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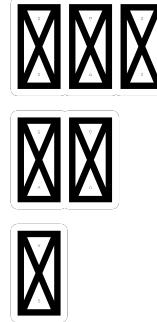
DMS 201 : INTRODUCTION TO MANAGEMENT⊗⊗

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MODULE-II: FINANCIAL MANAGEMENT⊗⊗



DR. PARVATI NEELAKANTAN
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PART 1: BUSINESS ENVIRONMENT



LECTURE 2: THE MARKET FORCES OF SUPPLY AND DEMAND



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*In this lecture, ☰
look for the answers to these questions:*

- What is a competitive market?
- What factors affect buyers' demand for goods in a competitive market?
- What factors affect sellers' supply of goods a competitive market?
- How do supply and demand determine the price of a good and the quantity sold?
- How do changes in the factors that affect demand or supply affect the market price and quantity of a good?
- How do markets allocate resources?



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Microeconomics and Macroeconomics

- **Microeconomics** is the study of how households and firms make decisions and how they interact in markets.
- **Macroeconomics** is the study of economy-wide phenomena, including inflation, unemployment, and economic growth.
- These two branches of economics are closely intertwined, yet distinct—they address different questions.



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Markets and Competition

- A **market** is a group of buyers and sellers of a particular product.
- A **competitive market** is one with many buyers and sellers, each has a negligible effect on price.
- In a **perfectly competitive** market:
 - All goods exactly the same
 - Buyers & sellers so numerous that no one can affect market price—each is a “**price taker**”
- In this class, we assume markets are perfectly competitive.



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Markets

Not all goods are sold in a perfectly competitive market.

- a. A market with only one seller is called a monopoly market.
- b. Other markets fall between perfect competition and monopoly.

We will start by studying perfect competition.

- 1. Perfectly competitive markets are the easiest to analyze because buyers and sellers take the price as a given.
- 2. Because some degree of competition is present in most markets, many of the lessons that we learn by studying supply and demand under perfect competition apply in more complicated markets.



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Demand

- The **quantity demanded** of any good is the amount of the good that buyers are willing and able to purchase.
- **Law of demand:** the claim that the quantity demanded of a good falls when the price of the good rises, other things equal



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The Demand Schedule

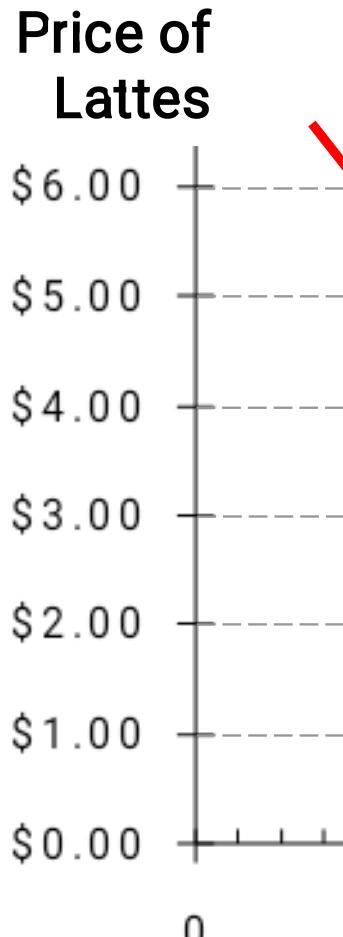
- **Demand schedule:** a table that shows the relationship between the price of a good and the quantity demanded
- Example: Hari's demand for lattes.
- Notice that Hari's preferences obey the law of demand.

Price of lattes	Quantity of lattes demanded
\$0.00	16
1.00	14
2.00	12
3.00	10
4.00	8
5.00	6
6.00	4



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Hari's Demand Schedule & Curve



Price of lattes	Quantity of lattes demanded
\$0.00	16
1.00	14
2.00	12
3.00	10
4.00	8
5.00	6
6.00	4



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Market Demand versus Individual Demand

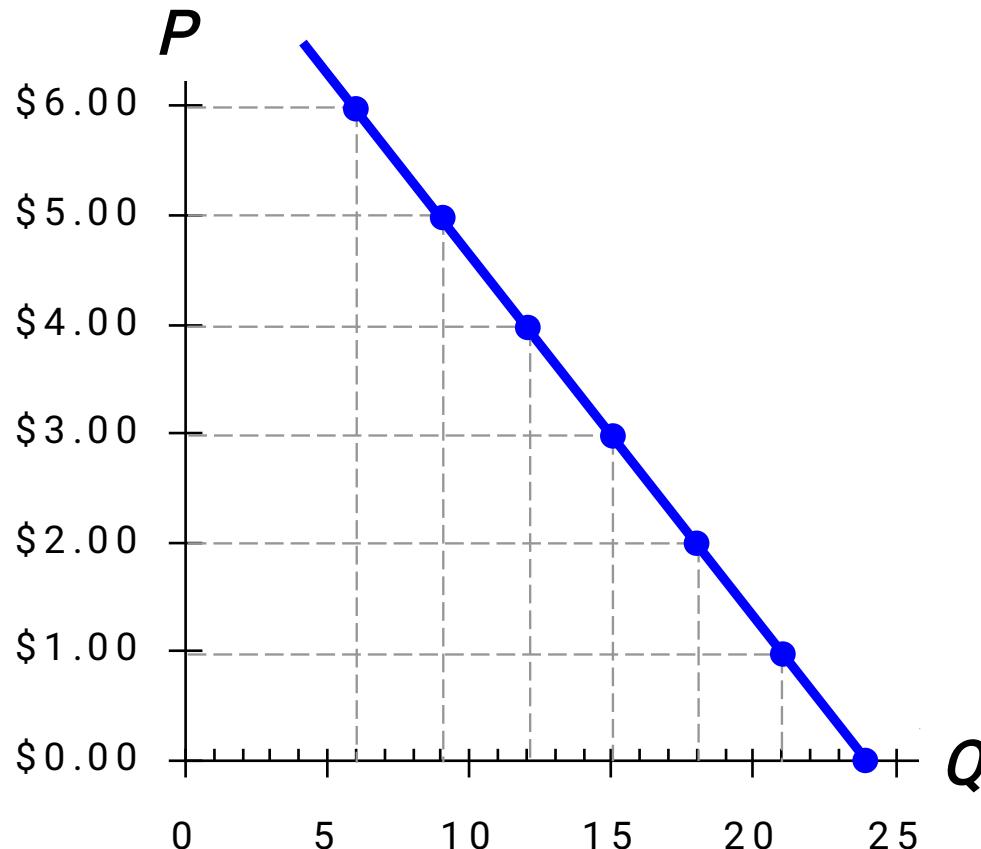
- The quantity demanded in the market is the sum of the quantities demanded by all buyers at each price.
- Suppose Hari and Kiran are the only two buyers in the Latte market. (Q^d = quantity demanded)

Price	Hari's Q^d	+	Kiran's Q^d	=	Market Q^d
\$0.00	16	+	8	=	24
1.00	14	+	7	=	21
2.00	12	+	6	=	18
3.00	10	+	5	=	15
4.00	8	+	4	=	12
5.00	6	+	3	=	9
6.00	4	+	2	=	6



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The Market Demand Curve for Lattes



P	Q^d (Market)
\$0.00	24
1.00	21
2.00	18
3.00	15
4.00	12
5.00	9
6.00	6



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Demand Curve Shifters

- The demand curve shows how price affects quantity demanded, *other things being equal.*
- These “other things” are non-price determinants of demand (i.e., things that determine buyers’ demand for a good, other than the good’s price).
- Changes in them shift the *D* curve...



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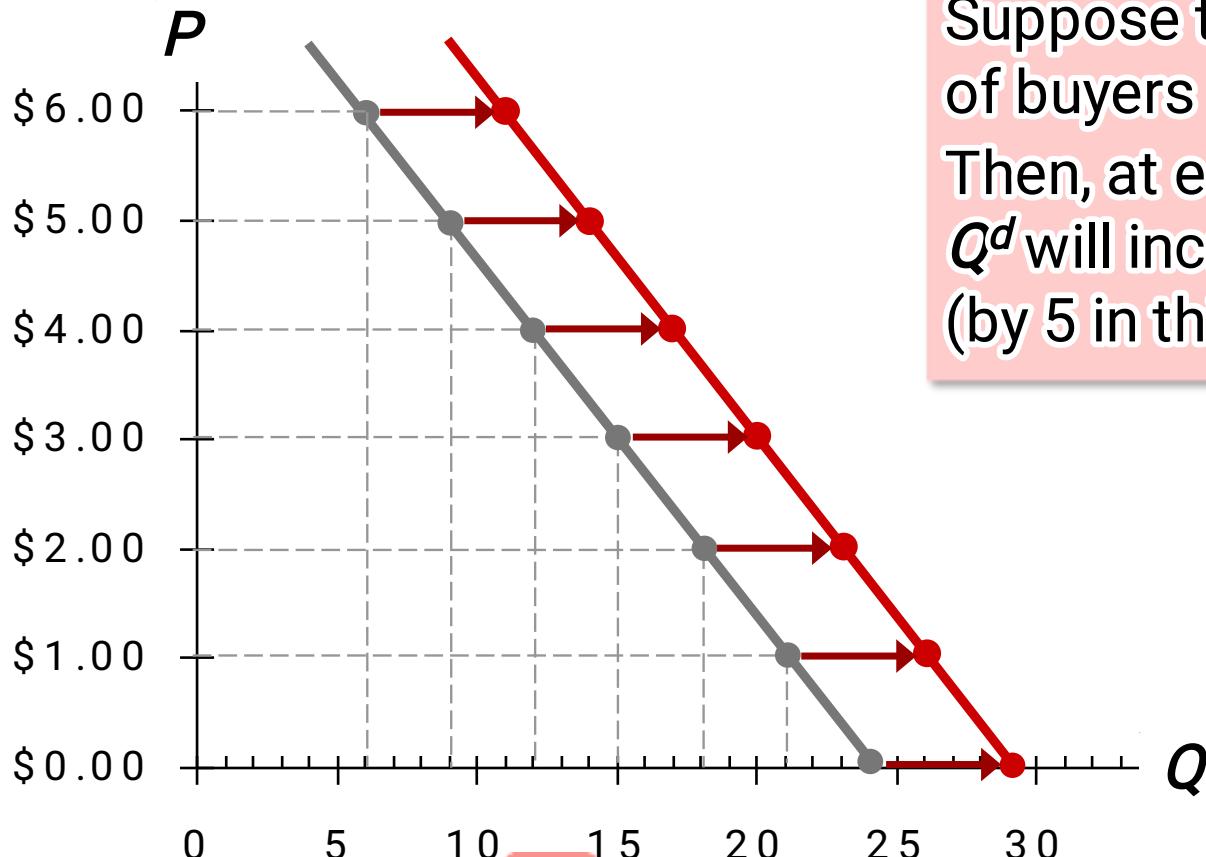
Demand Curve Shifters: # of Buyers

- Increase in # of buyers ☺ increases quantity demanded at each price, shifts *D* curve to the right.



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Demand Curve Shifters: # of Buyers



Suppose the number of buyers increases.
Then, at each P , Q^d will increase
(by 5 in this example).



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Demand Curve Shifters: Income

- Demand for a **normal good** is positively related to income.
 - Increase in income causes ☰ increase in quantity demanded at each price, shifts D curve to the right.

(Demand for an **inferior good** is negatively related to income. An increase in income shifts D curves for inferior goods to the left.)



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Demand Curve Shifters: Prices of Related Goods

- Two goods are **substitutes** if
an increase in the price of one
causes an increase in demand for the other.
- Example: pizza and burgers.
An increase in the price of pizza
increases demand for burgers,
shifting burger demand curve to the right.
- Other examples: Coke and Pepsi,
laptops and desktop computers,
CDs and music downloads



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Demand Curve Shifters: Prices of Related Goods

- Two goods are **complements** if an increase in the price of one causes a fall in demand for the other.
- Example: computers and software. If price of computers rises, people buy fewer computers, and therefore less software. Software demand curve shifts left.
- Other examples: college tuition and textbooks, bagels and cream cheese, chocolate brownie and ice cream.



