CHAPTER 2: DEMAND & SUPPLY

Demand

Supply

Market Equilibrium

Examples

Price ceiling/floor

BUILD A MODEL

buyers

sellers

& their interaction

USE THE MODEL

to predict

- the impact of changes

to explain

- changes that occur

DEMAND

behavior of buyers

relationship between

- quantity demanded of a good
- price
- holding other factors constant

QUANTITY DEMANDED (QD)

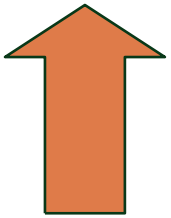
amount of good or service

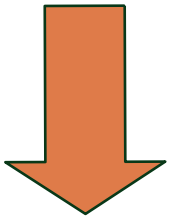
- unit of measure

per unit of time

“2 bottles of water per day”

LAW OF DEMAND

If the price of a good 

then the Qd 

holding other things constant!!!

WHY?

higher price makes you feel poorer

- income effect

higher price on one good,

substitute other goods.

- substitution effect

EXAMPLE: BOTTLES OF WATER PER DAY

Describe demand in 2 ways:

Demand schedule

- a list of Qd
  at each price

Demand curve

- a graph of demand schedule

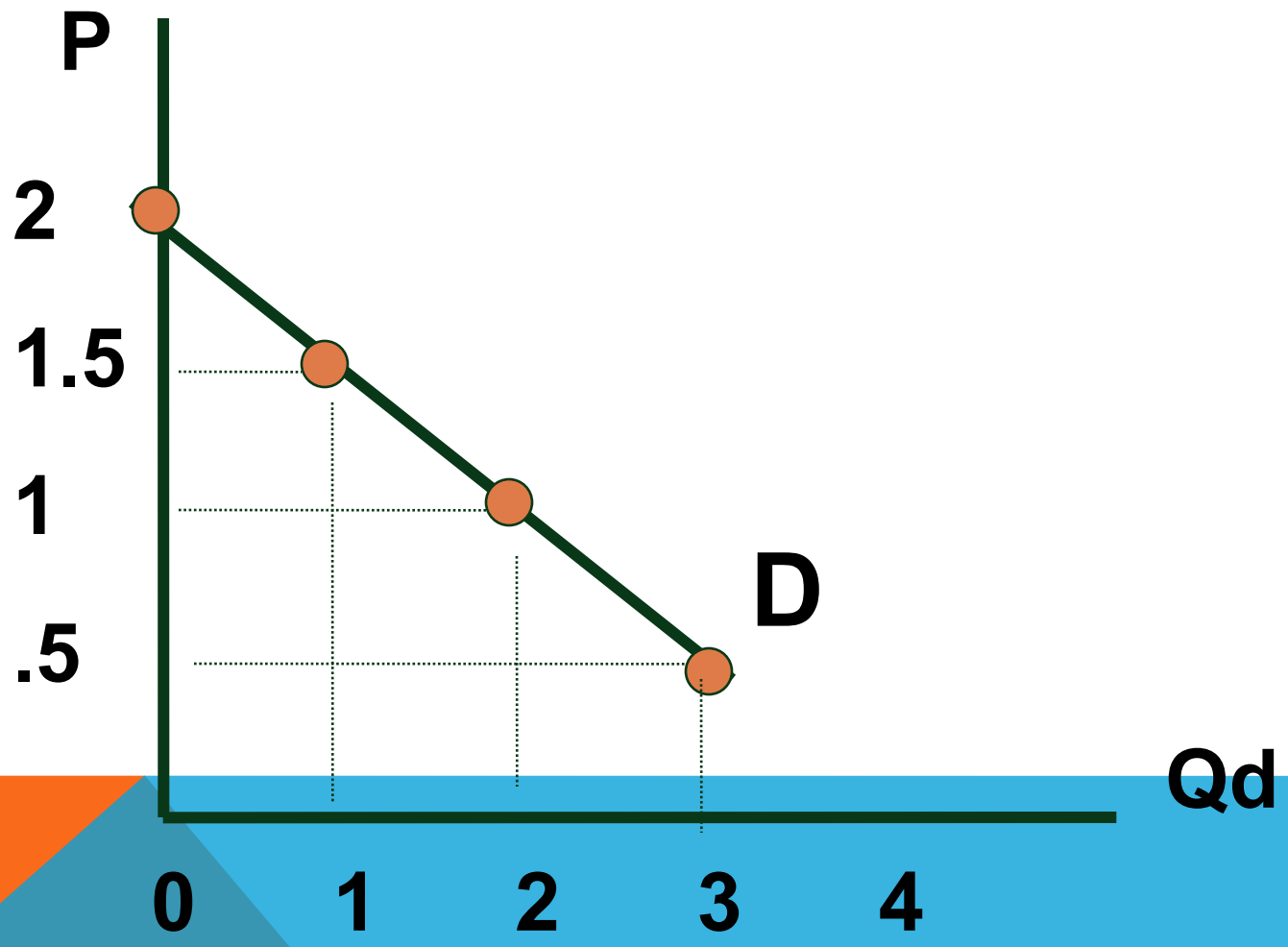
DEMAND SCHEDULE

Price = $/bottle

Qd = bottles/day

P	Qd
$2.00	0
$1.50	1
$1.00	2
$.50	3

DEMAND CURVE



- individual demand
  - **demand curve for 1 buyer**
- market demand**
  - **demand curve for all buyers**
  - **add up individual Qd for each price**

CHANGES IN DEMAND

recall our assumption

- hold other things constant
- allow only price to change

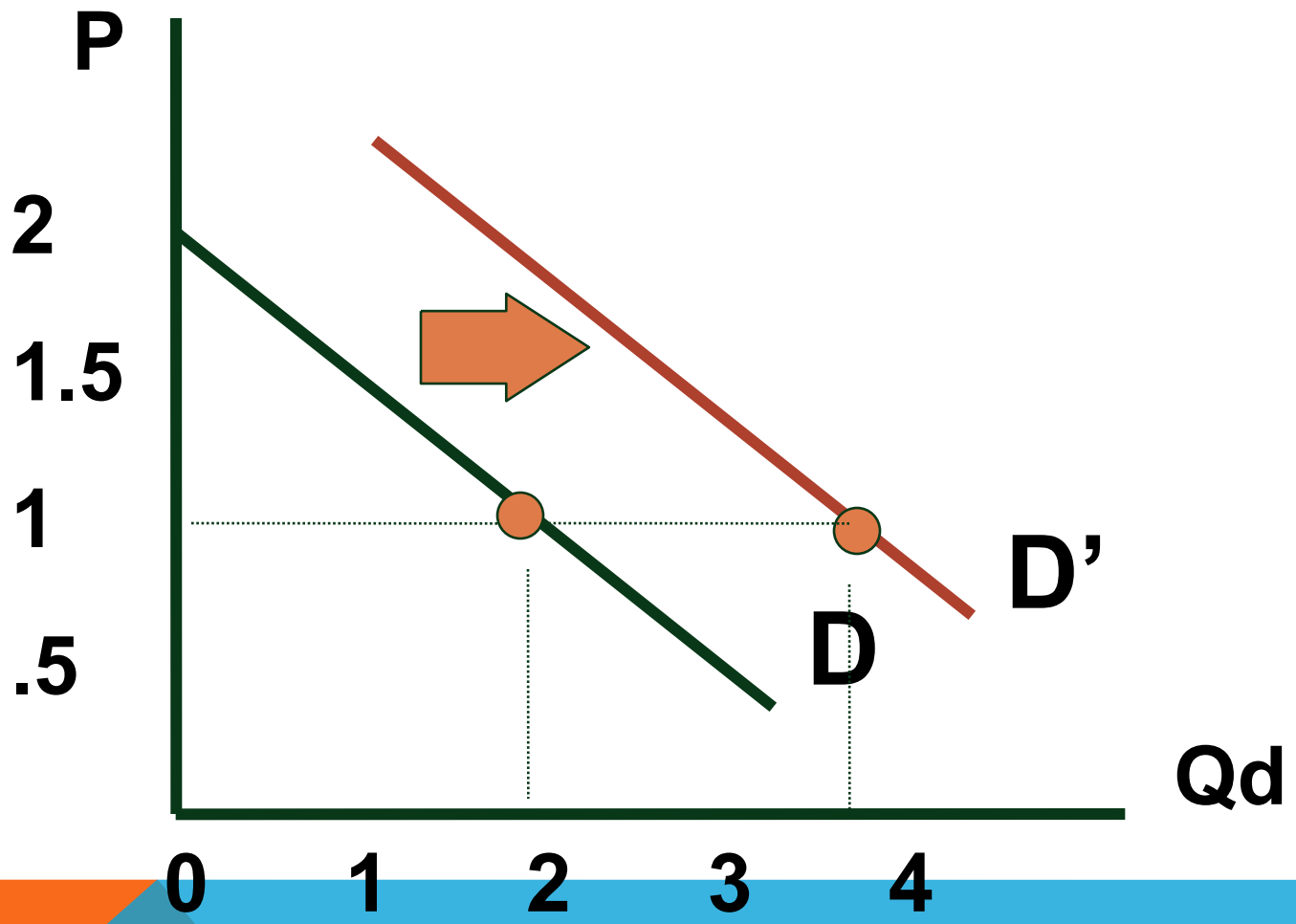
but what if other factors do change?

