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# Lecture 2:
# Supply, Demand & Market Equilibrium

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# ECONOMICS

**MICROECONOMICS**

- Basic Economic concepts
- **Supply, Demand and Market**
- Elasticity
- Supply, Demand & Government Policies
- Production and Cost
- Market structures

**MACROECONOMICS**

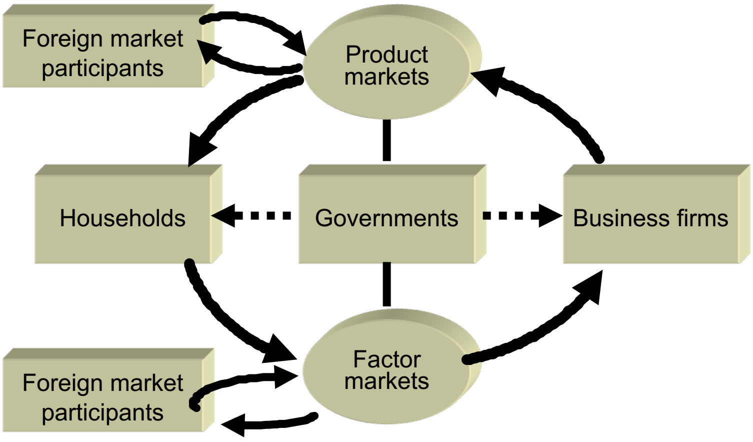
- National Income accounting
- ASAD
- Inflation and Unemployment
- Financial, Monetary and Banking system
- Macroeconomics Policies



# SUPPLY, DEMAND AND MARKET EQUILIBRIUM

- Demand and quantity demanded
- Supply and quantity supplied
- Change in **Demand** and change in **Quantity Demanded**
- Change in **Supply** and change in **Quantity Supplied**
- Shortage and Surplus
- Price Ceiling, Price Floor
- Welfare economics