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Demand Curve Shifters: Tastes

- Anything that causes a shift in tastes *toward* a good will increase demand for that good ☈ and shift its *D* curve to the right.
- Example: ☈ The Atkins diet became popular in the US during the '90s, ☈ caused an increase in demand for eggs, ☈ shifted the egg demand curve to the right.



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Demand Curve Shifters: Expectations

- Expectations affect consumers' buying decisions.
- Examples:
 - If people expect their incomes to rise, their demand for meals at expensive restaurants may increase now.
 - If the economy sours and people worry about their future job security, demand for new cars may fall now.



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Summary: Variables That Influence Buyers

Variable A change in this variable...

Price ...causes a movement \Rightarrow
along the *D* curve

of buyers ...shifts the *D* curve

Income ...shifts the *D* curve

Price of
related goods ...shifts the *D* curve

Tastes ...shifts the *D* curve

Expectations ...shifts the *D* curve



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Demand Curve

Draw a demand curve for music downloads.

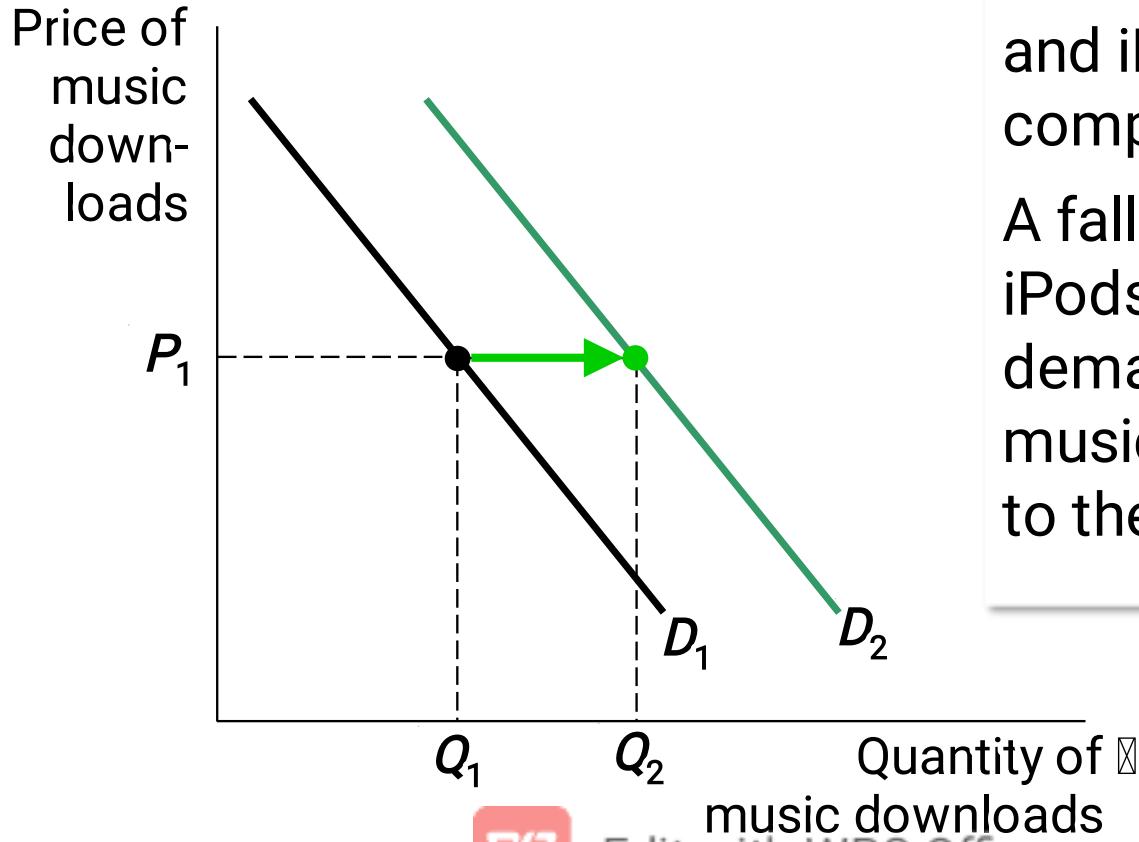
What happens to it in each of the following scenarios? Why?

- A. The price of iPods falls
- B. The price of music downloads falls
- C. The price of CDs falls



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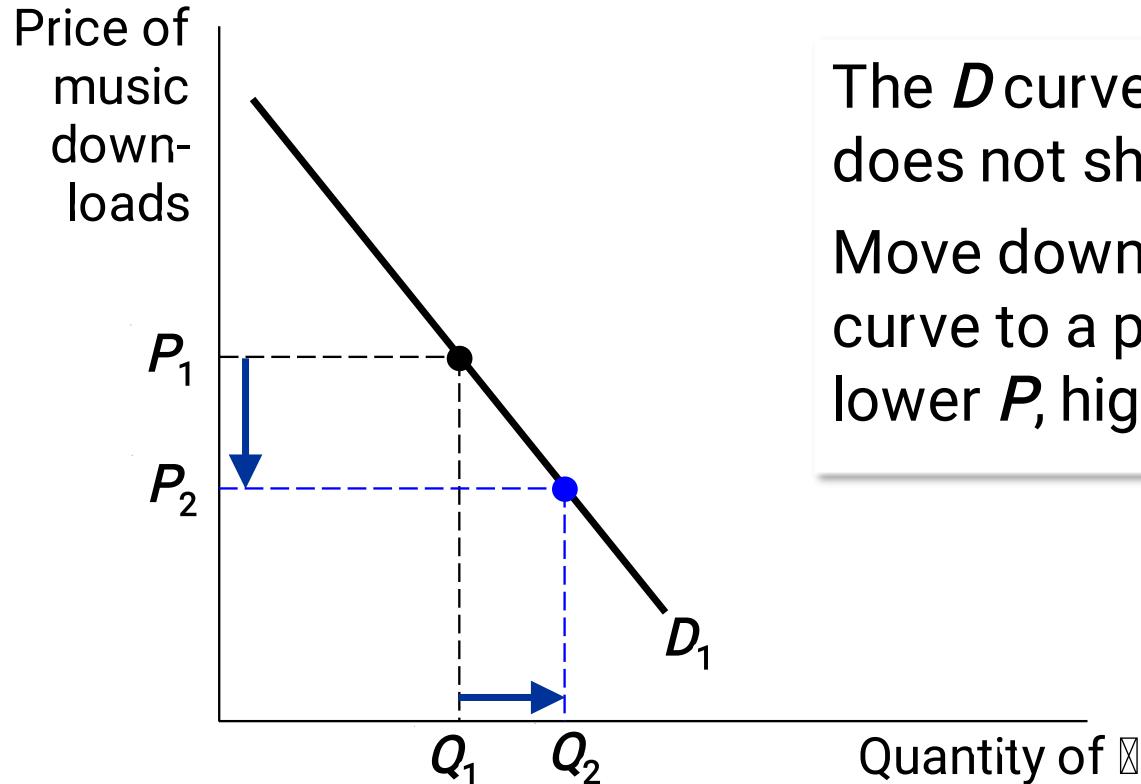
A. Price of iPods falls



Music downloads and iPods are complements.

A fall in price of iPods shifts the demand curve for music downloads to the right.

B. Price of music downloads falls



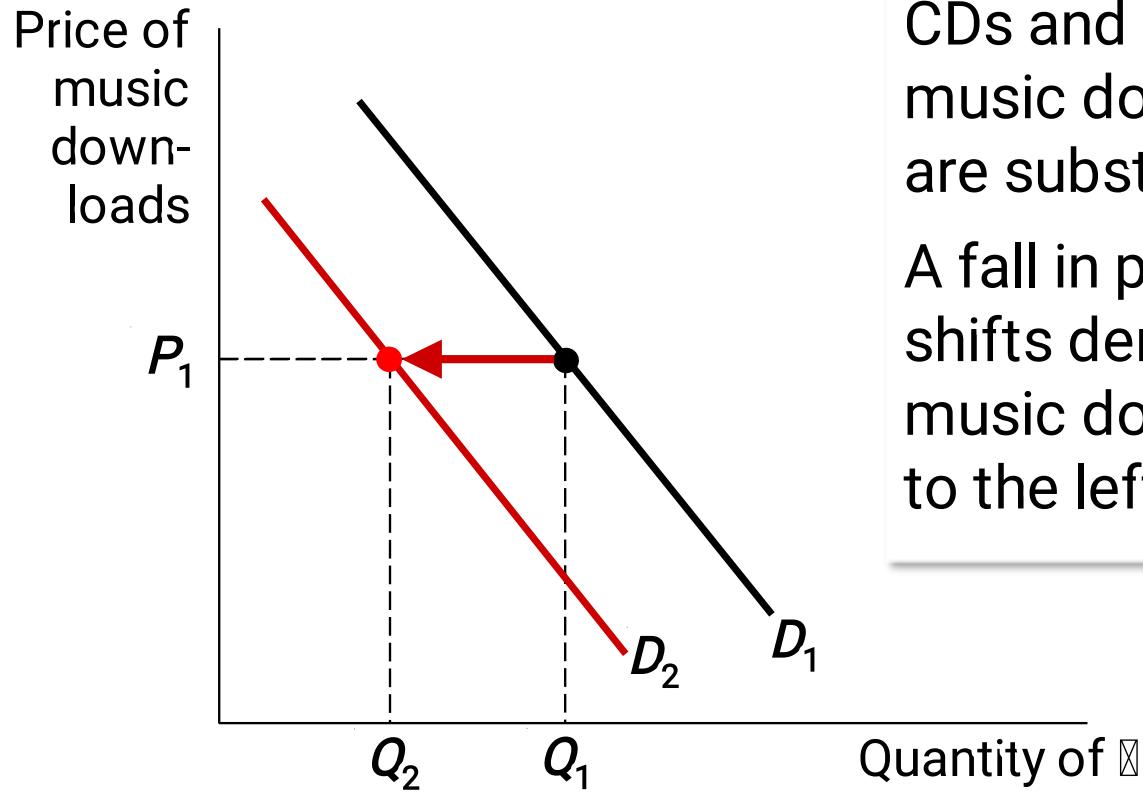
The D curve does not shift.
Move down along curve to a point with lower P , higher Q .



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C. Price of CDs falls



CDs and music downloads are substitutes.

A fall in price of CDs shifts demand for music downloads to the left.



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Supply

- The **quantity supplied** of any good is the amount that sellers are willing and able to sell.
- **Law of supply:** the claim that the quantity supplied of a good rises when the price of the good rises, other things equal



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The Supply Schedule

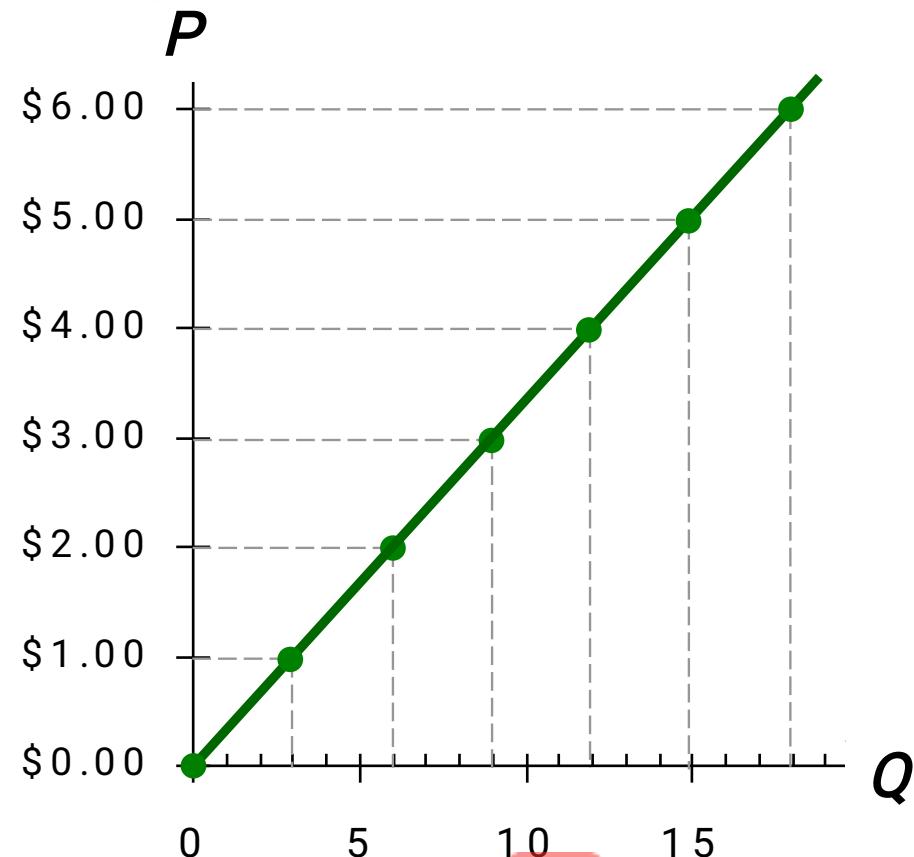
- **Supply schedule:** ☐
A table that shows the relationship between the price of a good and the quantity supplied.
 - Example: ☐
Starbucks' supply of lattes.
- ☐ Notice that Starbucks' supply schedule obeys the ☐ law of supply.

