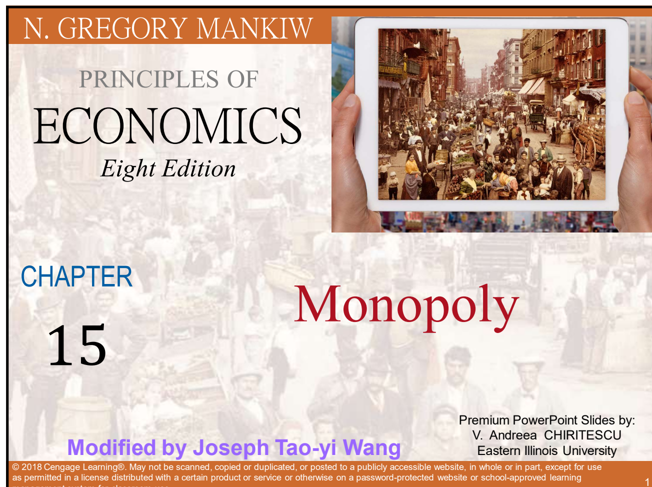

Look for the answers to these questions:

- Why do monopolies arise?
- Why is MR < P for a monopolist?
- How do monopolies choose their P and Q?
- How do monopolies affect society's well-being?
- What can the government do about monopolies?
- What is price discrimination?

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Introduction

- Monopoly
  - A firm that is the sole seller of a product without close substitutes
  - Has market power
    - The ability to influence the market price of the product it sells
    - A competitive firm has no market power
  - Arise due to barriers to entry
    - Other firms cannot enter the market to compete with it

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Three Barriers to Entry

1. Monopoly resources
   - A single firm owns a key resource.
     - E.g., DeBeers owns most of the world's diamond mines
2. Government regulation
   - The government gives a single firm the exclusive right to produce the good.
     - E.g., patents, copyright laws, rice wine

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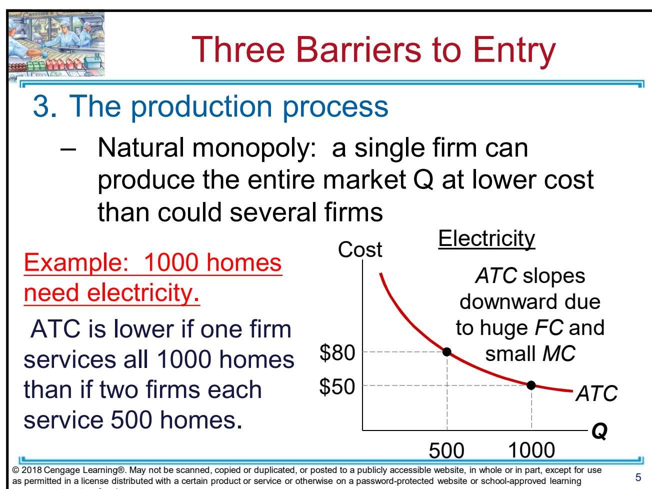

