Econ 200
Module 2
Lecture 3

UNIVERSITY of WASHINGTON

Outline

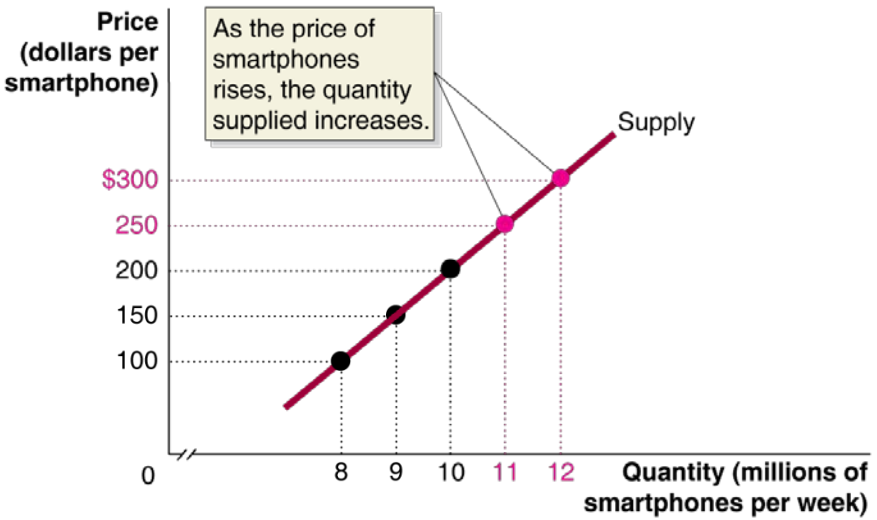
1. Supply and the Law of Supply
2. Changes in Supply
3. Equilibrium – Putting Supply and Demand Together
4. Impact of Curve Shifting on Equilibrium
5. Practice Problems

Readings: Chapter 3.4-3.7

Supply Schedules and Supply Curves

Supply curve: A curve that shows the relationship between the price of a product and the quantity of the product supplied.

Supply Schedule	
Price (dollars per smartphone)	Quantity (millions of smartphones per week)
$300	12
250	11
200	10
150	9
100	8



The Law of Supply

The law of supply: The rule that, holding everything else constant, increases in price cause increases in the quantity supplied, and decreases in price cause decreases in the quantity supplied.

Implication: supply curves slope upward.

Supply Schedule	
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$300	12
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200	10
150	9
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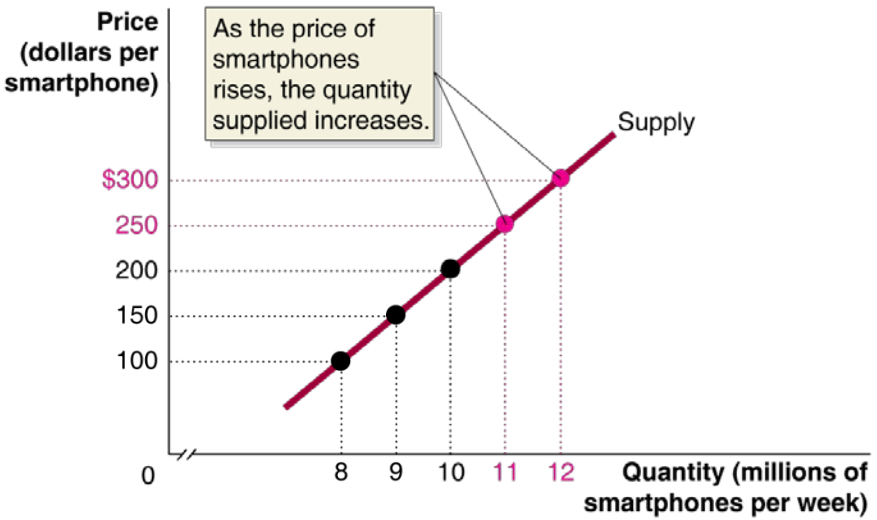
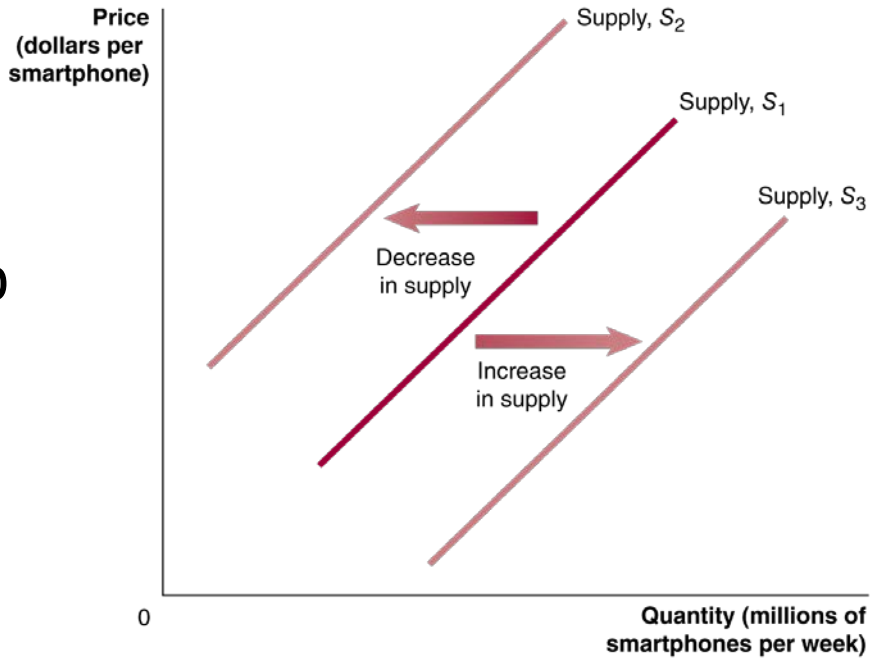


