

# Economics 610

Professor Frank Scott  
Department of Economics  
University of Kentucky

# Modest goals, Monday September 10

- Introduce myself and the class
- Go over syllabus and reading assignments
- Discuss goals for the course “Tempur-Pedic stock up after report, analysis,” *Lexington Herald-Leader*, July 26, 2012, p. B5:  
<http://www.kentucky.com/2012/07/25/2270718/tempur-pedic-stock-up-after-2q.html>
- Discuss different ways that societies organize their economic systems
- Introduce basic concepts of demand and supply and use them to understand how markets work to allocate society’s scarce resources

# Syllabus and Detailed Course Outline

- My webpage:  
<http://gatonweb.uky.edu/faculty/scott/>
- Syllabus highlights: reading assignments, grading, exam.
- Detailed course outline: background resources, outside readings, additional resources
- Classroom decorum: no passing notes, and no chewing gum!



# Comparative Economic Systems

- Over time and across the world different countries have fared differently in terms of the well-being of their citizens
- Economic development in four minutes:  
<https://www.youtube.com/watch?v=jbkSRLYSojo>
- Examples of different countries and the ways they organize economic activity:  
<https://www.cia.gov/library/publications/the-world-factbook/>

# Taxonomy of Economic Systems:

## I. The Decision-Making Process

All economic systems must answer three basic economic questions:

1. **What** goods will be produced and in what amounts?  
<http://www.ebay.com/>
2. **How?** What production techniques will be utilized?  
<https://www.youtube.com/watch?v=IV-iP1jSMII>  
<https://www.youtube.com/watch?v=JM-J8XPQo78>
3. **For Whom?** Who gets the goods and services that are produced by society?  
<http://www.youtube.com/watch?v=4sG-Xle5gwU>

# What, how, and for whom? Markets vs. Central Planning

- Command or central planning vs. Markets: will decision-making be centralized or decentralized?
- How do market systems answer the questions what, how, and for whom?
- How does a centrally planned economy answer these questions?
- How does the U.S. economy decide about apples? Leather coats? 3-bedroom houses? Secondary education? Missile submarines?
- How does the Greek economy answer these questions?

# Taxonomy of economic systems:

## II. Ownership of Resources

- Are the scarce resources of a society individually owned or commonly owned?
- Capitalism: land, labor, capital are owned by private individuals [so a basic function of government is defining and enforcing property rights]
- Socialism: land, labor, capital are jointly owned by everyone
- In the U.S., who owns farms? Electric power plants? Houses and apartments? Lake Cumberland? Human capital?

# Economic Systems around the World

- U.S. economy: most resource allocation decisions are decentralized—made through interactions of buyers and sellers in markets; most resources are privately owned
- China? Decision-making:  
<https://www.youtube.com/watch?v=m91zBt94LI0> ;  
ownership of resources:  
<https://www.youtube.com/watch?v=DMEANuyaKE4>
- Greece? Decision-making? Ownership of resources?
- Our focus in this course: capitalistic market economies



# How do markets work to allocate resources?

- What is a market? Examples?
- How is price determined in a market? Output?
- Theory of consumer behavior—Demand
- Theory of producer behavior—Supply
- Equilibrium in a market exists when everyone who wants to buy the product at the market price is able to do so and when everyone who wants to sell the product at the market price is able to do so.
- What will the price of crude oil be tomorrow? Next month? Next year?

<https://www.macrotrends.net/1369/crude-oil-price-history-chart>

# Using Demand and Supply Analysis without Graphs

- Increase in demand: UK beats Florida, Georgia, and Tennessee in football—market for UofL tickets on Stubhub.com?
- Increase in supply: fracking allows gas producers to extract more gas—market for natural gas?
- Decrease in demand: natural gas prices plummet—market for thermal coal?
- Decrease in supply: drought in Central Valley in California—market for carrots?

