Introduction to Microeconomics

- What are the key themes of microeconomics?
- What is a market?
- What is the difference between real and nominal prices?
- Why study microeconomics?

Why Study Microeconomics?

- Microeconomic concepts are used by everyone to assist them in making choices as consumers and producers
- Examples show the numerous levels of microeconomic questions necessary in many decisions

Themes of Microeconomics

- Microeconomics deals with limits
  - Limited budgets
  - Limited time
  - Limited ability to produce
- How do we make the most of limits?
- How do we allocate scarce resources?

Themes of Microeconomics

- Workers, firms and consumers must make trade-offs
  - Do I work or go on vacation?
  - Do I purchase a new car or save my money?
  - Do we hire more workers or buy new machinery?
- How are these trade-offs best made?

Themes of Microeconomics

- Consumers
  - Limited incomes
  - Consumer theory – describes how consumers maximize their well-being, using their preferences, to make decisions about trade-offs
  - How do consumers make decisions about consumption and savings?

Themes of Microeconomics

- Workers
  - Individuals decide when and if to enter the workforce
    - Trade-offs of working now or obtaining more education/training
  - What choices do individuals make in terms of jobs or workplaces?
  - How many hours do individuals choose to work?
    - Trade-off of labor and leisure

Themes of Microeconomics

- Firms
  - What types of products do firms produce?
    - Constraints on production capacity and financial resources create needs for trade-offs
  - Theory of the Firm – describes how these trade-offs are best made

Themes of Microeconomics

- Prices
  - Trade-offs are often based on prices faced by consumers and producers
  - Workers make decisions based on prices for labor – wages
  - Firms make decisions based on wages and prices for inputs and on prices for the goods they produce

Themes of Microeconomics

- Prices
  - How are prices determined?
    - Centrally planned economies – governments control prices
    - Market economies – prices determined by interaction of market participants
  - Markets – collection of buyers and sellers whose interaction determines the prices of goods

Theories and Models

- Economics is concerned with explanation of observed phenomena
  - Theories are used to explain observed phenomena in terms of a set of basic rules and assumptions:
    - The Theory of the Firm
    - The Theory of Consumer Behavior

Positive & Normative Analysis

- Positive Analysis – statements that describe the relationship of cause and effect
  - Questions that deal with explanation and prediction
    - What will be the impact of an import quota on foreign cars?
    - What will be the impact of an increase in the gasoline excise tax?
- Normative Analysis – analysis examining questions of what ought to be
  - Often supplemented by value judgments
    - Should the government impose a larger gasoline tax?
    - Should the government decrease the tariffs on imported cars?

What is a Market?

- Markets
  - Collection of buyers and sellers, through their actual or potential interaction, determine the prices of products
    - Buyers: consumers purchase goods, companies purchase labor and inputs
    - Sellers: consumers sell labor, resource owners sell inputs, firms sell goods

Types of Markets

- Perfectly competitive markets
  - Because of the large number of buyers and sellers, no individual buyer or seller can influence the price
    - Example: Most agricultural markets
  - Fierce competition among firms can create a competitive market
- Noncompetitive Markets
  - Markets where individual producers can influence the price
    - Cartels – groups of producers who act collectively
    - Example: OPEC dominates with world oil market

Market Price

- Transactions between buyers and sellers are exchanges of goods for a certain price
  - Market price – price prevailing in a competitive market

Market Definition

- Market Definition
  - Which buyers and sellers should be included in a given market?
  - This depends on the extent of the market – boundaries, geographical and by range of products, to be included in it
    - Market for housing in Sydney or Brisbane
    - Market for all cameras or digital cameras

Real Versus Nominal Prices

- Comparing prices across time requires measuring prices relative to some overall price level
  - Nominal price is the absolute or current dollar price of a good or service when it is sold
  - Real price is the price relative to an aggregate measure of prices or constant dollar price

Real Versus Nominal Prices

- Consumer Price Index (CPI) is often used as a measure of aggregate prices
  - Records the prices of a large market basket of goods purchased by a "typical" consumer over time
  - Percent changes in CPI measure the rate of inflation

$$\underset{baseyear}{\text{RealPrice}} = \frac{\text{CPI}_{\text{base year}}}{\text{CPI}_{\text{current year}}} \text{ x Nominal Price}_{\text{current year}}$$

Real Price of College

Year	Nom. Price	CPI	Real Price
1970	$2,530	38.8	$= \frac{38.8}{38.8} * \$2{,}530 = \$2{,}530$
1990	$12,018	130.7	$= \frac{38.8}{130.7} * \$12{,}018 = \$3{,}569$
2002	$18,273	181.0	$= \frac{38.8}{181.0} * \$18{,}273 = \$3{,}917$

