

**Supply and Demand:
An Introduction**

CHAPTER
3

**Supply and Demand:
An Introduction**

- How do we get the goods and services we want in the right quantities and qualities?
 - Many goods and services are allocated by the market forces of supply and demand.
- Why do some goods and services have shortages or surpluses?
 - Some good and services are regulated by the government.

Chapter 3 - Supply and Demand: An Introduction Slide 2

**What, How, and for Whom?
Central Planning Versus the Market**

- Three Problems All Economic Systems Must Address
 - What should be produced?
 - How should it be produced?
 - For whom will it be produced?

Chapter 3 - Supply and Demand: An Introduction Slide 3

**What, How, and for Whom?
Central Planning Versus the Market**

- Centralized Economic Organizations
 - Former Soviet Union
 - Cuba
 - North Korea
 - China
 - Bureaucracy

Chapter 3 - Supply and Demand: An Introduction Slide 4

**What, How, and for Whom?
Central Planning Versus the Market**

- Under central planning, a small number of individuals
 - Establish production targets for factories and farms,
 - Allocate labor and other resources needed to achieve the goals, and
 - Decide who gets to consumer the goods and services produced.

Chapter 3 - Supply and Demand: An Introduction Slide 5

**What, How, and for Whom?
Central Planning Versus the Market**

- Under free-market economic systems, individual choices determine
 - Which careers to pursue,
 - Which products to produce or buy,
 - When to start and shut-down a business,
 - Who gets what based on individual preferences and purchasing power.

Chapter 3 - Supply and Demand: An Introduction Slide 6

Buyers and Sellers in Markets

- What determines the price of
 - Pizza?
 - Gasoline?

Chapter 3 - Supply and Demand: An Introduction Slide 7

Buyers and Sellers in Markets

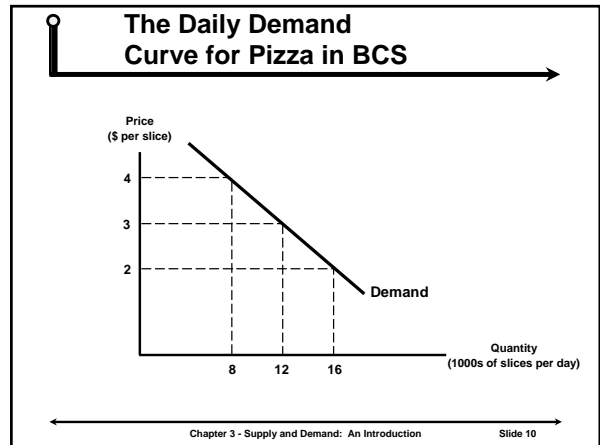
- A Market
 - Consists of all buyers and sellers of a good or service.
- The Demand Curve
 - A schedule or graph that tells us the quantity of a good that buyers wish to buy at each price.

Chapter 3 - Supply and Demand: An Introduction Slide 8

Buyers and Sellers in Markets

- A Property of Demand
 - As price of a good or service goes down the quantity consumers wish to buy will increase.
 - Therefore, the demand curve is downward-sloping.

Chapter 3 - Supply and Demand: An Introduction Slide 9



Buyers and Sellers in Markets

- Why do buyers purchase a greater quantity of pizza at lower prices?

Chapter 3 - Supply and Demand: An Introduction Slide 11

Buyers and Sellers in Markets

- The Substitution Effect
 - The change in the quantity demanded of a good that results because buyers switch to substitutes when the price of the good changes.