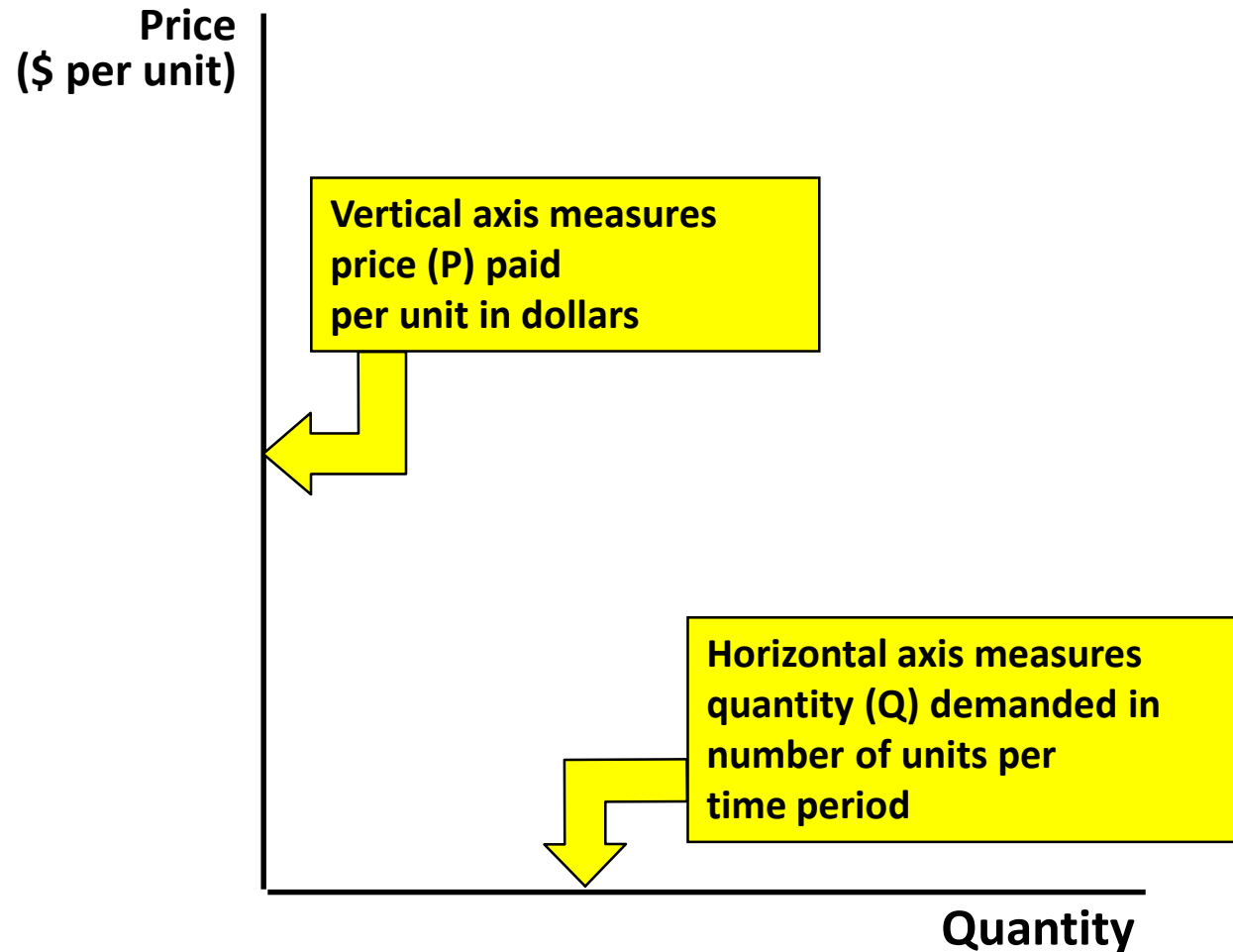
# Theory of Demand

- Quantity Demanded ( $Q_D$ ): total amount of a commodity that all households wish to purchase.
- Factors affecting  $Q_D$ :
  1. tastes or preferences
  2. income
  3. price of the product
  4. prices of other products
    - a) substitutes in consumption
    - b) complements in consumption

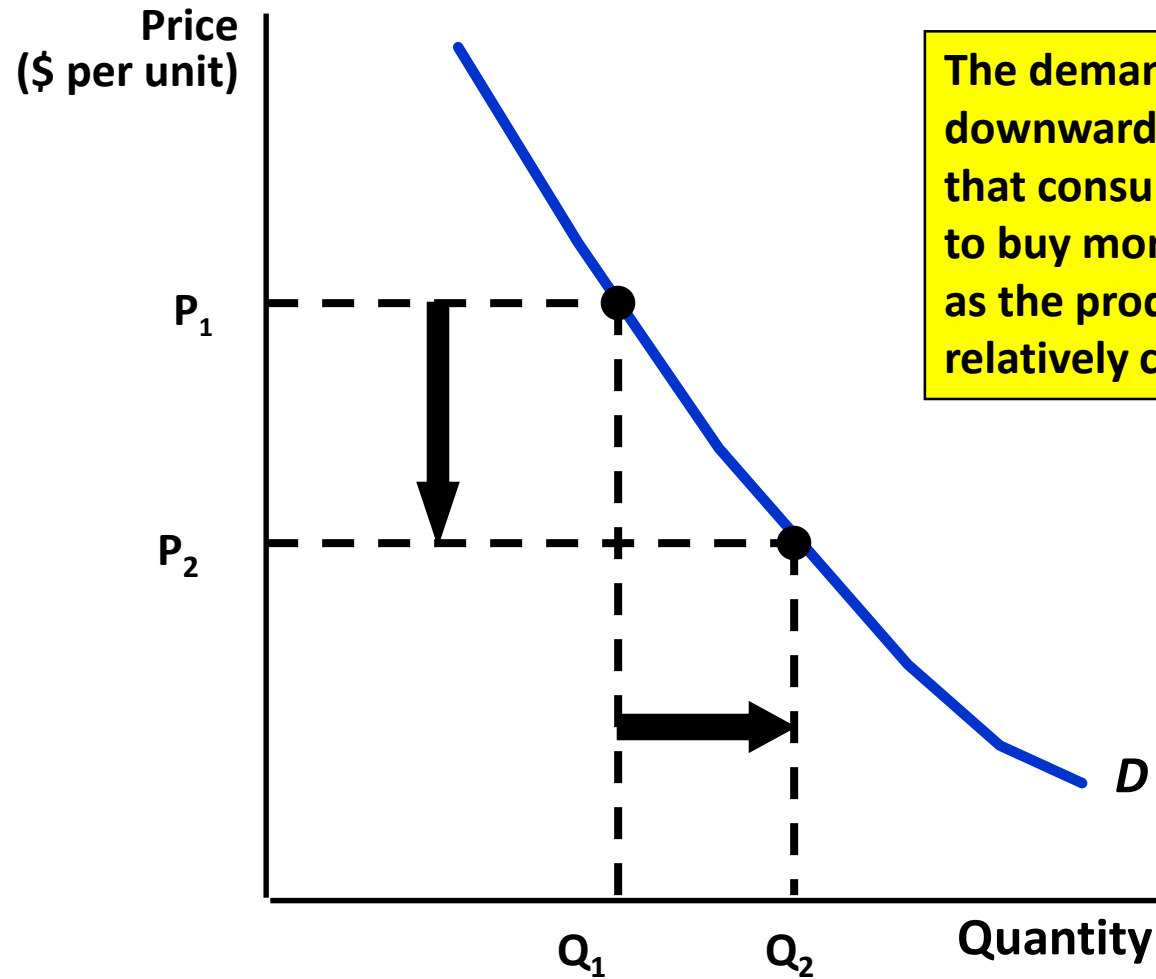
# Law of Demand

- Ceteris Paribus (holding other factors constant), as the price of the commodity increases, households will wish to purchase less of it, and vice versa.
- The Law of Demand can be represented graphically in what we call a Demand Curve. The Demand Curve shows how much consumers wish to purchase at each price, holding constant their tastes, incomes, and the prices of other commodities.