Increase and Decrease in Supply

A change in something other than price that affects supply causes the entire supply curve to shift.

A shift to the right (S_1 to S_3) is an **increase in supply**.

A shift to the left (S_1 to S_2) is a **decrease in supply**.

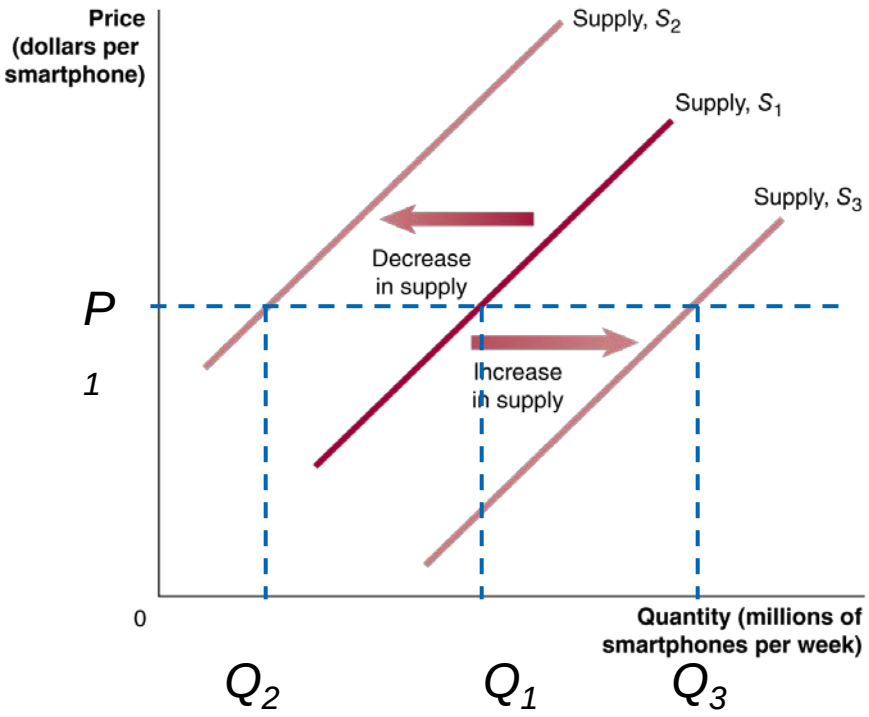


Shifting the supply curve

Shifts of the Supply Curve

As the supply curve shifts, the quantity supplied will change, *even if the price doesn't change*.

The quantity supplied changes at every possible price.

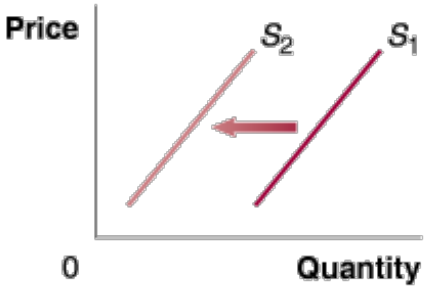


Shifting the supply curve

Changes in Prices of Inputs

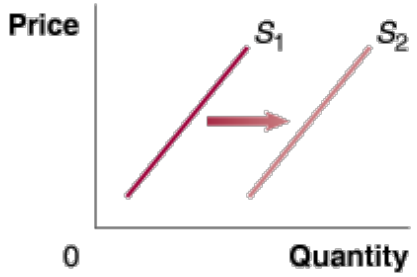
Inputs are things used in the production of a good or service.