# Market Interactions

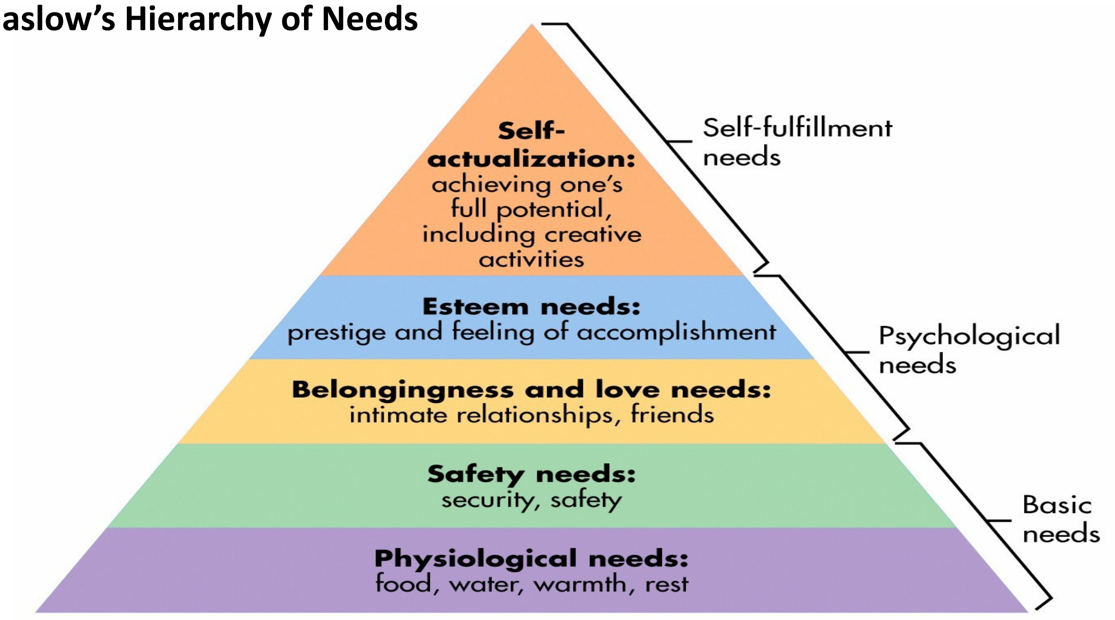





# Supply and Demand

- The two sides of each market transaction are called *supply* and *demand.*
- **Demand**: The ability and willingness to buy specific quantities of a good at alternative prices in a given time period, ceteris paribus.
- **Supply**: The ability and willingness to sell (produce) specific quantities of a good at alternative prices in a given time period, ceteris paribus.

**Maslow's Hierarchy of Needs**

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# Demand

- **Law of demand**
  - The quantity of a good demanded in a given time period increases as its price falls, ceteris paribus.
- **Determinants of demand**
  - Tastes (desire for this and other goods)
  - Income (of the consumer)
  - Other goods (their availability and price)
  - Expectations (for income, prices, tastes)
  - Number of buyers

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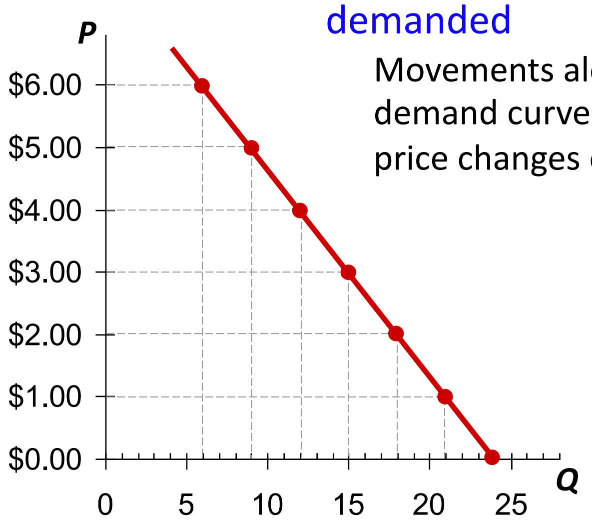
# The Demand Curve

| *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 |

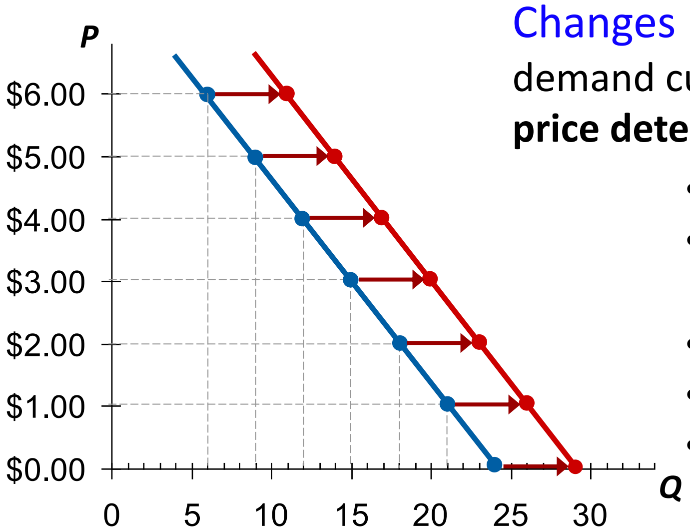



Changes in quantity demanded

Movements along a given demand curve in response to price changes of the good.



# Demand Curve Shifters




Changes in demand: Shifts of the demand curve due to changes in **non-price determinants** of demand

- income,
- prices of substitutes and complements,
- tastes,
- expectations,
- number of buyers.