- change in demand
- shift to a new demand curve

INCREASE IN DEMAND

increase in Qd at every price

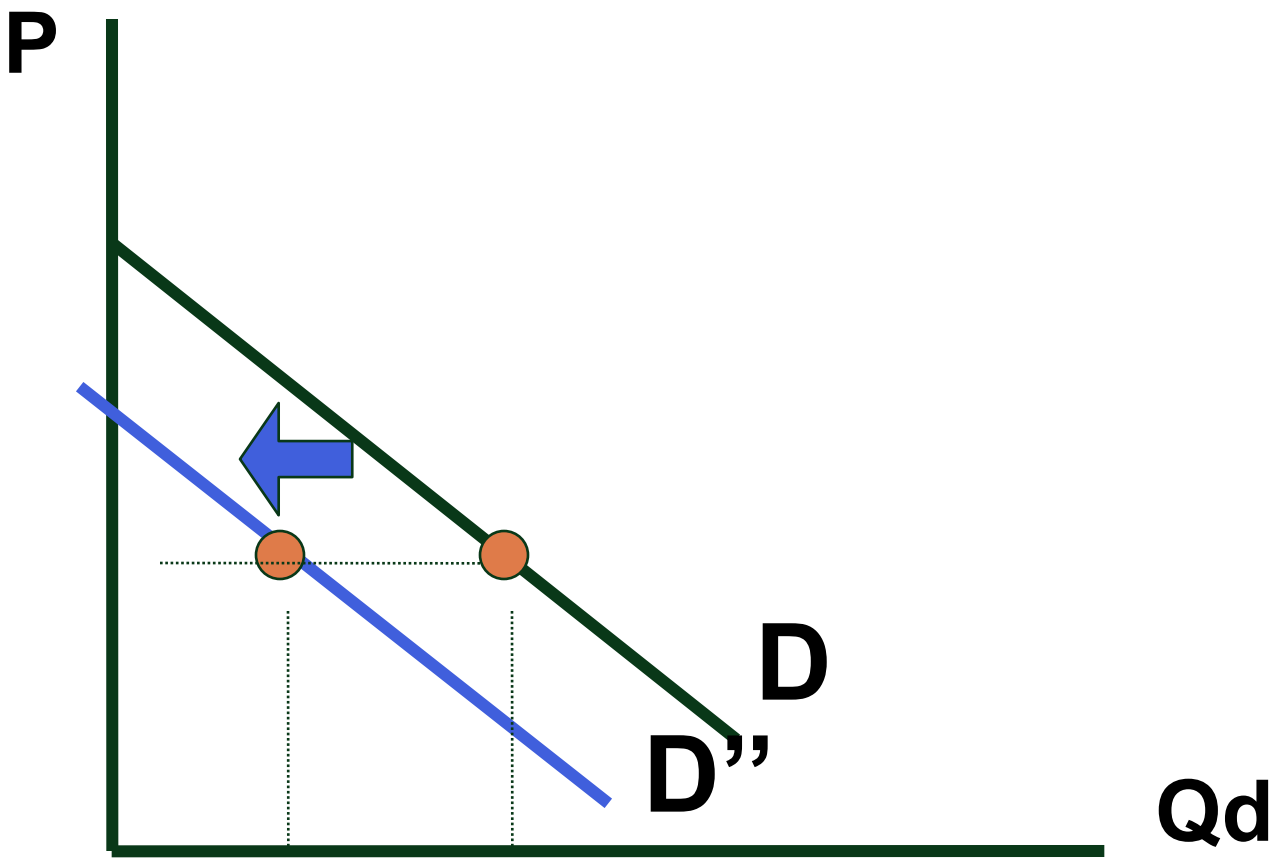
demand curve shifts to the right


P
2
1.5
1
.5
D'
D
Qd
0
1
2
3
4

DECREASE IN DEMAND

decrease in Qd at every price

demand curve shifts to the left


P
D
D”
Qd

FACTORS AFFECTING DEMAND

income

prices of related goods

buyer expectations

# of buyers

preferences

INCOME

for normal goods,

an increase in income will increase demand

examples:

CDs, bottled water,
eating out,

- for inferior goods,
  an increase in income will
  decrease the demand
- examples:
  - **ramen noodles,**
  - **check-cashing service**

PRICES OF RELATED GOODS

what are related goods?

- substitutes

  e.g. Snapple, Coke
- complements

  goods consumed with water

  e.g. pretzels

SUBSTITUTES

if price of Snapple rises,

- people switch to water
- increase in demand for water

if price of Snapple falls,

- people switch from water to Snapple
- decrease in demand for water

COMPLEMENTS

if price of pretzels rises

- eat fewer pretzels,
  so drink less water,
- demand for water falls

BUYER EXPECTATIONS

buyers can expect change in

- future income
- future prices

and act to change demand today

- expect price of water to rise next month,
  - **buy a case today,**
  - **increase demand today**

OF BUYERS

size of population

demographics

- age
- gender
- race

- if there are more buyers
  - **increase market demand for water**
  - **could be due to**
    - **more people overall**
    - **more people who like water**

PREFERENCES

what do we want to buy?

change in our likes/dislikes

- acid washed jeans?
- tattoos?

change in technology

- 5 1/4” floppies?
- DVDs?

- if drinking more water

  beneficial to health,

  - **increase in demand for bottled water**

IMPORTANT!!

Change in demand

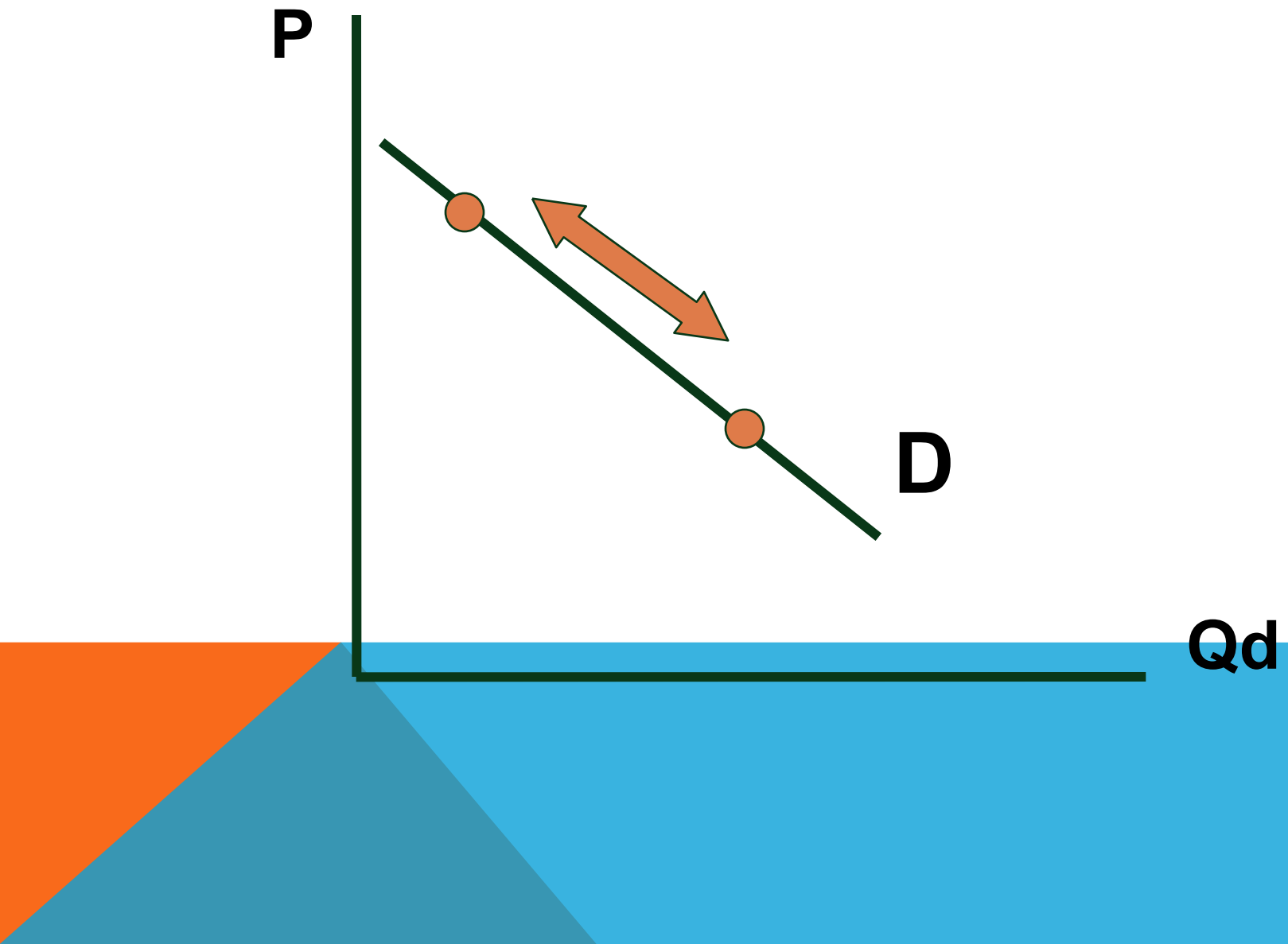
- occurs when other factors change
- shift to a new demand curve

change in demand

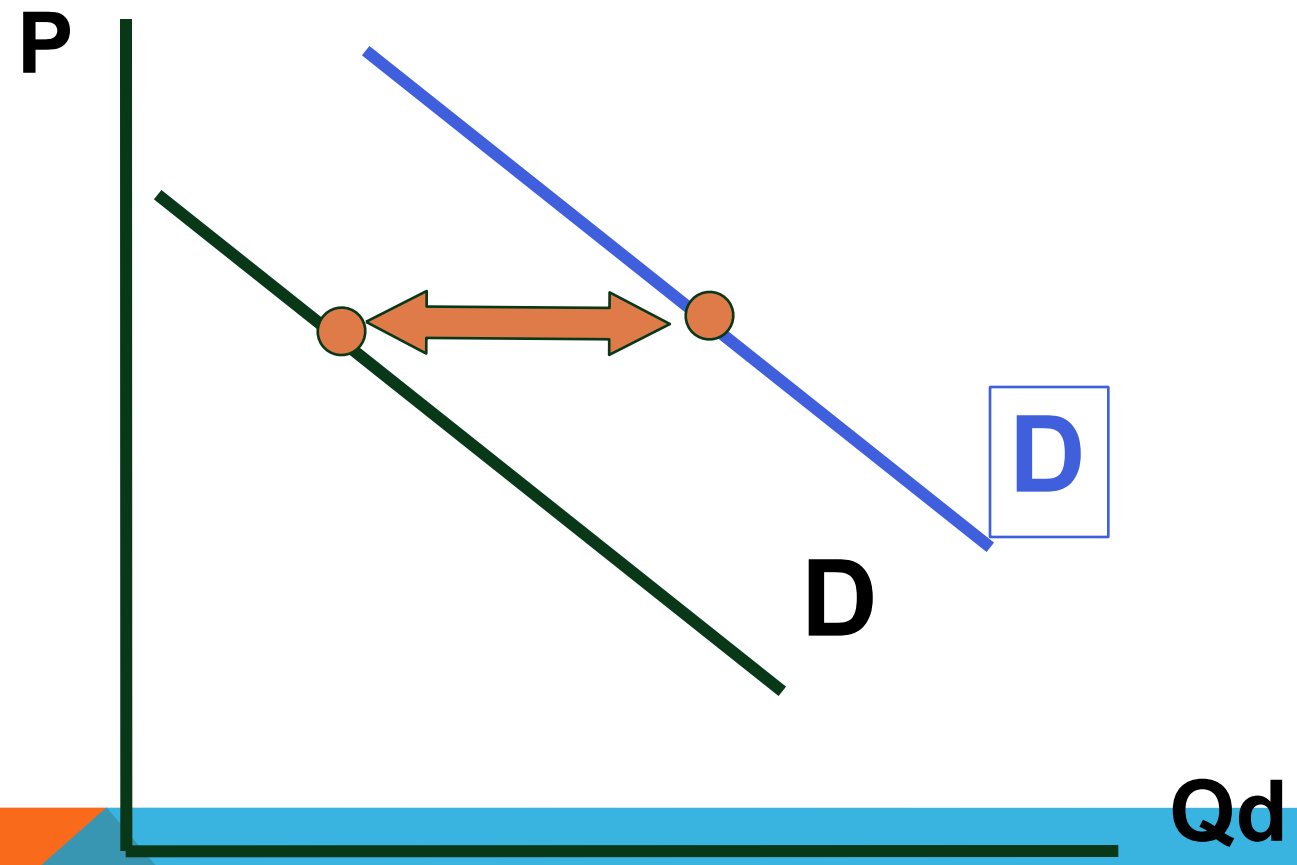
- NOT caused by change in price of the good

- Change in quantity demanded
  – occurs when prices change
  – movement along existing demand curve

CHANGE IN QD



CHANGE IN DEMAND



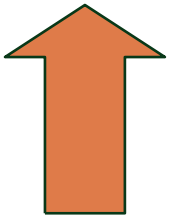
SUPPLY

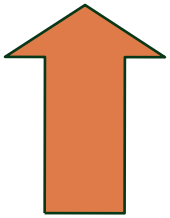
behavior of sellers

relationship between

- quantity supplied of a good
- price
- holding other factors constant

LAW OF SUPPLY

If the price of a good 

then the Qs 

holding other things constant!!!