Chapter 3 - Supply and Demand: An Introduction Slide 12

Buyers and Sellers in Markets

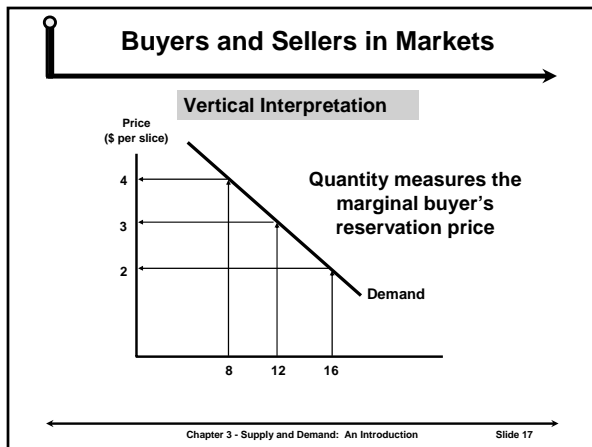
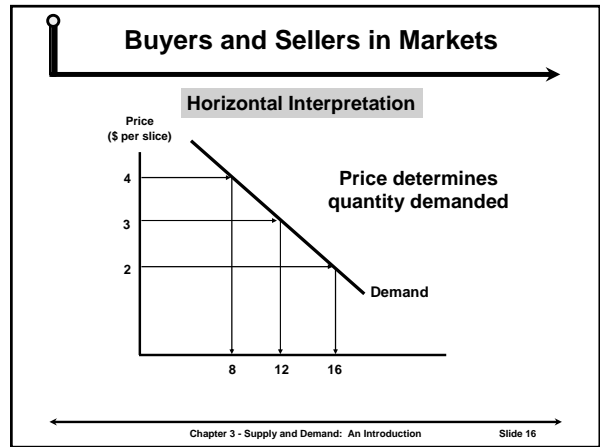
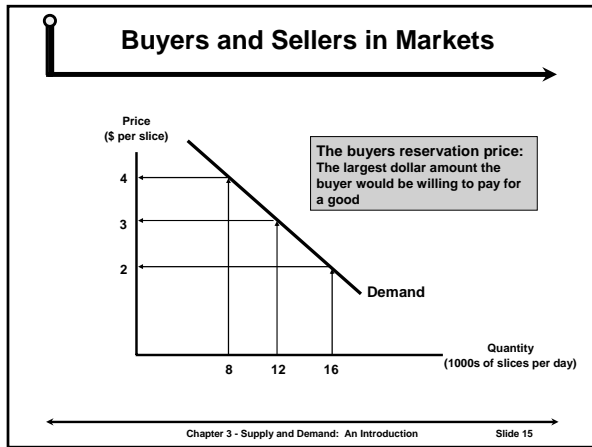
- The Income Effect
 - The change in the quantity demanded of a good that results because a change in the price of a good changes the buyer's purchasing power.

Chapter 3 - Supply and Demand: An Introduction Slide 13

Buyers and Sellers in Markets

- The Cost-Benefit Principle
 - The reservation price is the benefit the buyer receives from the good.
 - The cost of the good is its market price.
 - If the reservation price (benefit) exceeds the market price (cost) the consumer will purchase the good.
 - At higher prices, benefit will exceed cost for a smaller quantity than at lower prices.

Chapter 3 - Supply and Demand: An Introduction Slide 14



Buyers and Sellers in Markets

- The Supply Curve
 - A curve or schedule showing the quantity of a good that sellers wish to sell at each price.

Chapter 3 - Supply and Demand: An Introduction Slide 18

Buyers and Sellers in Markets

- Will the opportunity cost of producing additional units of pizza increase or decrease as the quantity supplied of pizza rises?

Chapter 3 - Supply and Demand: An Introduction

Slide 19

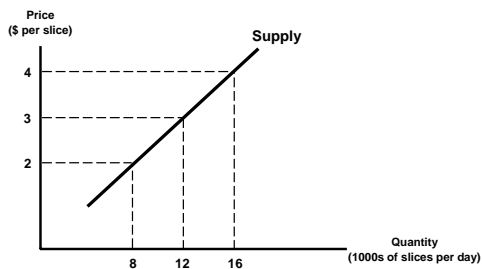
Buyers and Sellers in Markets

- The Supply Curve
 - Sellers must receive a higher price to produce additional units of a product to cover the higher opportunity costs of each additional unit.

Chapter 3 - Supply and Demand: An Introduction

Slide 20

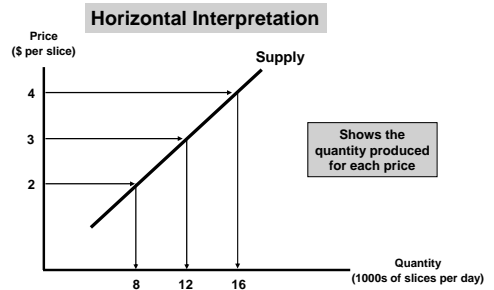
The Daily Supply Curve for Pizza in BCS



Chapter 3 - Supply and Demand: An Introduction

Slide 21

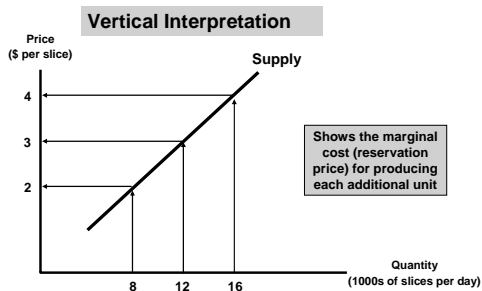
The Daily Supply Curve for Pizza in BCS



Chapter 3 - Supply and Demand: An Introduction

Slide 22

The Daily Supply Curve for Pizza in BCS



Chapter 3 - Supply and Demand: An Introduction

Slide 23

Market Equilibrium

- Seller's Reservation Price
 - The smallest dollar amount for which a seller would be willing to sell an additional unit, generally equal to marginal cost.

