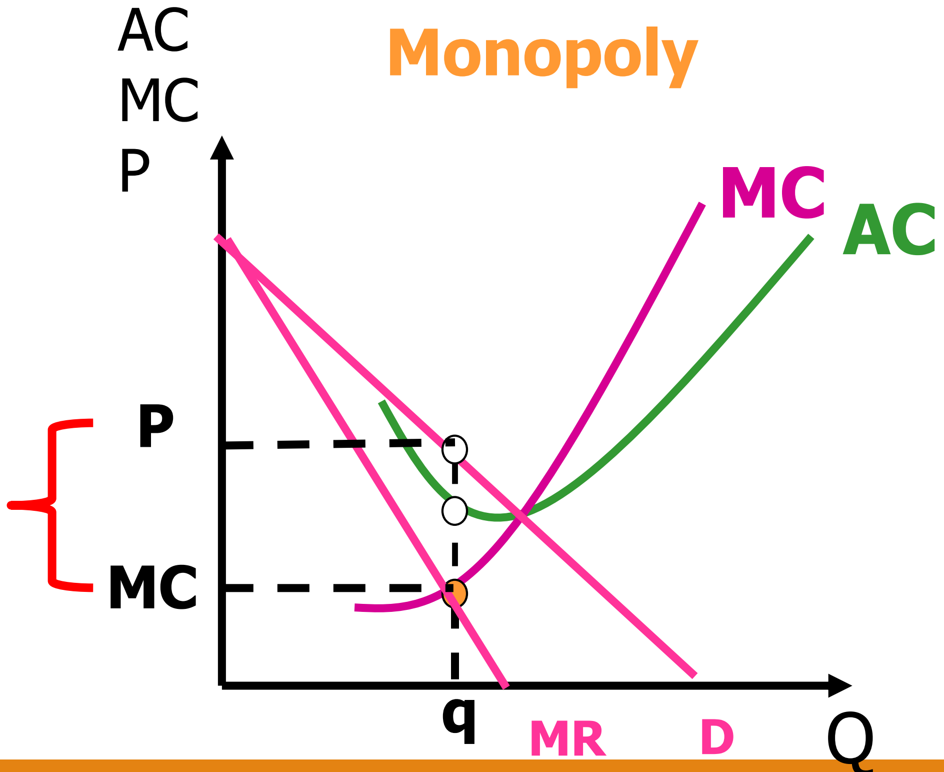
- Awareness that the actions of each competitor (e.g. choice of price and quantities, advertising campaign, qualitative changes in production, etc.) affect all other competitors. There is strategic interaction among the producers: a company's strategy depends on the behavior of its rivals

- An oligopoly can be characterized by cooperation (=> collusive oligopoly) or by competition between firms

Market power

It's the degree of control that a firm or group of firms has over the price and production decisions in an industry. In a monopoly, the firm has a high degree of market power; firms in perfectly competitive industries have no market power. Since market power basically consists of the ability to vary the position of the market supply, this power depends on the number and distribution by size of companies in a sector => market concentration. Concentration ratios are the most widely used measures of market power.