# Demand Curve



# Demand Curve



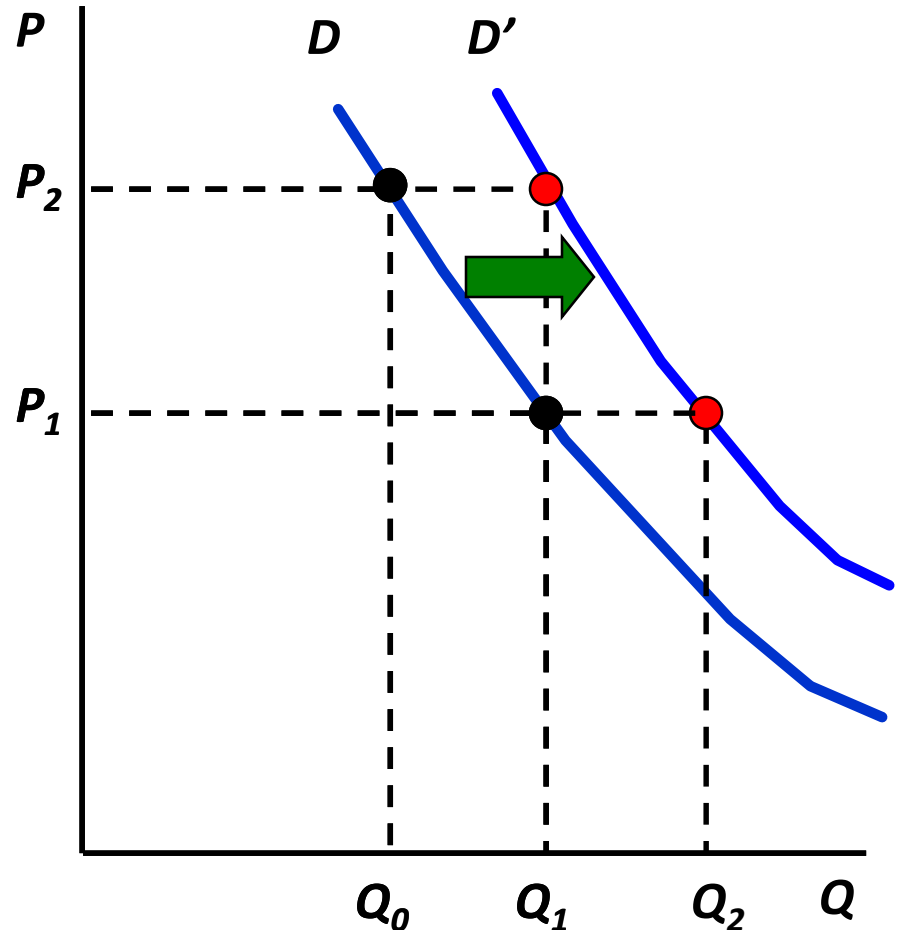
The demand curve slopes downward, indicating that consumers are willing to buy more at a lower price as the product becomes relatively cheaper.

# Change in Demand vs. Change in Quantity Demanded

- When the price of a commodity falls, households demand more of it, which is reflected in the movement from one point to another along the same demand curve.
- What happens when one of the other factors affecting  $Q_D$  changes? [tastes or preferences, income, price of a substitute, price of a complement]
- Draw a new diagram? Or . . .

# Demand for new cars

- Increase in Income Shifts the Entire Demand Curve
  - $D$  represents demand for new cars among UK MBA students while they are in school and have very low incomes.
  - After students graduate, they get good jobs, and experience significant increases in incomes.
  - $D'$  represents demand for new cars among UK MBA alums after graduation—they want to purchase more cars at each possible price.





# Shifts in Demand

- An increase in Demand (shift to the right of the entire Demand Curve) will occur if there is:
  - Change in tastes in favor of the good
  - Increase in income (for a normal good)
  - Increase in the price of a substitute
  - Decrease in the price of a complement
- A decrease in Demand (shift to the left of the entire Demand Curve) will occur if there is:
  - Change in tastes away from the good
  - Decrease in income (for a normal good)
  - Decrease in the price of a substitute
  - Increase in the price of a complement