WHY?

Holding costs constant

higher price means higher profit margin

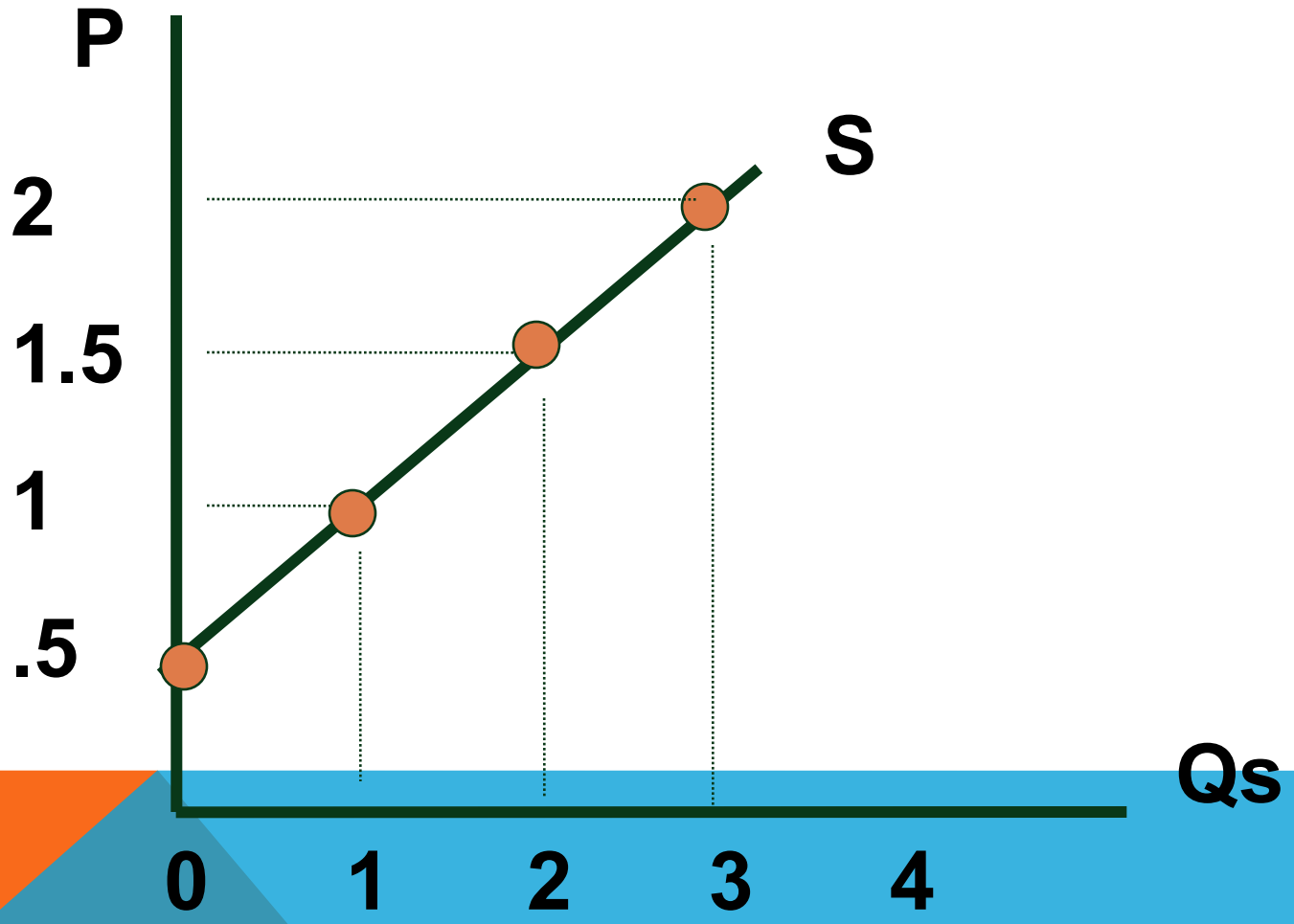
SUPPLY SCHEDULE

Price = $/bottle

Qs = bottles/day

P	Qs
$2.00	3
$1.50	2
$1.00	1
$.50	0

SUPPLY CURVE



- Individual supply
  - **supply curve for 1 supply**
- market supply**
  - **supply curve for all sellers**
  - **add up individual Qs for each price**

