Supply and Demand

ECO 120: Global Macroeconomics

Goals

Unit Goals

- Define demand and identify what influences demand
- Define supply and identify what influences supply
- Predict how prices and quantities are determined by supply and demand.
- Use these skills to make predictions about changes in price and quantity.

Learning Objectives

LO 2: Use the supply and demand model to predict price and quantity outcomes for markets for products and services.

Reading and Exercises

- Textbook: Demand, Chapter 2. pp. 44-55
- Textbook: Supply, Chapter 3, pp. 72-80
- Textbook: Equilibrium, Chapter 4, pp. 85-101
- **Canvas Quiz due Wed 11:59 PM**.
  Multiple-choice, 10 questions, unlimited attempts allowed, only best score counts
- **Homework/In-class Exercise due Friday 11:59 PM**. We will work together in class on Thursday.

Demand

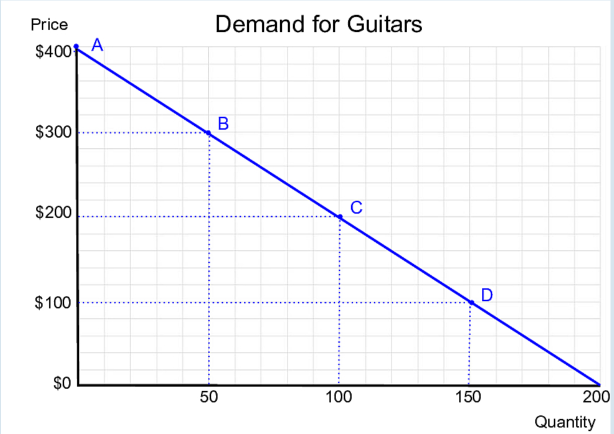
- The **quantity demanded** of a good or service is the amount consumers are willing and able to buy in a given time period at a particular price.
- **Law of demand**: All other things remaining equal, the higher (lower) the price of the good, the smaller (higher) is the quantity demanded.

Demand

Demand Schedule For Guitars

Point	Price	Q_D
A	$400	0
B	$300	50
C	$200	100
D	$100	150

Demand Curve for Guitars



- Law of demand makes the demand curve **downward sloping**.
- **Change in quantity demanded**: when there is a **change in price** causing a **movement** from one point on the demand curve to another point.

Income and Substitution effects

- The demand curve is downward sloping because of the income and substitution effect.
- **Substitution effect**: when the price of a good rises, people may buy substitute goods instead.
- **Income effect**: When the price of a good rises, the real purchasing power of your income decreases. When the real value of your income decreases, you buy less of everything.
- Close to correct. More on the income effect later.

Supply

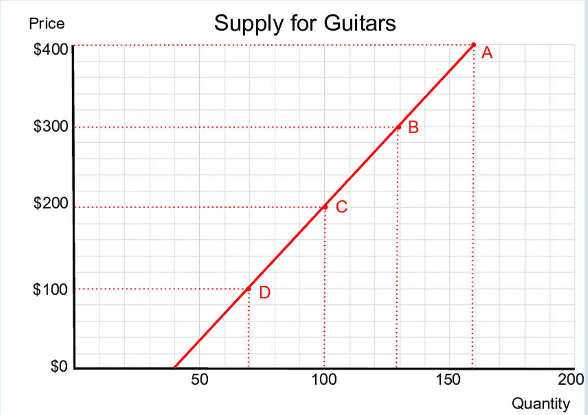
- The **quantity supplied** of a good or service is the amount producers are willing and able to produce and sell in a given time period at a given price.
- **Law of supply**: All other things remaining the same, the higher (lower) is the price of a good, the higher (lower) is the quantity supplied.