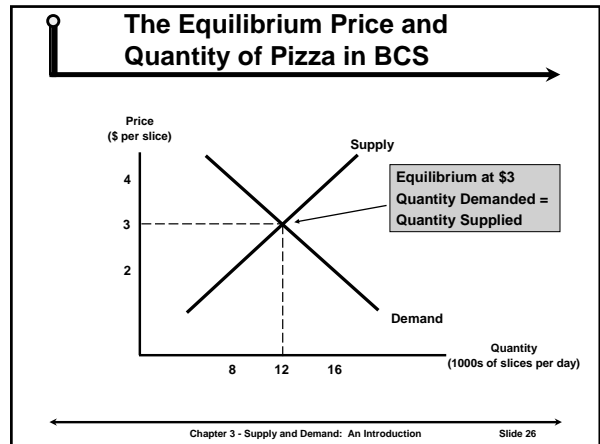
Chapter 3 - Supply and Demand: An Introduction

Slide 24

Market Equilibrium

- Equilibrium
 - A system is in equilibrium when there is no tendency for it to change.
- Market Equilibrium
 - Occurs in a market when all buyers and sellers are satisfied with their respective quantities at the market price.

Chapter 3 - Supply and Demand: An Introduction Slide 25



Market Equilibrium

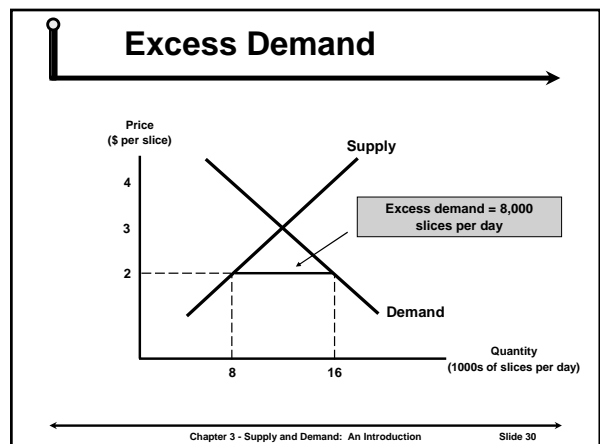
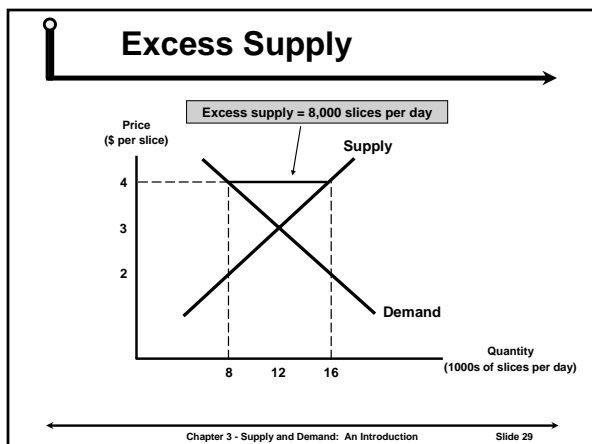
- Equilibrium Price and Equilibrium Quantity
 - The values of price and quantity for which quantity supplied and quantity demanded are equal.

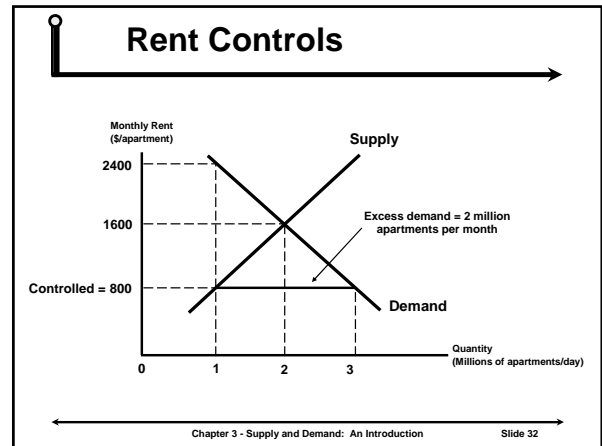
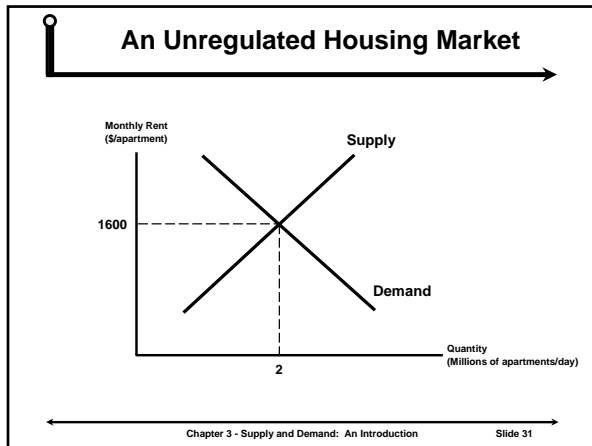
Chapter 3 - Supply and Demand: An Introduction Slide 27

Market Equilibrium

- Would pizza buyers prefer a lower price than the equilibrium price of \$3?
- Would pizza sellers prefer a higher price than the equilibrium price of \$3?