CHANGES IN SUPPLY

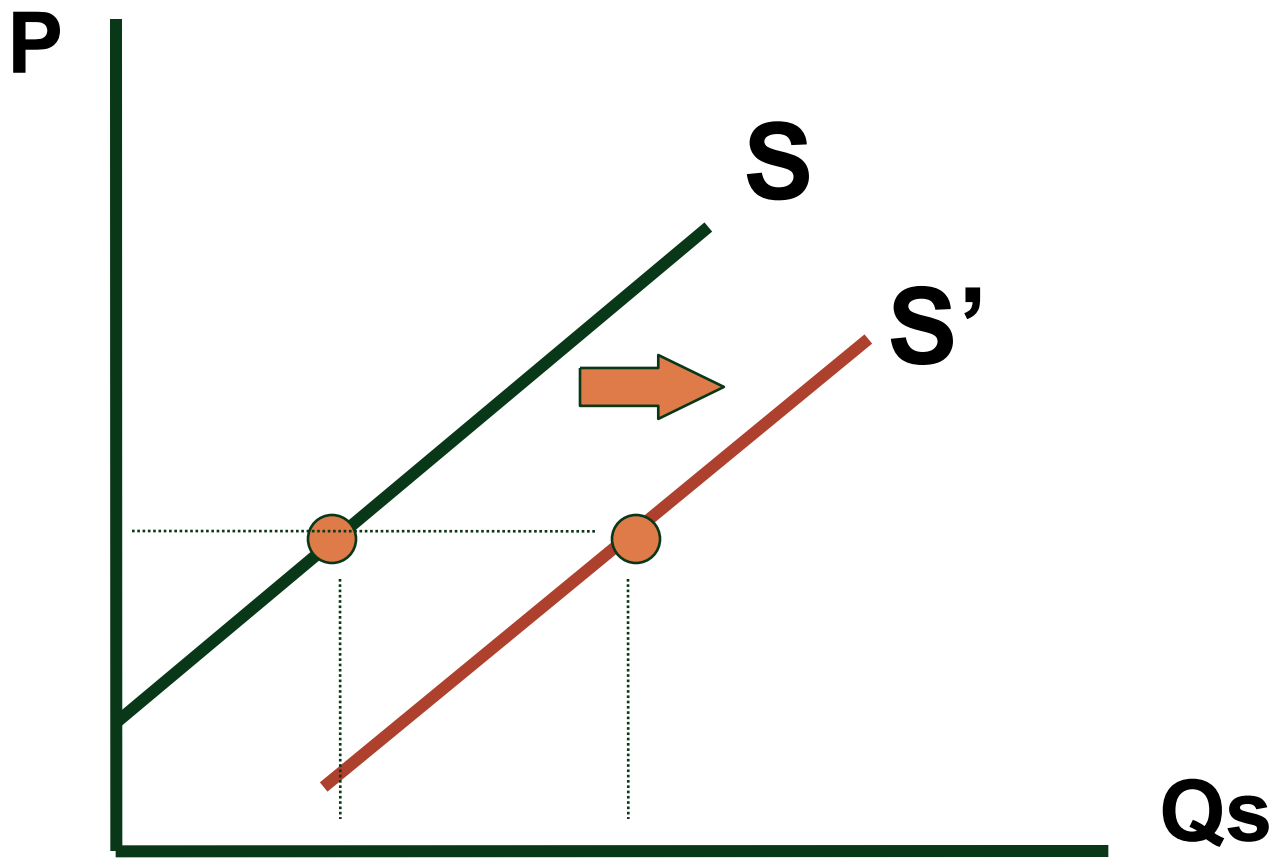
if other factors do change,

- change in supply
- shift to a new supply curve

INCREASE IN SUPPLY

increase in Qs at every price

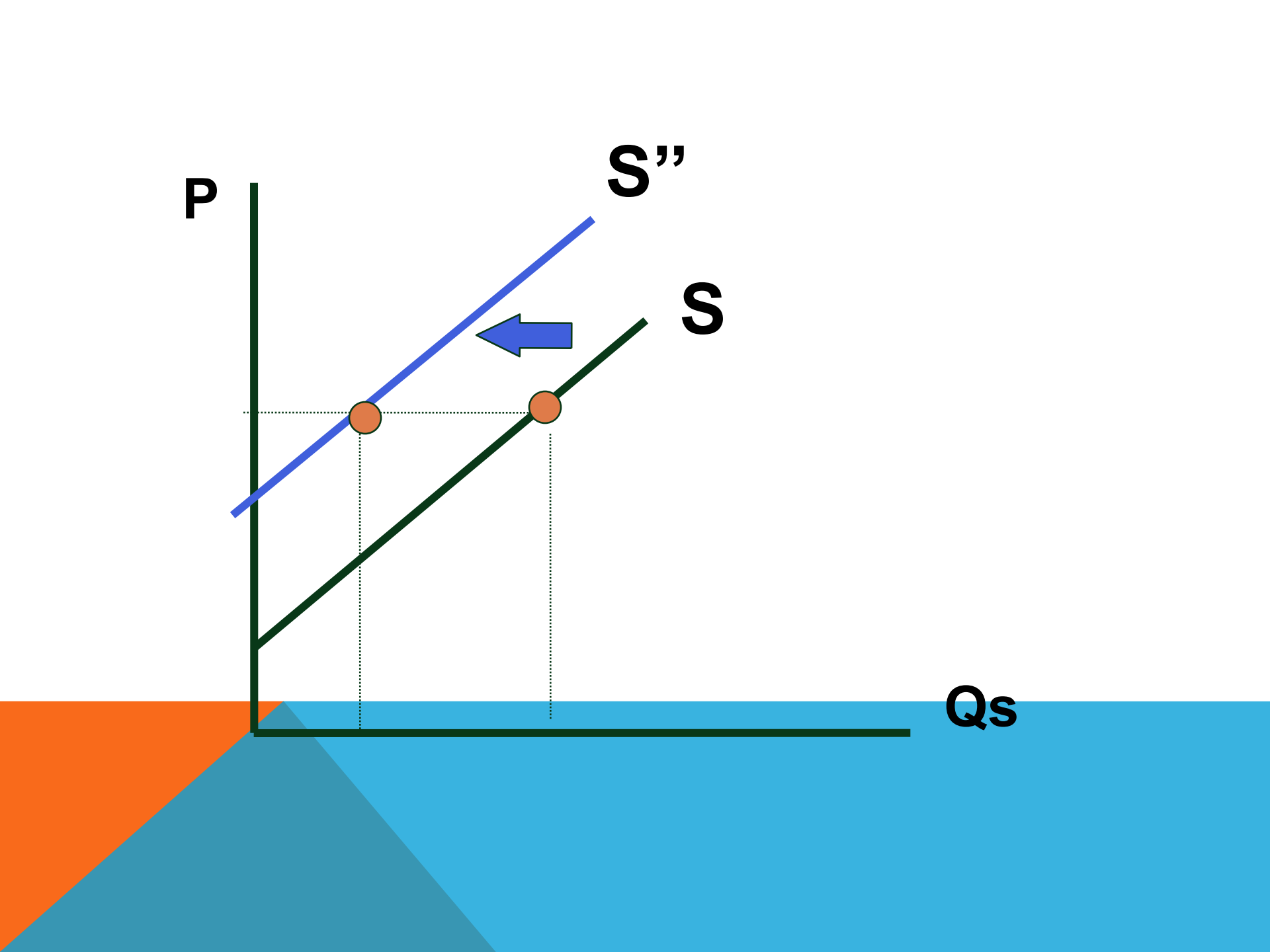
supply curve shifts to the right


P
S
S’
Qs

DECREASE IN SUPPLY

decrease in Qs at every price

supply curve shifts to the left


P
S”
S
Qs

FACTORS AFFECTING SUPPLY

Cost of inputs

prices of related goods

seller expectations

# of seller

productivity

COST OF INPUTS

As input prices get higher,

supply decreases

example: increase in cost of

- bottles
- labor
- electricity

PRICES OF RELATED GOODS

Substitutes in production

- a good that can be made instead
  of bottled water
  e.g. bottled tea

If price of bottled tea increases,

switch to tea production,

supply of bottled water falls

- Complements in production
  - **good that is produced with other good**
    - **e.g. Beef & leather**
  - **if price of beef rises,**
    - **Qs of beef rises,**
    - **& supply of leather rises**
    -

SELLER EXPECTATIONS

Expect input prices to rise in future

- increase supply today

expect price of good to rise in future

- decrease supply today

OF SELLERS

As more sellers supply good,

- market supply increases

PRODUCTIVITY

Amount of output per unit of input

- bottles of water per hour of labor

Increase in productivity lowers cost

- increases supply

what makes productivity increase?

- Technology
- human capital

IMPORTANT!!

Change in supply

– occurs when other factors change

– shift to a new supply curve

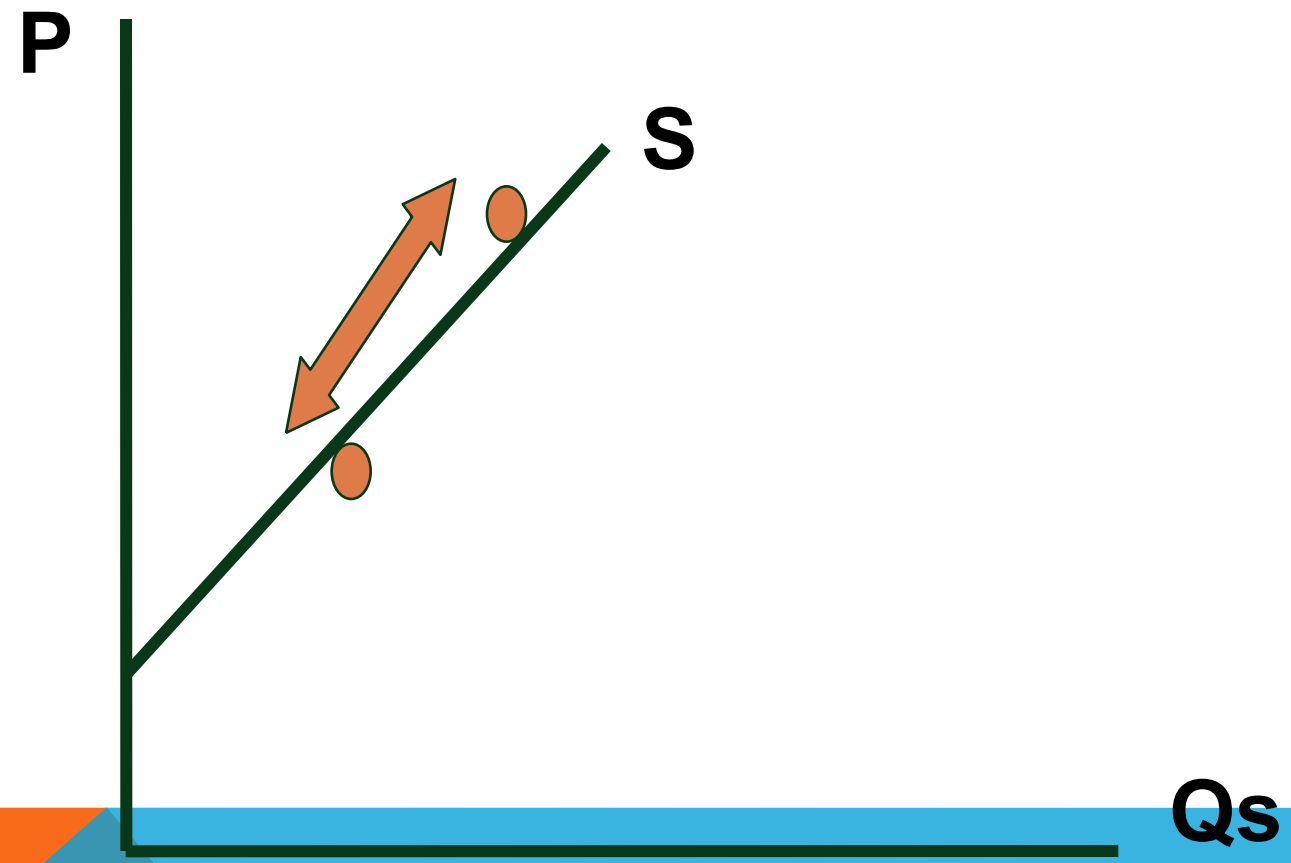
(right or left)

change in supply

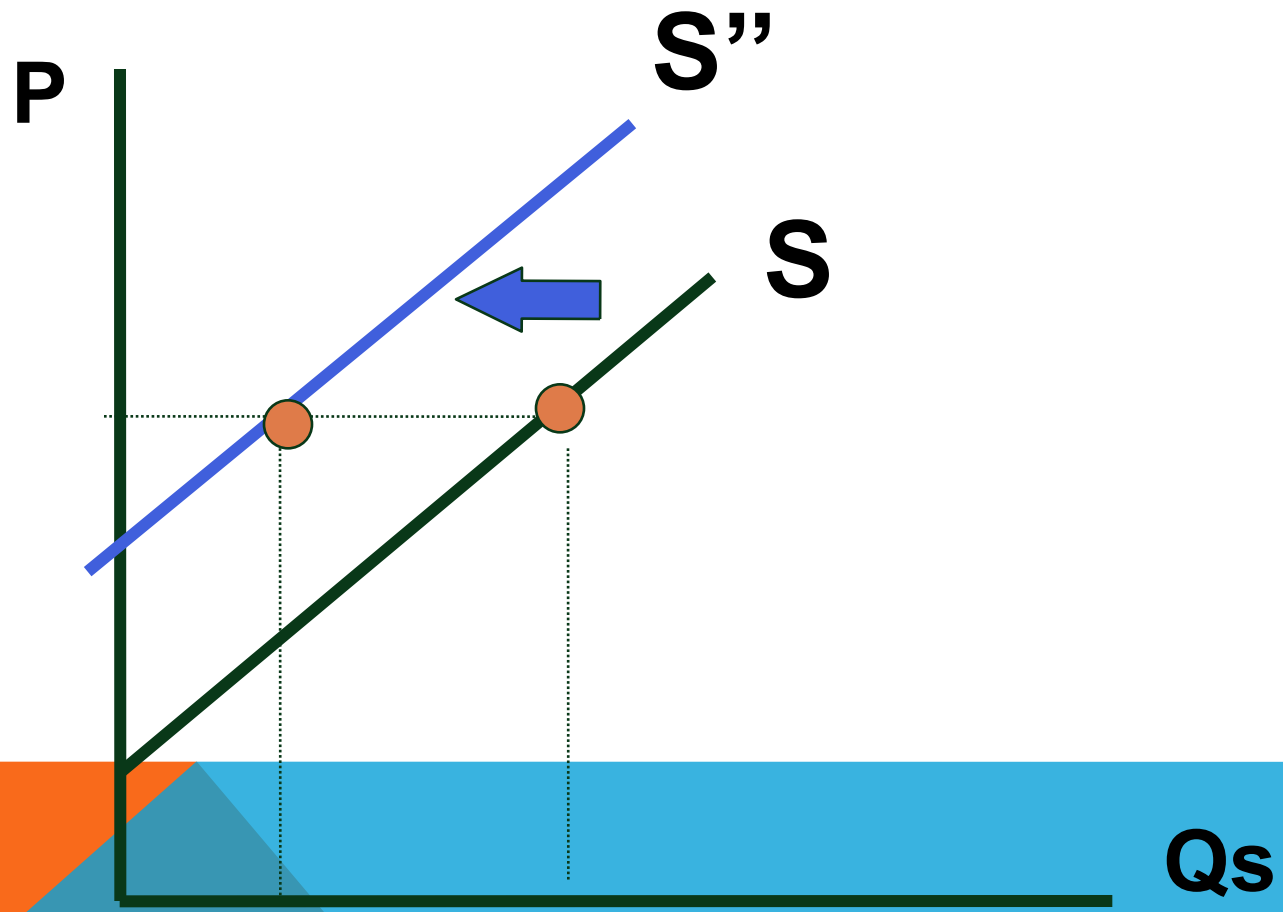
– NOT caused by change in price of the good