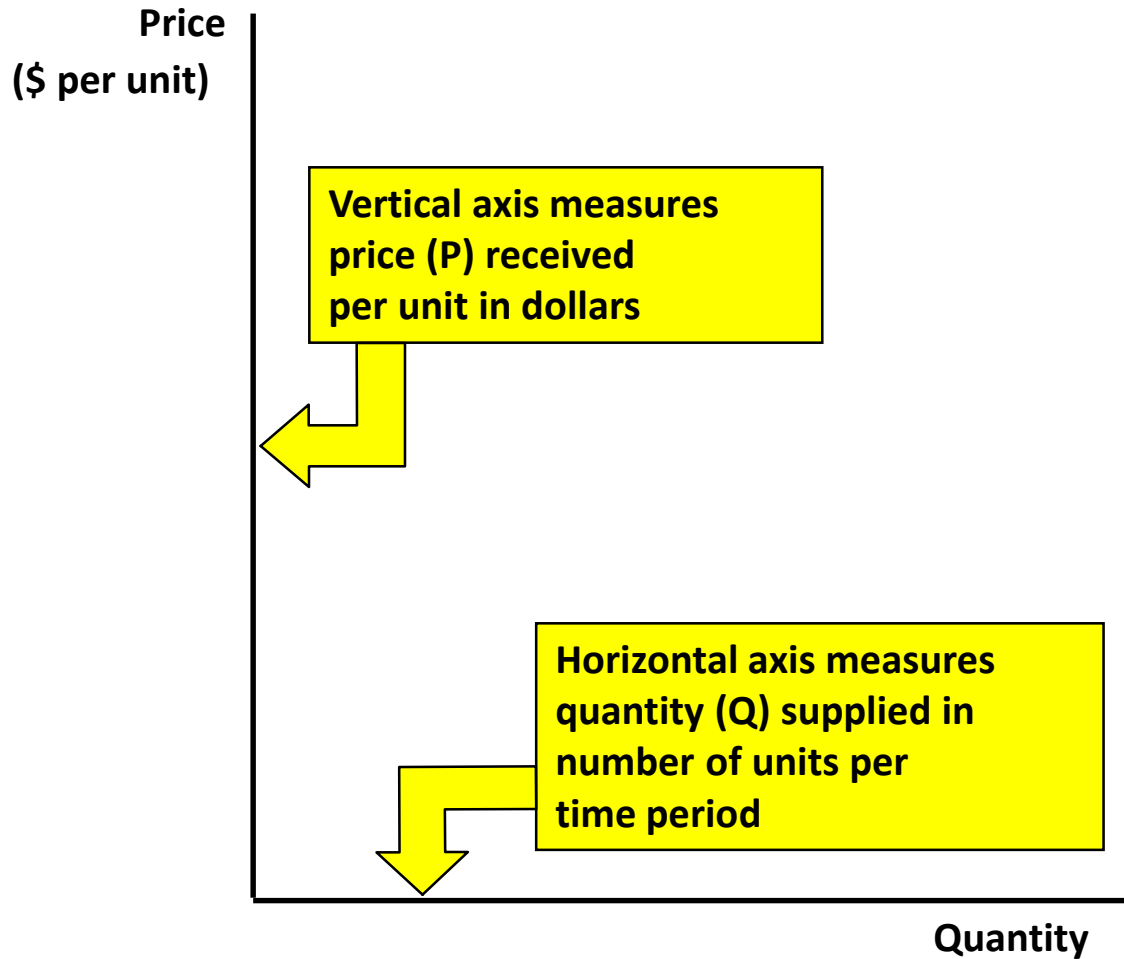
# Theory of Supply

- Quantity Supplied ( $Q_S$ ): total amount of a commodity that all firms wish to produce and sell
- Factors affecting  $Q_S$ :
  1. Goals of firm owners
  2. Technology
  3. Input prices
  4. Price of the product
  5. Prices of other products
    - a) substitutes in production
    - b) complements in production

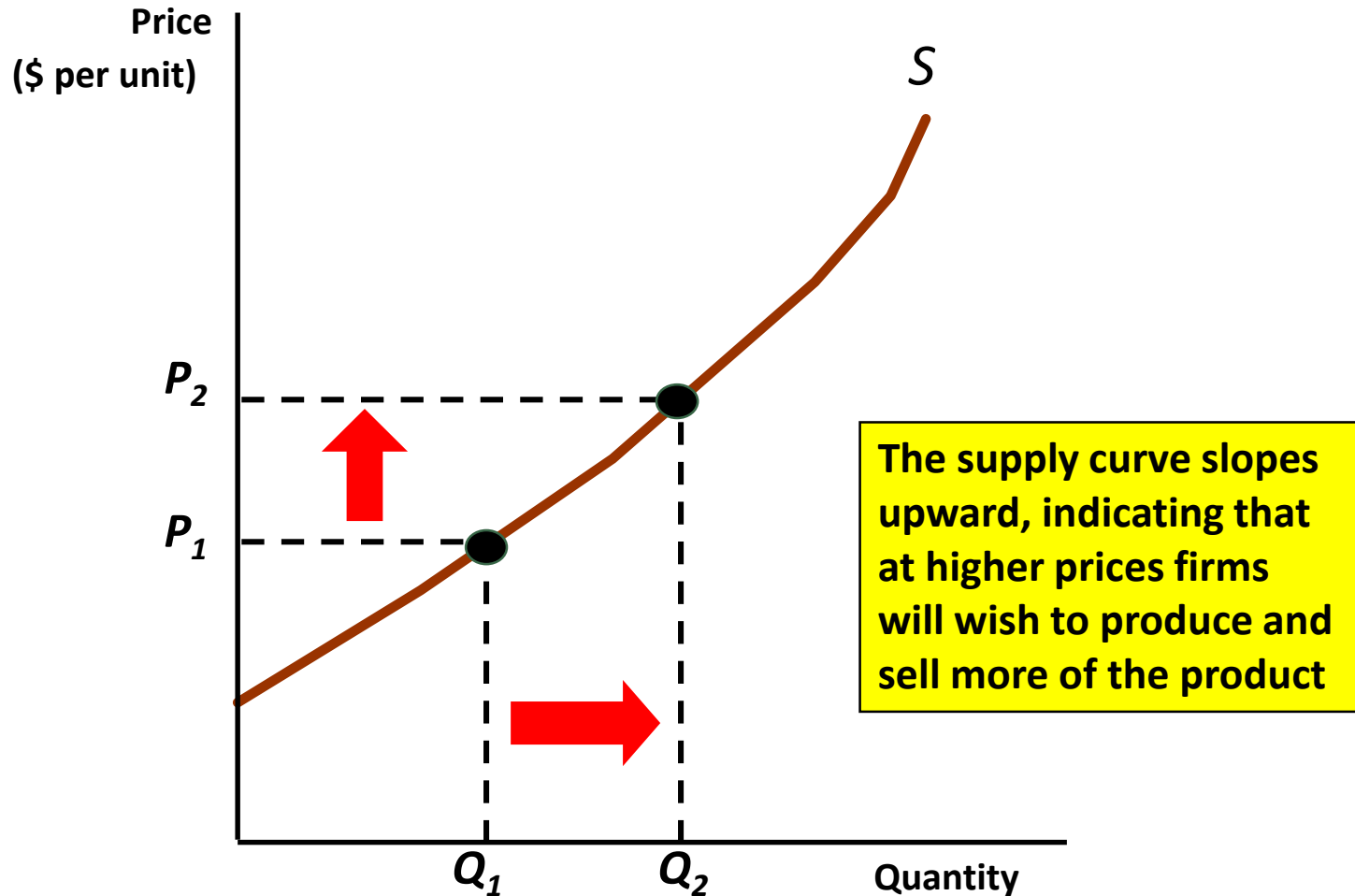
# Law of Supply

- Ceteris Paribus (holding other factors constant), as the price of a commodity rises, firms will wish to produce and sell more of it, and vice versa.
- The Law of Supply can be represented graphically in what we call a Supply Curve. The Supply Curve shows how much firms wish to produce and sell at each price, holding constant technology, input prices, and the prices of other commodities.