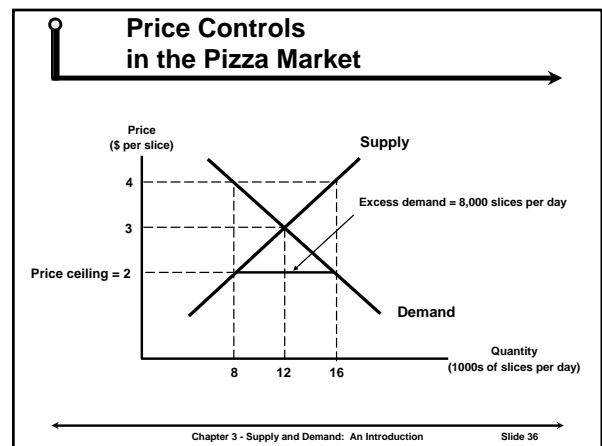
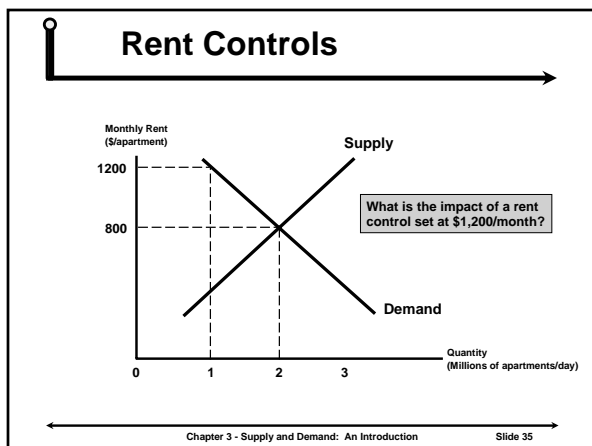
Chapter 3 - Supply and Demand: An Introduction Slide 28





- ### Market Equilibrium
- Other consequences of rent controls
 - Maintenance will decline and housing quality will fall
 - Illegal payments
 - Creation of co-ops and conversion to condominiums
 - Reduction in household mobility
 - Discrimination
- Chapter 3 - Supply and Demand: An Introduction Slide 33

- ### Market Equilibrium
- How can we make housing affordable for poor people without using rent ceilings?
- Chapter 3 - Supply and Demand: An Introduction Slide 34



Market Equilibrium

- Pizza Price Controls?
 - Market responses to a pizza price ceiling
 - ◆ Long lines
 - ◆ Preferential treatment to selected customers
 - ◆ Alternative pricing strategies
 - ◆ Poorer quality ingredients
 - ◆ Black-market pizzas

Chapter 3 - Supply and Demand: An Introduction

Slide 37

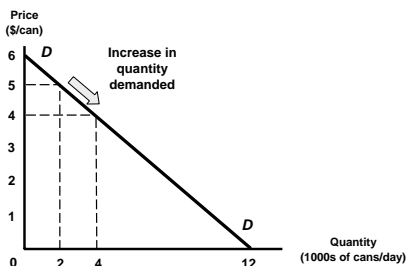
Predicting and Explaining Changes in Prices and Quantities

- Distinguishing Between
 - A change in the quantity demanded
 - ◆ A movement along the demand curve that occurs in response to a change in price
 - A change in demand
 - ◆ A shift of the entire demand curve

Chapter 3 - Supply and Demand: An Introduction

Slide 38

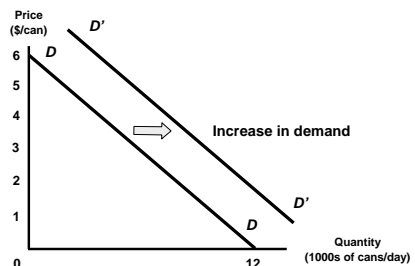
An Increase in Quantity Demanded vs. an Increase in Demand



Chapter 3 - Supply and Demand: An Introduction

Slide 39

An Increase in Quantity Demanded vs. an Increase in Demand



Chapter 3 - Supply and Demand: An Introduction

Slide 40

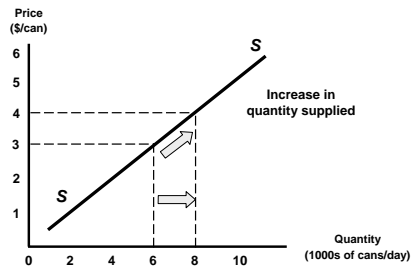
Predicting and Explaining Changes in Prices and Quantities

- Change in the quantity supplied
 - A movement along the supply curve that occurs in response to a change in price
- Change in supply
 - A shift of the entire supply curve