Ch. 2 The Basics of Supply & Demand

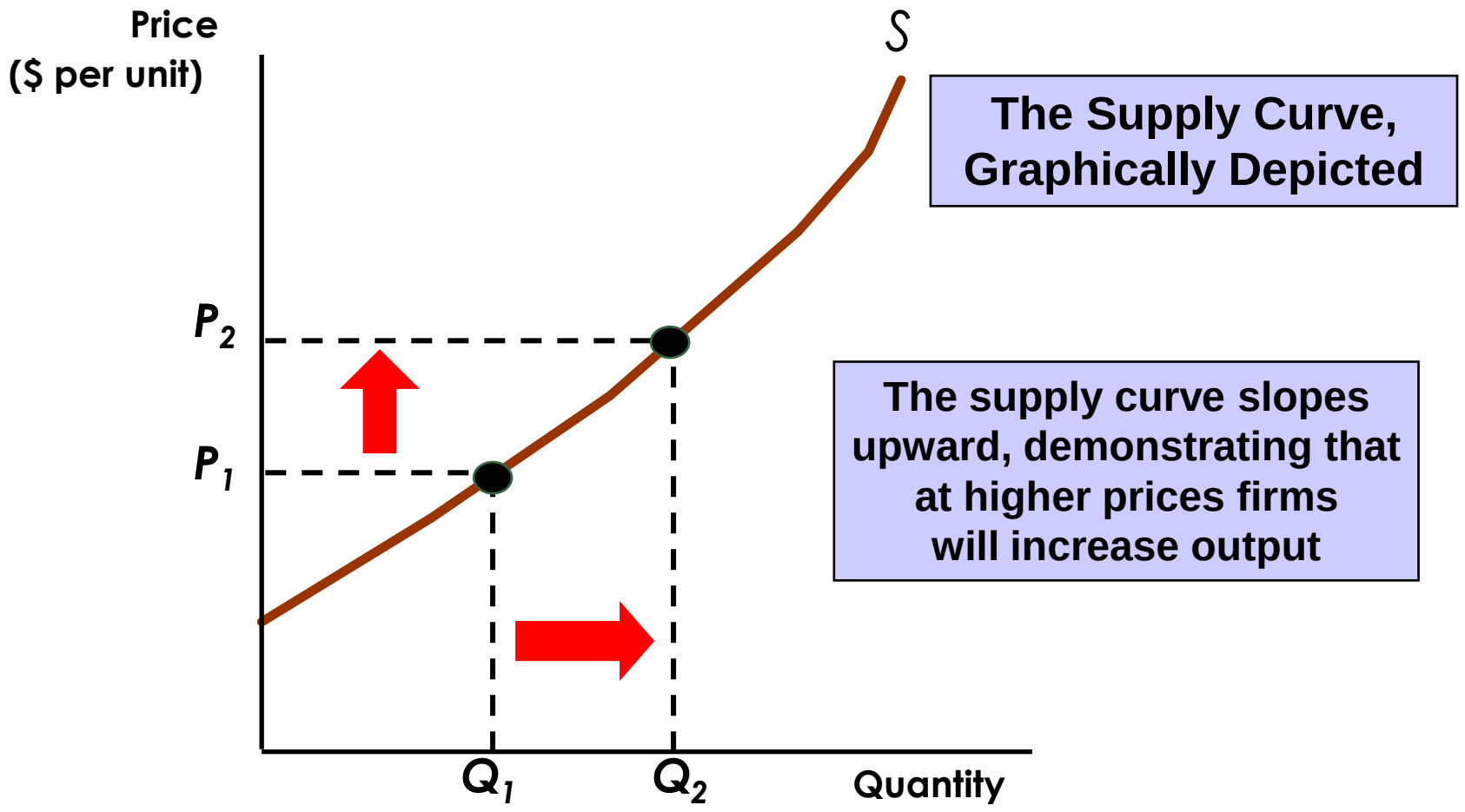
- What are supply and demand?
- What is the market mechanism?
- What are the effects of changes in market equilibrium?
- What are elasticities of supply and demand? (We'll omit supply here but read in text).

Supply and Demand

- The Supply Curve
  - The relationship between the quantity of a good that producers are willing to sell and the price of the good
  - Measures quantity on the x-axis and price on the y-axis