## Determinants of demand

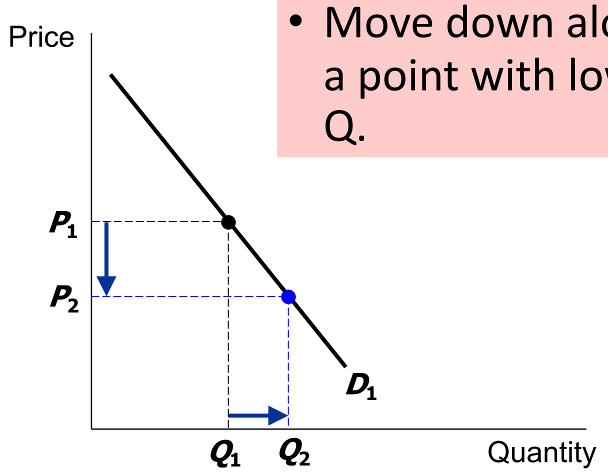
| Variable | A Change in This Variable . . . |
| --- | --- |
| Price of the good itself | Represents a movement along the demand curve |
| Income | Shifts the demand curve |
| Prices of related goods | Shifts the demand curve |
| Tastes | Shifts the demand curve |
| Expectations | Shifts the demand curve |
| Number of buyers | Shifts the demand curve |



## Change in quantity demanded

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

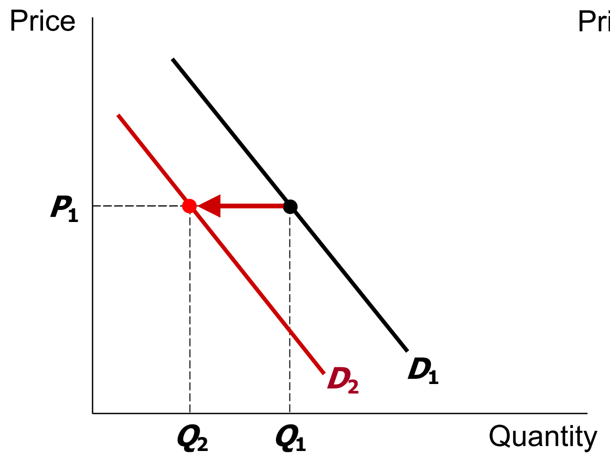
**PRICE**

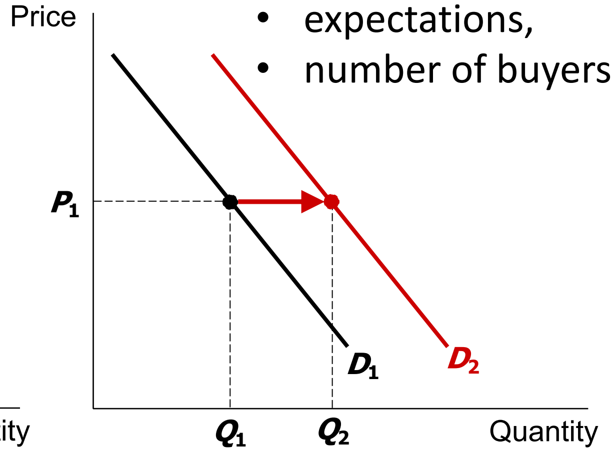


# Change in Demand

Non-price

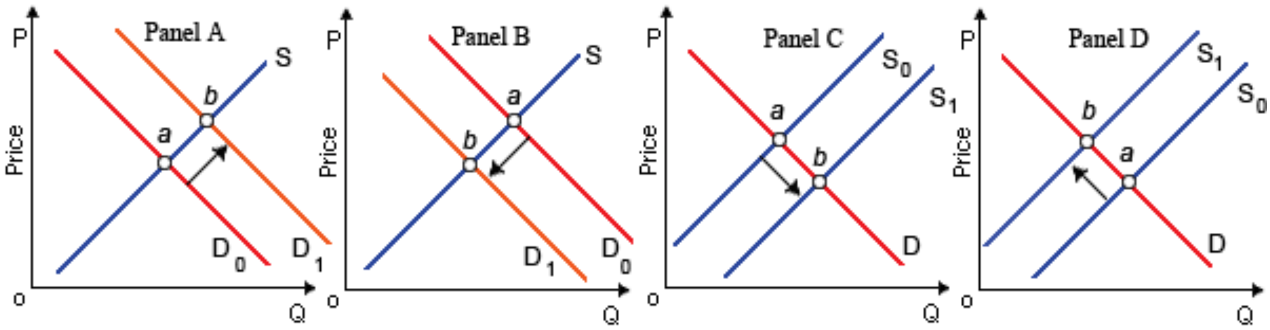
- income,
- prices of substitutes and complements,
- tastes,
- expectations,
- number of buyers.