Chapter 3 - Supply and Demand: An Introduction

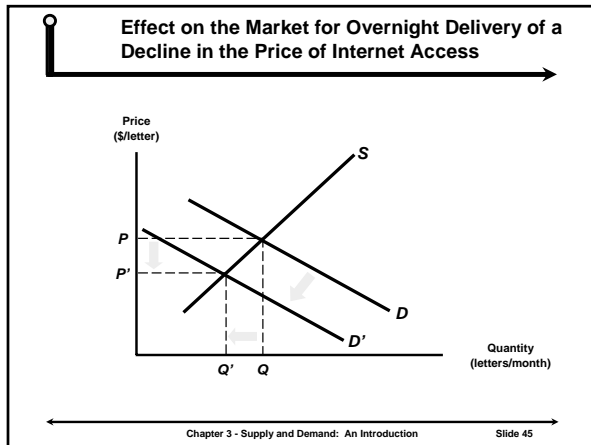
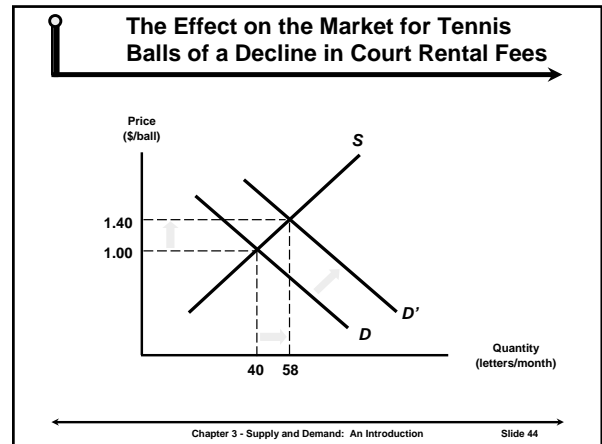
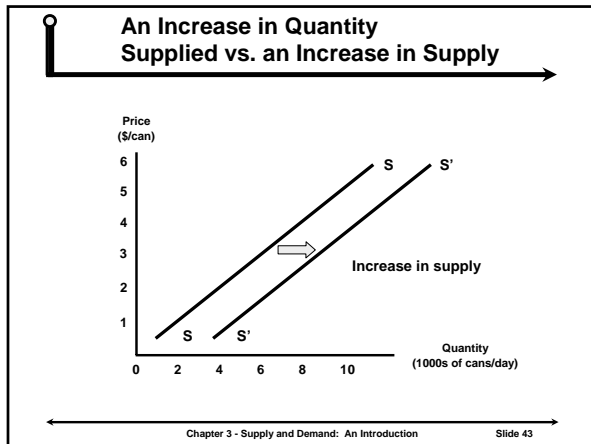
Slide 41

An Increase in Quantity Supplied vs. an Increase in Supply



Chapter 3 - Supply and Demand: An Introduction

Slide 42



- ### Predicting and Explaining Changes in Prices and Quantities
- Shifts in Demand
 - Complements
 - ◆ Two goods are complements in consumption if an increase (decrease) in the price of one cause a decrease (increase) in the demand for the other
- Chapter 3 - Supply and Demand: An Introduction Slide 46

- ### Predicting and Explaining Changes in Prices and Quantities
- Shifts in Demand
 - Substitutes
 - ◆ Two goods are substitutes in consumption if an increase (decrease) in the price of one causes an increase (decrease) in the demand for the other
- Chapter 3 - Supply and Demand: An Introduction Slide 47

- ### Predicting and Explaining Changes in Prices and Quantities
- Shifts in Demand
 - Changes In Demand
 - ◆ An increase (decrease) in the demand for a good will shift the demand curve to the right (left)
- Chapter 3 - Supply and Demand: An Introduction Slide 48

Predicting and Explaining Changes in Prices and Quantities

- How will an increase in airfares affect inter-city bus fares and the price of hotel rooms in resort communities?

Chapter 3 - Supply and Demand: An Introduction Slide 49

The Effect of a Federal Pay Raise on the Rent for Conveniently Located Apartments in Washington D.C.

The graph shows the market for conveniently located apartments. The vertical axis is labeled 'Rent (dollars per month)' and the horizontal axis is 'Conveniently located apartments (units per month)'. An upward-sloping supply curve 'S' intersects with the initial downward-sloping demand curve 'D' at equilibrium price 'P' and quantity 'Q'. A second, higher demand curve 'D'' is shown, representing an increase in demand. The new equilibrium is at the intersection of 'S' and 'D'', resulting in a higher price 'P'' and a higher quantity 'Q''.

Chapter 3 - Supply and Demand: An Introduction Slide 50

Predicting and Explaining Changes in Prices and Quantities

- A Change In Income
 - Normal Good
 - One whose demand increases (decreases) when the incomes of buyers increase (decrease).

Chapter 3 - Supply and Demand: An Introduction Slide 51

Predicting and Explaining Changes in Prices and Quantities

- A Change In Income
 - Inferior Good
 - One whose demand decreases (increases) when the incomes of buyers increase (decrease).
 - Can you think of an example of an inferior good?

Chapter 3 - Supply and Demand: An Introduction Slide 52

The Effect of the Release of Jurassic Park on the Market for Toy Dinosaurs

D' = demand after release of movie

The graph shows the market for toy dinosaurs. The vertical axis is 'Price' and the horizontal axis is 'Toy Dinosaurs (units per month)'. An upward-sloping supply curve 'S' intersects with the initial demand curve 'D' at equilibrium price 'P' and quantity 'Q'. A second, higher demand curve 'D'' is shown, representing an increase in demand after the release of the movie. The new equilibrium is at the intersection of 'S' and 'D'', resulting in a higher price 'P'' and a higher quantity 'Q''.