$$Q_S = Q_S(P)$$

The Supply Curve

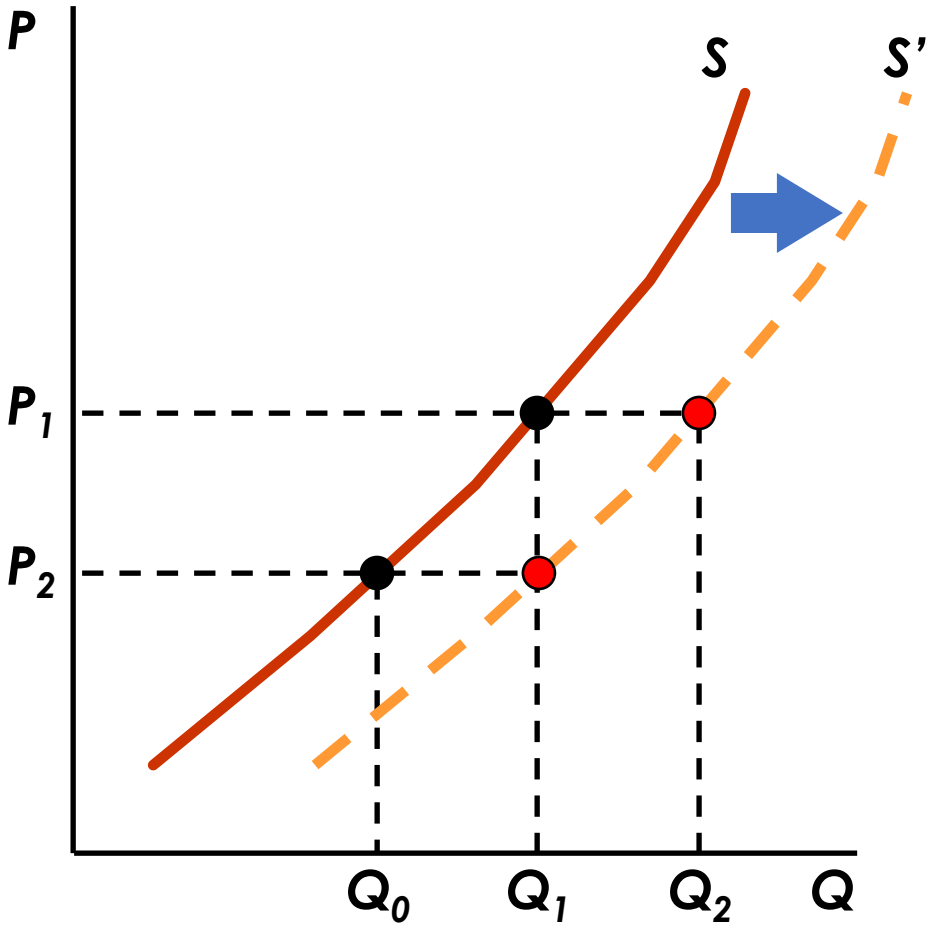


The Supply Curve

- Other Variables Affecting Supply
  - Costs of Production
    - Labor
    - Capital
    - Raw Materials
  - Lower costs of production allow a firm to produce more at each price and vice versa

Change in Supply

- The cost of raw materials falls
  - Produced Q_1 at P_1 and Q_0 at P_2
  - Now produce Q_2 at P_1 and Q_1 at P_2
  - Supply curve shifts right to S'



The Supply Curve

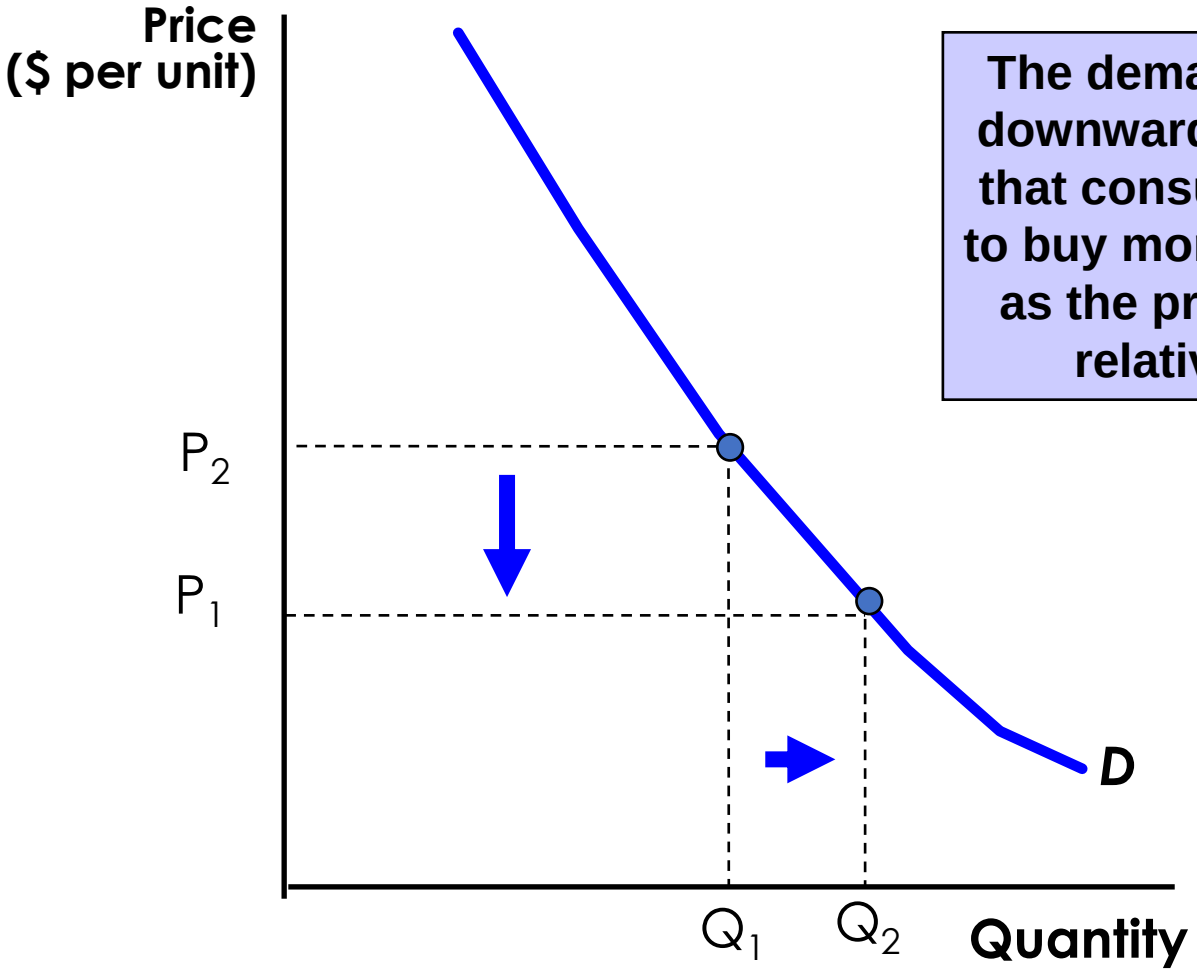
- Change in Quantity Supplied
  - Movement along the curve caused by a change in price
- Change in Supply
  - Shift of the curve caused by a change in something other than the price of the good
    - Change in costs of production

