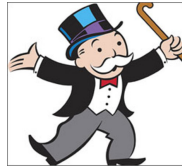


# Monopoly

Econ 102: Introduction to Microeconomics



## 1

### 1.1 Goals of today's class

#### Goals of today's class

- Learn how monopolies maintain market power.
- Learn how monopolies make production decisions.
- Learn how monopolies can increase profits with price discrimination.

## 2 Market Power

### 2.1 Characteristics of a Monopoly

#### Characteristics of a Monopoly

- Single firm produces and sells to the entire market.
- No close substitutes for the good.
- Barriers to entry prevent new firms in long run.
- All these enable firm to have **market power**, the ability of a firm to control the price of its product.

#### Barriers to Entry

- Legal barriers to entry.
- Minimum efficiency scale.
- Networking externalities.
- QWERTY monopolies.

## 2.2 Legal Barriers

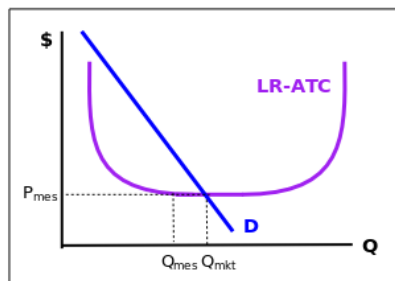
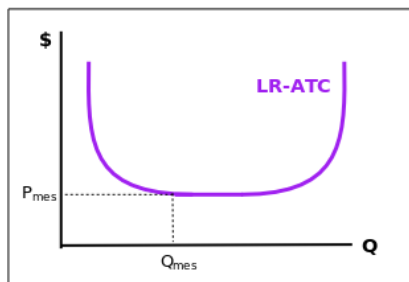
### Legal Barriers to Entry

- Public franchise: government granted exclusive right to supply a service.
  - Examples: U.S. Postal Service, Major League Baseball.
- Patents: exclusive right granted to inventors to produce and sell product for 20 years.
- Copyright: exclusive right to distribute intellectual property.

## 2.3 Minimum Efficiency Scale

### Minimum Efficiency Scale

- When the minimum of the *long-run* average total cost results in a production level that serves the entire market.
- $Q_{MES}$  and  $P_{MES}$  are the long-run quantity and price of a product from a perfectly competitive industry.
- $Q_{MKT}$  is the quantity demanded from the entire market when the price is  $P_{MES}$ .



## Minimum Efficiency Scale

- Minimum efficiency scale barrier is often referred to as a “natural monopoly”.
- Examples:
  - Electric utilities, cable company, phone company.
- Examples have substantial fixed costs, causing large quantity to reach minimize average total cost.

## 2.4 Other Barriers

### Networking Externalities

- Sometimes buying/using a product is more beneficial when other people also use it.
- **Externality:** very generally, it is the situation when an economic transaction affects others not involved in the transaction.
- **Network externality:** when you have benefits from other people using the same product.
- Examples:
  - Microsoft office.
  - Facebook and MySpace vs. Friendster or FaceSpace.

### QWERTY Effect

- I made this term up. Another good term would be *habit formation*.
- Does anyone know why keyboard letters are arranged they way they are?
- Why do we keep using inferior technology?
- Anyone ever heard of Dvorak keyboard, invented in 1936 by Educational Psychology Professor August Dvorak?

**QWERTY**

1	2	3	4	5	6	7	8	9	0	- =
q	w	e	r	t	y	u	i	o	p	[ ]
a	s	d	f	g	h	j	k	l	;	'
z	x	c	v	b	n	m	,	.	/	

**Dvorak**

1	2	3	4	5	6	7	8	9	0	[ ]
'	,	.	p	y	f	g	c	r	l	/ =
a	o	e	u	i	d	h	t	n	s	-
;	q	j	k	x	b	m	w	v	z	

### 3 Short-run Production Decisions

#### 3.1 Marginal Revenue

##### Demand and Marginal Revenue

- The market demand curve is the demand curve facing the monopolist.
- Marginal revenue *does not equal* price.
  - When you produce and sell an extra unit, move right and down along the demand curve.
  - This causes price (for entire quantity produced) to decrease.
  - Change in total revenue is therefore *less than* the price.