An **increase in the price of an input** decreases the profitability of selling the good, causing a **decrease in supply**.



Effect of an increase in the price of input goods

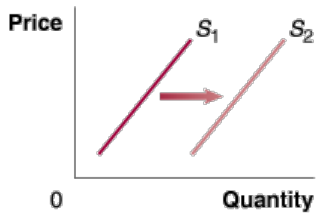
A **decrease in the price of an input** increases the profitability of selling the good, causing an **increase in supply**.



Effect of a decrease in the price of input goods

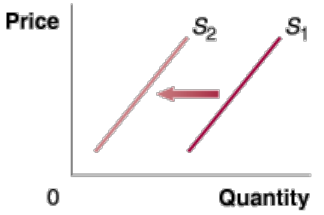
Technological Change

A firm may experience a positive or negative change in its ability to produce a given level of output with a given quantity of inputs. This is a ***technological change****.*



Effect of a positive change in technology

Changes raise or lower firms' costs, hence their supply of the good.



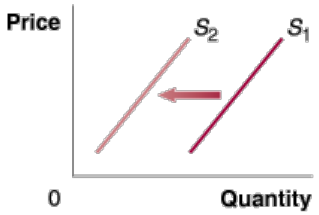
Effect of a negative change in technology

Prices of Substitutes, and Number of Firms

Many firms can produce and sell more than one product.

Example:

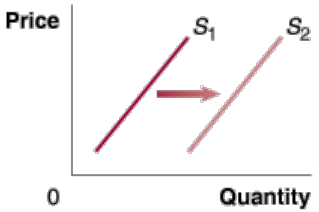
An Illinois farmer can plant corn or soybeans. If the price of soybeans rises, he will plant (supply) less corn.



Effect on the supply of corn, of an increase in the price of soybeans

More firms in the market will result in more product available at a given price (greater supply).

Fewer firms → supply decreases.



Effect of a increase in the number of firms

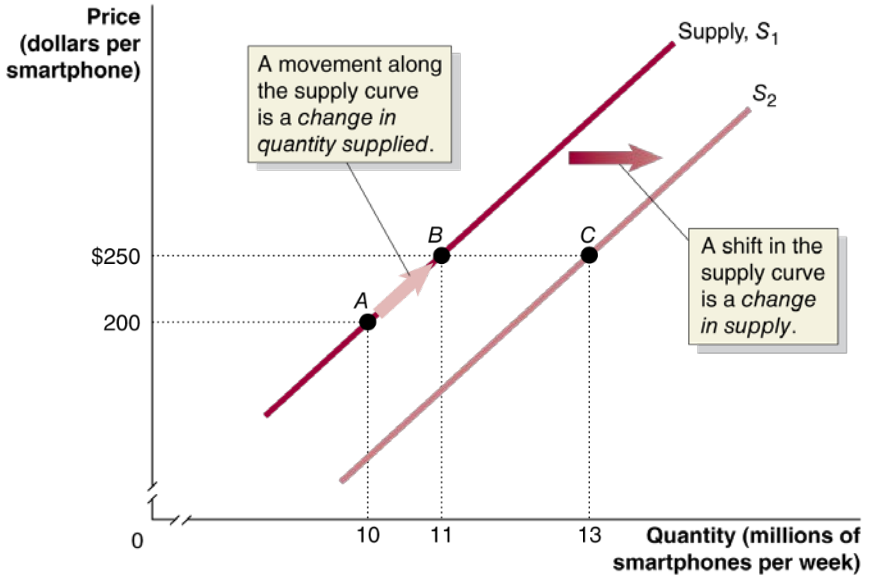
Change in Supply vs. Change in Quantity Supplied

A change in the price of the product being examined causes a movement along the supply curve.

This is a *change in quantity supplied.*

Any other change affecting supply causes the entire supply curve to shift.