Price ☐ of lattes	Quantity ☐ of lattes supplied
\$0.00	0
1.00	3
2.00	6
3.00	9
4.00	12
5.00	15
6.00	18



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Starbucks' Supply Schedule & Curve



Price of lattes	Quantity of lattes supplied
\$0.00	0
1.00	3
2.00	6
3.00	9
4.00	12
5.00	15
6.00	18



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Market Supply versus Individual Supply

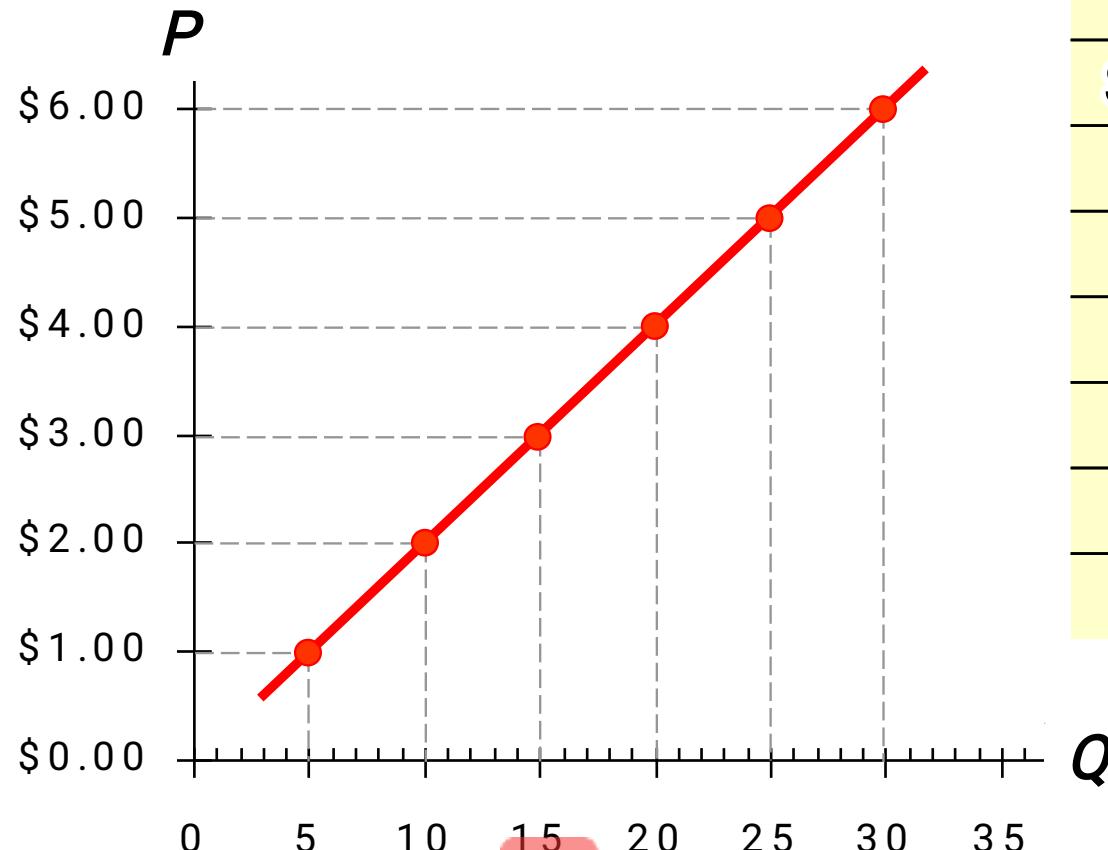
- The quantity supplied in the market is the sum of the quantities supplied by all sellers at each price.
- Suppose Starbucks and Faro are the only two sellers in this market. (Q^s = quantity supplied)

Price	Starbucks	+ +	Faro	=	Market Q^s
\$0.00	0		0	=	0
1.00	3	+	2	=	5
2.00	6	+	4	=	10
3.00	9	+	6	=	15
4.00	12	+	8	=	20
5.00	15	+	10	=	25
6.00	18		12	=	30



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The Market Supply Curve



P	Q^S (Market)
\$0.00	0
1.00	5
2.00	10
3.00	15
4.00	20
5.00	25
6.00	30



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Supply Curve Shifters

- The supply curve shows how price affects quantity supplied, *other things being equal.*
- These “other things” are non-price determinants of supply.
- Changes in them shift the **S** curve...



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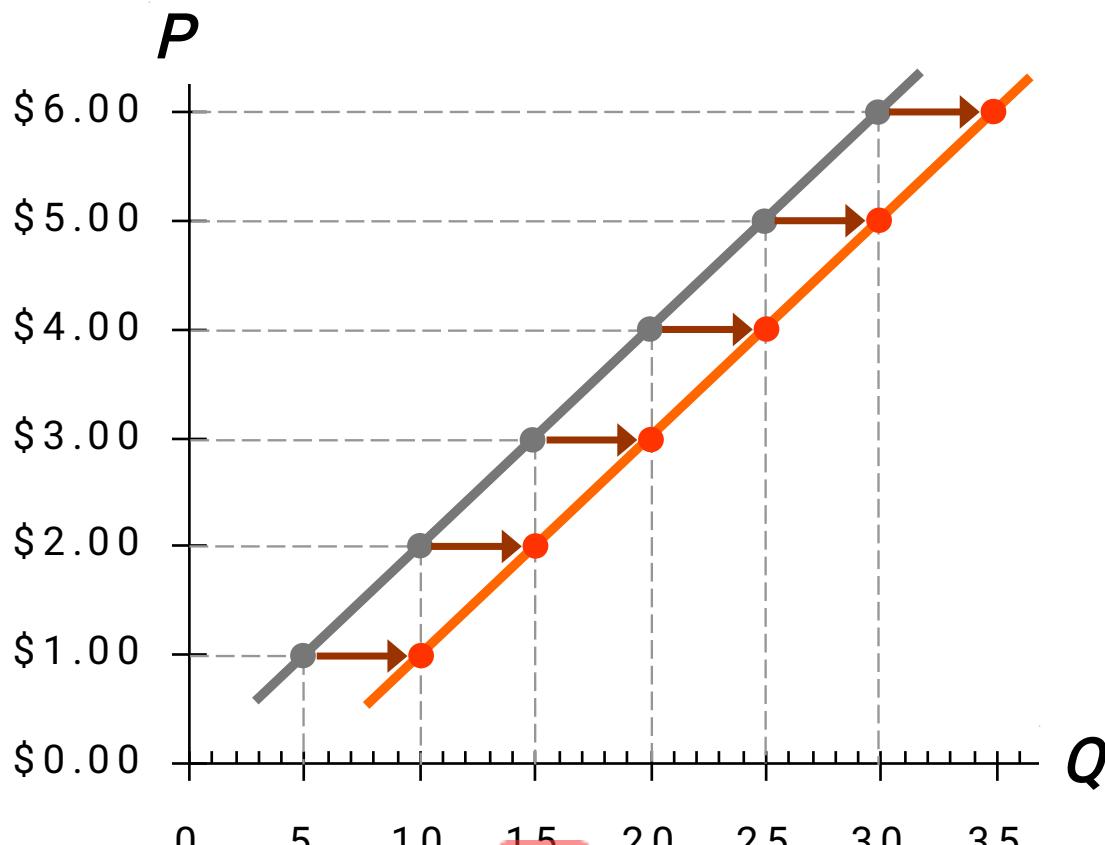
Supply Curve Shifters: Input Prices

- Examples of input prices: wages, prices of raw materials.
- A fall in input prices makes production more profitable at each output price, so firms supply a larger quantity at each price, and the **S**curve shifts to the right.



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Supply Curve Shifters: Input Prices



Suppose the price of milk falls. At each price, the quantity of lattes supplied will increase (by 5 in this example).



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Supply Curve Shifters: Technology

- Technology determines how much inputs are required to produce a unit of output.
- A cost-saving technological improvement has the same effect as a fall in input prices, shifts **S**curve to the right.



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Supply Curve Shifters: # of Sellers

- An increase in the number of sellers increases the quantity supplied at each price,
shifts **S**curve to the right.



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Supply Curve Shifters: Expectations

- Example:
 - Events in the Middle East lead to expectations of higher oil prices.
 - In response, owners of Assam oilfields reduce supply now, save some inventory to sell later at the higher price.
 - S curve shifts left.
- In general, sellers may adjust supply* when their expectations of future prices change. ☰
*(*If good not perishable)*



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Summary: Variables that Influence Sellers

Variable	A change in this variable...
----------	------------------------------

Price ...causes a movement ☰
along the **S**curve

Input Prices...shifts the **S**curve

Technology ...shifts the **S**curve

of Sellers ...shifts the **S**curve

Expectations ...shifts the **S**curve



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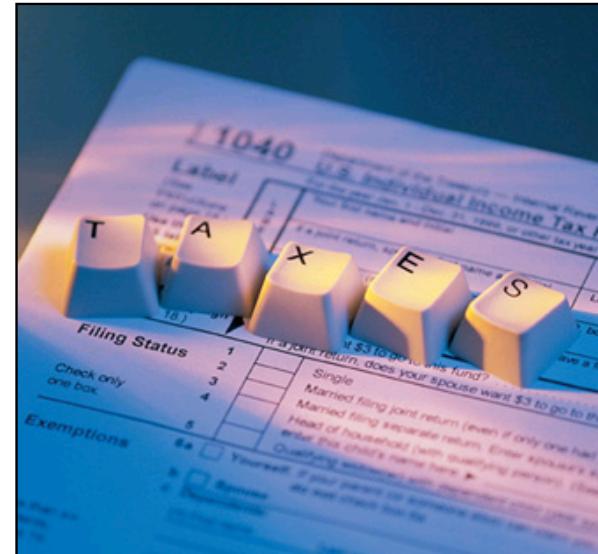
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Supply Curve

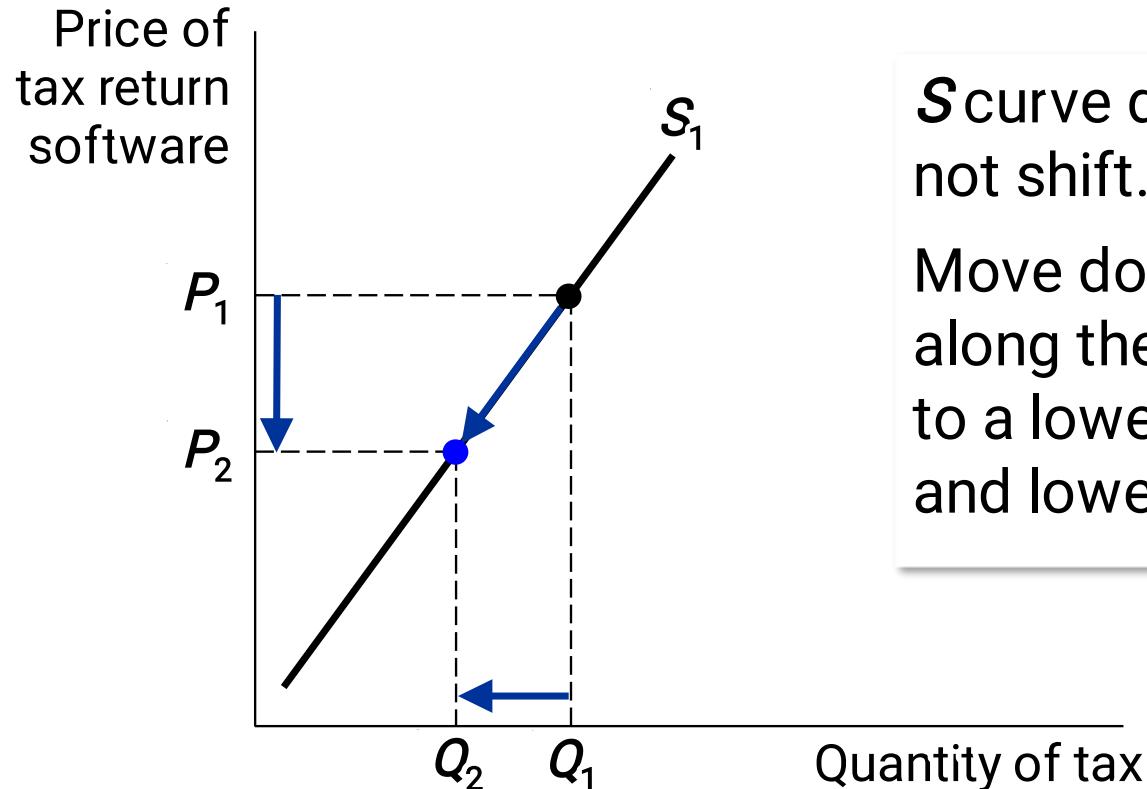
2

Draw a supply curve for tax return preparation software. What happens to it in each of the following scenarios?