- Change in quantity supplied
  - occurs when prices change
  - movement along existing supply curve

CHANGE IN QS



CHANGE IN SUPPLY

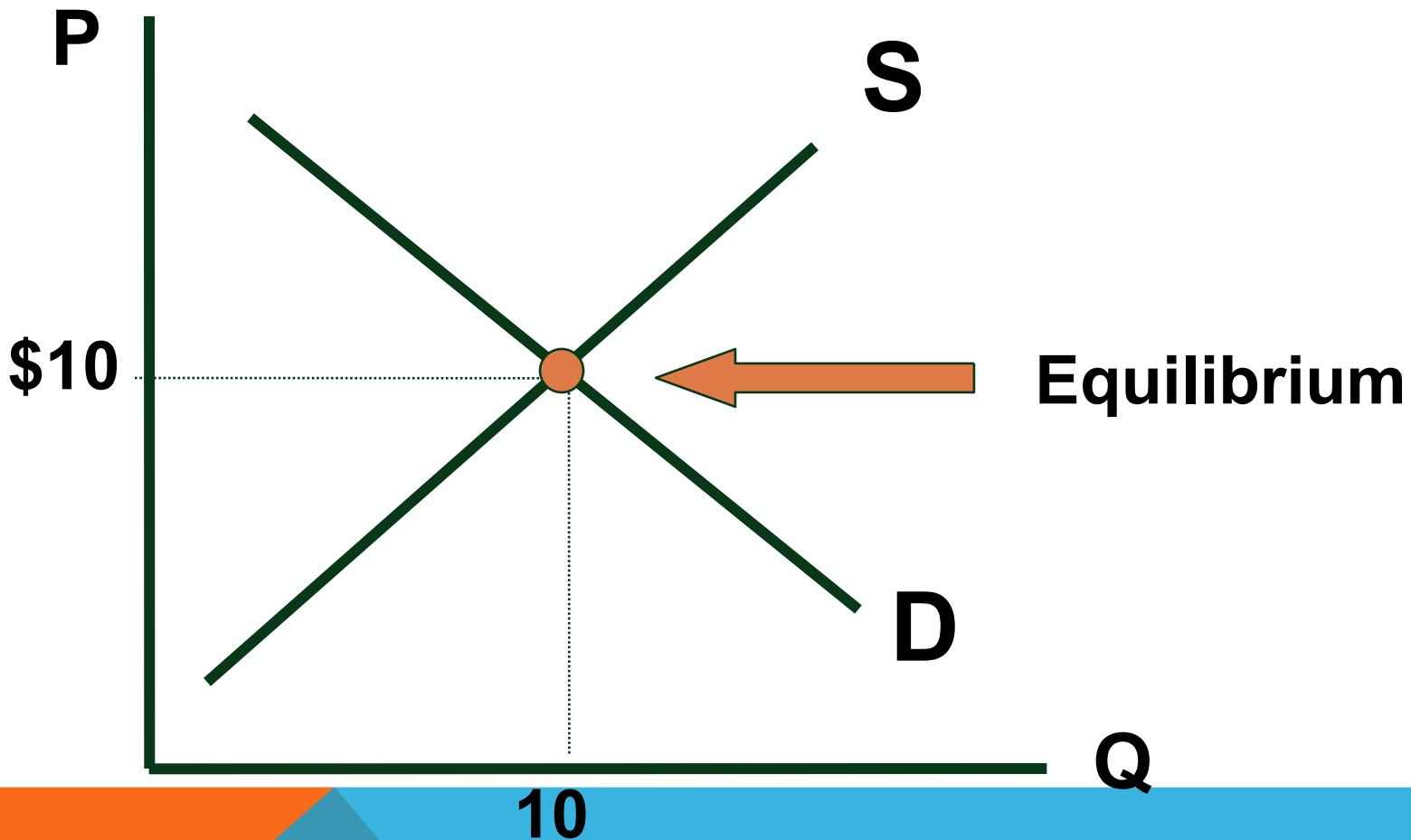


MARKET EQUILIBRIUM

What will be the price of bottled water?

- Price at which Qs = Qd
  - -- equilibrium price
  - -- equilibrium quantities

MARKET FOR BOTTLED WATER



WHY IS THIS AN EQUILIBRIUM?

If Qs > Qd

- surplus
- price falls until Qs = Qd

If Qs < Qd

- shortage
- price rises until Qs = Qd

CHANGES IN EQUILIBRIUM

If supply and/or demand changes

(shifts left or right),

then equilibrium will change too.

EXAMPLE 1

Market for bottled water

price of plastic bottles rises

what happens to equilibrium?

WHICH CURVE IS AFFECTED?

buyers or sellers?

Supply curve

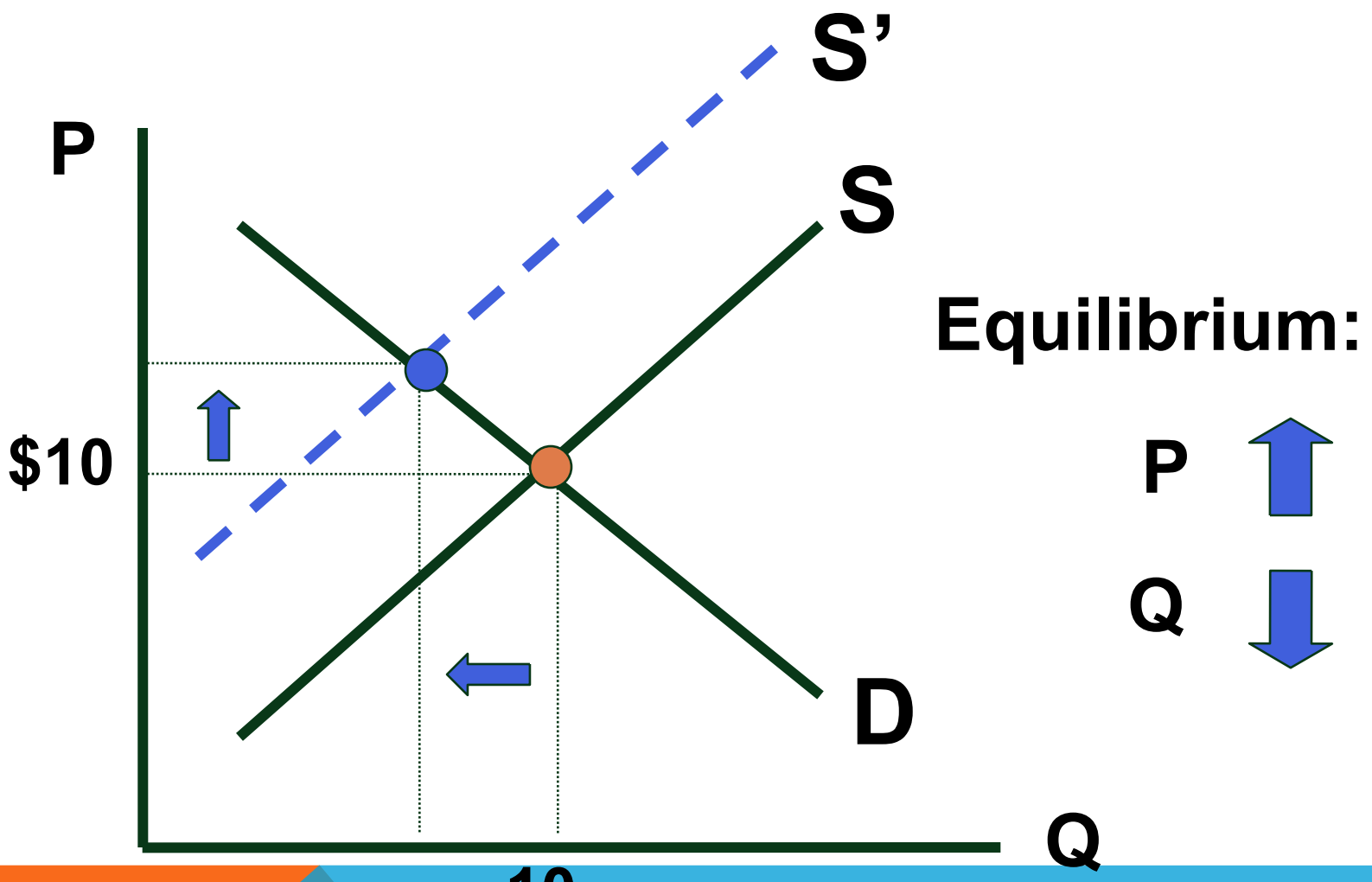
- bottles are an input

INCREASE OR DECREASE IN SUPPLY?

Increase in cost of input

supply decreases

- shift LEFT



Equilibrium:

P ↑

Q ↓

NOTE

Change in supply causes

change in equilibrium price

BUT

Change in price does NOT cause a

change in supply

EXAMPLE 2

Market for bottled water

sugar is found to be harmful to health

what happens to equilibrium?

WHICH CURVE IS AFFECTED?