This is a *change in supply.*



A change in supply versus a change in quantity supplied

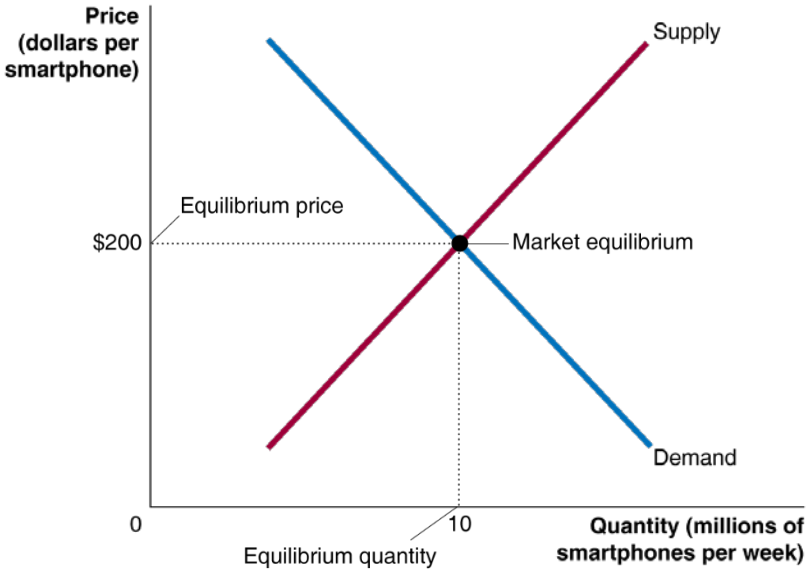
Market Equilibrium Price and Quantity

In this market:

The *equilibrium price* of a smartphone is $200, and

The *equilibrium quantity* of a smartphone is 10 million smartphones per week.

Since buyers and sellers want to trade the same quantity at the price of $200, we do not expect the price to change.



Market equilibrium

A Surplus in the Market for Smartphones

At a price of $250,

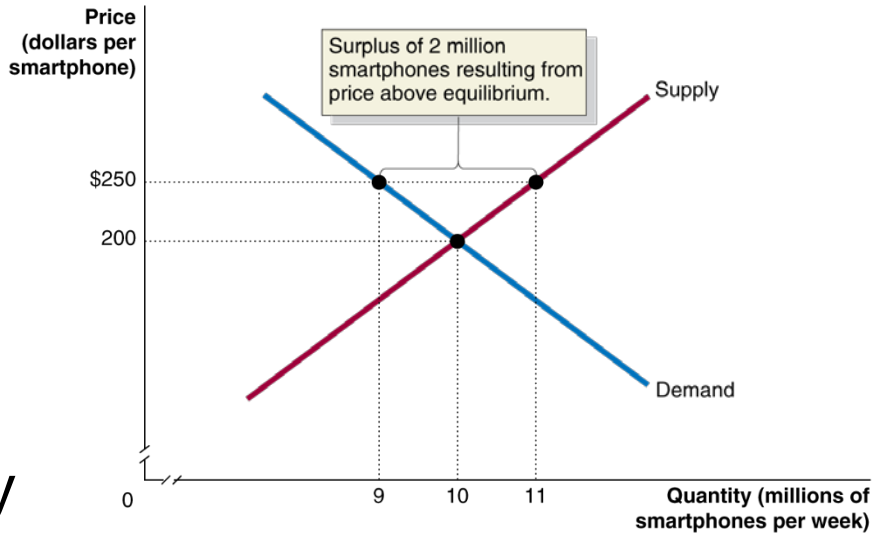
Qd= 9 million

But…

Qs=11 million

This gives a **surplus** of 2 million smartphones: a situation in which quantity supplied is greater than quantity demanded.

What happens?