Concentration ratios

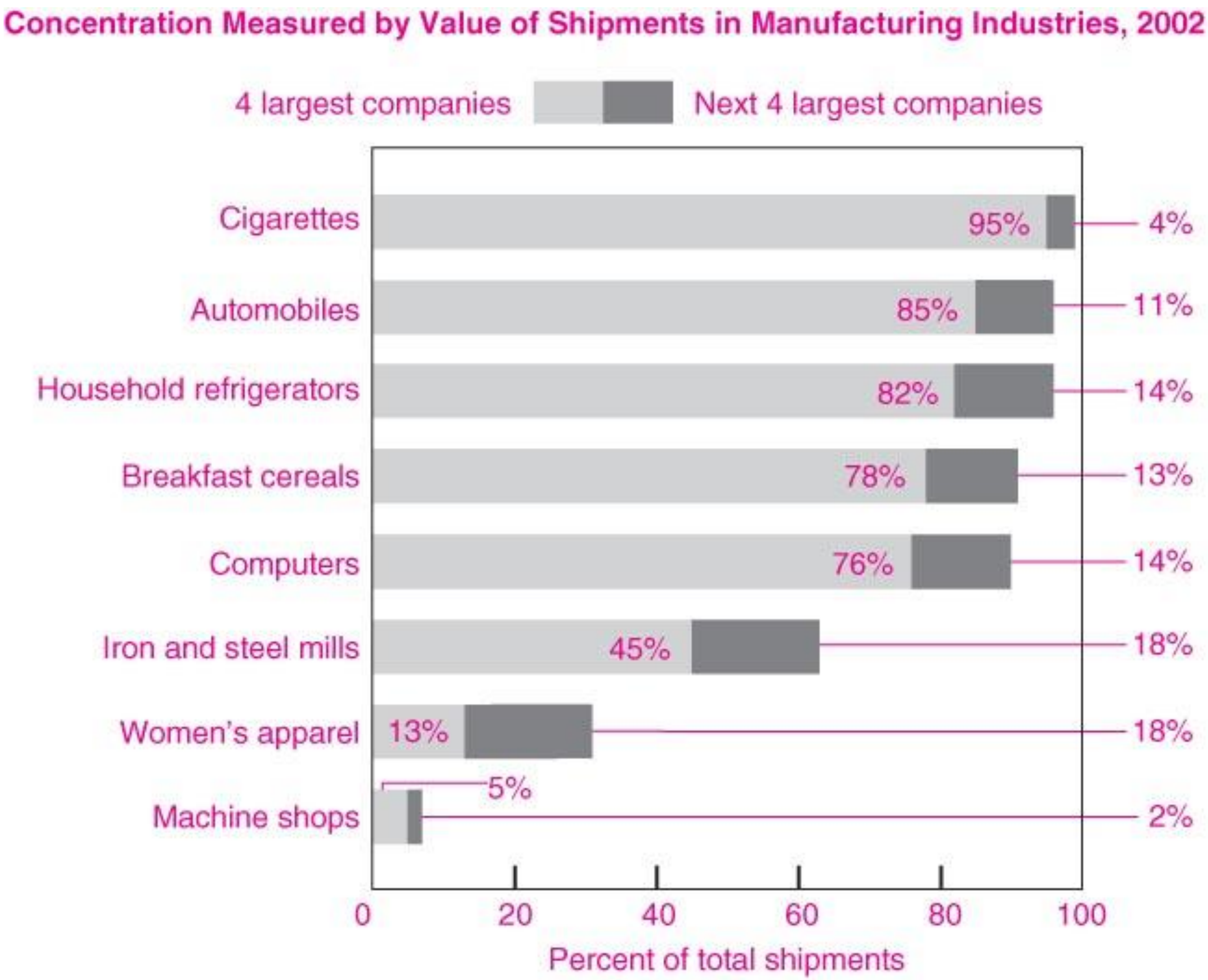


FIGURE 10-1. Concentration Ratios Are Quantitative Measures of Market Power

Collusive oligopoly and Cartels

When there are few firms in a market, they can find explicit or implicit agreements for maximizing the collective interest of the group **=> COLLUSION:** e.g. reducing competition, exchange of information, facilitate relations with trade unions and the government, carry out joint research programs, ...

When the collusion has the specific purpose of reducing competition between companies (agreement on prices, on the total production capacity of the sector, on the allocation of territorial areas, ...) there is a CARTEL: formal agreement between independent companies, which produce similar goods, aimed at avoiding or limiting competition.

Other forms of cooperation can be trade associations (e.g. exchange of information, facilitate relations with trade unions and the government), joint ventures (e.g. joint research programs) .

Cartels

Have the objective of maximizing profits or in any case guaranteeing conditions of adequate profitability for businesses.
The agreement is about a joint decision on the price (and market supply) that maximize single firms profits: the enterprises operate as they were a unique firm and the result for them is similar to monopoly