##### Example Demand Curve

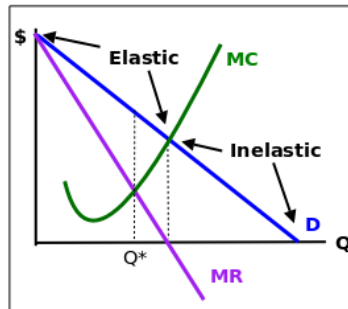
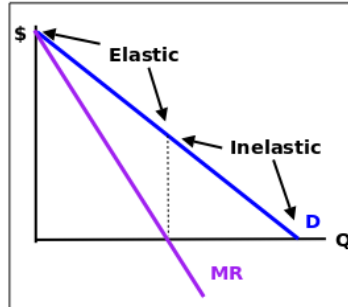
Compute the Total Revenue and Marginal Revenue for this *linear* demand

	<u>Price</u>	<u>Quantity</u>	<u>Total Revenue</u>	<u>Marginal Revenue</u>
	20	0		
	16	1		
curve:	12	2		
	8	3		
	4	4		
	0	5		

1. Graph the Demand Curve and Marginal Revenue Curve.
2. How are the slopes related?

##### Marginal Revenue and Elasticity

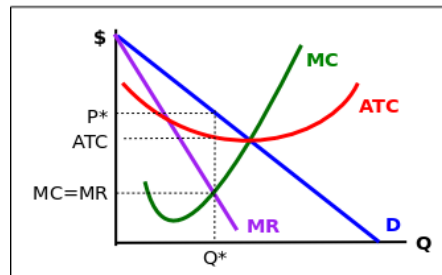
- If you increase quantity (decrease price), and total revenue goes up, is the demand elastic or inelastic?
- Marginal Revenue is positive for quantities less than midpoint.
- Marginal Revenue is negative for quantities greater than midpoint.
- Since MC is always positive, output is always on *elastic* part of demand curve.



## 3.2 Profit Maximization

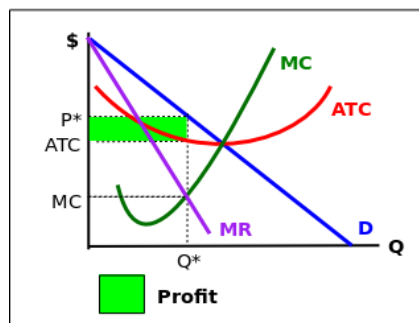
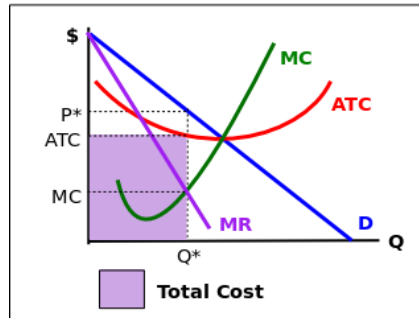
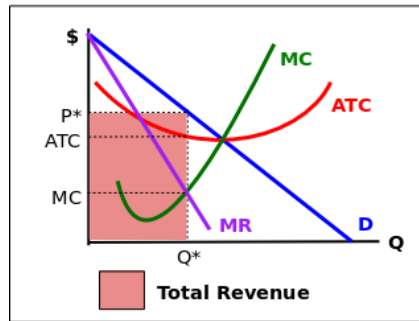
### Profit Maximization

- Monopolist sets  $MR=MC$ .
- Price is above marginal cost.
- Economists call the difference  $P - MC$  a **mark-up**.
- Price is above average total cost.



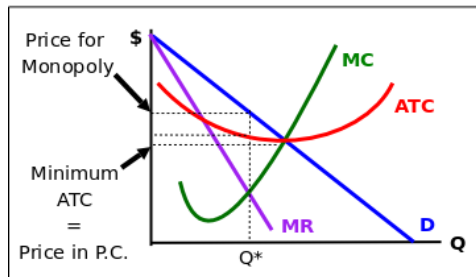
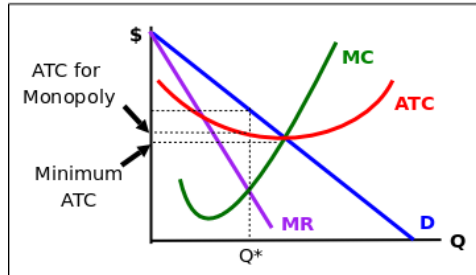
## Profits, Revenue, and Costs

- Total Revenue is  $P \times Q$ .
- Total Cost is  $ATC \times Q$ .
- Profit is difference.
- What happens in the long run?