Supply and Demand

- The Demand Curve
  - The relationship between the quantity of a good that consumers are willing to buy and the price of the good
  - Measures quantity on the x-axis and price on the y-axis

$$Q_D = Q_D(P)$$

The Demand Curve



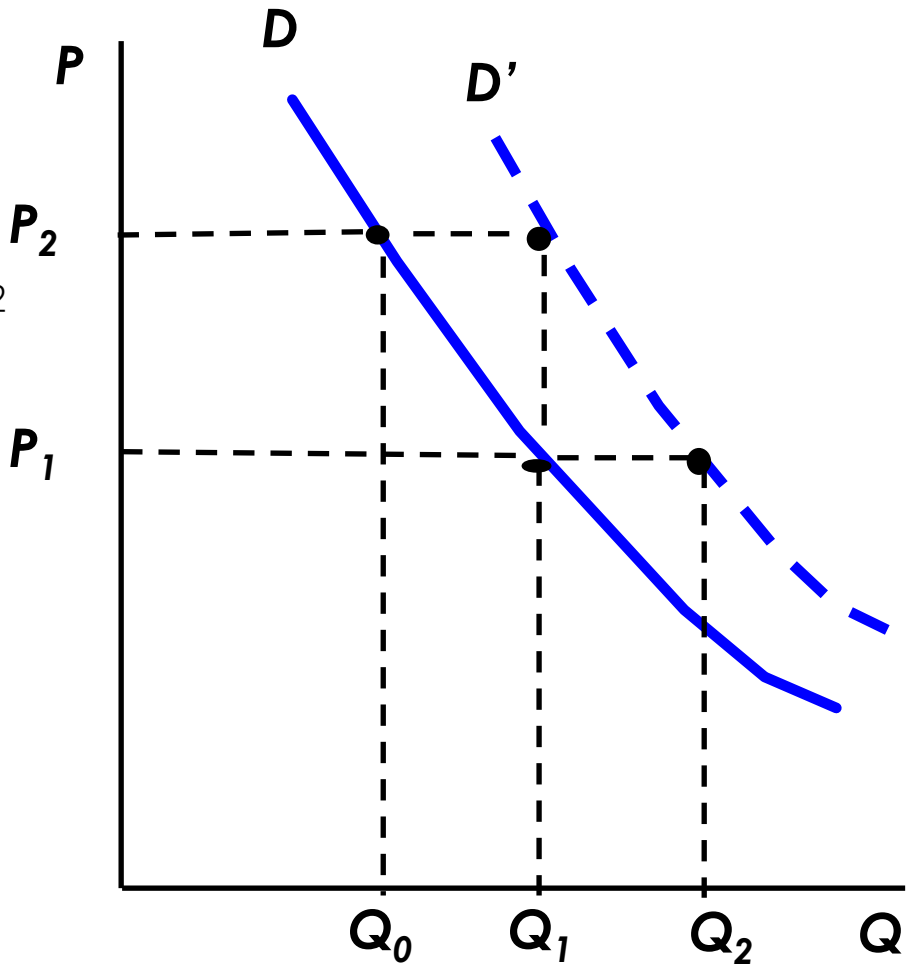
The demand curve slopes downward, demonstrating that consumers are willing to buy more at a lower price as the product becomes relatively cheaper.