Supply

Demand Schedule For Guitars

Point	Price	Q_S
A	$400	160
B	$300	130
C	$200	100
D	$100	70

Supply Curve for Guitars

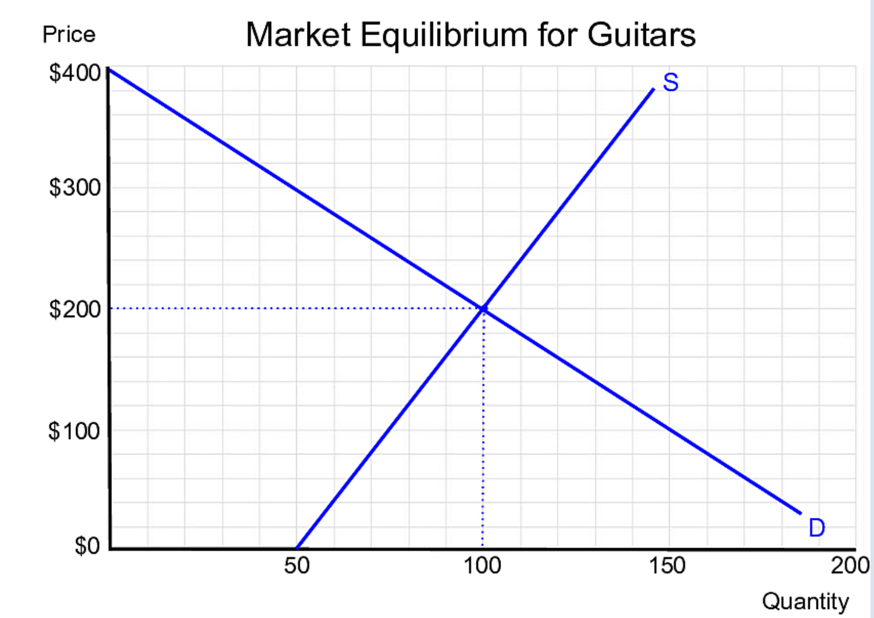


- Law of supply makes the supply curve **upward sloping**.
- **Change in quantity suppplied**: when there is a **change in price** causing a **movement** from one point on the supply curve to another point.

Equilibrium Definition

- The **equilibrium price** is the price where the quantity supplied is equal to the quantity demanded.
- The **equilibrium quantity** is the corresponding quantity.
- This is the price and quantity that will prevail in an unregulated market.

Graphical Equilibrium

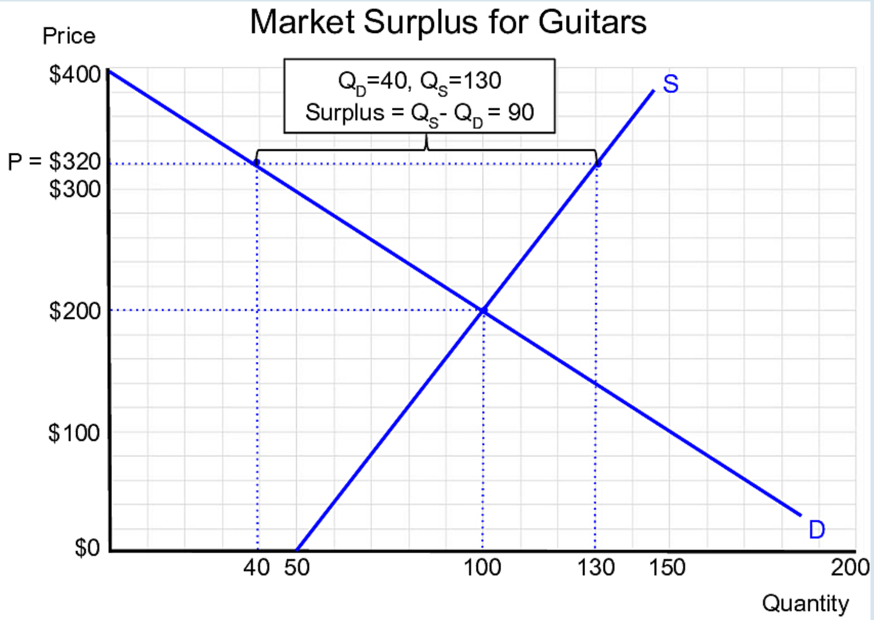


Surplus

Surplus Definition

- When the prevailing price is **above** equilibrium price, quantity supplied exceeds quantity demanded
- Difference is the surplus
- In an unregulated market, market forces will push price lower toward equilibrium

Graphical Surplus

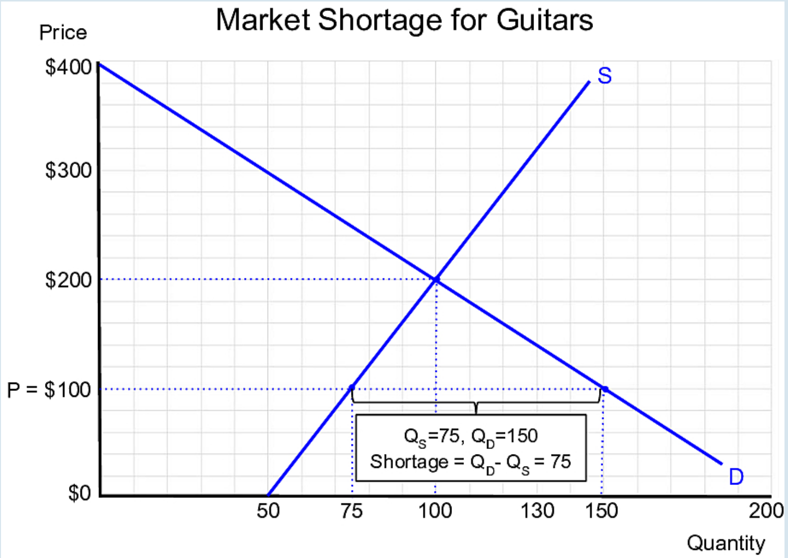


Shortage

Shortage Definition

- When the prevailing price is **below** equilibrium price, quantity demanded exceeds quantity supplied
- Difference is the shortage
- In an unregulated market, market forces will push equilibrium price higher