The effect of surpluses and shortages on the market price

A Shortage in the Market for Smartphones

At a price of $100,

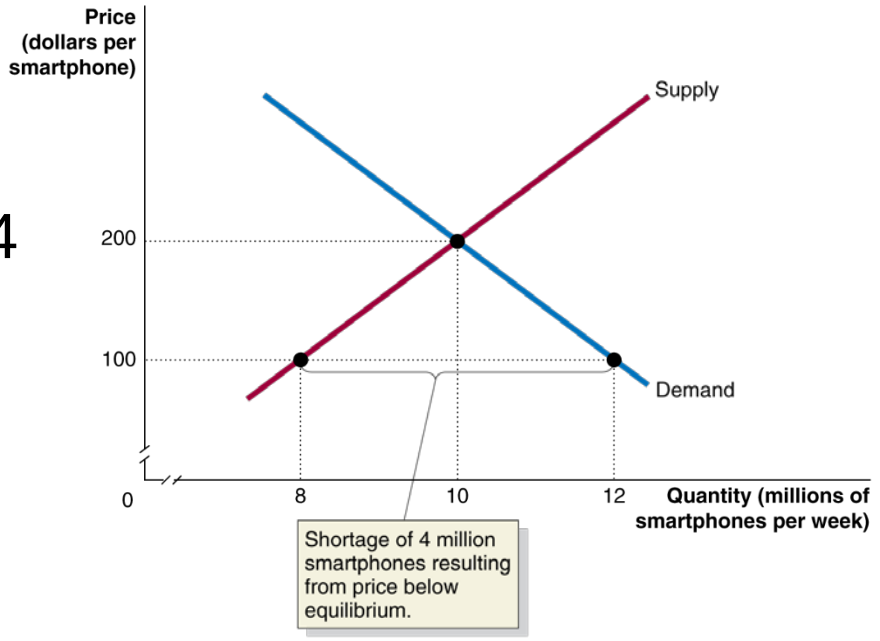
Qd=12 million

But…

Qs=8 million

This gives a **shortage** of 4 million smartphones: a situation in which quantity demanded is greater than quantity supplied.

What happens?



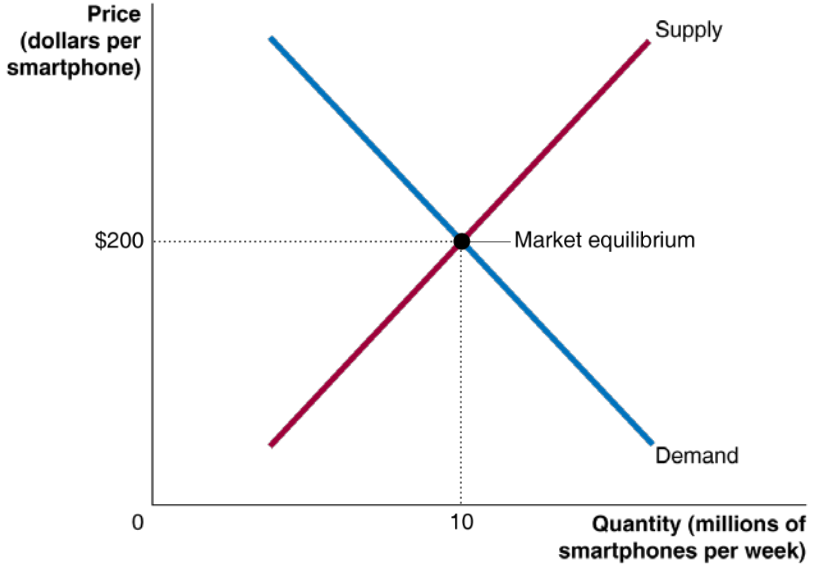
The effect of surpluses and shortages on the market price

Market Equilibrium

At a price of $200,
$Q_s = Q_d = 10$ million

This is a **market equilibrium**: a situation in which quantity demanded equals quantity supplied.

A market equilibrium with many buyers and sellers is a **competitive market equilibrium**.



Market equilibrium

Demand and Supply Both Count

Price is determined by the *interaction* of buyers and sellers.

Neither group can dictate price in a competitive market (i.e. one with many buyers and sellers).

However *changes in supply and/or demand* will affect the price and quantity traded.

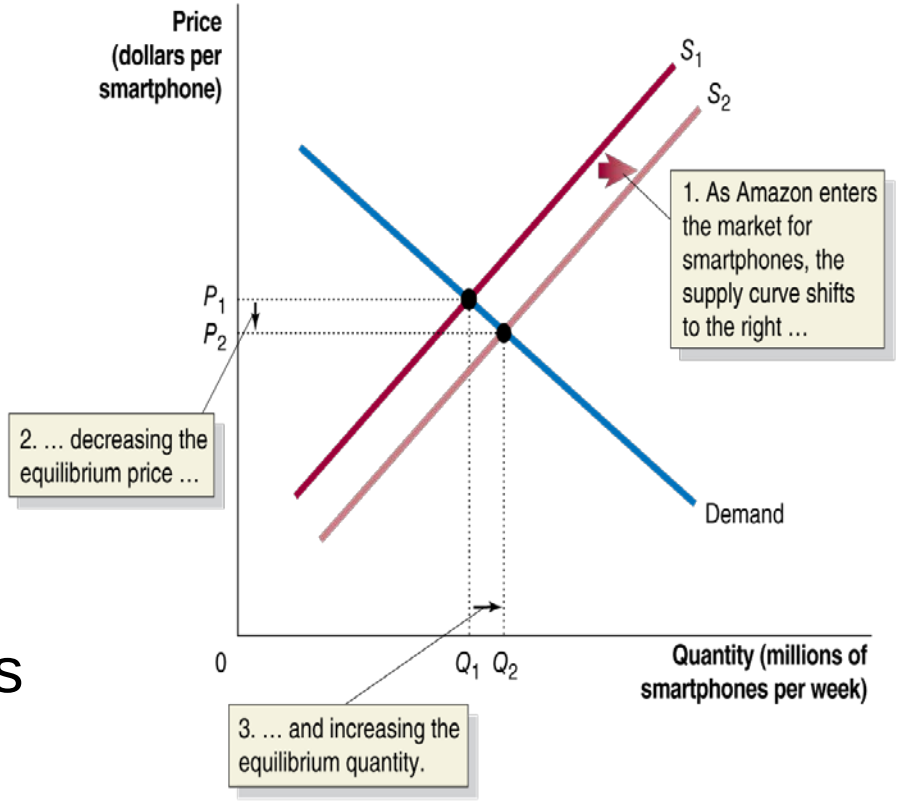
The Effect of Shifts in Supply on Equilibrium