s: Supply axis




**1. If equilibrium moves from point *a* to point *b*, the only market experiencing an increase in demand is shown in:**

(a) Panel A.
(b) Panel B.
(c) Panel C.
(d) Panel D.

**2. If equilibrium moves from point *a* to point *b*, the only market experiencing an increase in quantity demanded is shown in:**

(a) Panel A.
(b) Panel B.
(c) Panel C.
(d) Panel D.

**3. Lobster is a normal good and peanut butter is an inferior good. If your income rises, you will probably consume:**

a. more of both goods.

b. less of both goods.

c. more peanut butter and less lobster.

d. more lobster and less peanut butter.

**4. Which of the following demonstrates the law of demand?**

a. Relative to last month, Jason buys more KitKats at $1.50 per KitKat since he got a raise at work this month.

b. Chanel buys fewer cupcakes at $0.75 per cupcake than at $1 per cupcake, other things equal.

c. John buys more donuts at $0.25 per donut than at $0.50 per donut, other things equal.

d. Rica buys fewer Snickers at $0.60 per Snicker since the price of Milky Ways fell to $0.50 per Milky Way.

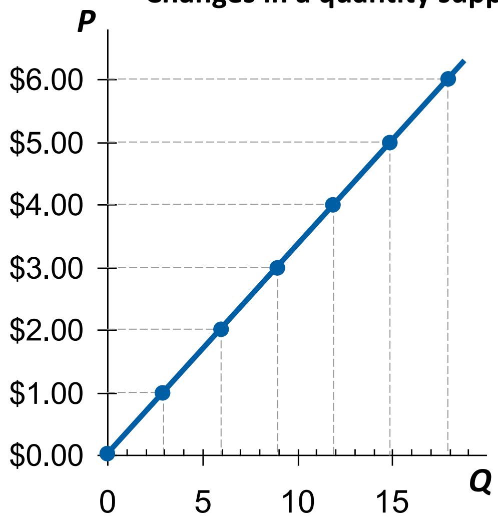


# Supply

- The total quantities of a good that sellers are **willing and able** to sell at alternative prices in a given time period, ceteris paribus.
- Market supply is an expression of sellers' intentions, of the ability and willingness to sell, not a statement of actual sales.
- **Law of supply**:
  - The quantity of a good supplied in a given time period increases as its price increases, ceteris paribus.
  - Larger quantities will be offered at higher prices.

# Supply Schedule and Supply Curve

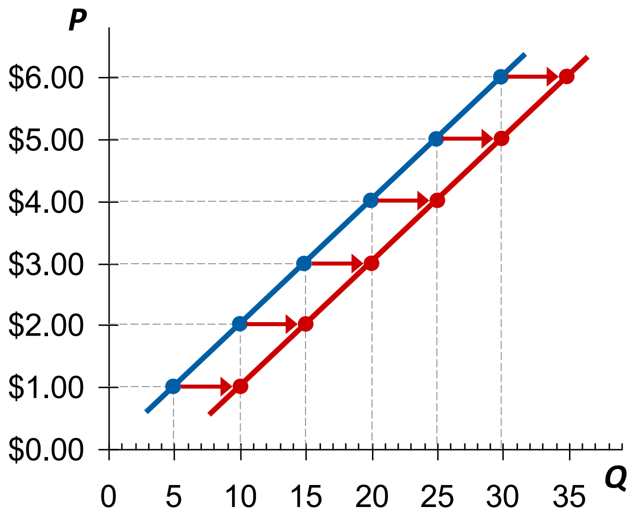
**Changes in a quantity supplied**: Movement along a given supply curve.