- A. Retailers cut the price of the software.
- B. A technological advance allows the software to be produced at lower cost.
- C. Professional tax return preparers raise the price of the services they provide.



A. Fall in price of tax return software

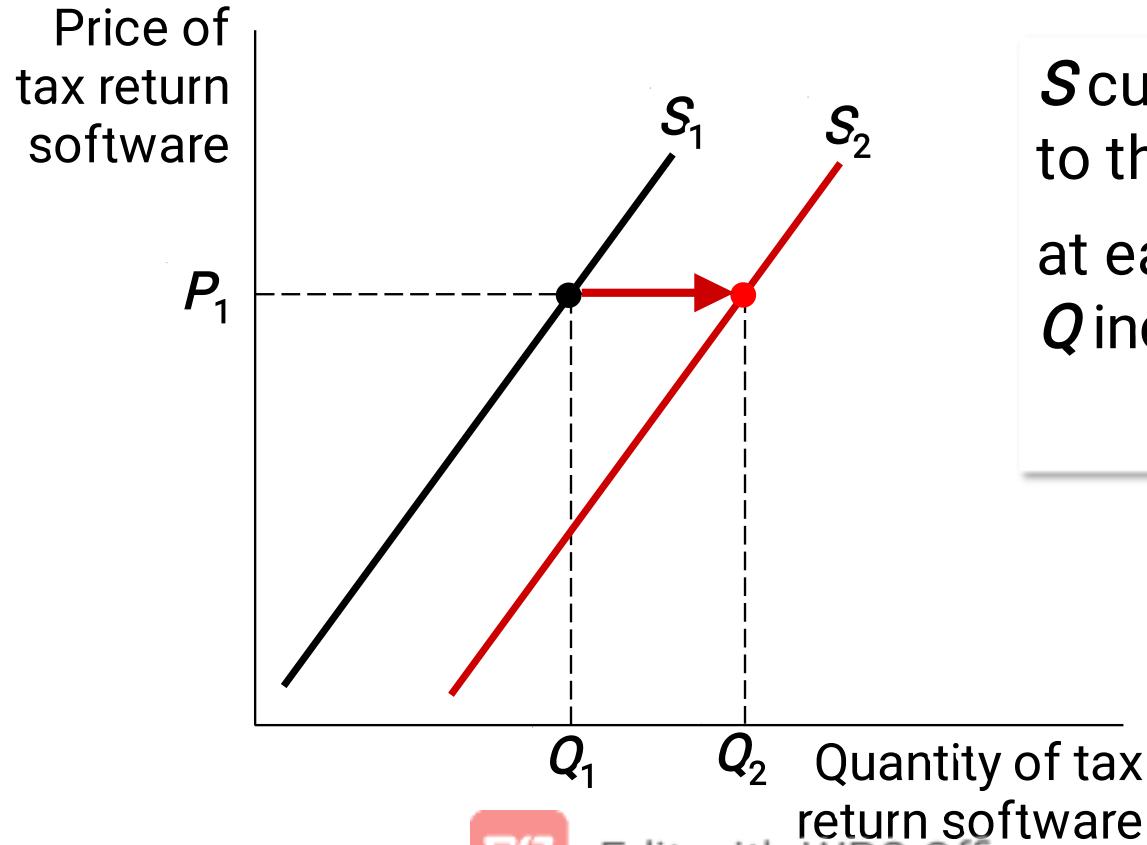


S curve does ☒
not shift.

Move down ☒
along the curve ☒
to a lower P ☒
and lower Q .

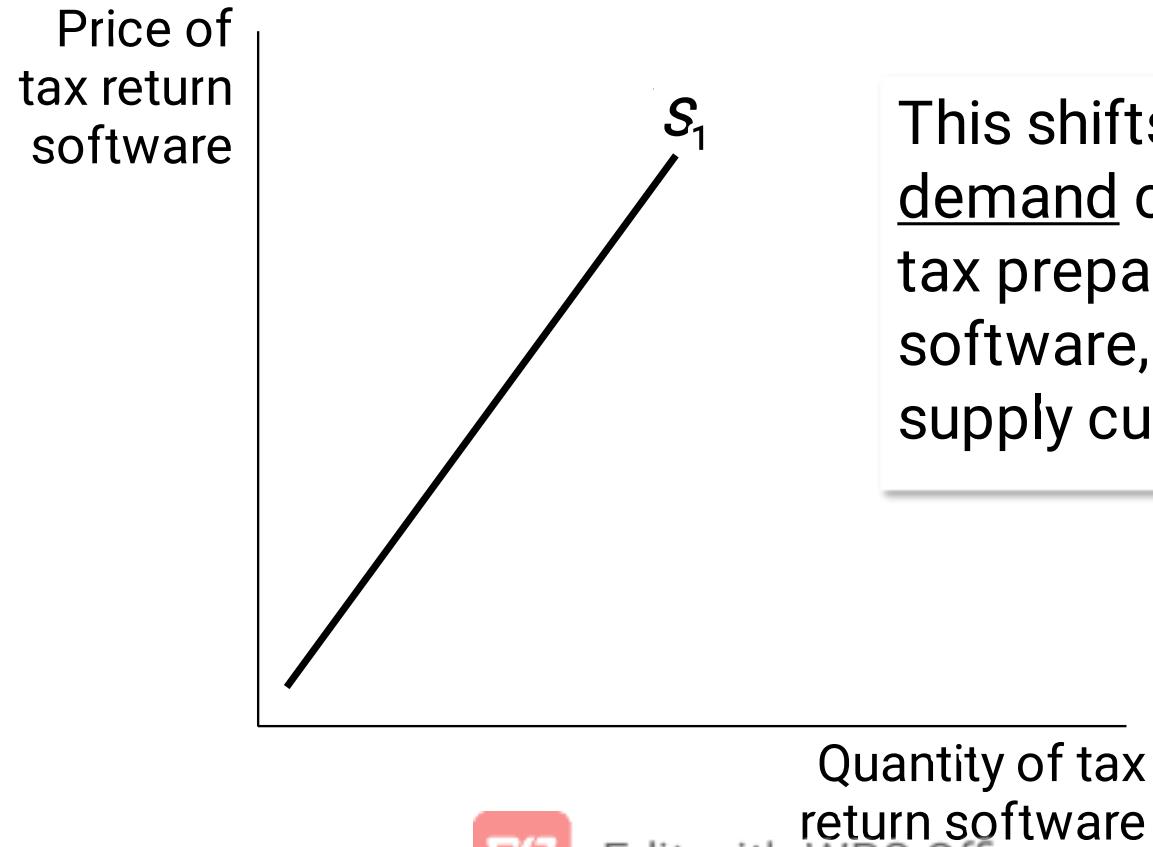


B. Fall in cost of producing the software



S curve shifts to the right:
at each price, Q increases.

C. Professional preparers raise their price

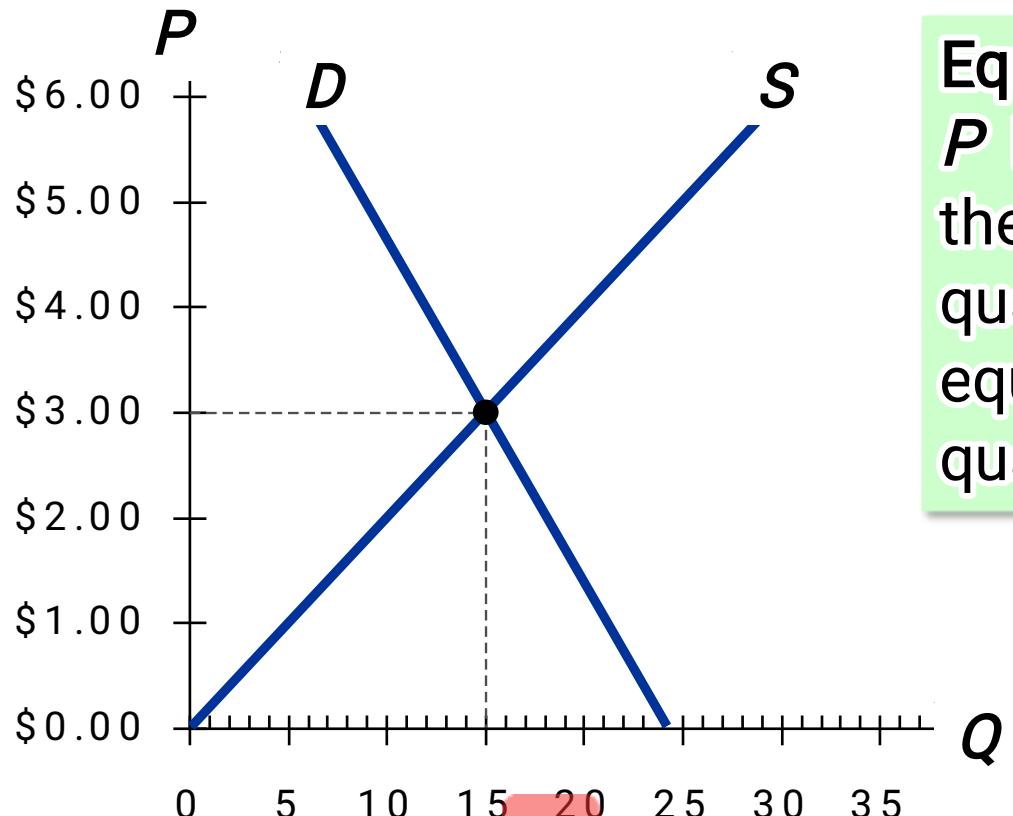


This shifts the demand curve for tax preparation software, not the supply curve.