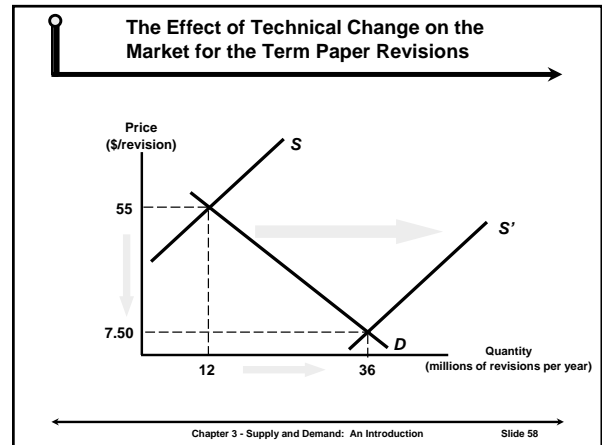
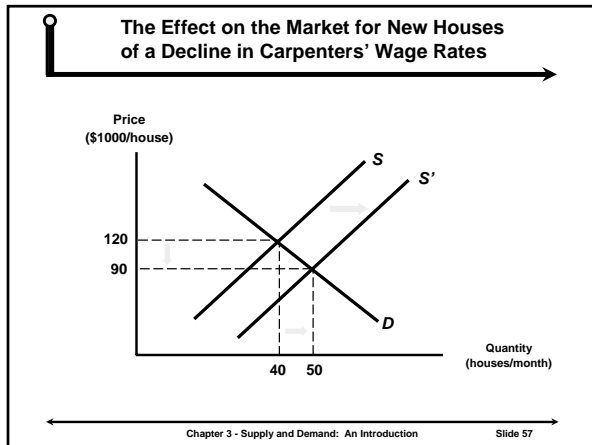
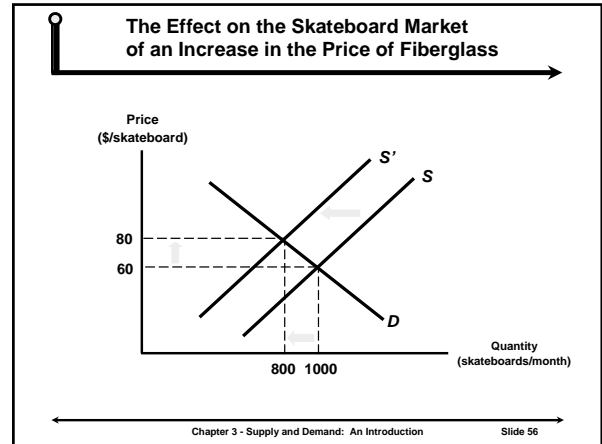
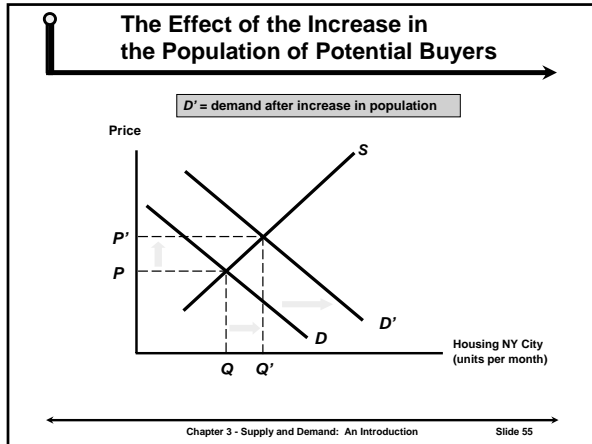
Chapter 3 - Supply and Demand: An Introduction Slide 53

The Effect of a Credible Rumor on the Market for Apple Macintosh Computers

D' = demand after rumor of cheaper model soon to be released

The graph shows the market for Apple Macintosh computers. The vertical axis is 'Price' and the horizontal axis is 'Apple Computers (units per month)'. An upward-sloping supply curve 'S' intersects with the initial demand curve 'D' at equilibrium price 'P' and quantity 'Q'. A second, lower demand curve 'D'' is shown, representing a decrease in demand due to a rumor of a cheaper model. The new equilibrium is at the intersection of 'S' and 'D'', resulting in a lower price 'P'' and a lower quantity 'Q''.