Graphical Shortage

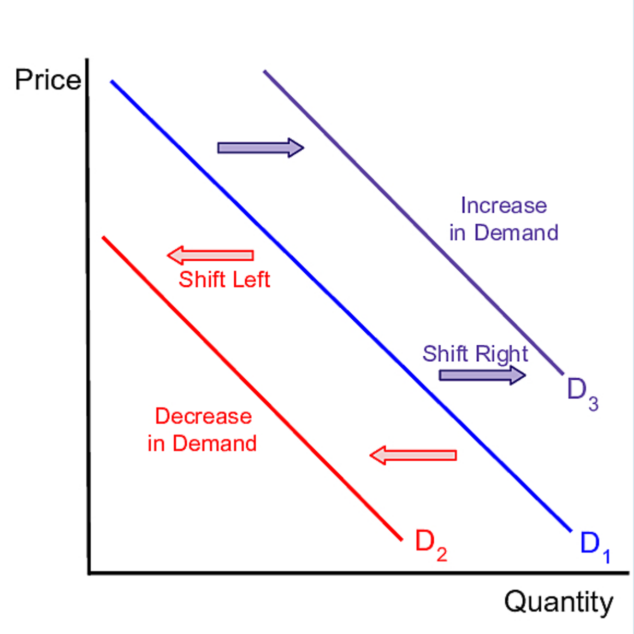


Demand Curve Shifts

Shifts in Whole Demand Curve

- When something *besides the price of the good* affects demand, we say there is a *change or shift in demand*.
- Something that **increases** demand shifts the demand curve to the **right**
- Something that **decreases** demand shifts the demand curve to the **left**

Shifts in Demand

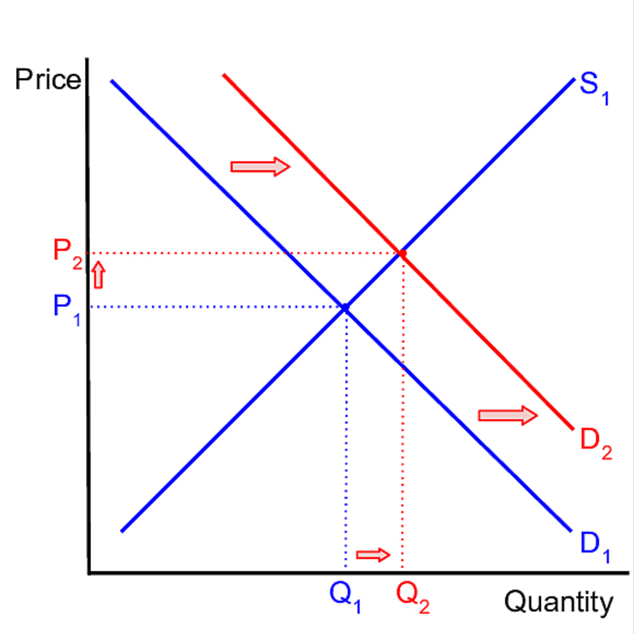


Substitute Goods

Price of Substitute Goods

- **Substitutes**: a substitute good is a good that can be consumed instead of another good.
- Examples: iPhones and Samsung smart-phones, E-books and print books
- **Suppose price of Samsumg phones increases.**
- If the price of a **substitute increases**, this will **increase demand** for a good
- Eqm price increases, quantity increases

Market for iPhones

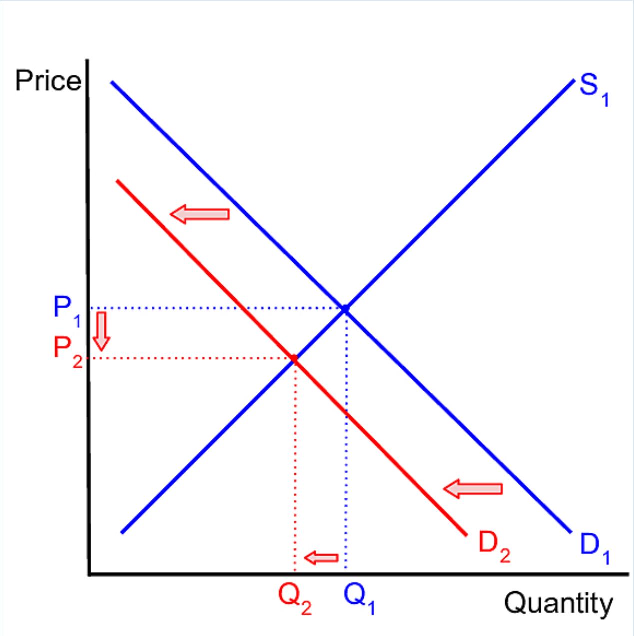


Complement Goods

Price of Complement Goods

- **Compelement**: a complement good is a good that is often consumed together with another good.
- Examples: iPads and Ebooks, smart-phones and apps
- **Suppose Price of Samsung phones increases.**
- If the price of a **complement increases**, this will **decrease demand** for a good
- Eqm price decreases, quantity decreases