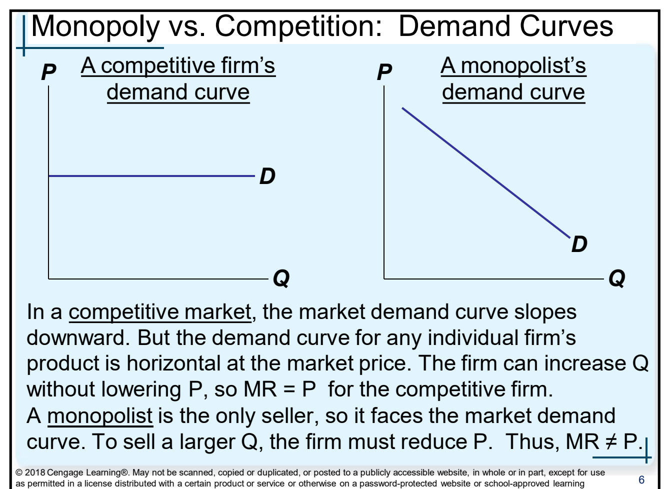

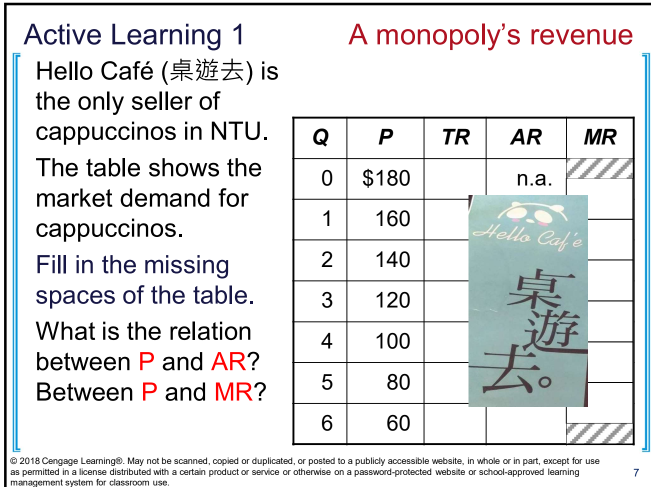

Q	P	TR	AR	MR
0	$180		n.a.	
1	160			
2	140			
3	120			
4	100			
5	80			
6	60			

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Active Learning 1 — Answers

- P = AR, same as for a competitive firm.
- MR < P, whereas MR = P for a competitive firm.

Q	P	TR	AR	MR
0	$180	$ 0	n.a.	
1	160	160	$160	$160
2	140	280	140	120
3	120	360	120	80
4	100	400	100	40
5	80	400	80	0
6	60	360	60	–40

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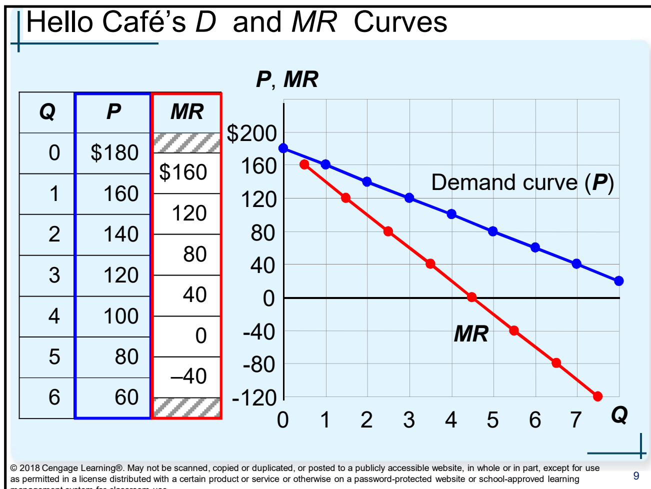

Q	P	MR
0	$180	
1	160	$160
2	140	120
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4	100	40
5	80	0
6	60	–40

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Understanding the Monopolist's MR

- Increasing Q has two effects on revenue:
  - Output effect: higher output raises revenue
  - Price effect: lower price reduces revenue
- Marginal revenue, MR < P
  - To sell a larger Q, the monopolist must reduce the price on all the units it sells
  - Is negative if price effect > output effect
    - e.g., when Hello Café increases Q from 5 to 6

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Profit-Maximization

- Like a competitive firm, a monopolist maximizes profit by producing the quantity where MR = MC
  - Sets the highest price consumers are willing to pay for that quantity
  - It finds this price from the D curve

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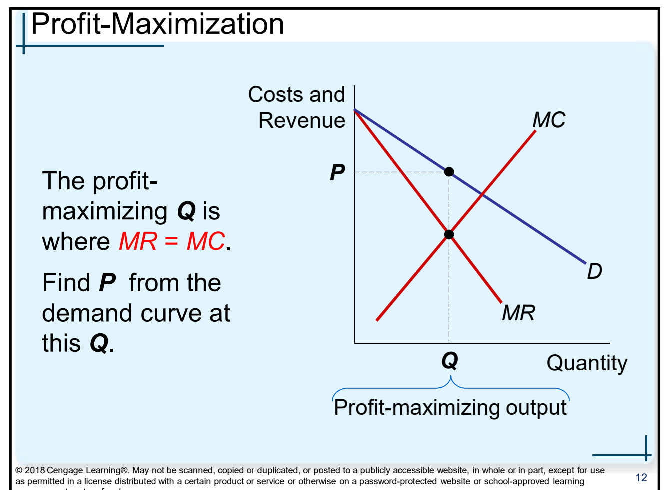

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The Monopolist's Profit

As with a competitive firm, the monopolist's profit equals

$(P - ATC) \times Q$

Costs and Revenue
P
ATC
MC
ATC
D
MR
Q
Quantity

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A Monopoly Does Not Have an S 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-maker"
  - Q does not depend on P
  - Q and P are jointly determined by MC, MR, and the demand curve
  - Hence, no supply curve for monopoly.