| Price | Quantity |
|---|---|
| $0.00 | 0 |
| 1.00 | 3 |
| 2.00 | 6 |
| 3.00 | 9 |
| 4.00 | 12 |
| 5.00 | 15 |
| 6.00 | 18 |



# Supply Curve Shifters




**Changes in supply**: Shifts due to some change in a determinant of supply

- input prices,
- technology,
- expectations,
- number of sellers

# Determinants of Supply

| Variable | A Change in This Variable . . . |
| --- | --- |
| Price of the good itself | Represents a movement along the supply curve |
| Input prices | Shifts the supply curve |
| Technology | Shifts the supply curve |
| Expectations | Shifts the supply curve |
| Number of sellers | Shifts the supply curve |



**5. An increase in the price of oranges would lead to**

a. an increased supply of oranges.

b. a reduction in the prices of inputs used in orange production.

c. a movement up and to the right along the supply curve for oranges.

d. an increased demand for oranges.

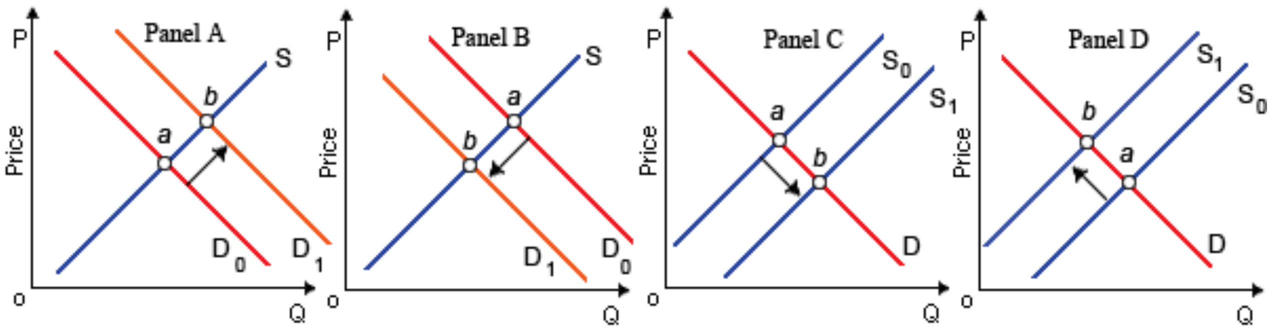
**6. Workers at a bicycle assembly plant currently earn the mandatory minimum wage. If the government increases the minimum wage by $1.00 an hour, it is likely that the**

a. demand for bicycle assembly workers will increase.

b. supply of bicycles will shift to the right.

c. supply of bicycles will shift to the left.

d. firm must increase output to maintain profit levels.




**7. If equilibrium moves from point *a* to point *b*, the only market experiencing an decrease in quantity supplied is shown in:**

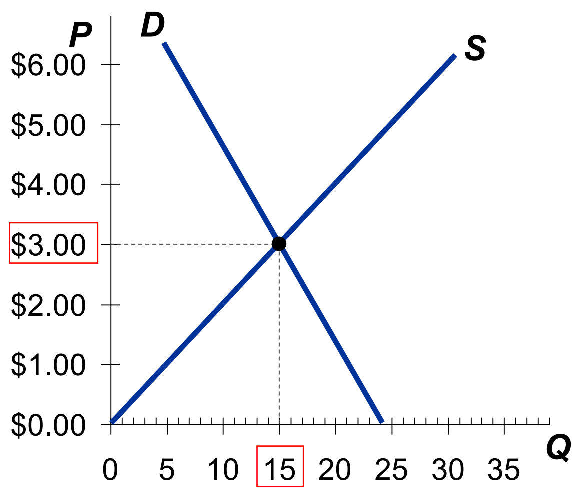
(a) Panel A.
(b) Panel B.
(c) Panel C.
(d) Panel D.