Market for Andriod Apps



Changes in Income

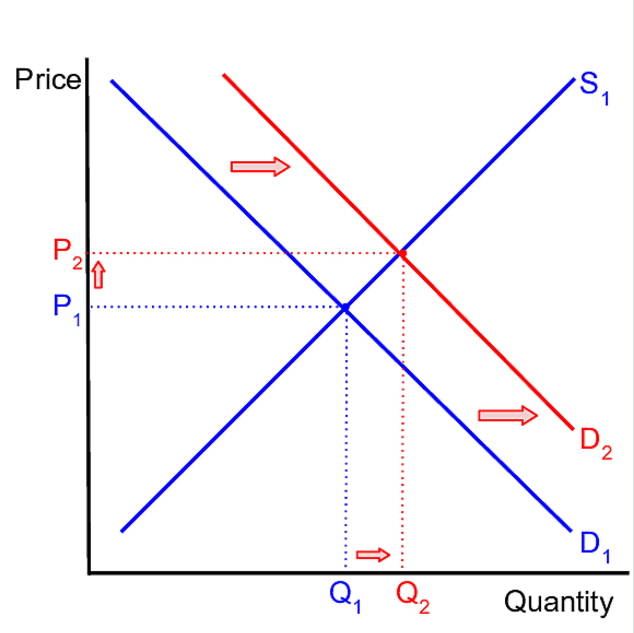
- **Normal good**: a good whose demand increases when consumers' incomes increase.
- **Inferior good**: a good whose demand decreases when consumers' incomes increase.
- Examples of inferior goods:
  - Used clothing
  - Kraft Macaroni and Cheese
  - Public transportation

Changes in Income: Normal Goods

Income Effect on Normal Goods

- **Normal good**: a good whose demand increases when consumers' incomes increase.
- Examples: Most things, computers, automobiles, restaurant meals
- **Suppose income increases**
- This will **increase demand** for a normal good
- Eqm price increases, quantity increases

Market for Automobiles

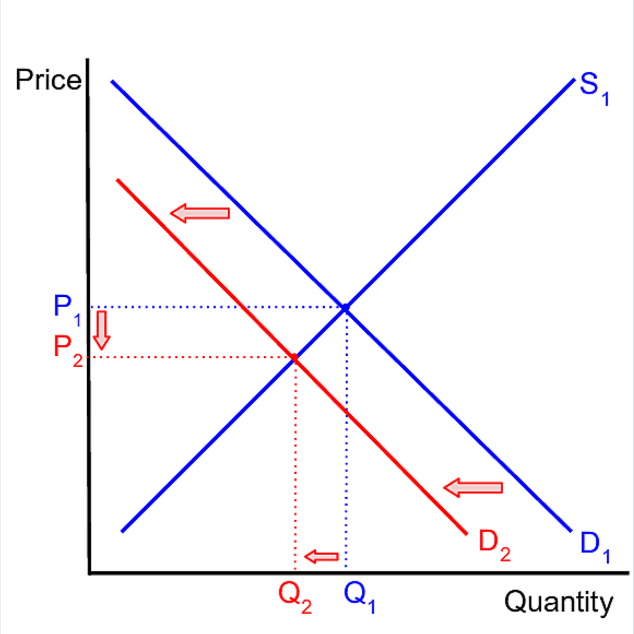


Changes in Income: Inferior Goods

Income Effect on Inferior Goods

- **Inferior good**: a good whose demand **decreases** when consumers' incomes increase.
- **Suppose income increases**
- This will **decrease demand** for an inferior good
- Eqm price decreases, quantity decreases