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CASE STUDY: Monopoly vs. Generic Drugs

Patents on new drugs give a temporary monopoly to the seller.

When the patent expires, the market becomes competitive, generics appear.

The market for a typical drug
Price
P_M
$P_C = MC$
D
MR
Q_M
Q_C
Quantity

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The Welfare Cost of Monopoly

- Recall:
  - Competitive market equilibrium: P = MC and total surplus is maximized
- Monopoly equilibrium, P > MR = MC
  - The value to buyers of an additional unit (P) exceeds the cost of the resources needed to produce that unit (MC)
  - The monopoly Q is too low – could increase total surplus with a larger Q.
  - Monopoly results in a deadweight loss

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The Welfare Cost of Monopoly

Competitive equilibrium:
- quantity = Q_C
- $P = MC$
- total surplus is maximized

Monopoly equilibrium:
- quantity = Q_M
- $P > MC$
- deadweight loss

Price
Deadweight loss
MC
P
P = MC
MC
D
MR
Q_M Q_C
Quantity

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Price Discrimination

- Price discrimination:
  - Sell the same good at different prices to different buyers
  - A firm can increase profit by charging a higher price to buyers with higher willingness to pay
  - Requires the ability to separate customers according to their willingness to pay
  - Can raise economic welfare

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Price Discrimination

- Perfect price discrimination
  - Charge each customer a different price
    - Exactly his or her willingness to pay
  - Monopoly firm gets the entire surplus (Profit)
  - No deadweight loss

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Single Price Monopoly

Here, the monopolist charges the same price (P_M) to all buyers.

A deadweight loss results.

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Perfect Price Discrimination vs. Single Price Monopoly

Here, the monopolist produces the competitive quantity, but charges each buyer his or her WTP.

This is called **perfect price discrimination**.

The monopolist captures all CS as profit.

But there's no DWL.

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Price Discrimination in the Real World

- Perfect price discrimination
  - Not possible in the real world
    - No firm knows every buyer's WTP
    - Buyers do not reveal it to sellers
- Price discrimination
  - Firms divide customers into groups based on some observable trait
    - that is likely related to willingness to pay (WTP), such as age

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Examples of Price Discrimination

- Movie tickets
  - Discounts for seniors, students, and people who can attend during weekday afternoons.
    - Lower WTP than people who pay full price on Friday night
- Airline prices
  - Discounts for Saturday-night stayovers
    - Business travelers (higher WTP) vs. more price-sensitive leisure travelers

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Examples of Price Discrimination

- Discount coupons
  - People who have time to clip and organize coupons are more likely to have lower income and lower WTP than others
- Need-based financial aid
  - Low income families have lower WTP for their children's college education
  - Schools price-discriminate by offering need-based aid to low income families

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Examples of Price Discrimination

- Quantity discounts
  - A buyer's WTP often declines with additional units, so firms charge less per unit for large quantities than small ones.
    - Example: A movie theater charges NT$160 for a small popcorn and NT$200 for a large one that's twice as big

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Public Policy Toward Monopolies

1. Increasing competition with antitrust laws
   - Sherman Antitrust Act, 1890
   - Clayton Antitrust Act, 1914
   - Prevent mergers
   - Break up companies
   - Prevent companies from coordinating their activities to make markets less competitive

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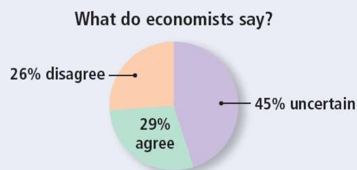
ASK THE EXPERTS

Airline Mergers

"If regulators had not approved mergers in the past decade between major networked airlines, travelers would be better off today."