# Supply Curve



# Supply Curve



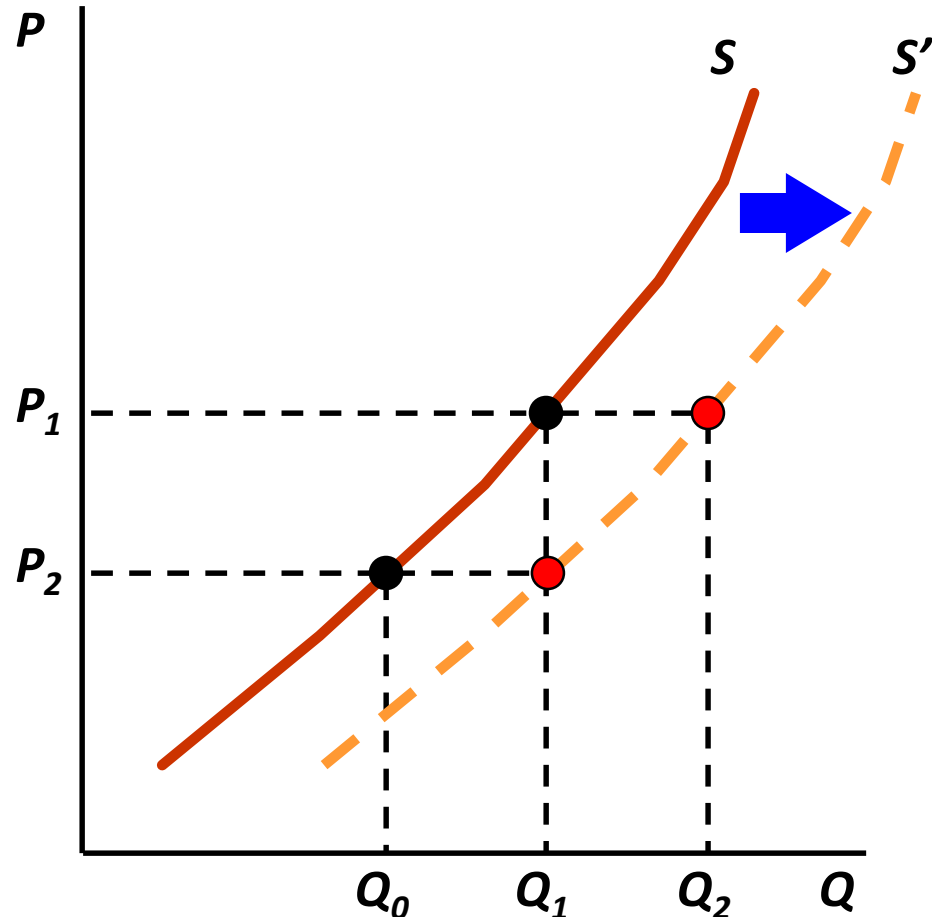
# Change in Supply vs. Change in Quantity Supplied

- When the price of a commodity rises, firms supply more of it, which is reflected in the movement from one point to another along the same supply curve.
- What happens when one of the other factors affecting  $Q_s$  changes? [technology, input prices, price of a substitute in production, price of a complement in production]
- Draw a new diagram? Or . . .

# Supply of natural gas

## ➤ Change in technology shifts entire Supply Curve

- S represents supply decisions of firms before fracking revolution.
- Technology of extracting natural gas changes
- S' represents supply decisions of firms after technology changes. Since they can extract more gas at lower costs, they wish to supply more natural gas at every possible price.