Market for Used Clothing

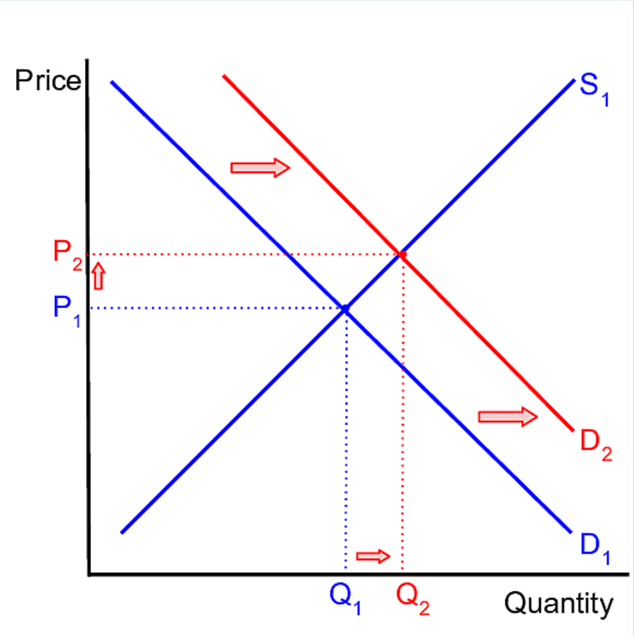


Consumers Expect Price Increase

Expectation of Price Increase

- If consumers expect a price will increase in the future, demand will increase in the present
- The expectation can be well-informed or even unfounded speculation
- Results in higher price, higher quantity
- *Self-fulfilling expectations are possible!*
- **Expectation for gasoline prices on 9/11/2001**

Gasoline on 9/11/2001

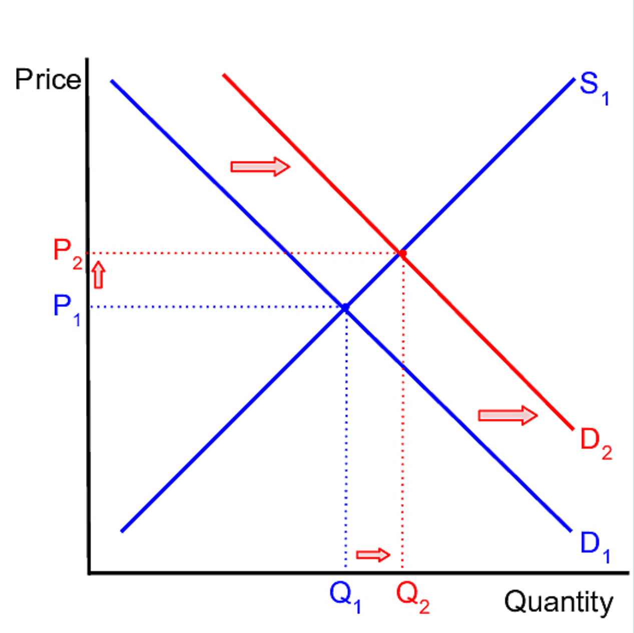


Consumers Expect Increase in Income

Expectation of Increase in Income

- If consumers expect higher future income, demand may increase immediately for normal goods
- The expectation can be well-informed or even unfounded speculation
- Why consumer confidence is so important for macroeconomy

Market for Automobiles



Supply Curve Shifts

Shifts in Whole Supply Curve

- When something *besides the price of the good* affects supply, there is a *change or shift in supply*.
- Something that **increases** supply shifts the supply curve to the **right**
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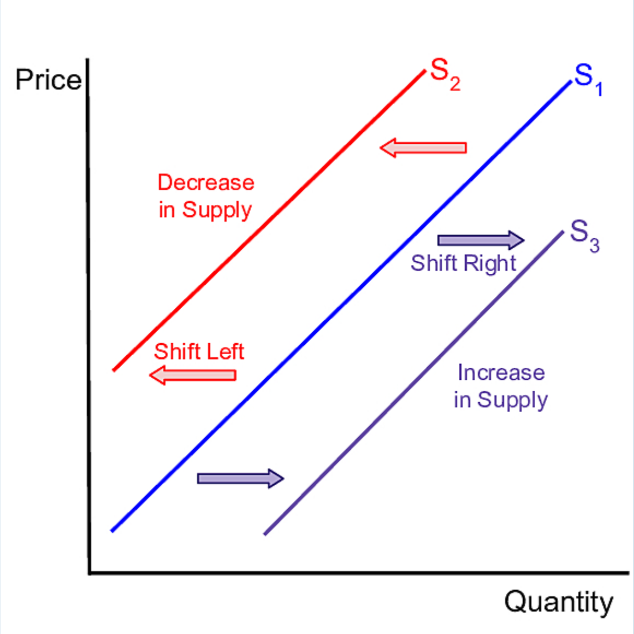
Shifts in Supply

