



Kosmas Marinakis, Ph.D.

Lecture 4

Monopoly & Market Efficiency

Economics
& Society

SMU

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Previously in E&S

- ★ Production function ▶
- ★ Cost of production ▶
short-run vs. long-run
- ★ Returns and Economies of Scale ▶
- ★ Assumptions of PC
- ★ Profit maximization condition
in general and in PC
- ★ S-R supply of a PC firm
- ★ Zero profit in the L-R ▲

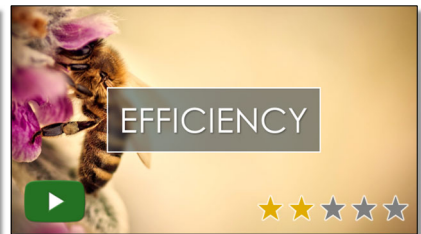
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Monopoly & Market Efficiency



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MONOPOLY



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Monopoly assumptions

> Monopoly

A market is a **pure monopoly** when:

1. There is only one **seller** but many **buyers**
2. The **product** has no (close) substitutes
3. There exist **barriers** to entry:
 - ▶ **Production**: Access to resources, to labor, or to the market
 - ▶ **Legal**: patents, copyright, licensing, exclusive relations
 - ▶ **Economic**: economies of scale, ecosystems, network effects.

★ **Examples** of (near) monopolistic markets:

patented medications, replacement parts, wholesale diamonds, airports

Price setting

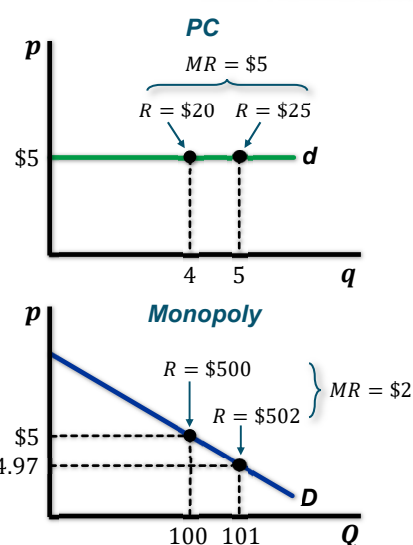
> Monopoly

★ The generalized **profit maximization** condition applies in monopoly

$$MR = MC$$

★ In monopoly, **MR is NOT equal** to the price:

- ▶ The monopoly **does not face** a horizontal demand for its brand
- ▶ It faces the entire **market demand**
- ▶ Once it sets a price, it has to **decrease** it to sell an additional unit
- ▶ Thus, in monopoly $p > MR$



MR for linear demand

> Monopoly

- ★ Consider a **linear** demand

$$p = a - bQ$$

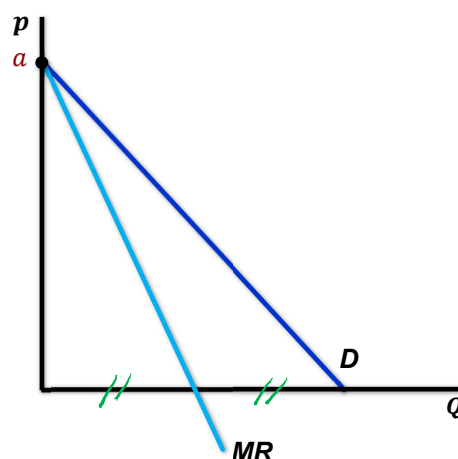
a
constant

b
gradient

- ★ Then, **marginal revenue** is

$$MR = a - 2bQ$$

for every linear demand, we can calculate the MR by **doubling the gradient**



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Profit maximization in Monopoly vs. PC

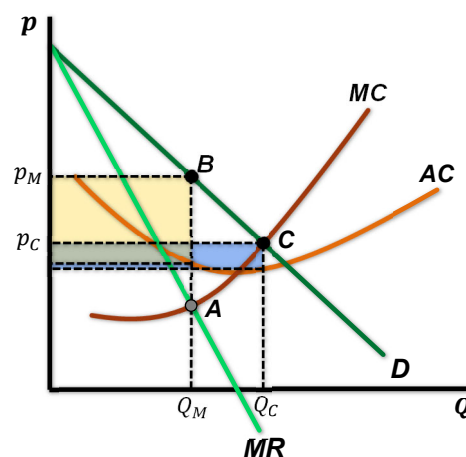
> Monopoly

- ★ A monopoly, maximizes profit when $MR = MC$

- ▶ Profit maximizing **quantity** is Q_M
- ▶ **Price** p_M is given by the demand curve at B .

- ★ If this was a PC market, profit maximization would occur when $p = MC$

- ★ **Profit** in monopoly will always be
- ★ **Price** in monopoly will always be
- ★ **Quantity** in monopoly will always be



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How real firms set prices

> Monopoly

- ★ $MR = MC$ is quite **impractical** to use in the **real world**
- ★ There is a much **simpler expression**, mathematically **equivalent** to $MR = MC$:

$$p = MC \cdot \left[1 + \frac{-1}{1 + \varepsilon_d} \right]$$

markup
as % of MC

the seller maximizes profit when **MC is marked up** by $\frac{-1}{1 + \varepsilon_d}$

- ★ The markup is **determined solely** by ε_d
the **more inelastic** the good, the **higher the markup**
- ★ **For instance**, a markup of 30% implies that $\varepsilon_d = -4.333$ ▲▲



MARKET POWER



Assessing market power

> Market power

- ★ Market power is **NOT an abstract** notion
it is clearly defined as the extent to which **price can exceed the MC**
- ★ Market power can even exist in industries with **more than one firms**
as long as products are **not perfect substitutes**
- ★ Firms in such markets can still use the **markup rule** to maximize profit

$$p = MC \cdot \left[1 + \frac{-1}{1 + \varepsilon_d} \right]$$

in this case, ε_d refers to elasticity of demand **for the firm's brand**,
not for the product in general.

Market power & Profit

> Market power

- ★ Market power **does NOT necessarily imply profit**
- ★ If **demand** is weak and **costs** are high, a monopoly can have **losses**
- ★ Market power is the extend to which **price** exceeds **MC**
- ★ Profit depends on volume of **sales** and the difference between **price** and **AC**
- ★ For **instance**:
 - ▶ **Amazon.com** has a 0.5-3% markup but makes billions in profit
 - ▶ **Cafés** have 300%+ markup but small profit

Sources of market power !

> Market power

Market power for a brand **originates** in its **elasticity of demand**

1. A brand's elasticity is **positively** affected by the **elasticity of the product**
 - ▶ If the demand of **cars** becomes less elastic, **VW cars** will also become less elastic
2. A brand's elasticity is **negatively** affected by **entry** of new firms:
 - ▶ Consumers are offered more chances for **substituting** the product
3. A brand's elasticity is **negatively** affected by the **intensity of competition** among brands:
 - ▶ When firms compete **aggressively**, prices fall closer to *MC*
 - ▶ If firms agree to **moderate** competition and **co-exist**, prices may stay way above *MC* ▲

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How to create market power

> Market power

1. **Understand** the game
make sure you **know your market** and what matters in it
2. **Work** on your product:
 - ▶ Make it **better**, so competitors **cannot** keep up
 - ▶ Make it **different**, so consumers cannot **substitute** you.
3. **Show** the world
communicate why you are better
4. **Close the door** behind you
protect your position because existing rivals **WILL come for you**
5. **Deter** the competition
make it **harder** for potential entrants to come after your profits ▲▲

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Thank you!

(you may stay for consultation)

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