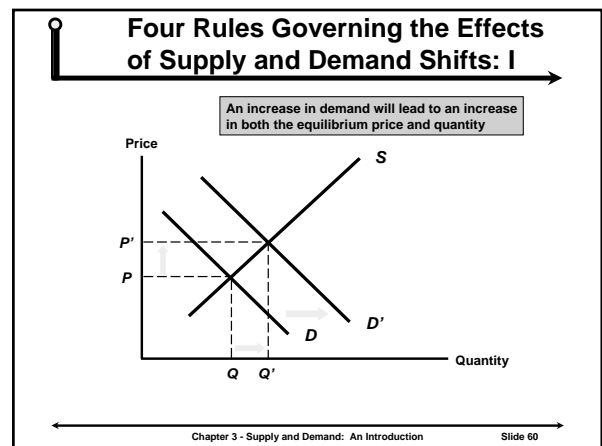
Chapter 3 - Supply and Demand: An Introduction Slide 54

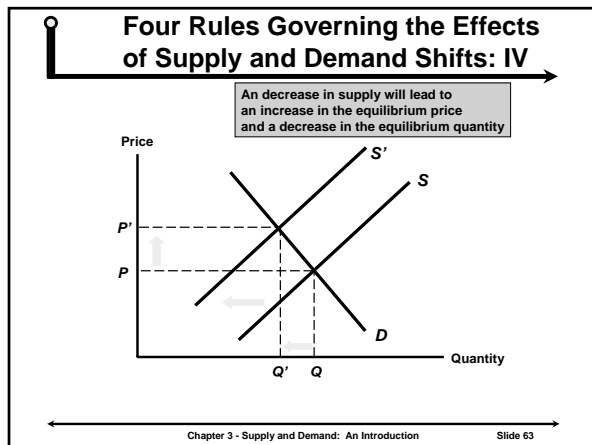
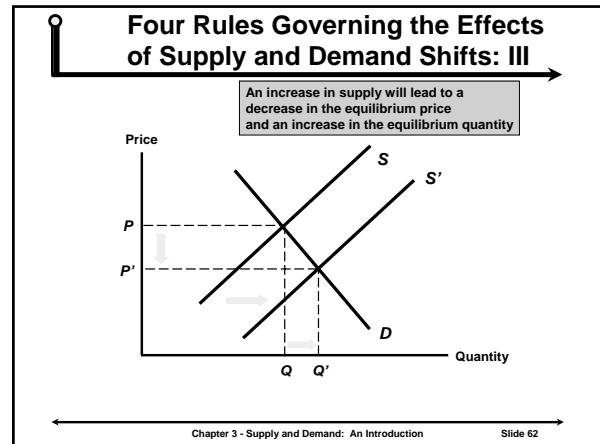
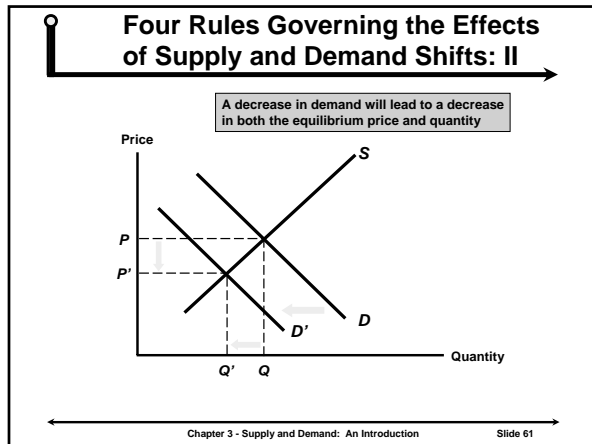


Predicting and Explaining Changes in Prices and Quantities

- Other determinants of supply
 - Weather
 - Expectations
 - Number of sellers

Chapter 3 - Supply and Demand: An Introduction Slide 59





- ### Predicting and Explaining Changes in Prices and Demand
- Factors That Cause an Increase (rightward or upward shift) in Demand
 1. A decrease in the price of complements to the good or service
 2. An increase in the price of substitutes for the good or service
 3. An increase in income (for a normal good)
- Chapter 3 - Supply and Demand: An Introduction Slide 64

- ### Predicting and Explaining Changes in Prices and Demand
- Factors That Cause an Increase (rightward or upward shift) in Demand
 4. An increased preference by demanders for the good or service
 5. An increase in the population of potential buyers
 6. An expectation of higher prices in the future
- Chapter 3 - Supply and Demand: An Introduction Slide 65

- ### Predicting and Explaining Changes in Prices and Demand
- Factors That Cause an Increase (rightward or upward shift) in Supply
 1. A decrease in the cost of materials, labor, or other inputs used in the production of the good or service
 2. An improvement in technology that reduces the cost of producing the good or service
- Chapter 3 - Supply and Demand: An Introduction Slide 66

Predicting and Explaining Changes in Prices and Demand

- Factors That Cause an Increase (rightward or upward shift) in Supply
 3. An improvement in the weather, especially for agricultural products
 4. An increase in the number of suppliers
 5. An expectation of lower prices in the future

Chapter 3 - Supply and Demand: An Introduction

Slide 67

Predicting and Explaining Changes in Prices and Demand



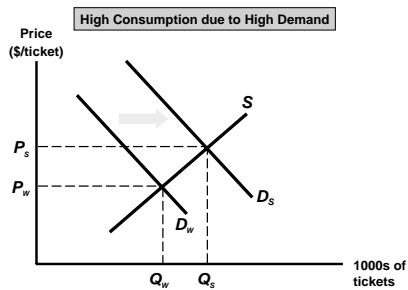
Economic Naturalist

- Why do the prices of some goods, like airline tickets to Europe, go up during the months of heaviest consumption, while others, like corn, go down?