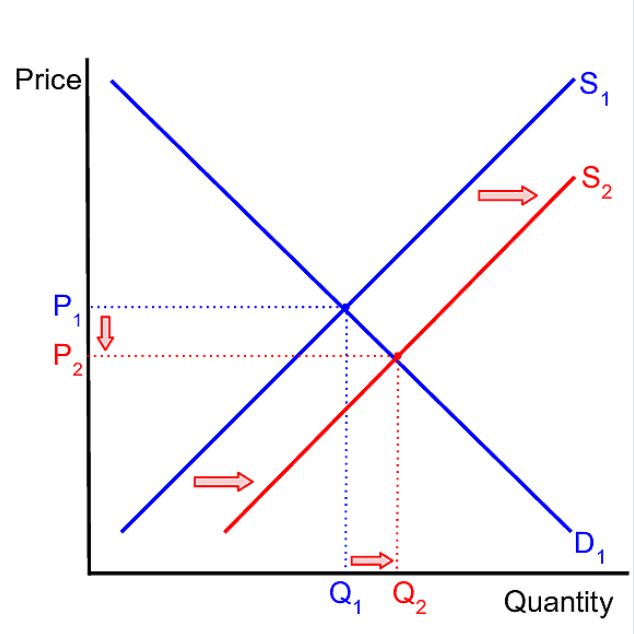


Improvements in Technology

Improvements in Technology

- Improvements in technology can make it possible to produce more
- Improvements in technology can make production easier or less costly
- Shift supply to the right
- Eqm quantity increases, price decreases

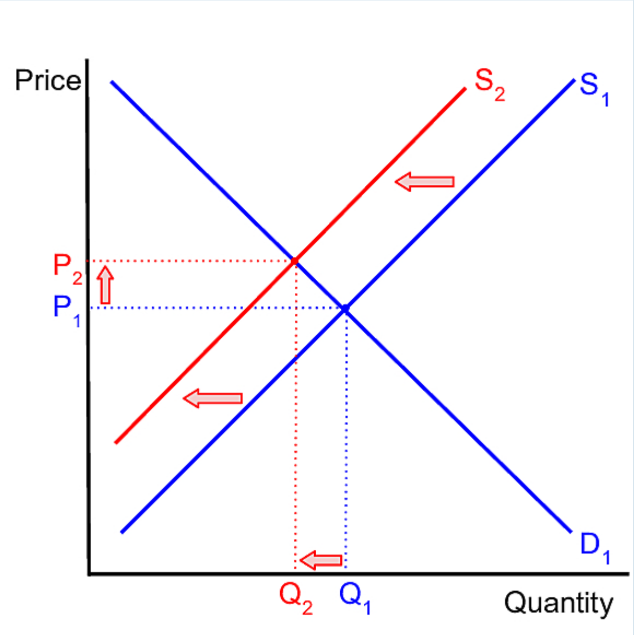
Market for Computers



Increase in Production Costs

- Any increase in production costs causes supply to shift to the left
- For example: Increase in price of lumber for construction of new housing
- Eqm quantity decreases, price increases
- **Suppose there is an increase in lumber prices**

Market for New Homes

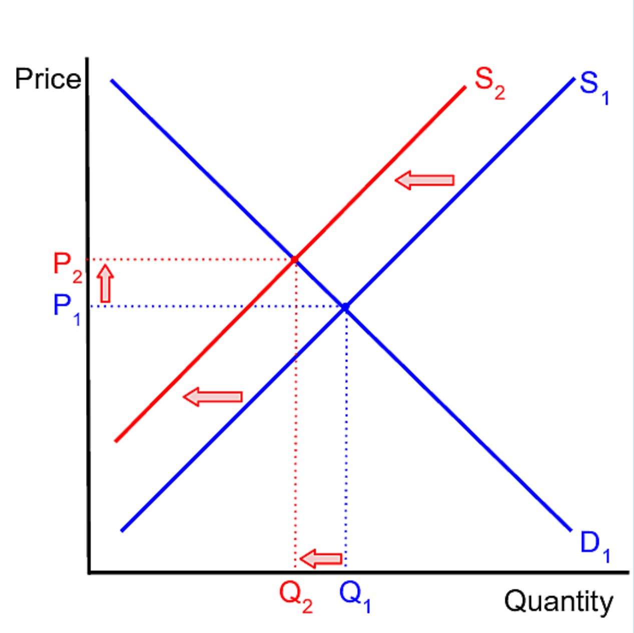


Producers Expect Higher Prices in Future

Producer Expectations

- If producers expect an increase in prices, may hold back production or sales until prices are higher
- Easier for goods than can be stored or warehoused
- For example: Agriculture producers expects an increase in price of grain
- Store grain to sell later, supplying less today, supply shifts left
- Eqm quantity decreases, price increases
- *Can lead to self-fulfilling expectations*