Amazon enters the smartphone market:

More smartphones are supplied at any given price—an increase in supply from S_1 to S_2.

→Equilibrium price falls from P_1 to P_2.

→Equilibrium quantity rises from Q_1 to Q_2.



The effect of an increase in supply on equilibrium

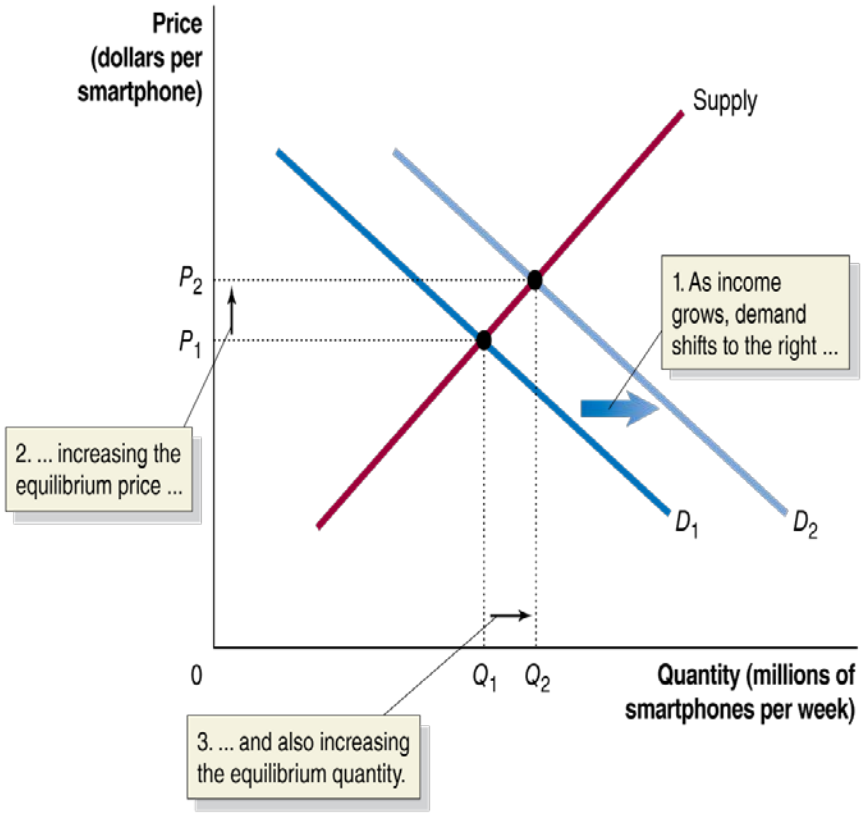
The Effect of Shifts in Demand on Equilibrium

Suppose incomes increase?

Smartphones are a normal good, so demand shifts to the right (D_1 to D_2).

→ Equilibrium price rises (P_1 to P_2).

→Equilibrium quantity rises (Q_1 to Q_2).