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Supply and Demand Together



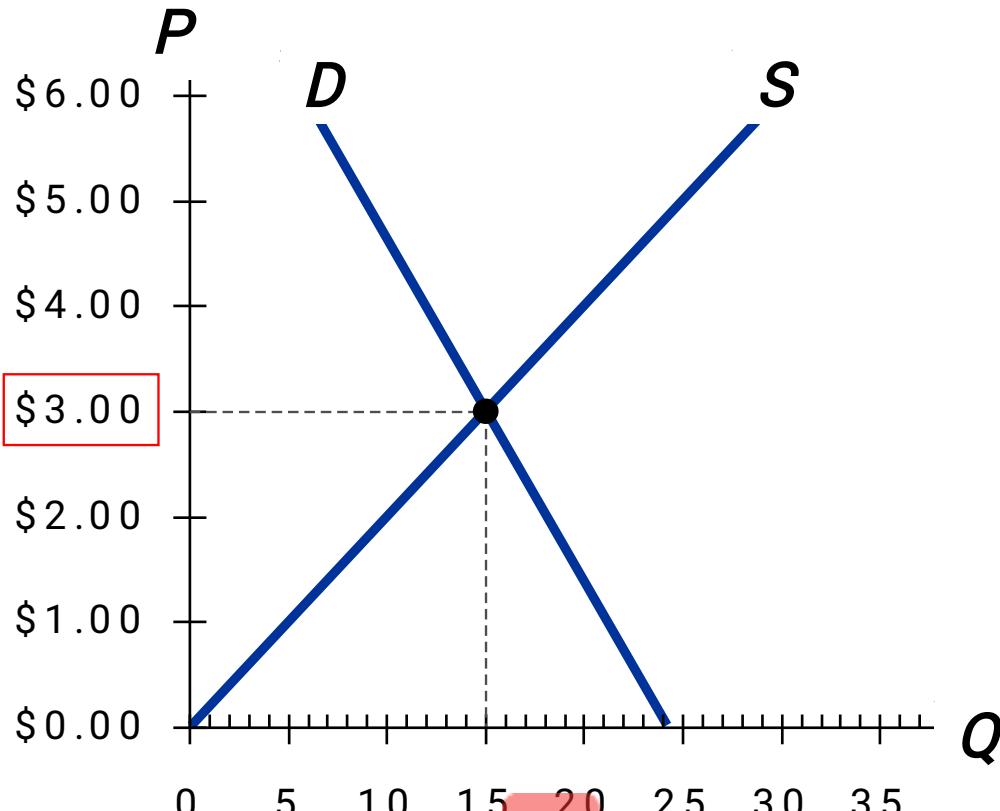
Equilibrium: \otimes
 P has reached \otimes
the level where \otimes
quantity supplied
equals \otimes
quantity demanded



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Equilibrium price:

the price that equates quantity supplied
with quantity demanded

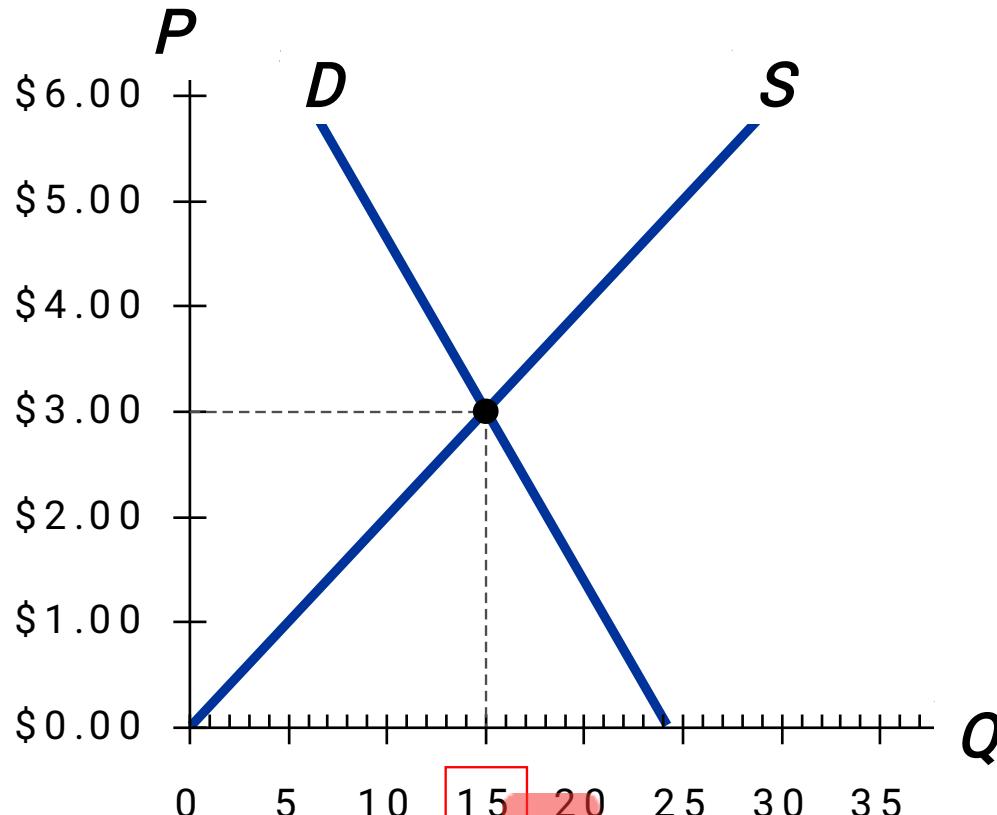


P	Q^D	Q^S
\$0	24	0
1	21	5
2	18	10
3	15	15
4	12	20
5	9	25
6	6	30



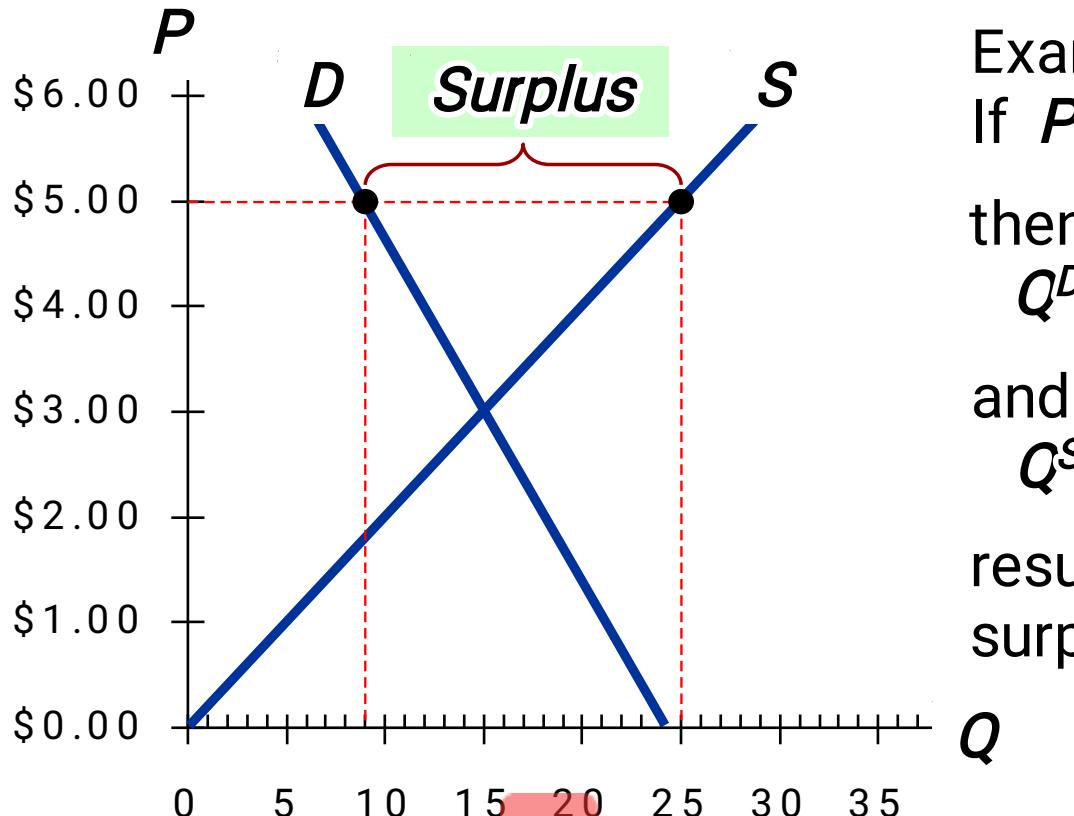
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Equilibrium quantity:
the quantity supplied and quantity demanded
at the equilibrium price



P	Q^D	Q^S
\$0	24	0
1	21	5
2	18	10
3	15	15
4	12	20
5	9	25
6	6	30

Surplus (a.k.a. excess supply):
when quantity supplied is greater than
quantity demanded

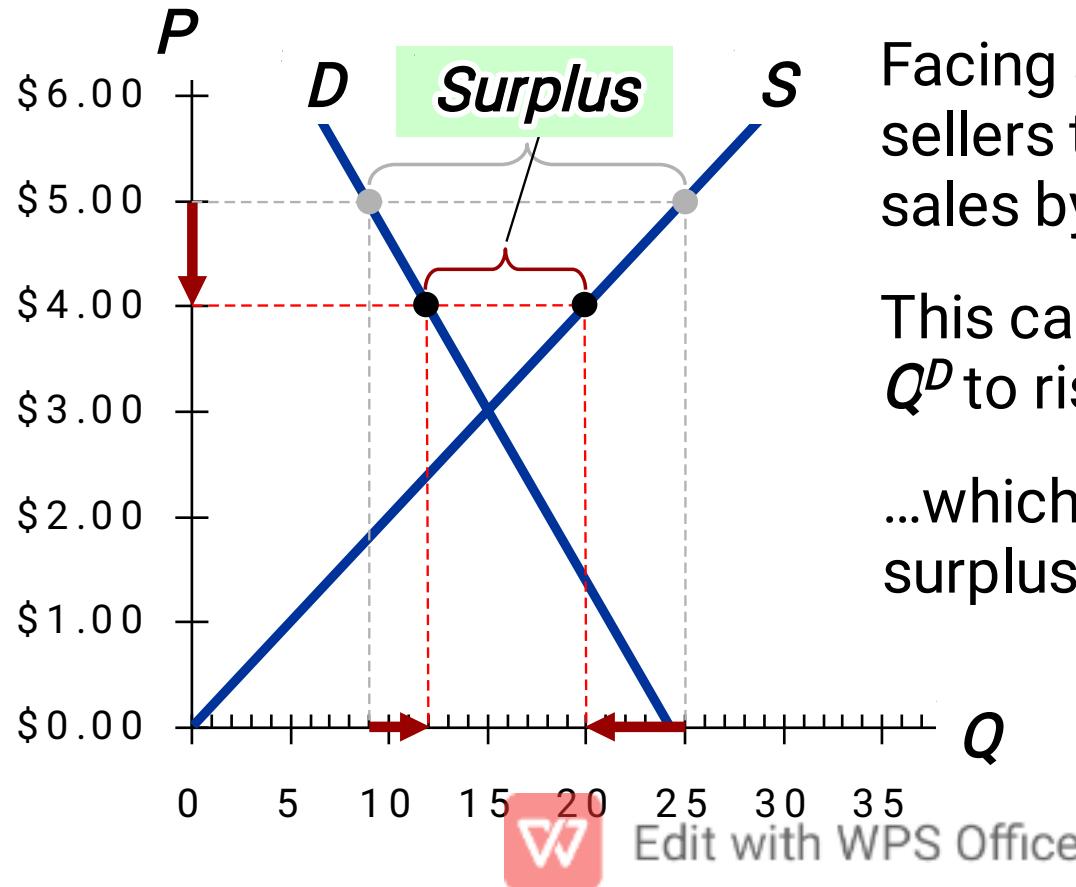


Example: ☒
If $P = \$5$,
then ☒
 $Q^D = 9$ lattes

and ☒
 $Q^S = 25$ lattes

resulting in a ☒
surplus of 16 lattes

Surplus (a.k.a. excess supply):
when quantity supplied is greater than
quantity demanded