Expectation of Higher Price

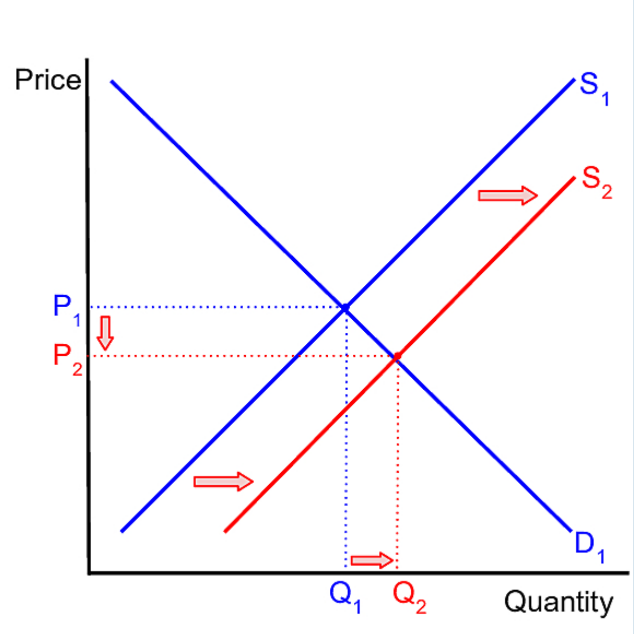


Subsidy on Ethanol Production

Production Subsidy

- Suppose the government increases the subsidy to gasoline producers for blending ethanol into gasoline.
- Supply for gasoline with ethanol increases
- Eqm quantity increases, price decreases

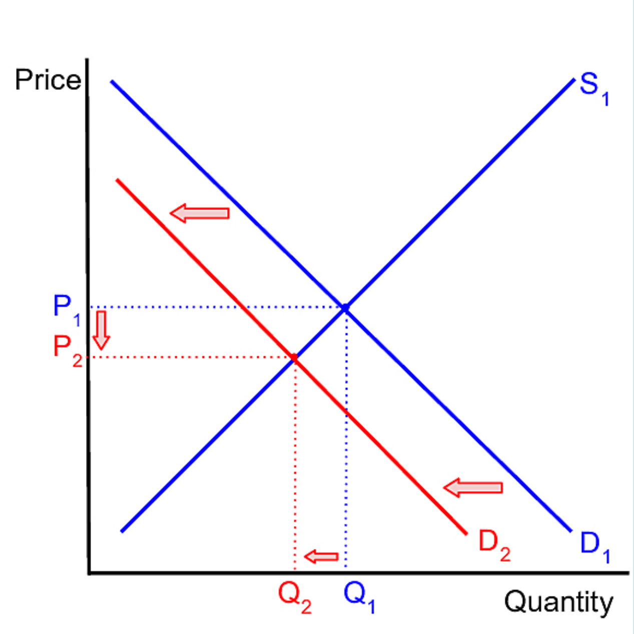
Supply and Demand



Increase in Taxes

- Suppose the government increases the taxes on cigarettes.
- Demand for cigarettes decreases
- Equilibrium quantity decreases
- Equilibrium price decreases (price received by sellers decreases)
- Price + tax paid by buyers increases (ECO 110)

Supply and Demand

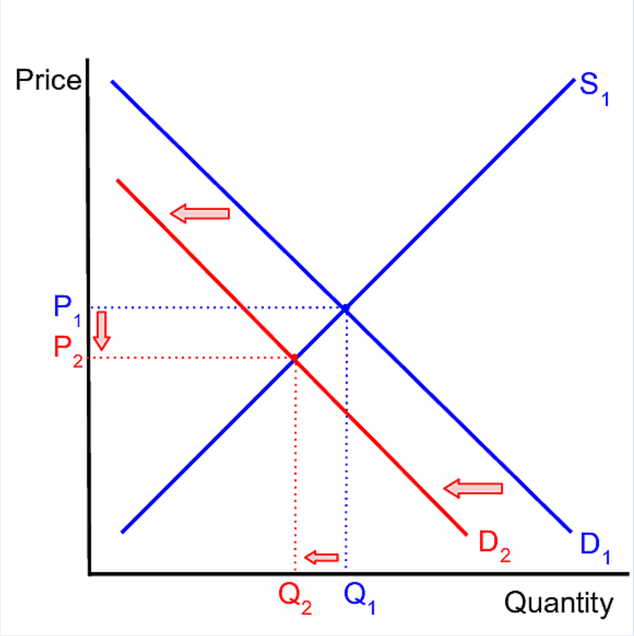


Changes in Opinions and Preferences: Peloton

Changes in Preferences

- Suppose Mr. Big dies while working out on his Peloton bike, and this leads people to think that Peloton bikes are dangerous
- Demand for Peloton bikes decreases
- Eqm quantity decreases, price decreases