**8. If equilibrium moves from point *a* to point *b*, the only market experiencing an decrease in supply is shown in:**

(a) Panel A.
(b) Panel B.
(c) Panel C.
(d) Panel D.



# Supply and Demand Together

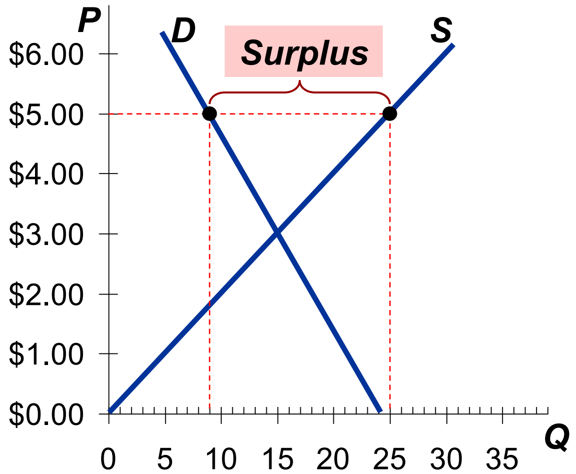



| *P* | *Q^D* | *Q^S* |
|---|---|---|
| $0 | 24 | 0 |
| 1 | 21 | 5 |
| 2 | 18 | 10 |
| 3 | 15 | 15 |
| 4 | 12 | 20 |
| 5 | 9 | 25 |
| 6 | 6 | 30 |

Equilibrium price:
price where Q supplied = Q demanded

Equilibrium quantity:
Q supplied and demanded at the equilibrium price

# Markets Not in Equilibrium: Surplus

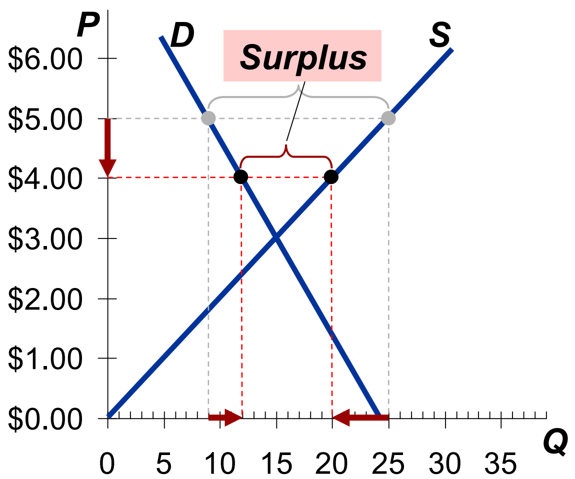



**Surplus** (excess supply):
quantity supplied is greater than quantity demanded

Example: if ***P*** = $5,
then $Q^D$ = 9
and $Q^S$ = 25
resulting in a surplus of 16 lattes



# Markets Not in Equilibrium: Surplus



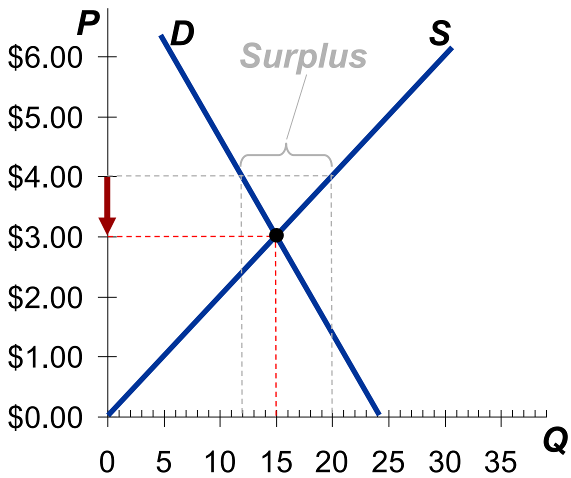

Facing a surplus,

sellers try to increase sales by cutting price.