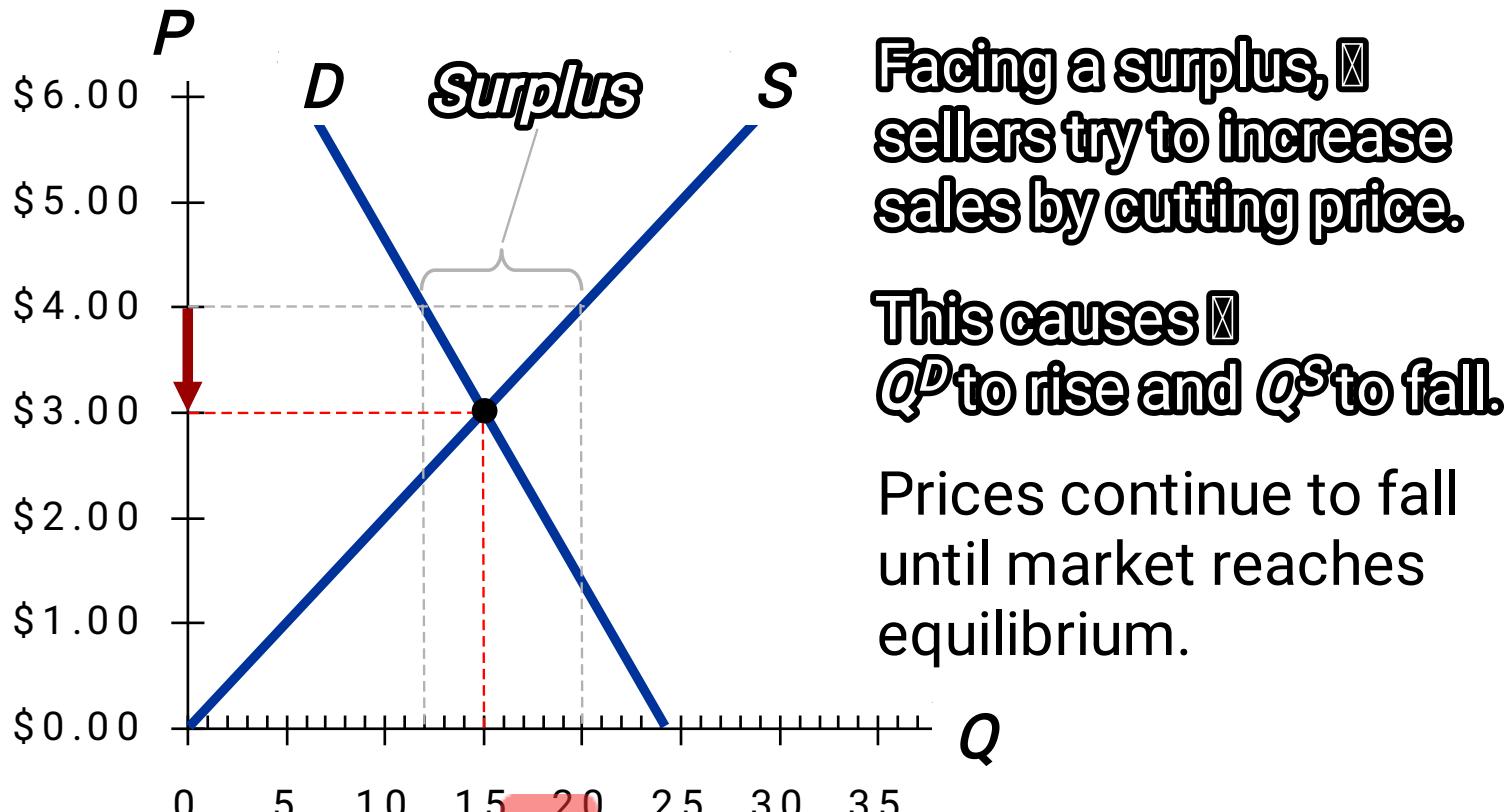


Facing a surplus, sellers try to increase sales by cutting price.

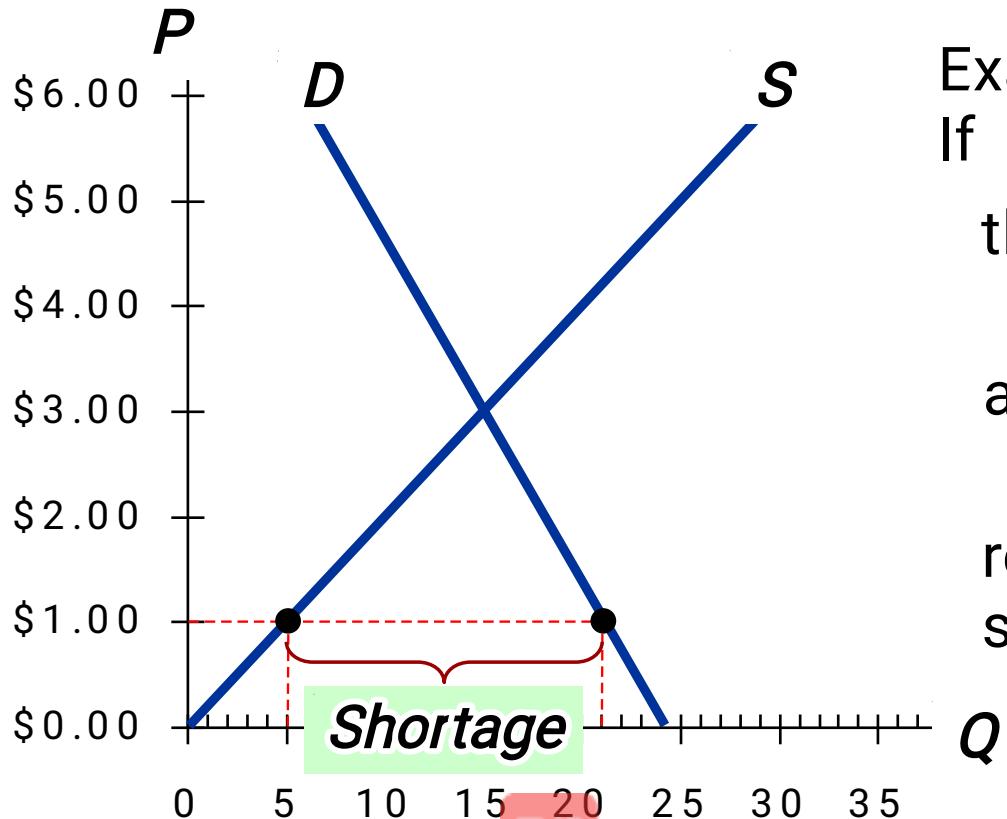
This causes Q^D to rise and Q^S to fall...

...which reduces the surplus.

Surplus (a.k.a. excess supply):
when quantity supplied is greater than
quantity demanded

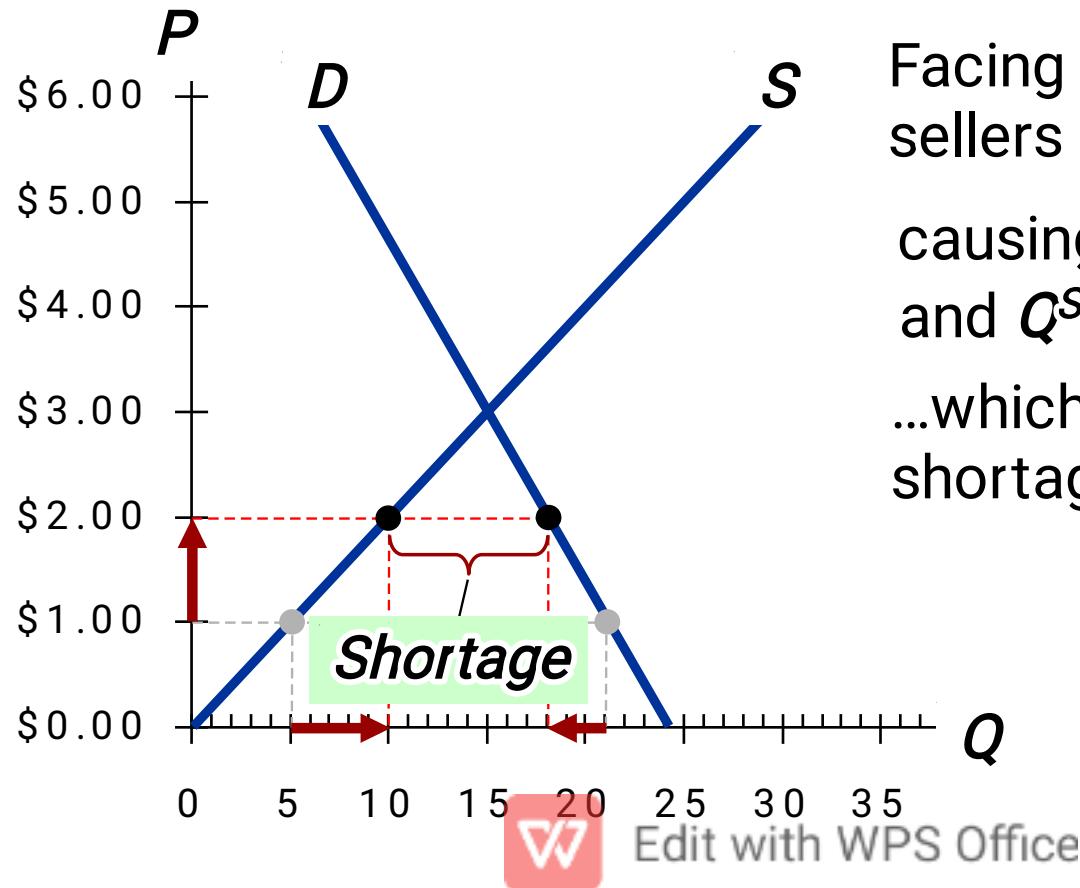


Shortage (a.k.a. excess demand):
when quantity demanded is greater than
quantity supplied



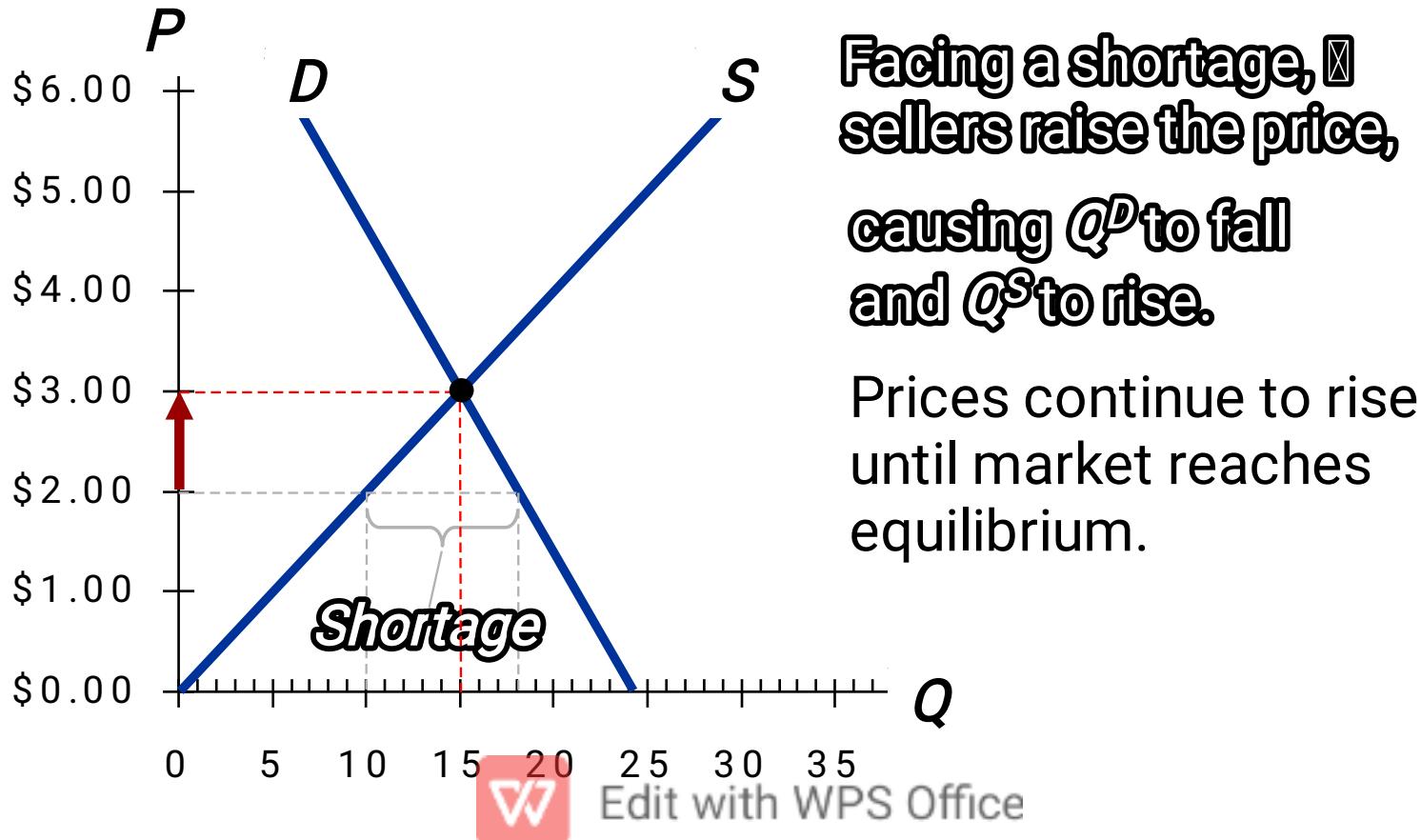
Example: ☒
If $P = \$1$,
then ☒
 $Q^D = 21$ lattes
and ☒
 $Q^S = 5$ lattes
resulting in a ☒
shortage of 16 lattes

Shortage (a.k.a. excess demand):
when quantity demanded is greater than
quantity supplied



Facing a shortage, sellers raise the price,
causing Q^D to fall
and Q^S to rise,
...which reduces the
shortage.