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Public Policy Toward Monopolies

2. Regulation
   - Regulate the behavior of monopolists
     - Set the monopolists' price
   - Common in case of natural monopolies
     - MC < ATC at all Q
     - Marginal-cost pricing would result in losses
   - Regulator might subsidize the monopolist or set P = ATC for zero economic profit

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Public Policy Toward Monopolies

3. Public ownership
   - How the ownership of the firm affects the costs of production
     - Example: USPS, Taiwan CPC, TTL
   - Private owners: incentive to min costs
   - Public owners (government)
     - If it does a bad job, losers are the customers and taxpayers
     - Public ownership is usually less efficient since no profit motive to minimize costs

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Public Policy Toward Monopolies

4. Do nothing
   - Some economists argue that it is often best for the gov't not to try to remedy the inefficiencies of monopoly pricing
     - Determining the proper role of the gov't in the economy requires judgments about politics as well as economics
5. Auction Off the Market (Harold Demsetz)
   - Can use revenue to subsidize consumers
     - Pigovian Subsidy: Correct for DWL

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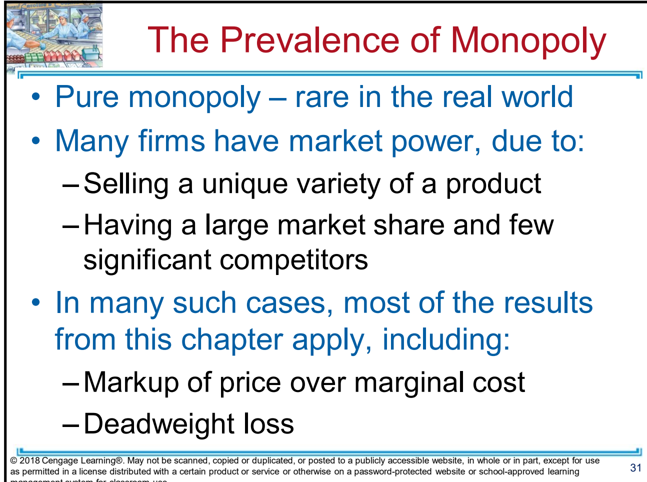

The Prevalence of Monopoly

- Pure monopoly – rare in the real world
- Many firms have market power, due to:
  - Selling a unique variety of a product
  - Having a large market share and few significant competitors
- In many such cases, most of the results from this chapter apply, including:
  - Markup of price over marginal cost
  - Deadweight loss

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Summary

- A monopoly is a firm that is the sole seller in its market.
  - A monopoly arises when a single firm owns a key resource, when the government gives a firm the exclusive right to produce a good, or when a single firm can supply the entire market at a lower cost than many firms could.
  - Faces a downward-sloping demand curve for its product.

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Summary

- Monopoly increases production by 1 unit
  - Causes the price of its good to fall, which reduces the amount of revenue earned on all units produced.
  - Marginal revenue is always below the price
- A monopoly firm maximizes profit by producing the quantity at which marginal revenue equals marginal cost.
  - Sets the price at which that quantity is demanded. P > MR, so P > MC

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Summary

- A monopolist's profit-maximizing level of output is below the level that maximizes the sum of consumer and producer surplus.
  - Causes deadweight losses
- A monopolist can often increase profits by charging different prices for the same good based on a buyer's willingness to pay.
  - Price discrimination can raise economic welfare
  - Perfect price discrimination, the deadweight loss of monopoly is completely eliminated

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Summary

- Policymakers can respond to the inefficiency of monopoly behavior in four ways
  - Use antitrust laws to try to make the industry more competitive
  - Regulate the prices that the monopoly charges
  - Turn the monopolist into a government-run enterprise
  - Can do nothing at all
- Or, just auction off the market. (Demsetz, 1968)

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Chapter 15: Monopoly

- MR=MC to maximize profit (still true!)
- But, P > MR (D - downward sloping)
- Welfare Cost of a Monopoly:
  - Profits (unfair?) vs. DWL (efficiency loss!)
- Cures? Do nothing?
  - Auction off the market!
- Homework: Mankiw, Ch.15,
  Problem 5-11

2018/11/28 | Monopoly | Joseph Tao-yi Wang

Chapter 15: Monopoly

- Challenge Questions (Past Finals)
  - 2007 - Part 1
  - 2008 - Essay D
  - 2009 - Essay A
  - 2012 - Part III
- True or False. Monopolists can achieve any level of profit they desire because they have unlimited market power.
- True or False. Heavy competition among firms for a limited number of customers leads to such devices as discounts for students and senior citizens.