The Demand Curve

- Other Variables Affecting Demand
  - Income
    - Increases in income allow consumers to purchase more at all prices
  - Consumer Tastes
  - Price of Related Goods
    - Substitutes
    - Complements

Change in Demand

- Income Increases
  - Purchased Q_0, at P_2 and Q_1 at P_1
  - Now purchased Q_1 at P_2 and Q_2 at P_1
  - Same for all prices
  - Demand curve shifts right



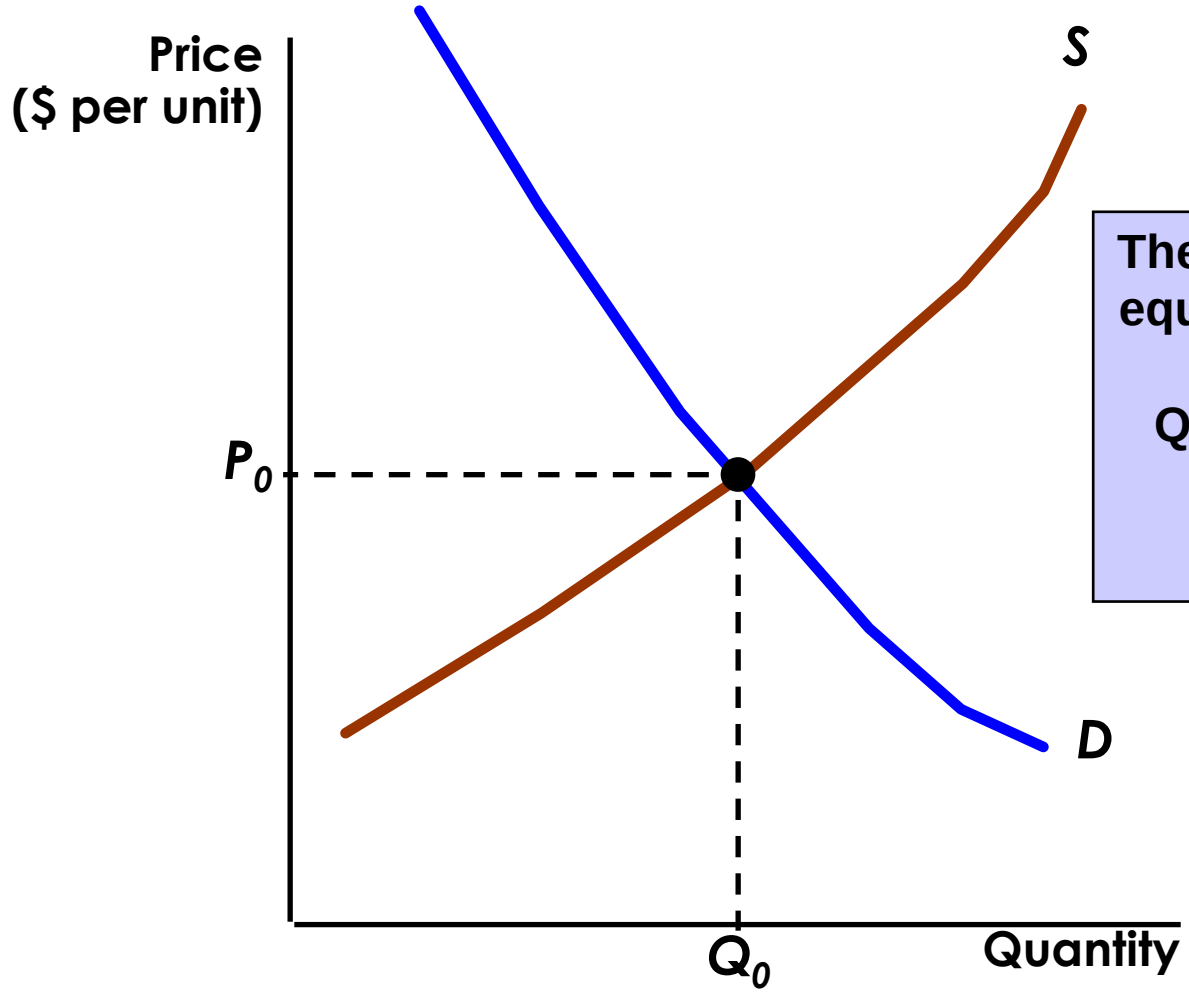
The Demand Curve

- Changes in quantity demanded
  - Movements along the demand curve caused by a change in price
- Changes in demand
  - A shift of the entire demand curve caused by something other than price
    - Income
    - Preferences

The Market Mechanism

- The market mechanism is the tendency in a free market for price to change until the market clears
- Markets clear when quantity demanded equals quantity supplied at the prevailing price
- Market clearing price – price at which markets clear

The Market Mechanism



The curves intersect at equilibrium, or market-clearing, price. Quantity demanded equals quantity supplied at P_0