Chapter 3 - Supply and Demand: An Introduction

Slide 68

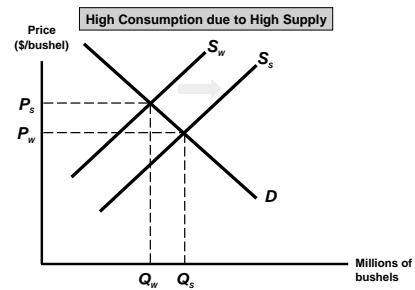
Seasonal Variation in Air Travel and Corn Markets



Chapter 3 - Supply and Demand: An Introduction

Slide 69

Seasonal Variation in Air Travel and Corn Markets



Chapter 3 - Supply and Demand: An Introduction

Slide 70

Markets and Social Welfare

- If all exchange is purely voluntary, then the buyer's reservation price exceeds the seller's reservation price and both the buyer and seller receive an economic surplus.

Chapter 3 - Supply and Demand: An Introduction

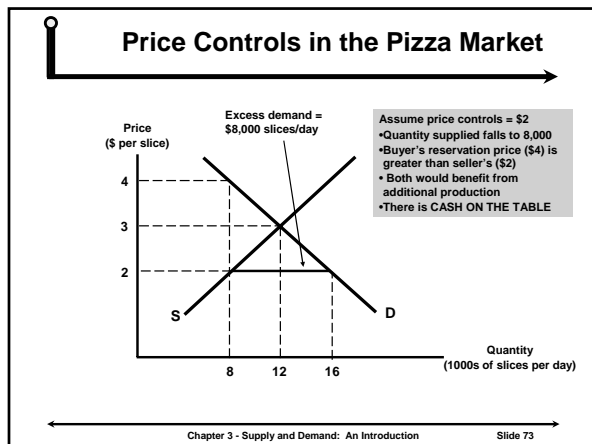
Slide 71

Markets and Social Welfare

- Buyer's surplus
 - The difference between the buyer's reservation price and the price he or she actually pays.
- Seller's surplus
 - The difference between the price received by the seller and his or her reservation price.
- Total surplus
 - The difference between the buyer's reservation price and the seller's reservation price.

Chapter 3 - Supply and Demand: An Introduction

Slide 72



- ### Markets and Social Welfare
- Cash On The Table
 - Economic metaphor for unexploited gains from exchange.
 - The free-market equilibrium does not leave any cash on the table.
- Chapter 3 - Supply and Demand: An Introduction Slide 74

- ### Markets and Social Welfare
- Socially optimal quantity
 - The quantity of a good that results in the maximum possible economic surplus from producing and consuming the good
 - The socially optimal quantity occurs when $MC = MB$
- Chapter 3 - Supply and Demand: An Introduction Slide 75

- ### Markets and Social Welfare
- Economic efficiency occurs when all goods and services are produced and consumed at their respective socially optimal levels
 - Achieving economic efficiency
 - Maximizes the economic surplus
 - Increases the economic pie
- Chapter 3 - Supply and Demand: An Introduction Slide 76

- ### Markets and Social Welfare
- When is the market equilibrium efficient?
 - When all costs of producing the good or service are borne directly by the seller
 - When all benefits from the good or service accrue directly to buyers
- Chapter 3 - Supply and Demand: An Introduction Slide 77

- ### Markets and Social Welfare
- Inefficient market equilibrium
 - When some costs of production fall on people other than those who sell the good or service
 - When some benefits from the good or service accrue to people who did not buy the good or service
- Chapter 3 - Supply and Demand: An Introduction Slide 78

Markets and Social Welfare

- Example: Pollution
 - The market is in equilibrium: $MC = MB$.
 - MC however underestimates the cost to society of producing the good.
 - Therefore, the market produces more than the efficient amount and there is no incentive for producers and consumers to alter their behavior.

Chapter 3 - Supply and Demand: An Introduction

Slide 79

Markets and Social Welfare

- Example: Vaccinations
 - The market is in equilibrium: $MC = MB$.
 - MB underestimates the benefits to society of consuming the vaccinations.
 - The market produces less than the efficient amount of vaccinations and there is no incentive for producers and consumers to alter their behavior.

Chapter 3 - Supply and Demand: An Introduction

Slide 80

Markets and Social Welfare

- In these markets
 - Buyers and sellers are behaving rationally
 - Market equilibrium exists
 - There are no unexploited opportunities for individuals
 - Economic surplus is not maximized

Chapter 3 - Supply and Demand: An Introduction

Slide 81