Demand curve

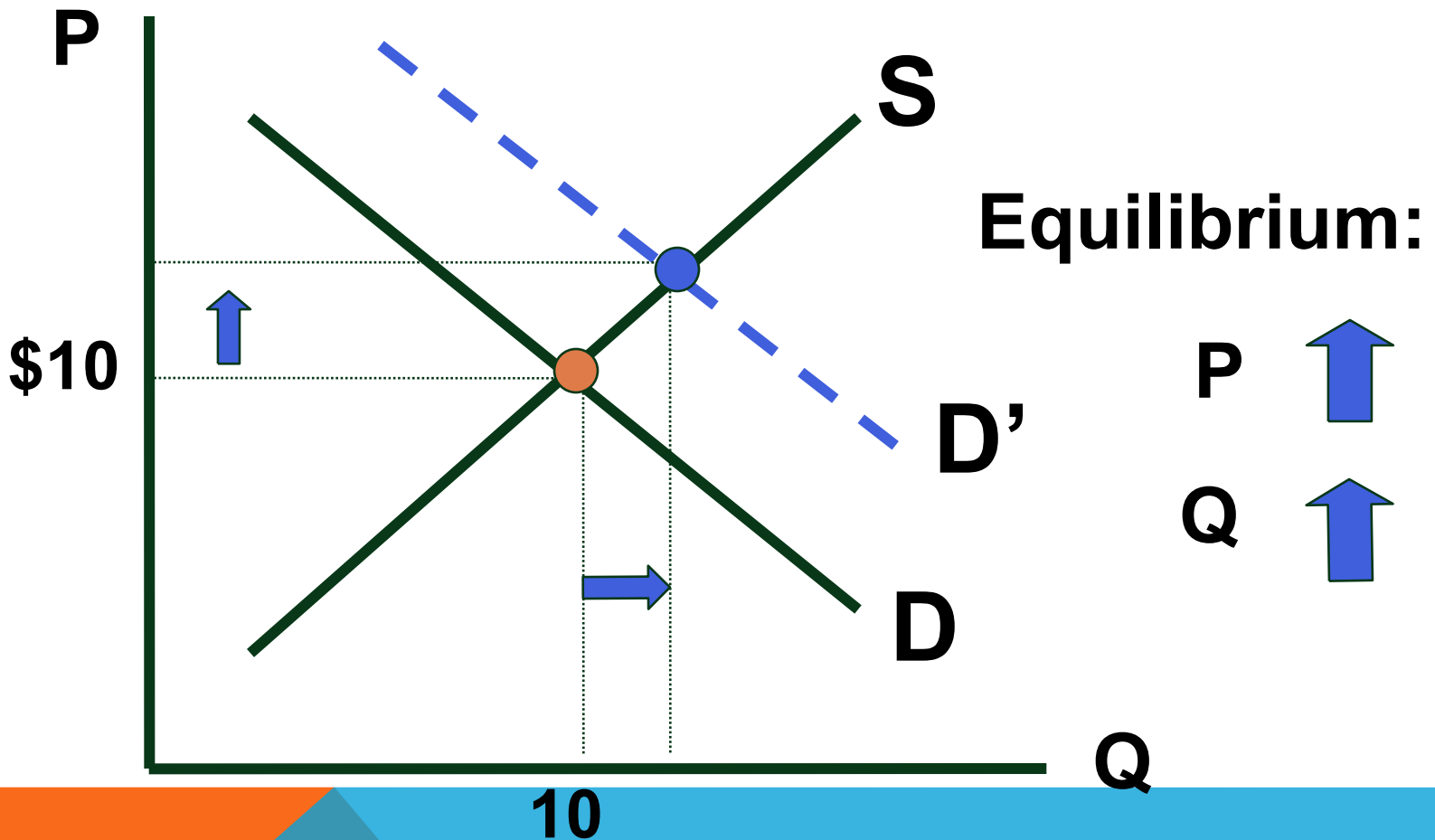
- health concerns increase
  preferences for water

INCREASE OR DECREASE IN DEMAND?

Increase in preference for water

demand increases

- shift RIGHT



Equilibrium:

P ↑

Q ↑

EXAMPLE 3

Market for bottled water

incomes fall &

sellers expect utilities to rise

WHICH CURVE IS AFFECTED?

Demand curve

- income falls

Supply curve

- seller expectations change
- expect costs to rise

INCREASE OR DECREASE?

Demand decreases (left)

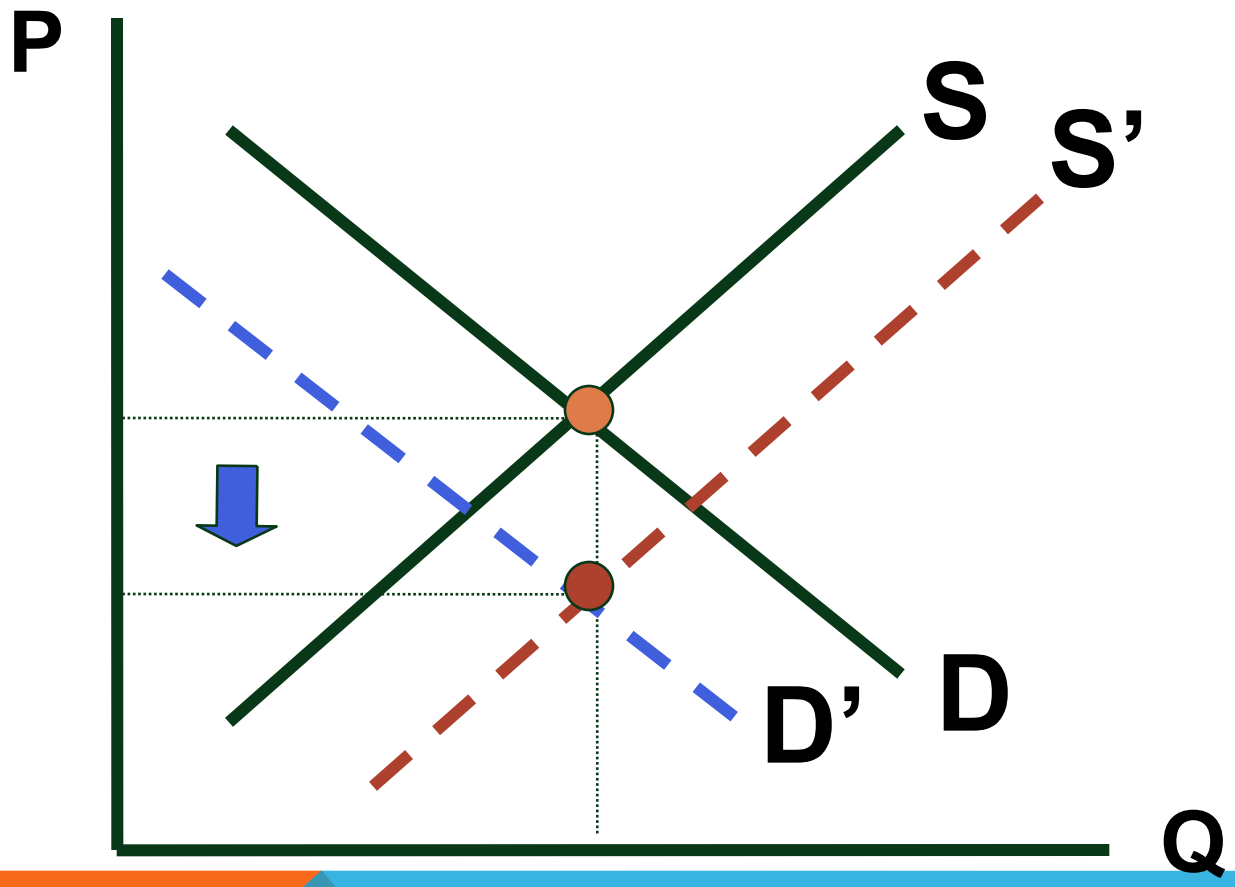
- income falls &

  bottled water is normal good

Supply increases (right)

- make more water today before

  costs go up



Equilibrium:

P ↓

Q ?

(millions bottles per day)