## Comparison With Perfect Competition

- ATC is greater than minimum average total cost.
- Price is greater in monopoly than under perfect competition.
- Consumers pay price greater than average cost of producing product.



## 4 Price Discrimination

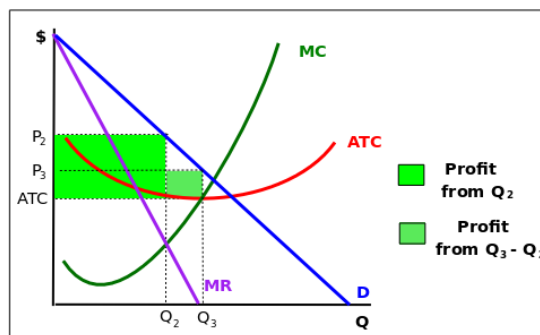
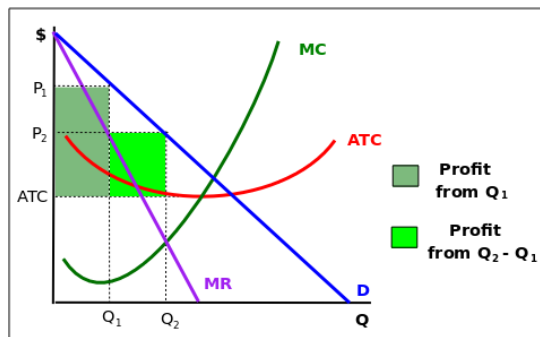
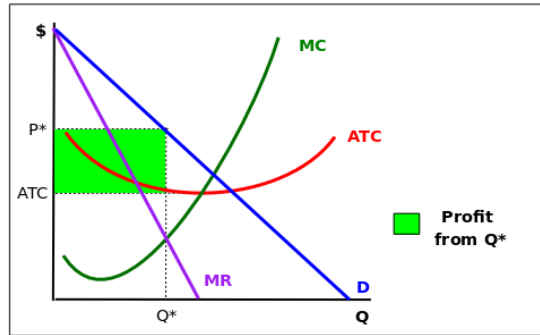
### 4.1 How to Discriminate

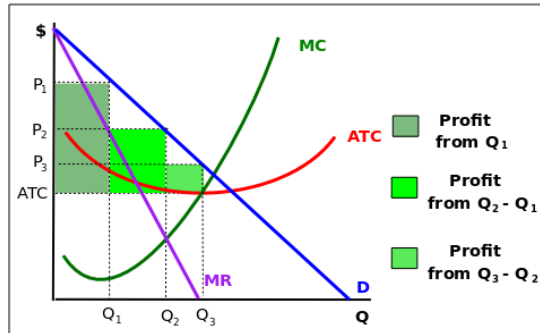
#### Price Discrimination

- **Price Discrimination:** practice of charging different groups of people different prices, based on their willingness and ability to pay.
- Examples:
  - Airlines charge business travelers more than leisure travelers.
  - Many stores offer student discounts and senior discounts.
  - Used car sales.
- Requirements:
  - Identify and separate different types of buyers.
  - Prevent resale of the product between buyers of different types.

## 4.2 Graphical Illustration

### Graphical Illustration





Single Price Monopolist Maximizing Profits.

Charging a higher price to buyers with greater ability and willingness to pay.

Charging a lower price to buyers with lesser ability and willingness to pay.

Doing both!

### 4.3 Perfect Price Discrimination

#### Perfect Price Discrimination

- **Perfect Price Discrimination:** when a monopolist can identify *every single buyer's* willingness to pay and charge them that amount.
- What impact will this have on producer surplus and consumer surplus.
- No “perfect” examples of perfect price discrimination.
- Some attempts:
  - Car sales people.
  - Viterbo tuition?

#### Perfect Price Discrimination