# Shifts in Supply

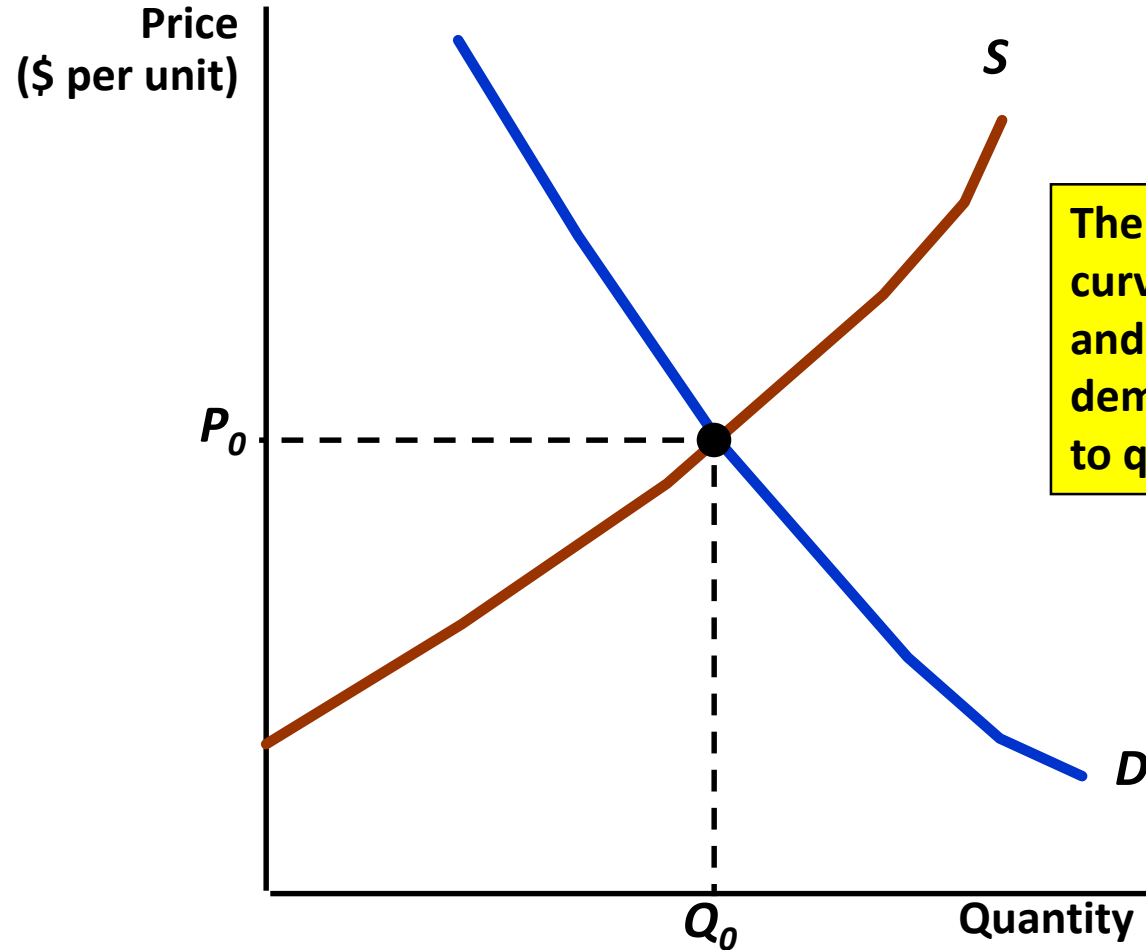
- An increase in Supply (shift to the right of the entire Supply Curve) will occur if there is:
  - Change in technology
  - Decrease in input prices
  - Decrease in the price of a substitute in production
  - Increase in the price of a complement in production
- A decrease in Supply (shift to the left of the entire Supply Curve) will occur if there is:
  - Increase in input prices
  - Increase in the price of a substitute in production
  - Decrease in the price of a complement in production



# Market Equilibrium

- How are price and output determined in a market? Interactions of buyers and sellers exchanging the commodity.
- We say a market is in **equilibrium** when the quantity demanded equals the quantity supplied
- When  $Q_S = Q_D$  there are no market forces acting to change this outcome, since there are no frustrated buyers or sellers.

# Market Equilibrium

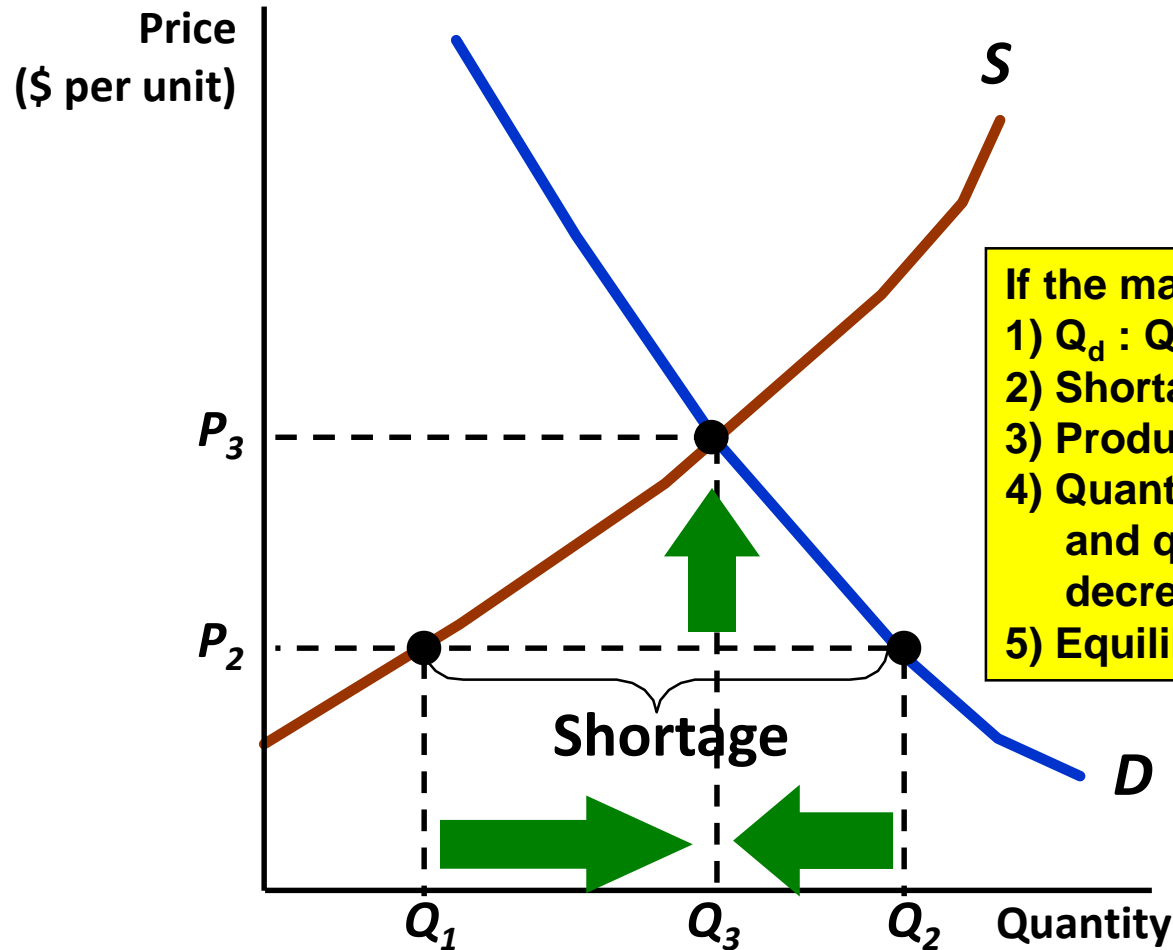


The Demand and Supply curves intersect at  $P_0$  and  $Q_0$ . At  $P_0$  quantity demanded is equal to quantity supplied.