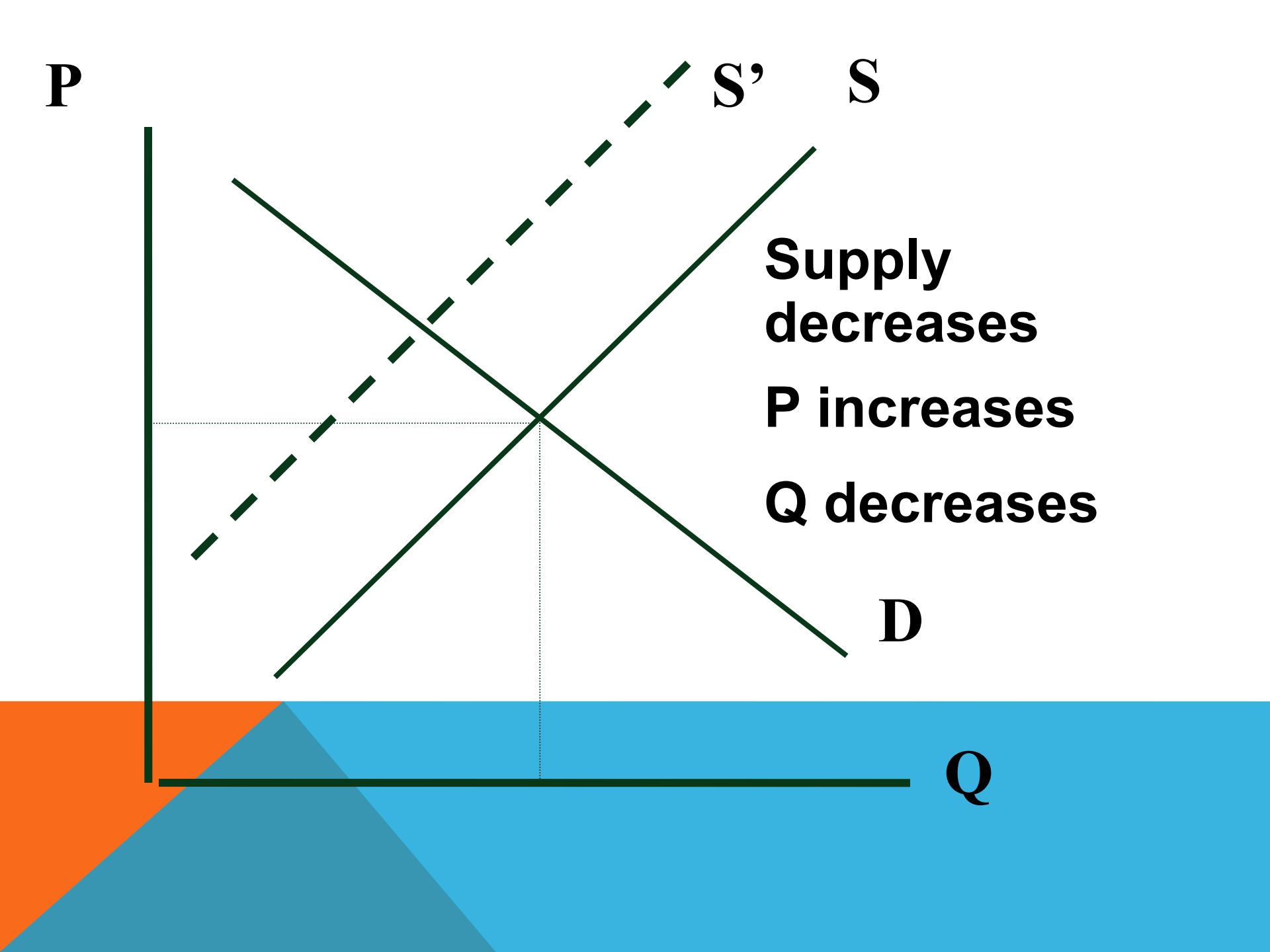
EXAMPLE 4: LEATHER SANDALS

Market for leather sandals

A. Mad cow disease

– must destroy 20% of herds

what happens to equilibrium

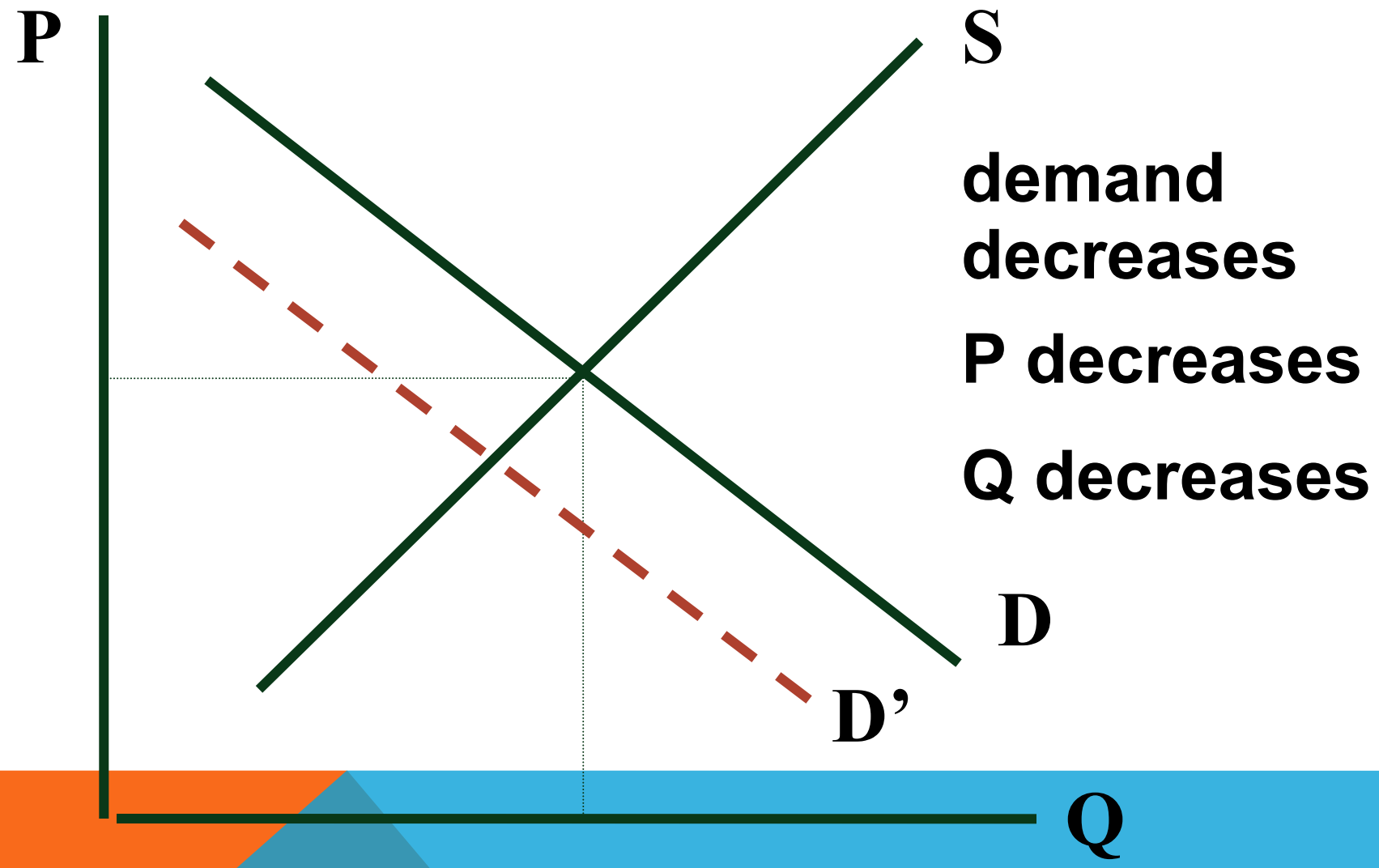

P
S'
S
Supply decreases
P increases
Q decreases
D
Q

B.

PETA

campaign against leather products

what happens to equilibrium?


P
S
demand decreases
P decreases
Q decreases
D
D'
Q

EXAMPLE 5: NATURAL GAS PRICES

Winter 2000-2001

prices increased over 100%

why?

3 possible causes:

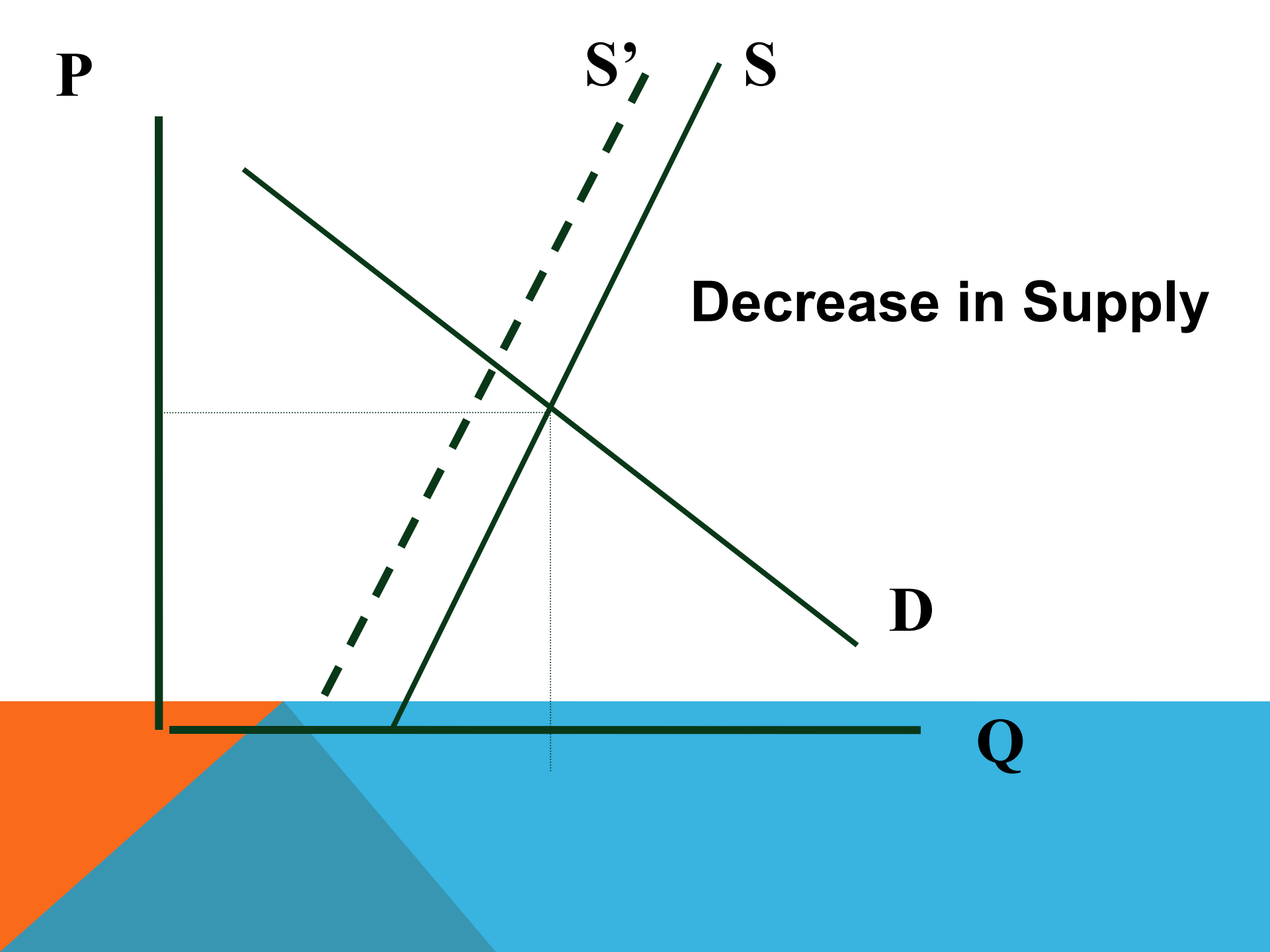
1. Supply decreases

or

2. Demand increases

or

3. both


P
S'
S
Decrease in Supply
D
Q

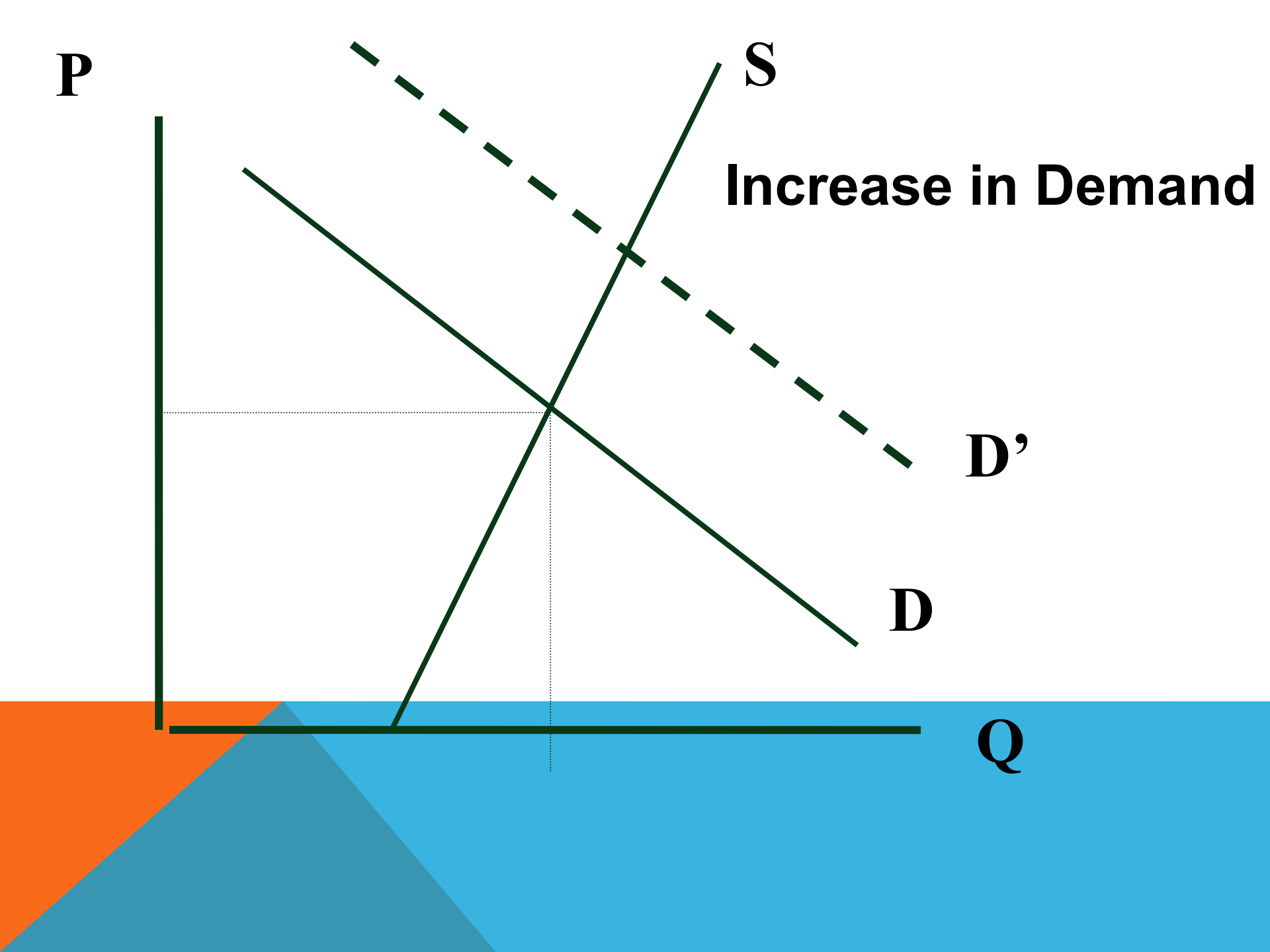
WHY WOULD S FALL?