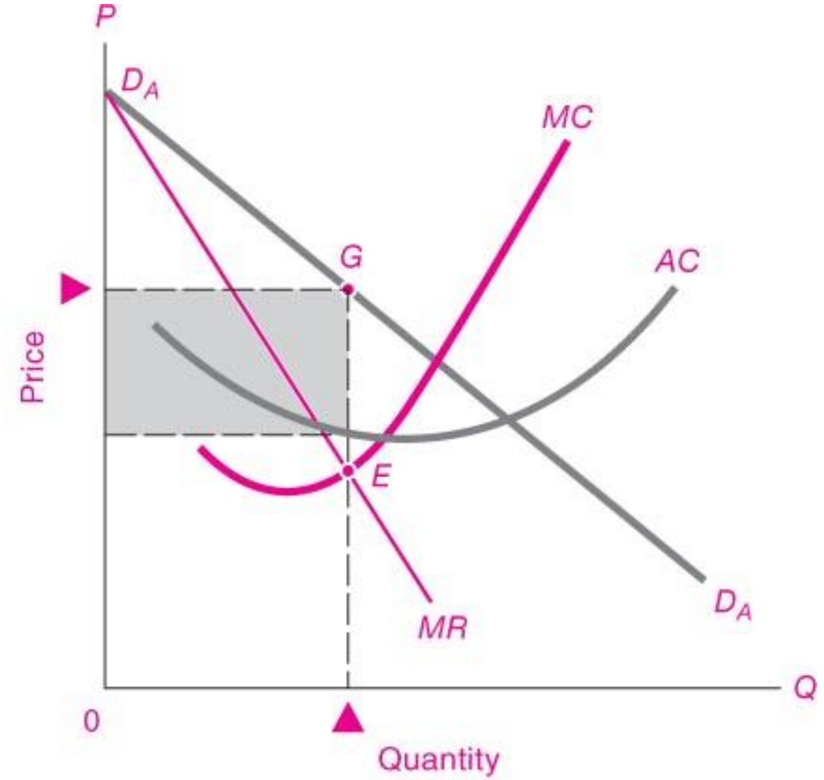


FIGURE 10-2. Collusive Oligopoly Looks Much Like Monopoly

Cartels

Collusion is very attractive because it produces profits similar to monopoly, but it is often prohibited (antitrust laws). Furthermore, it is still very difficult for firms maintaining cartel agreements:

- "Opportunistic" behaviors (incentive to increase production when other firms are reducing their own keeping the market price high)
- There are many companies in the sector
- The product is not homogeneous, but differentiated
- Demand and cost conditions change rapidly
- There are no barriers to entry and competition also comes from abroad

Non-collusive oligopoly

Limited number of companies, in competition with each other. Characteristics:

- There is strategic interaction: for every strategic action undertaken, the firm needs to forecast the reaction of direct competitors, therefore there is generally a great caution in changes =>
- prices tend to be "sticky"
- only in the face of major and non-temporary changes in costs, prices changed

Non-collusive oligopoly

It is often vital for the company to maintain market shares in order to not lose market power, so self-protection "strategies" are put in place.

- Profit maximization is not a short-term goal
- Product innovation and process innovation are carried out to differentiate the output from competitors
- Search for efficiency and productivity improvements to lower average costs
- Strengthening of barriers to entry in the market (e.g., maintaining excess of productive capacity for increasing output in the event of a threat of new entrants, advertising, research and development, …)

Monopolistic competition

- small businesses, very numerous (there competition)
- there are no barriers to entry and exit
- firms are price takers (to a limited extent)

But…

- the products are differentiated with respect to quality
- the demand curve has a negative slope and producers can have a limited effect on the price (low market power)
- in the long run other firms enter the market (the demand curve for existing firms is reduced, market shares contracting) and profit is eliminated