# Disequilibrium

- Suppose at the current market price, buyers want to purchase more of the commodity than sellers wish to produce and sell?
- Alternatively, suppose at the current market price, sellers want to produce and sell more of the commodity than buyers wish to purchase?
- There will be frustrated buyers or sellers, and price will tend to change.

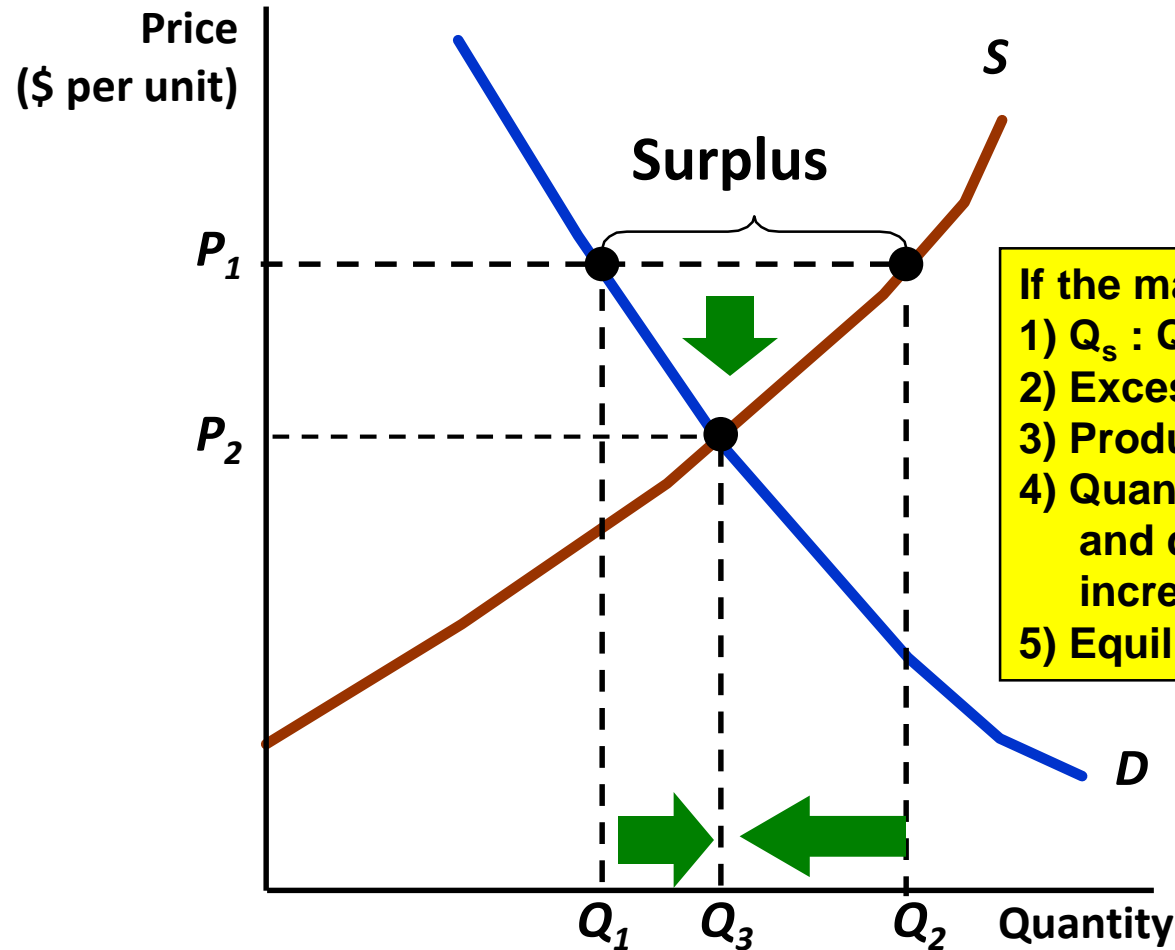
# Market price below the equilibrium price—Shortage



If the market price is  $P_2$ , then:

- 1)  $Q_d : Q_2 > Q_s : Q_1$
- 2) Shortage is  $Q_2 - Q_1$ .
- 3) Producers raise price.
- 4) Quantity supplied increases and quantity demanded decreases.
- 5) Equilibrium at  $P_3, Q_3$

# Market price above the equilibrium price—Surplus



If the market price is  $P_1$ , then:

- 1)  $Q_s : Q_2 > Q_d : Q_1$
- 2) Excess supply is  $Q_2 - Q_1$ .
- 3) Producers lower price.
- 4) Quantity supplied decreases and quantity demanded increases.
- 5) Equilibrium at  $P_2, Q_3$

# Shifts in Demand and/or Supply

- Increase in demand: UK announces big enrollment increase—market for apartments?
- Increase in supply: fracking allows gas producers to extract more gas—market for natural gas?
- Decrease in demand: natural gas prices plummet—market for thermal coal?
- Decrease in supply: drought in Central Valley in California—market for carrots?

# Price Ceilings

- Suppose government imposes a maximum price on a commodity below the equilibrium price.
- Buyers want to buy more than firms want to sell, so a shortage of the commodity will occur.
- Normally when there is a shortage, price rises and the shortage disappears. But when price is legally constrained from rising, the shortage will persist.