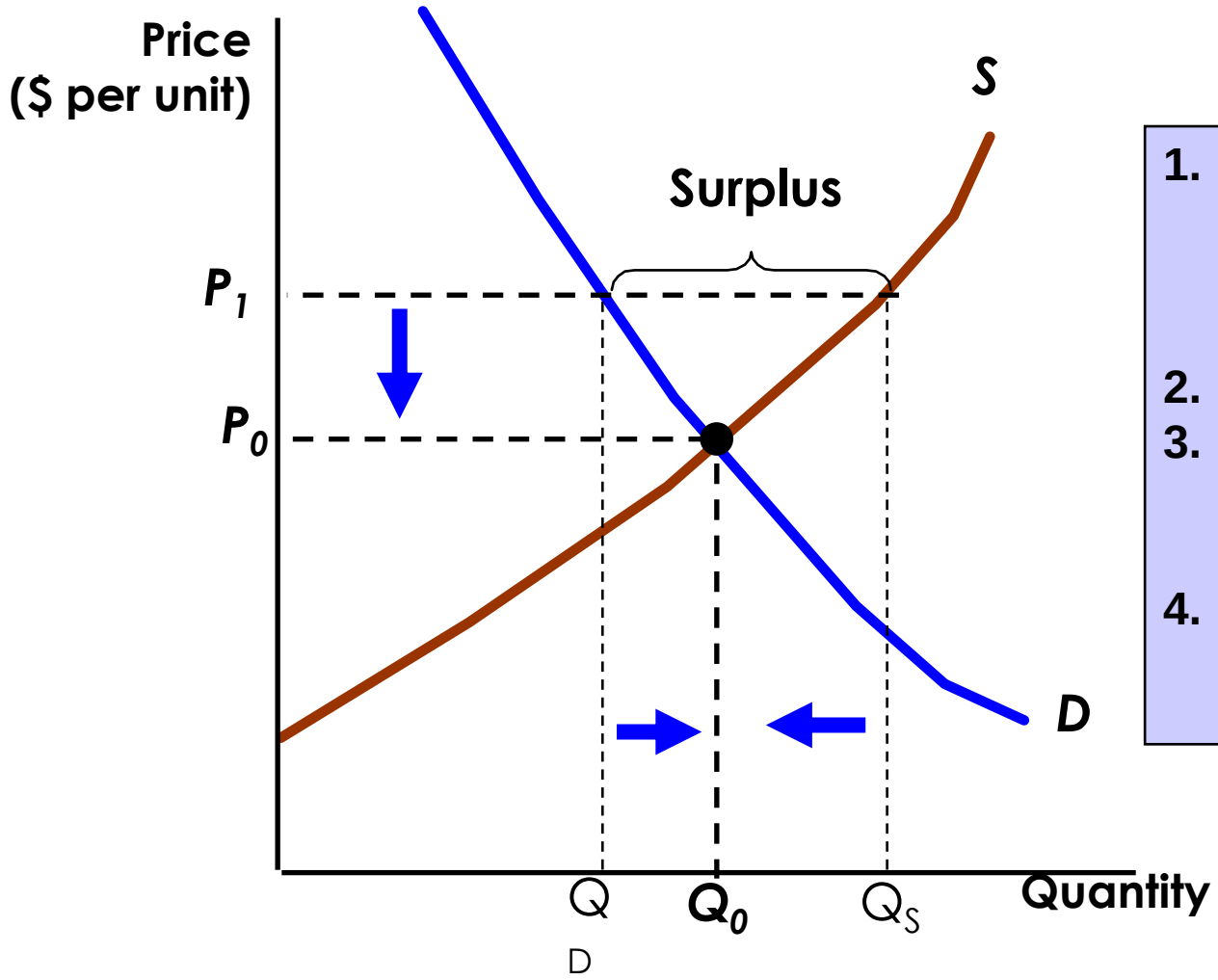
The Market Mechanism

- In equilibrium
  - There is no shortage or excess demand
  - There is no surplus or excess supply
  - Quantity supplied equals quantity demanded
  - Anyone who wants to buy at the current price can and all producers who want to sell at that price can

Market Surplus (read about market shortage in text)

- The market price is above equilibrium
  - There is excess supply - surplus
  - Downward pressure on price
  - Quantity demanded increases and quantity supplied decreases
  - The market adjusts until new equilibrium is reached

The Market Mechanism



1. At P_1, price is above the market clearing price
2. $Q_S > Q_D$
3. Price falls to the *market-clearing* price
4. Market adjusts to equilibrium

Elasticities of Supply and Demand

- Not only are we concerned with what direction price and quantity will move when the market changes, but we are concerned about how much they change
- Elasticity gives a way to measure by how much a variable will change with the change in another variable
- Specifically, it gives the percentage change in one variable resulting from a one percent change in another

Price Elasticity of Demand

- Measures the sensitivity of quantity demanded to price changes
  - It measures the percentage change in the quantity demanded of a good that results from a one percent change in price

$$E_P^D = \frac{\%\Delta Q_D}{\%\Delta P}$$

- The percentage change in a variable is the absolute change in the variable divided by the original level of the variable
- Therefore, elasticity can also be written as:

$$E_P^D = \frac{\Delta Q/Q}{\Delta P/P} = \frac{P}{Q}\frac{\Delta Q}{\Delta P}$$

Price Elasticity of Demand

- Usually a negative number
  - As price increases, quantity decreases
  - As price decreases, quantity increases
- When $|E_P| > 1$, the good is price elastic
  - $|\%\Delta Q| > |\%\Delta P|$
- When $|E_P| < 1$, the good is price inelastic
  - $|\%\Delta Q| < |\% \Delta P|$