Shortage (a.k.a. excess demand):
when quantity demanded is greater than
quantity supplied



Three Steps to Analyzing Changes in Eq'm

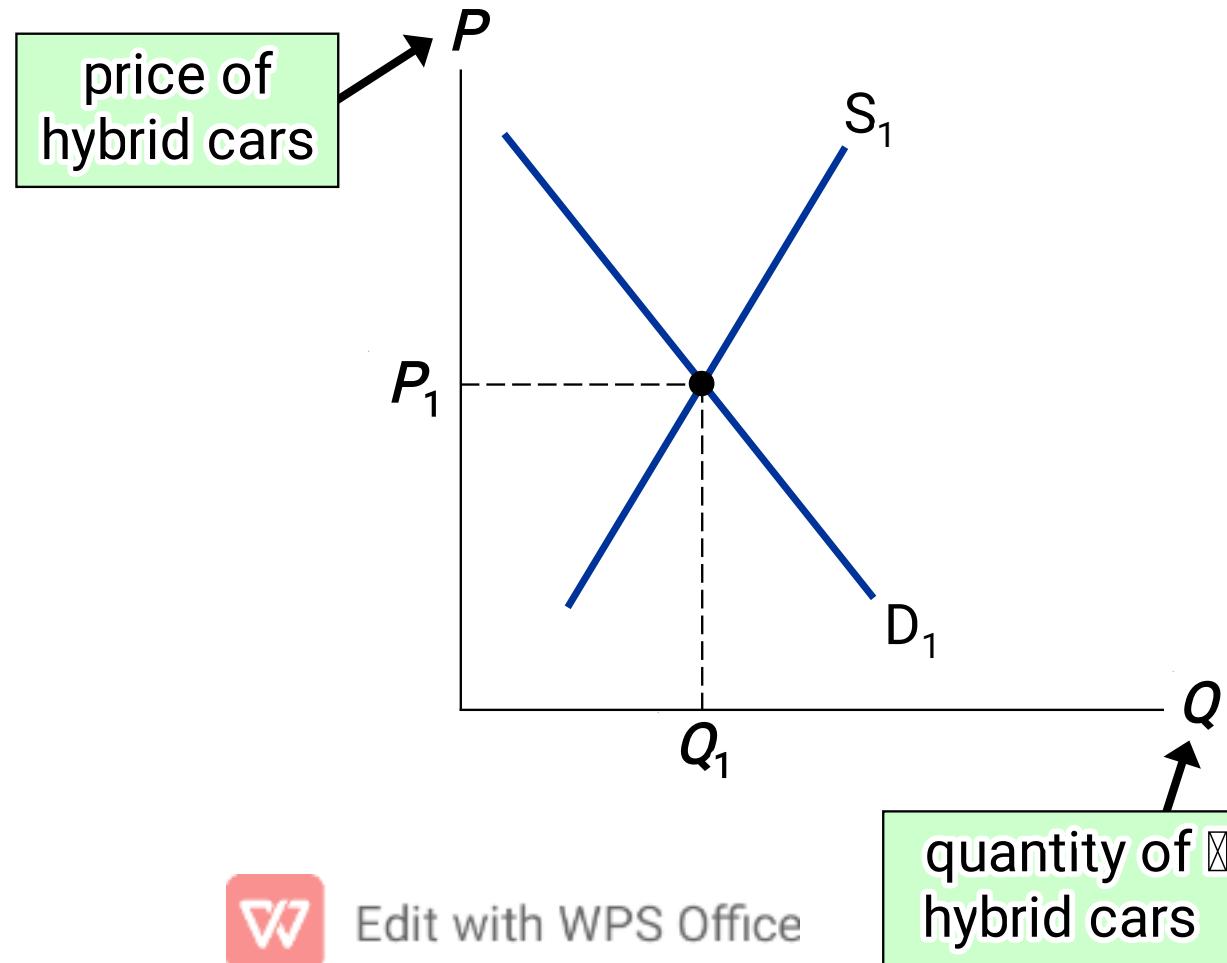
To determine the effects of any event,

1. Decide whether event shifts S curve, D curve, or both.
2. Decide in which direction curve shifts.
3. Use supply–demand diagram to see how the shift changes eq'm P and Q .



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EXAMPLE: The Market for Hybrid Cars



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EXAMPLE 1: A Shift in Demand

EVENT TO BE

ANALYZED:

Increase in price of gas.

STEP 1:

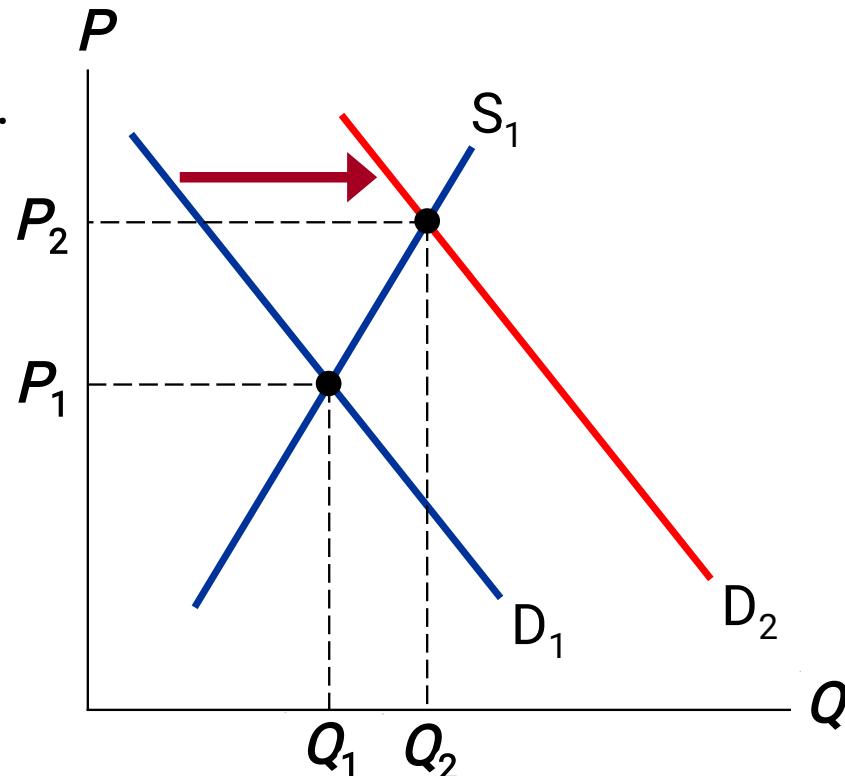
D curve shifts

STEP 2:

D shifts right

STEP 3:

The shift causes an increase in price
and quantity of hybrid cars.



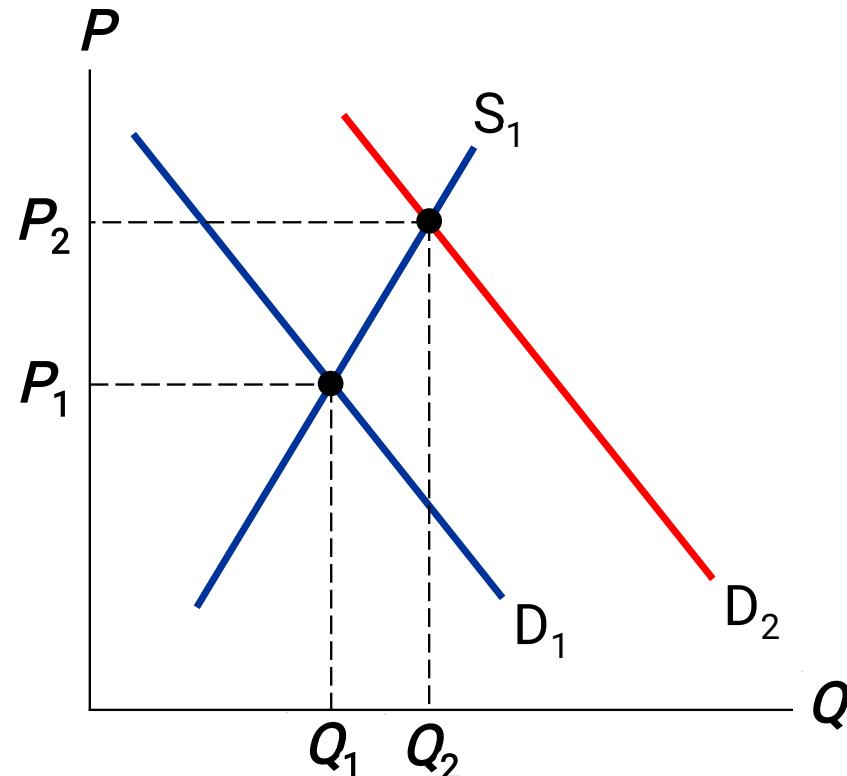
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EXAMPLE 1: A Shift in Demand

Notice:

- When P rises, producers supply a larger quantity of hybrids, even though the S curve has not shifted.

Always be careful to distinguish b/w a shift in a curve and a movement along the curve.



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Terms for Shift vs. Movement Along Curve

- **Change in supply:** a shift in the *S* curve
occurs when a non-price determinant of supply changes (like technology or costs)
- **Change in the quantity supplied:** ☰
a movement along a fixed *S* curve
occurs when *P* changes
- **Change in demand:** a shift in the *D* curve
occurs when a non-price determinant of demand changes (like income or # of buyers)
- **Change in the quantity demanded:** ☰
a movement along a fixed *D* curve
occurs when *P* changes



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EXAMPLE 2: A Shift in Supply

EVENT: New technology reduces cost of producing hybrid cars.

STEP 1:

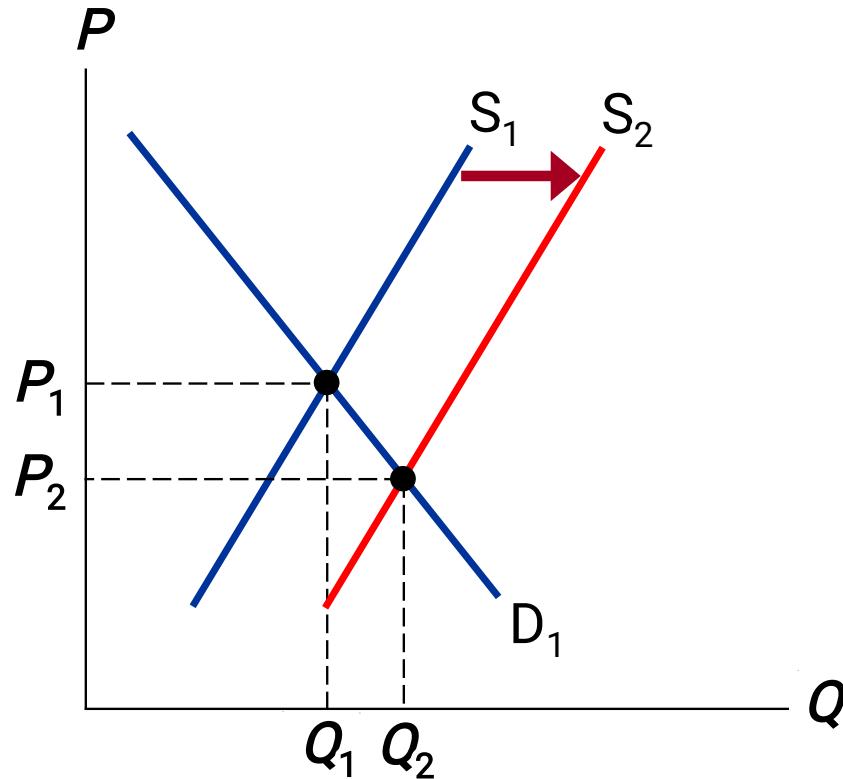
S curve shifts

STEP 2:

S shifts right

STEP 3:

The shift causes price to fall
and quantity to rise.