regulation

- -- tougher to drill
- -- increase costs

hot summer (2000)

- -- depletes inventories


P
S
Increase in Demand
D'
D
Q

Why would D rise?

- booming economy (2000)
- EPA rules
  - fewer coal plants, more gas plants
- cold winter

WHY DID P RISE?

both falling supply & rising demand

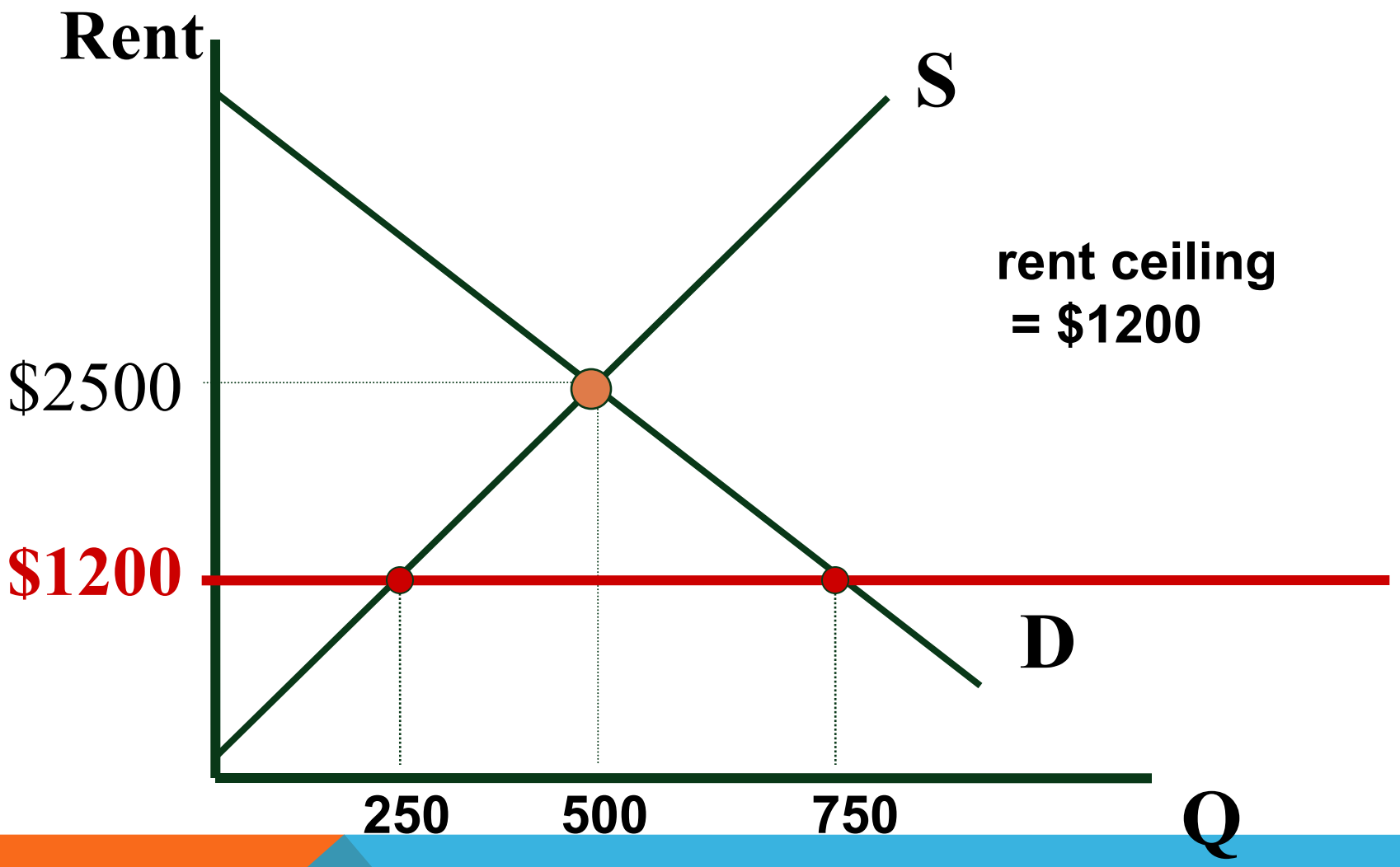
– but demand was most important

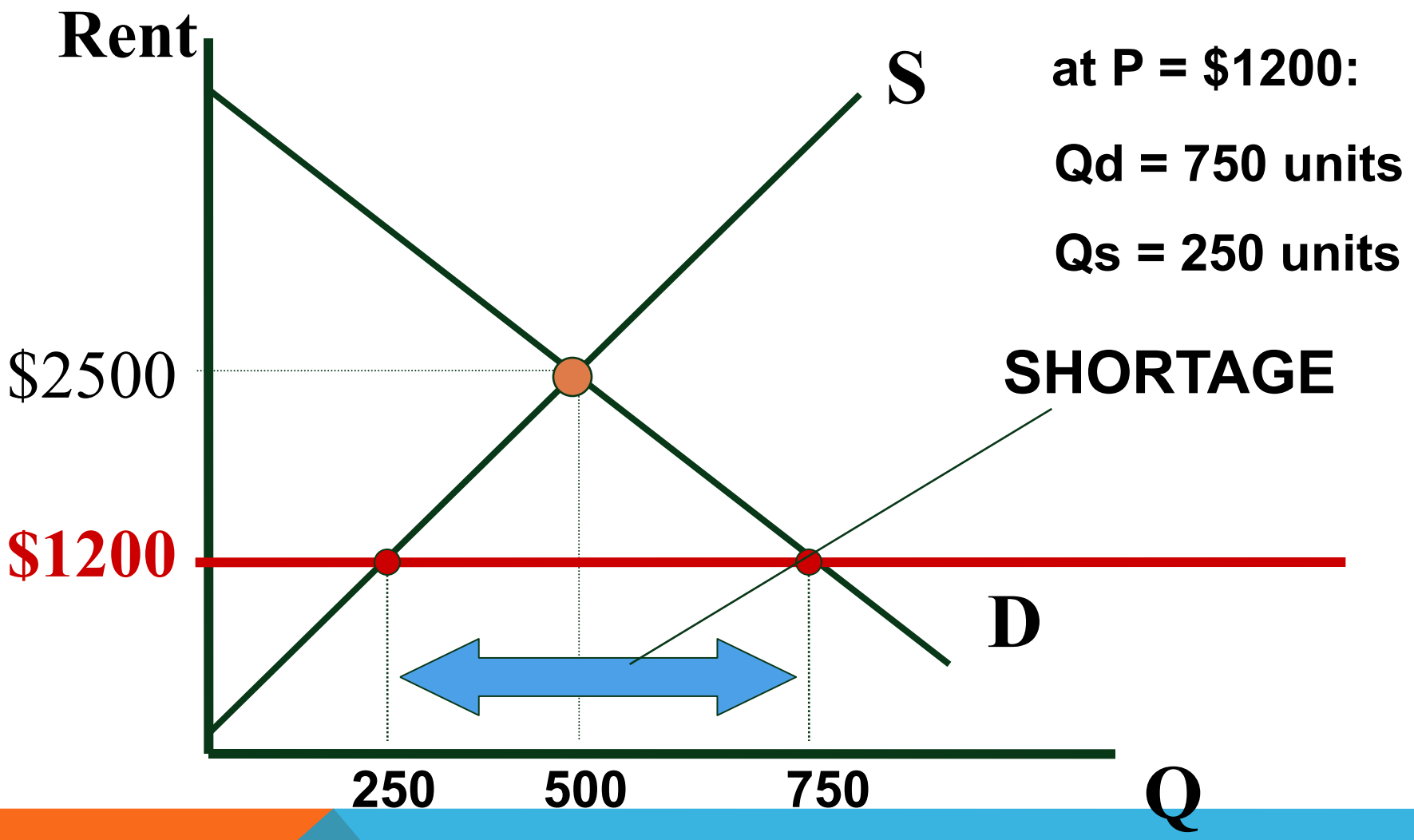
PRICE CEILING

gov’t regulation sets maximum price

example: rent control in NYC

what happens?


Rent
S
rent ceiling
= $1200
$2500
$1200
D
250
500
750
Q


Rent
S
at P = $1200:
Qd = 750 units
Qs = 250 units
$2500
SHORTAGE
$1200
D
250
500
750
Q

WHO GETS HOUSING?

those willing to pay more

- bogus fees:“key money”

those who look harder

- loss of time

those who get lucky

- Monica on *Friends*

RESULT

Price does not ration scarce good

too few apt. units

lost resources in searching

price ceiling is inefficient

WHY HAVE RENT CONTROL?

intended to help make housing affordable

secondary effect

- shortage
- run-down buildings
- rent-controlled apts. go to the “connected”

MORE PRACTICE?

course web site, related links

- Explorations in Supply & Demand
- AmosWeb