Price Elasticity of Demand

- The primary determinant of price elasticity of demand is the availability of substitutes
  - Many substitutes, demand is price elastic
    - Can easily move to another good with price increases (e.g. Hungry Jack's & McDonalds)
  - Few substitutes, demand is price inelastic (e.g. salt, petrol)

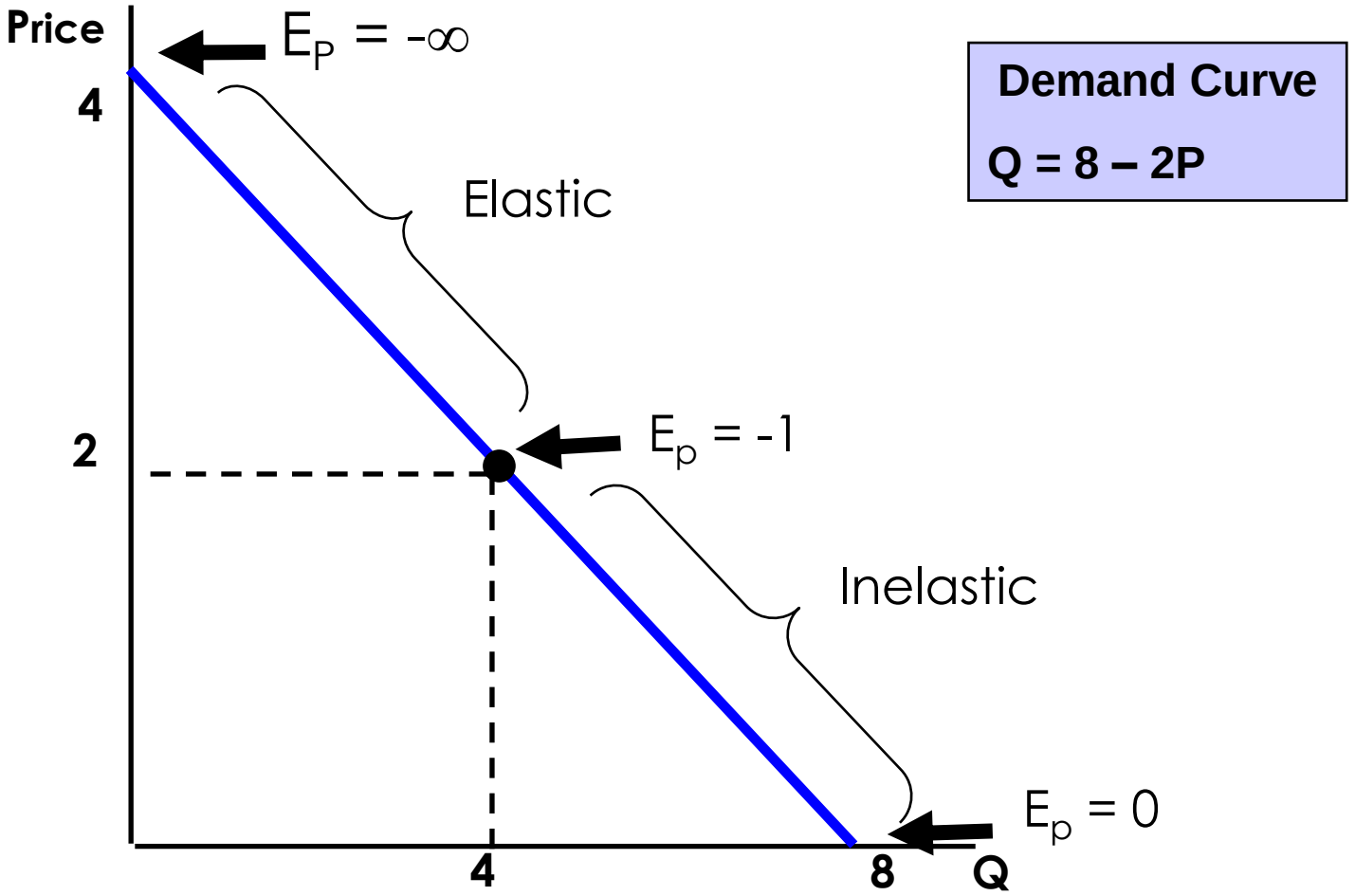
Price Elasticity of Demand

- Looking at a linear demand curve, as we move along the curve $\Delta Q/\Delta P$ is constant, but P and Q will change
- Price elasticity of demand must therefore be measured at a particular point on the demand curve
- Elasticity will change along the demand curve in a particular way

Price Elasticity of Demand

- Given a linear demand curve
  - Elasticity depends on slope and on the values of P and Q
  - The top portion of demand curve is elastic
    - Price is high and quantity small
  - The bottom portion of demand curve is inelastic
    - Price is low and quantity high