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EXAMPLE 3: A Shift in Both Supply and Demand

EVENTS:

Price of gas rises AND new technology reduces production costs

STEP 1:

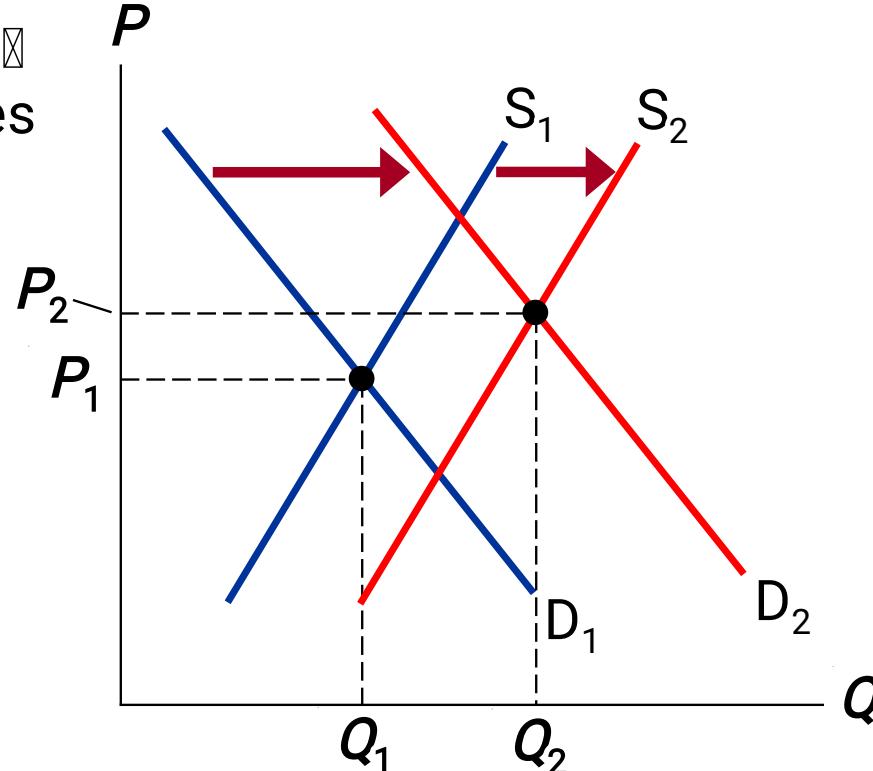
Both curves shift.

STEP 2:

Both shift to the right.

STEP 3:

Q rises, but effect on P is ambiguous:
If demand increases more than supply, P rises.



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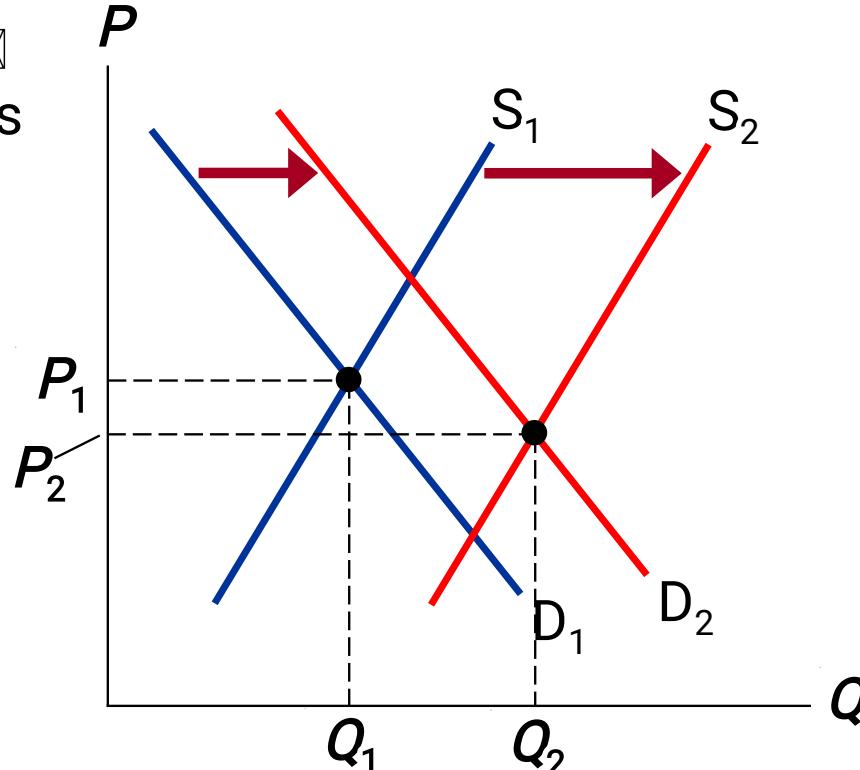
EXAMPLE 3: A Shift in Both Supply and Demand

EVENTS:

price of gas rises AND
new technology reduces
production costs

STEP 3, cont.

But if supply
increases more
than demand, P
 \downarrow



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ACTIVE LEARNING

Shifts in supply and demand³

Use the three-step method to analyze the effects of each event on the equilibrium price and quantity of music downloads.

Event A: A fall in the price of CDs

Event B: Sellers of music downloads negotiate a reduction in the royalties they must pay for each song they sell.

Event C: Events A and B both occur.

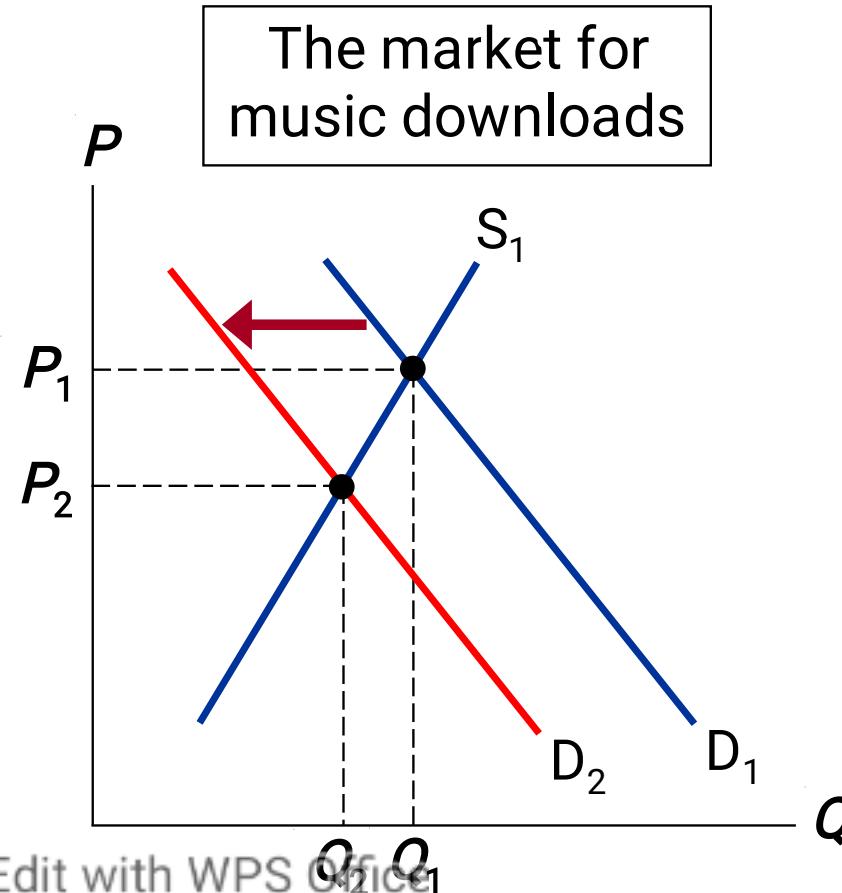


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A. Fall in price of CDs

STEPS

1. D curve shifts
2. D shifts left
3. P and Q both fall.

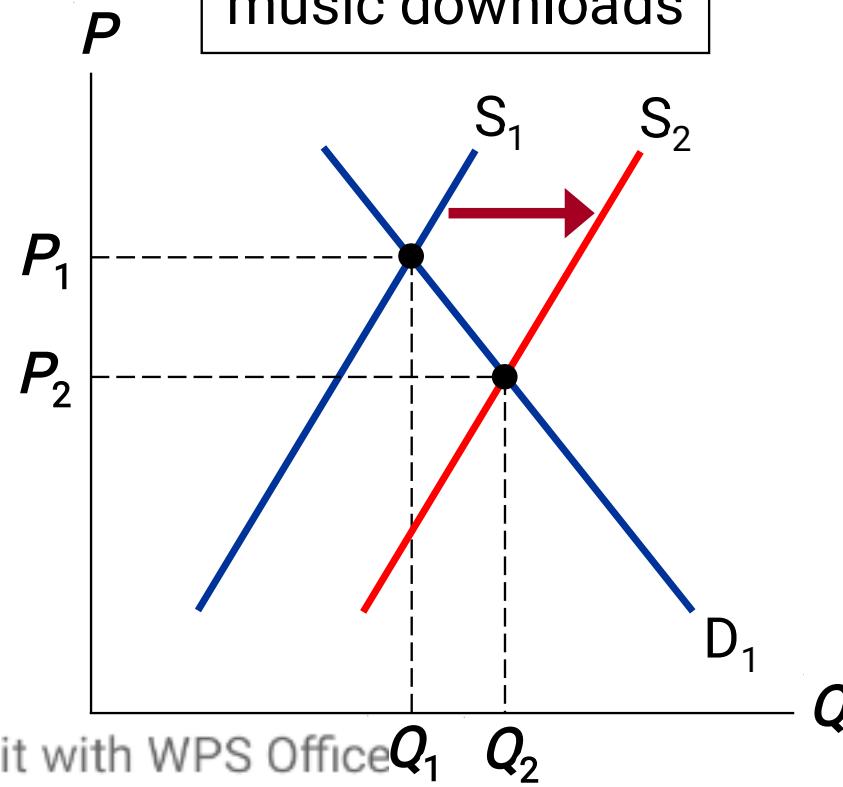


B. Fall in cost of royalties

STEPS

1. S curve shifts
2. (Royalties are part of sellers' costs)
3. P falls, \otimes
 Q rises.

The market for
music downloads



C. Fall in price of CDs and fall in cost of royalties

STEPS

1. Both curves shift (see parts A & B).
2. D shifts left, S shifts right.
3. P unambiguously falls.

Effect on Q is ambiguous:

The fall in demand reduces Q ,
the increase in supply increases Q .



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CONCLUSION: ☰ How Prices Allocate Resources

- One of the Ten Principles from Lectures 1 and 2: ☰
Markets are usually a good way ☰ to organize economic activity.
- In market economies, prices adjust to balance supply and demand. These equilibrium prices are the signals that guide economic decisions and thereby allocate scarce resources.



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SUMMARY

- A competitive market has many buyers and sellers, each of whom has little or no influence on the market price.
- Economists use the supply and demand model to analyze competitive markets.
- The downward-sloping demand curve reflects the law of demand, which states that the quantity buyers demand of a good depends negatively on the good's price.



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SUMMARY

- Besides price, demand depends on buyers' incomes, tastes, expectations, the prices of substitutes and complements, and number of buyers. If one of these factors changes, the *D* curve shifts.
- The upward-sloping supply curve reflects the Law of Supply, which states that the quantity sellers supply depends positively on the good's price.
- Other determinants of supply include input prices, technology, expectations, and the # of sellers. Changes in these factors shift the *S*curve.



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SUMMARY

- The intersection of *S* and *D* curves determines the market equilibrium. At the equilibrium price, quantity supplied equals quantity demanded.
- If the market price is above equilibrium, a surplus results, which causes the price to fall. ☰
If the market price is below equilibrium, a shortage results, causing the price to rise.



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SUMMARY

- We can use the supply-demand diagram to analyze the effects of any event on a market:
 - First, determine whether the event shifts one or both curves.
 - Second, determine the direction of the shifts. Third, compare the new equilibrium to the initial one.
- In market economies, prices are the signals that guide economic decisions and allocate scarce resources.



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