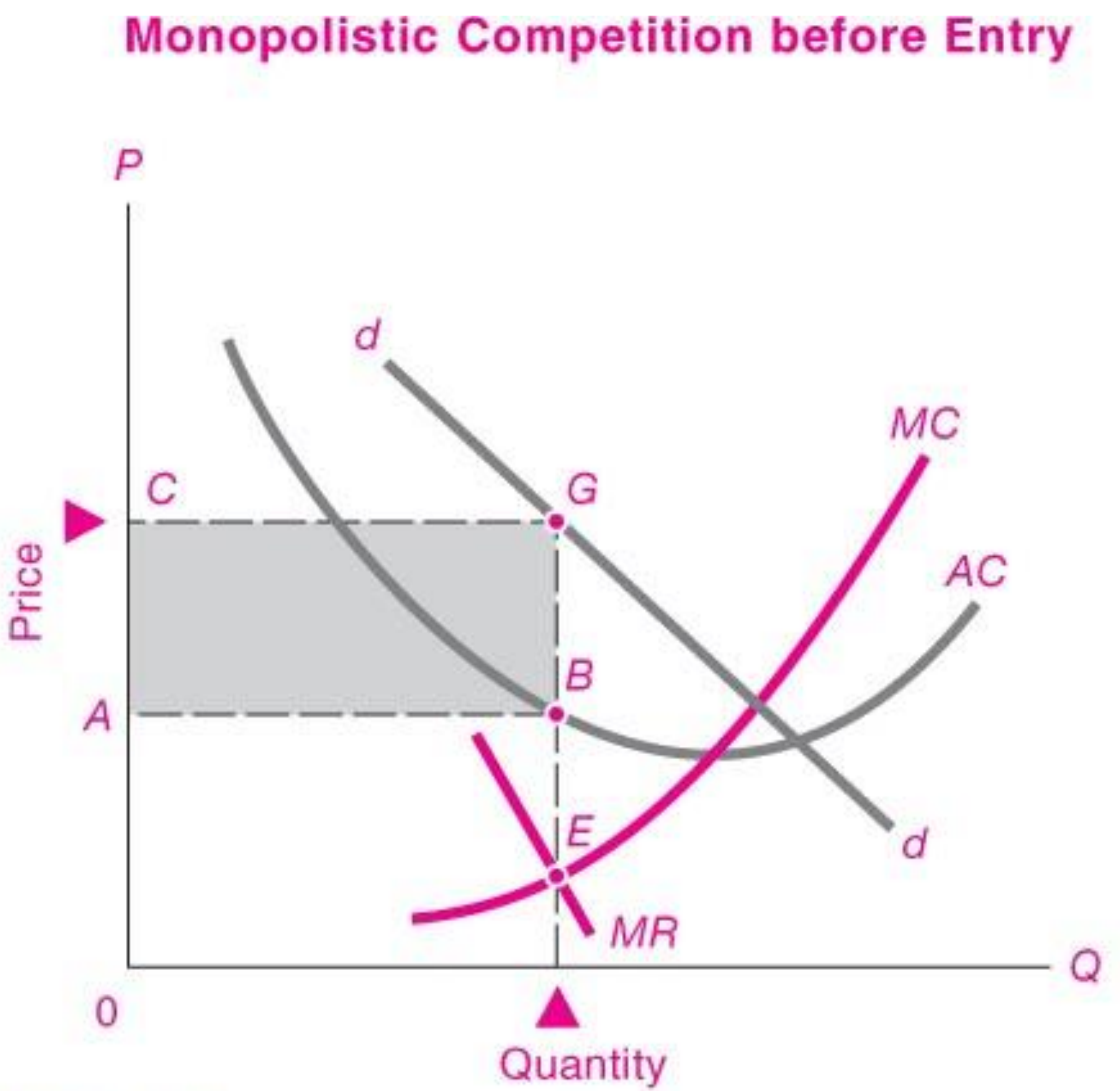


FIGURE 10-3. **Monopolistic Competitors Produce Many Similar Goods**

Short run

- Product differentiation gives firms market power (they can raise the price without immediately losing all customers)
- The demand faced by the firm is therefore negatively inclined.
- There is no market demand as the products are all differentiated.
- The firm maximizes profit with MR=MC
- In the short run, profits can be positive.