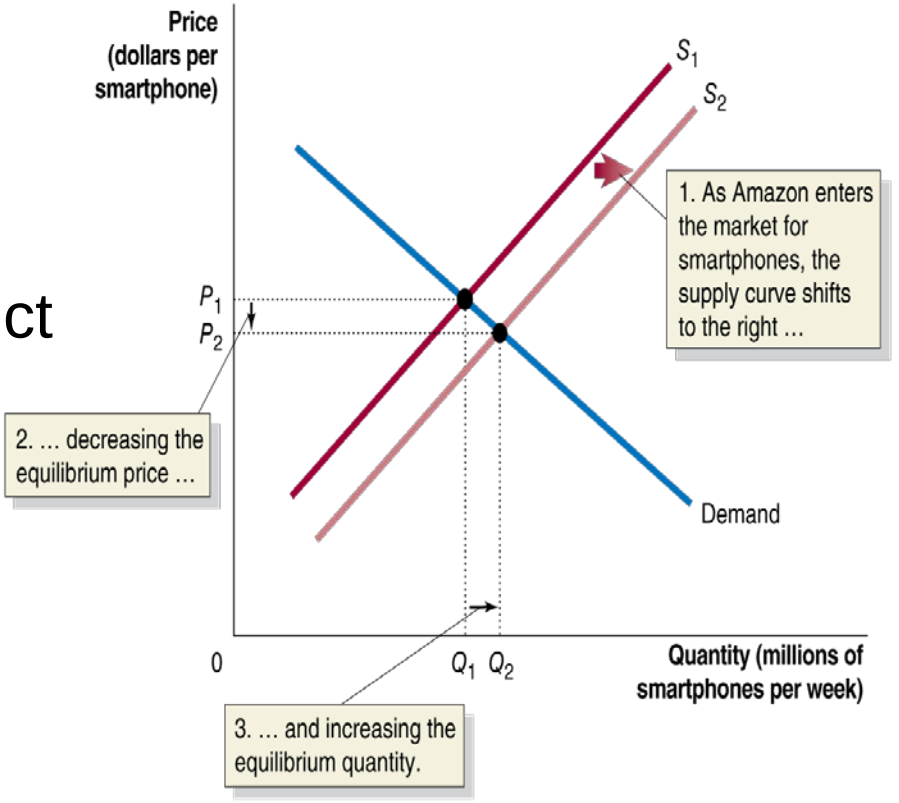


The effect of an increase in demand on equilibrium

How Much Will Price and Quantity Change?

By how much will price fall? By how much will quantity rise?

For now, we cant predict that.



The effect of an increase in supply on equilibrium

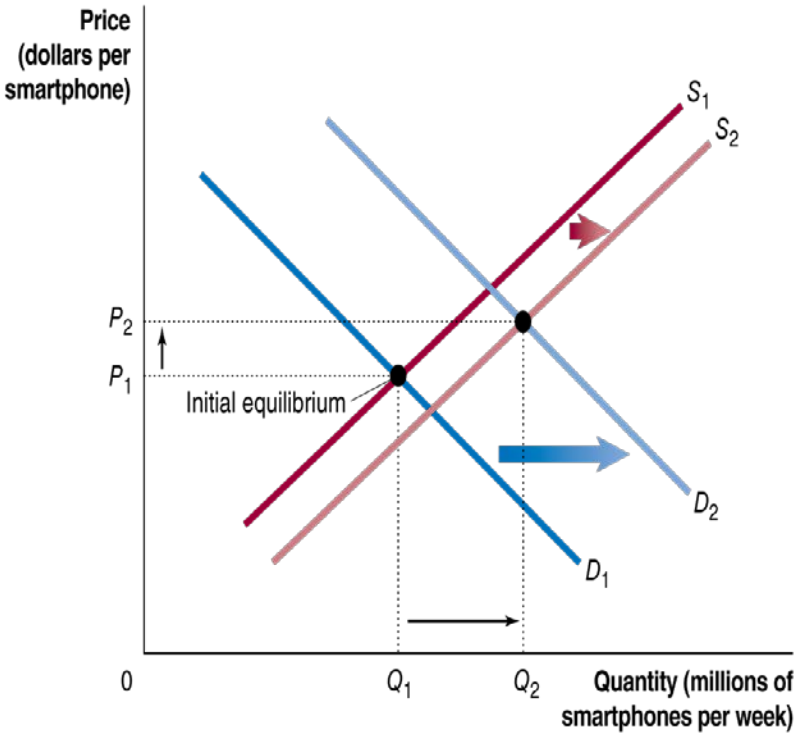
Shifts in Demand and Supply over Time

What happens in the long run?

As new firms enter the market for smartphones *and* incomes increase, we expect:

The supply of smartphones will shift to the right, *and*

The demand for smartphones will shift to the right.



Shifts in demand and supply over time: demand shifting more than supply

Find the quantity demanded and quantity supplied at a price of $1, then quantify the excess demand (shortage).

Price	Qty Supplied	Qty Demanded
1	130	280
2	260	260
3	390	240
4	520	220
5	650	200
6	780	180
7	910	160
8	1040	140

The shortage is equal to:

1. 400
2. 300
3. 150
4. 0

Find the quantity demanded and quantity supplied at a price of $1, then quantify the excess demand (shortage).