# Price Floors

- Suppose government imposes a minimum price on a commodity above the equilibrium price.
- Sellers want to sell more than buyers want to buy, so a surplus of the commodity will occur.
- Normally when there is a surplus, price falls and the surplus disappears. But when price is legally constrained from falling, the surplus will persist.



# Other aspects of market economies

- Role of prices in conveying information
- Role of profits in signaling the need for resource shifts
- Incentives for efficient use of scarce resources
- Whose preferences matter most in directing economic decision-making?
- Why do firms exist in a market economy?

# Required Readings

- “As Economy Grows, North Korea’s Grip on Society is Tested,” *New York Times*, 5/1/17.  
<http://search.proquest.com.ezproxy.uky.edu/docview/1893439516/6B98A8736BF04FEAPQ/2?accountid=11836>
- “Venezuela is Starving—Hobbled by Economic Policies, Latin America’s Once-Richest Country Can No Longer Feed its People,” *WSJ*, 5/6/17.  
<http://search.proquest.com.ezproxy.uky.edu/docview/1895499247/5CF40B45C8B34BBDPQ/1?accountid=11836>
- “Corn’s Rally Sends Ripples,” *WSJ*, 1/18/07.  
<http://ezproxy.uky.edu/login?url=http://search.proquest.com/docview/398983538?accountid=11836>

## Corn's Rally Sends Ripples; Ethanol Boom Cheers Grain Farmers, Pinches Food Makers

Lauren Etter, Ilan Brat and Steven Gray . *Wall Street Journal* , Eastern edition; New York, N.Y. [New York, N.Y.]18 Jan 2007: A.10.

ABSTRACT (ABSTRACT) As corn prices rise, farmers are racing to cash in. Leon Corzine in Assumption, Ill., is planting 95% corn on his 3,000-acre farm this year, up from 50% in 2002. **The prices he now gets for corn are well above the \$2 to \$3 a bushel he has come to expect.** Largely as a result, he has spent \$300,000 on trucks, tractors and grain storage. Last year, Mr. Corzine built an additional grain-storage unit, an investment equivalent to about \$1.50 per bushel of corn. With corn prices up, he has already recouped that investment. In an interview yesterday, **Stephen W. Sanger, chief executive of food giant General Mills Inc., said increased demand for corn would likely cause a spike in the prices of other commodities** as farmers devote more acreage to the crop. "Corn isn't a central item for us in the cereal world, but we use a lot of wheat in our cereals and dough, and oats are an important grain for us. We'll look to offset those price increases with productivity," Mr. Sanger said. ADM is counting on farmers to ramp up corn production, which could eventually bring prices back to lower levels. "Farmers have a strong incentive to plant corn given today's relative value of corn to soybeans," says Ed Harjehausen, senior vice president of ADM. "Based on current prices, many believe that farmers will substantially increase corn production this year."

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The surge in corn prices ignited by the ethanol boom is rippling through the nation's economy -- from the Farm Belt to Wall Street to the office soda machine.

The price of corn, the nation's No. 1 crop in total production, **and an ingredient in products ranging from sugary syrups to chicken feed to tortillas**, has doubled since this time last year to \$3.66 a bushel, despite an abundant harvest, and is inching toward the rarely breached \$4-a-bushel mark.

Driving the run-up is an unprecedented demand for ethanol, a biofuel typically made from corn that many policy makers are counting on to help wean the nation away from foreign oil. President Bush is expected to intensify demand by calling for yet more production in his State of the Union address next week.

The new demand has much of the agricultural economy humming. As corn rallies, **farmers**, emboldened by the higher prices or planning to switch to corn or expand their acreage, **are buying new farm equipment from makers like Deere & Co. and CNH Global NV's Case IH. They are spending more on seed from giants like Monsanto Co. and DuPont Co. and fertilizer from companies like Mosaic Co. PDF GENERAT**

At H &R Agri Power Inc., a Case IH dealer with five locations in Kentucky, **orders for combines -- the giant machines that help harvest the corn -- shot up 54%** from a year earlier in the last three months of 2006, and **tractor orders climbed 25%**, says President Wayne Hunt. Just this week, two groups of farmers came to an H &R dealer to explore buying combines for the cotton fields they are switching to corn, he says.

The **increased demand for corn is also driving up sales of nitrogen fertilizer**, which corn requires in heavy doses. Mr. Hunt estimates nitrogen fertilizer sales at his eight Kentucky farm-supply stores this year will climb 10% to 12% from 2006. "

**Corn's rally has been a headache for the livestock industry**, which consumes nearly 60% of the U.S. corn crop. Pork-production costs have increased 25% from last year, according to Ronald Plain, an agricultural economist at the University of Missouri-Columbia. At the end of last year, Tyson Foods Chief Executive Richard Bond warned that higher corn costs would eventually mean higher meat prices at the grocery store.

Food and beverage producers, too, are feeling cost pressures -- and in some cases higher corn prices are trickling down to consumers. **Bottlers for Coke and Pepsi are being buffeted by increases in the price of high-fructose corn syrup.**

Rising corn prices are one factor behind the increases in soft-drink prices that began last year and are expected to continue this year, totaling about 4% over 2006, says Bill Pecoriello, a beverage-industry analyst with Morgan Stanley. The sweetener accounts for about 10% of the cost of goods for Coca-Cola Enterprises Inc. and Pepsi Bottling Group Inc., Coke and Pepsi's largest bottlers, respectively.

In an interview yesterday, Stephen W. Sanger, chief executive of food giant General Mills Inc., said increased demand for corn would likely cause a spike in the prices of other commodities as farmers devote more acreage to the crop. **"Corn isn't a central item for us in the cereal world, but we use a lot of wheat in our cereals and dough, and oats are an important grain for us.** We'll look to offset those price increases with productivity," Mr. Sanger said.

At supermarkets, analysts say, **higher prices for beef and pork will likely cause price-sensitive consumers to buy less expensive cuts of meat, or even chicken.**