Supply and Demand

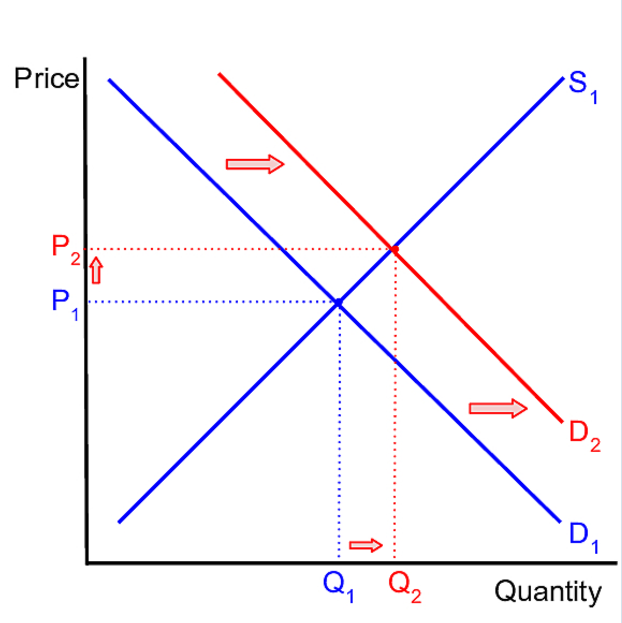


Changes in Preferences: Christmas Trees

Increased Preference for Christmas Trees

- After a difficult year in 2020, more people decided to celebrate the holiday season with real Christmas trees.
- Demand for Christmas trees increases
- Eqm quantity increases, price increases

Supply and Demand

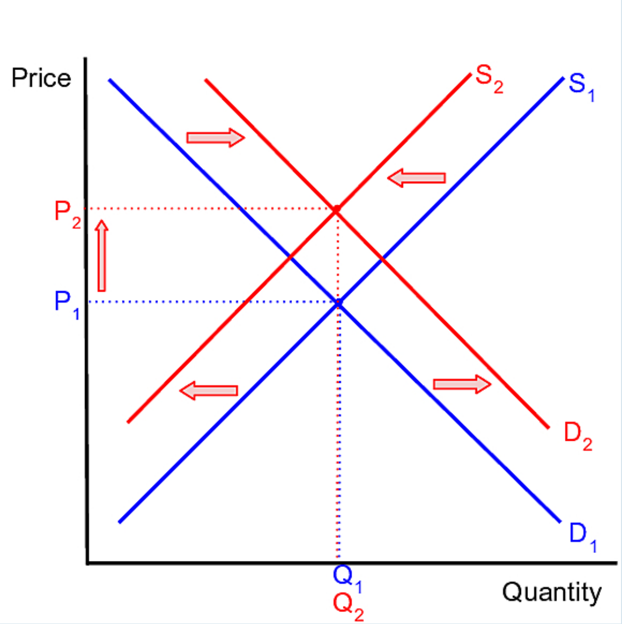


Changes in Supply and Demand: Christmas Trees

Supply and Demand Shifts

- During 2008-2009 recession, many Christmas tree farmers did not invest in planting new trees. It takes about 10-11 years for trees to grow to full height.
- Also, after a difficult year in 2020, more people wanted real Christmas trees.
- Demand increases and supply decreases
- Equilibrium price increases
- Change in quantity is indeterminate

Supply and Demand

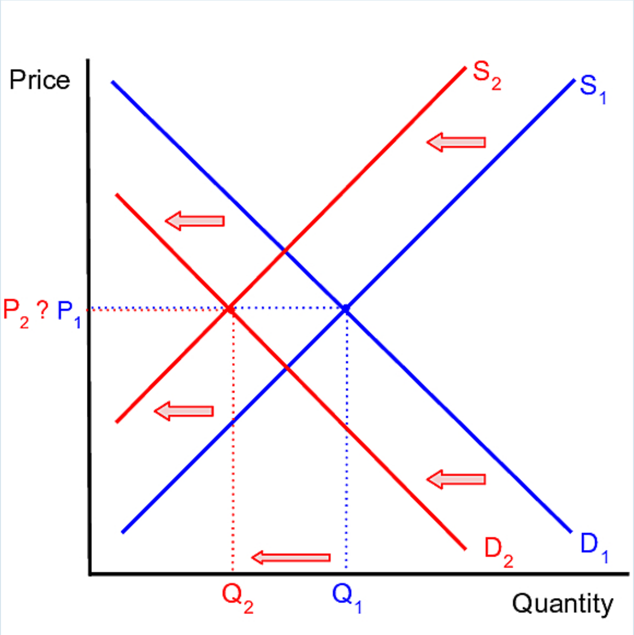


Changes in Supply and Demand: New Homes

Scenario

- Suppose that global supply chain problems cause a decrease in availability for construction materials
- Suppose also that the country is in a recession and people have lower incomes
- Demand for new homes decreases
- Supply for new homes decreases
- Quantity decreases
- Change in price is indeterminate

Supply and Demand



Scholar Spotlight: Sheida Teimouri

Housing Prices and Import Competition (with Joachim Zietz), *Empirical Economics*, July 2024.

Trade Liberalization with China

- New trade agreement with China in October 2000 led to more imports of Chinese goods
- Less demand for similar U.S. produced items led to less employment in some industries
- Less employment → less income → less demand for housing
- Housing prices fell 7% in *heavily trade-exposed areas*

About the Scholar

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Reading and Exercises

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