Price Elasticity of Demand

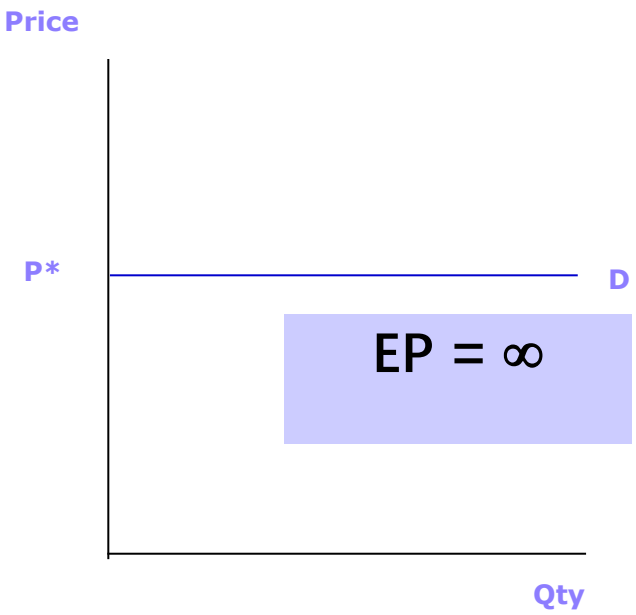


Price Elasticity of Demand

- The steeper the demand curve, the more inelastic the demand for the good becomes
- The flatter the demand curve, the more elastic the the demand for the good becomes
- Two extreme cases of demand curves
  - Completely inelastic demand – vertical
  - Infinitely elastic demand – horizontal

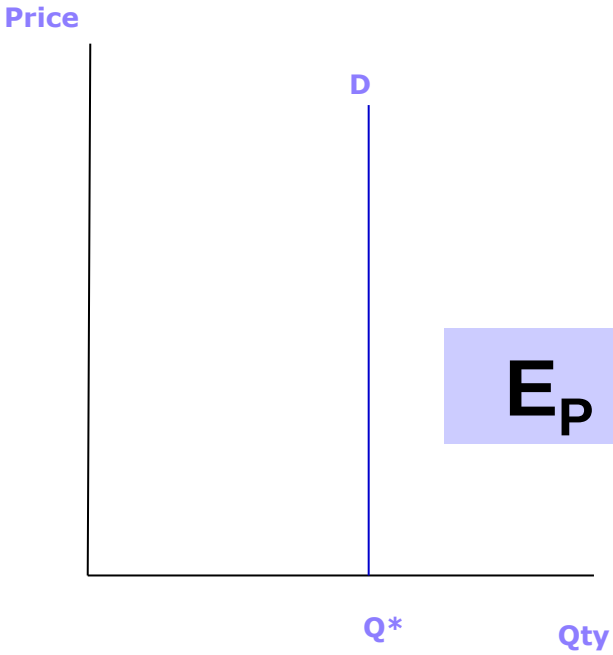
Price elasticity of Demand

Infinitely Elastic Demand



$EP = \infty$

Completely Inelastic Demand



$E_P = 0$

Other Demand Elasticities

- **Income Elasticity of Demand**
  - Measures how much quantity demanded changes with a change in income

$$E_I = \frac{\Delta Q/Q}{\Delta I/I} = \frac{I}{Q}\frac{\Delta Q}{\Delta I}$$

- **Cross-Price Elasticity of Demand**
  - Measures the percentage change in the quantity demanded of one good that results from a one percent change in the price of another good

$$E_{Q_b P_m} = \frac{\Delta Q_b / Q_b}{\Delta P_m / P_m} = \frac{P_m}{Q_b}\frac{\Delta Q_b}{\Delta P_m}$$

Elasticity: An Application

- During the 1980's and 1990's, the market for wheat went through changes that had great implications for American farmers and US agricultural policy
- Using the supply and demand curves for wheat, we can analyze what occurred in this market

Elasticity: An Application

- Supply: $Q_S = 1800 + 240P$
- Demand: $Q_D = 3550 – 266P$

$$Q_D = Q_S$$
$$1800 + 240P = 3550 – 266P$$
$$506P = 1750$$
$$P = \$3.46 \text{ per bushel}$$

$$Q = 1800 + (240)(3.46) = 2630 \text{ million bushels}$$

Elasticity: An Application

- We can find the elasticities of demand and supply at these points

$$E_P^D = \frac{P}{Q}\frac{\Delta Q_D}{\Delta P} = \frac{3.46}{2{,}630}(-266) = -0.35 = |0.35|$$

$$E_P^S = \frac{P}{Q}\frac{\Delta Q_S}{\Delta P} = \frac{3.46}{2{,}630}(240) = 0.32$$

Elasticity: An Application

- Assume the price of wheat is $4.00/bushel due to decrease in supply

$$Q_D = 3{,}550 - (266)(4.00) = 2{,}486$$

$$Q_P^D = \frac{4.00}{2{,}486}(-266) = -0.43 = |0.43|$$