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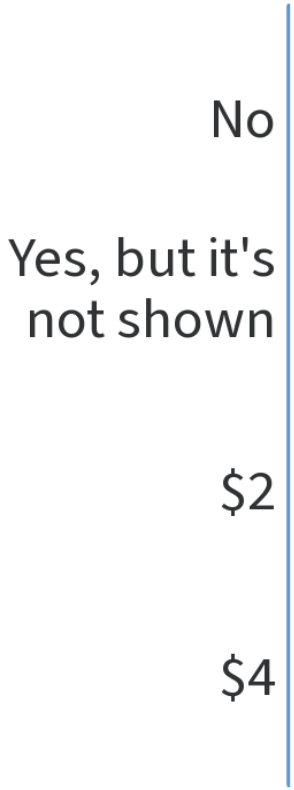
The shortage is equal to:
280-130=150

Is there a possible equilibrium price in this market? If so, what is it?



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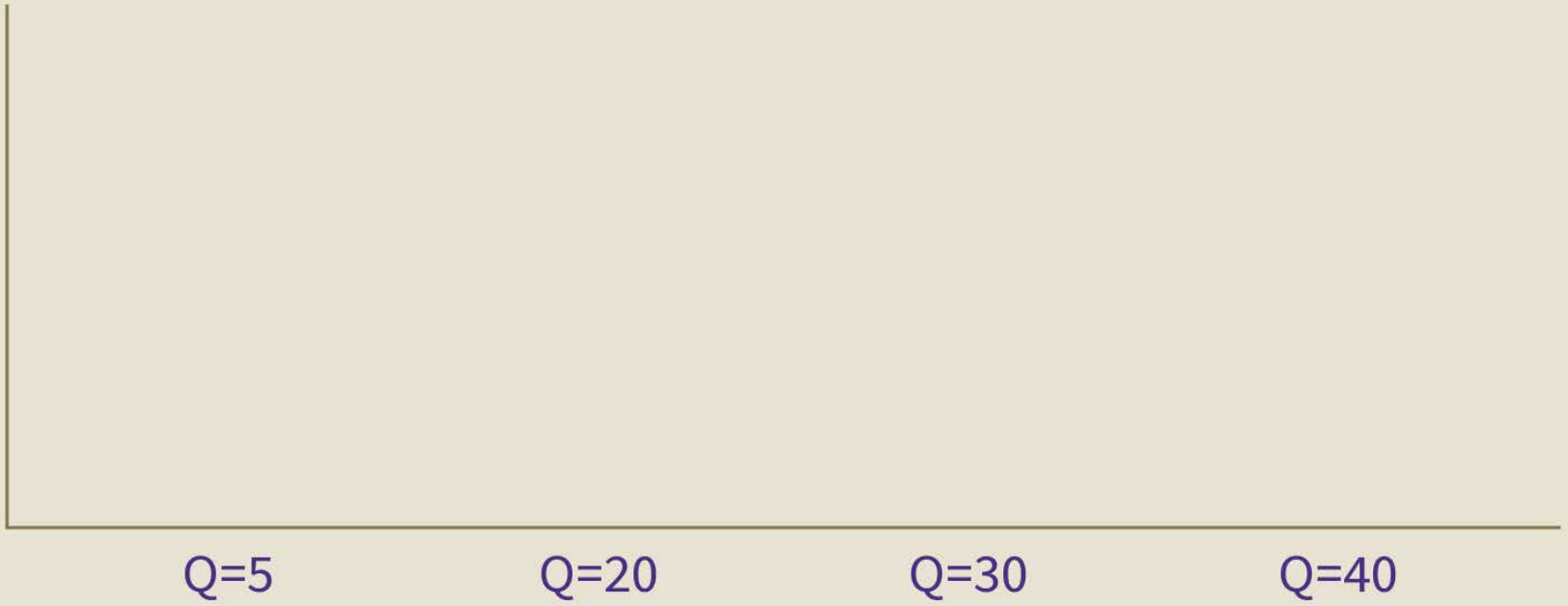
Equilibrium price = $2

Equ. Quantity=260

W Use the following equations for the supply and demand of hockey sticks to find the equilibrium quantity Q*. P=50−4QD /P=10+4QS



Use the following equations for the supply and demand of hockey sticks to find the equilibrium quantity Q*.

$P=50-4Q$

$P=10+4Q$

(Make sure you know which is supply and which is demand!)

1. Q=5
2. Q=20
3. Q=30
4. Q=40

Use the following equations for the supply and demand of hockey sticks to find the equilibrium quantity Q*.

Demand: $P=50-4Q$

Supply: $P=10+4Q$

$50-4Q=10+4Q$

$8Q=40$

$Q=5$

$P=50-4*5=30$