Monopolistic Competition after Entry

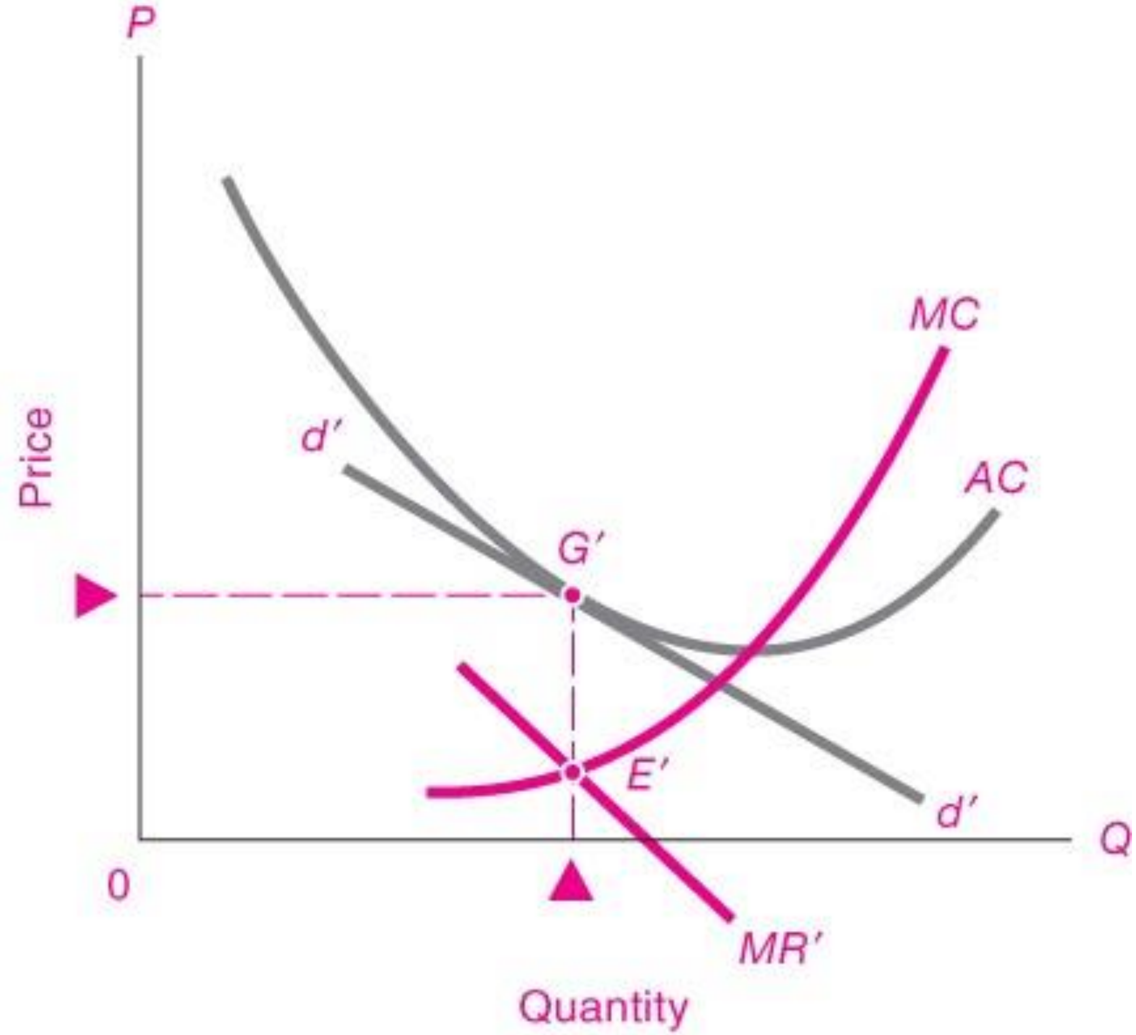


FIGURE 10-4. **Free Entry of Numerous Monopolistic Competitors Wipes Out Profit**

Long run

In the long run, the possibility for profit attracts new companies to the market:

- The quantity supplied of differentiated products increases, the quantity sold by the individual company decreases and the overall price decreases, the revenues and the demand faced by the company (AR and MR) move to the left.
- The entry of new companies into the market continues until the market price reaches the average cost.
- In the long run, profits are zero.
- There is a loss of efficiency deriving from the fact that firms do not produce at the minimum average cost.
- However, consumers enjoy differentiated products.

Comparison between perfect and imperfect competition

- The perfect competition model is the most efficient market structure
- The more one tends to monopoly, the more one goes towards economic inefficiency (P>MC and quality can deteriorate)
- In the oligopoly, prices tend to be higher than the average minimum cost
- Should we therefore intervene to eliminate any imperfection of markets?

Eliminate imperfections?

- large firms are those that mostly invest in R&D given their positive profit
- the fragmentation of the industry slows down technological progress;
- large companies are also a professional "school", they foster the formation of human capital which is indispensable for development;
- However, it is necessary to control the action of enterprises that operate in absence of competition and avoid the abuse of a dominant position (e.g., through antitrust legislation).