This causes $Q^D$ to rise and $Q^S$ to fall…

…which reduces the surplus.

# Markets Not in Equilibrium: Surplus



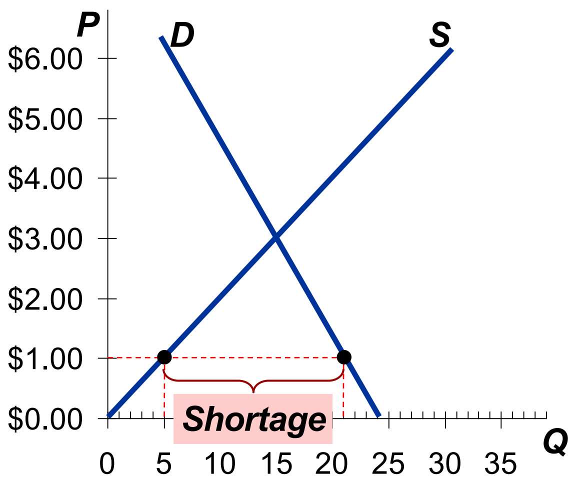

Facing a surplus, sellers try to increase sales by cutting price.

This causes $Q^D$ to rise and $Q^S$ to fall…

Prices continue to fall until market reaches equilibrium.



# Markets Not in Equilibrium: Shortage




**Shortage** (excess demand): quantity demanded is greater than quantity supplied

Example: if $P$ = $1,
then $Q^D$ = 21
and $Q^S$ = 5

resulting in a shortage of 16

# Market dynamics: Hybrid car market

**EVENT:** Increase in the price of gas.

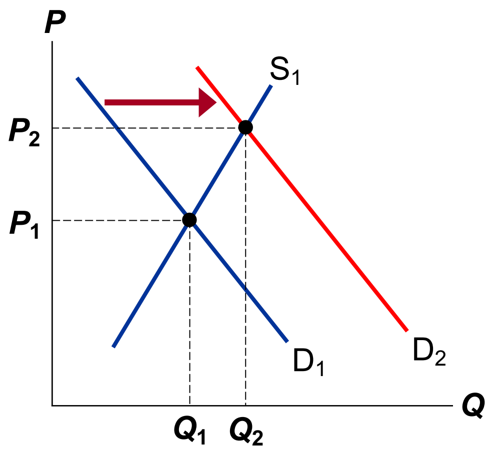
**STEP 1:** ***D*** **curve shifts**

because price of gas affects demand for hybrids. (***S*** curve does not shift, because price of gas does not affect cost of producing hybrids)

**STEP 2:** ***D*** **shifts** <u>right</u>

- because high gas price makes hybrids more attractive relative to other cars.

**STEP 3:** The shift causes an increase in price and quantity of hybrid cars.






# A Shift in Supply

**EVENT:** New technology reduces cost of producing hybrid cars.

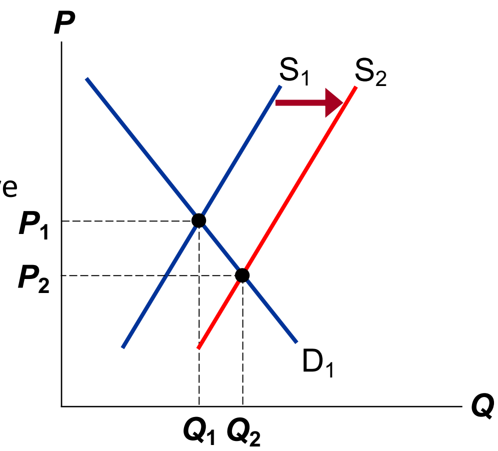
**STEP 1:** ***S*** **curve shifts**

because event affects cost of production. (***D*** curve does not shift, because production technology is not one of the factors that affect demand)

**STEP 2:** ***S*** **shifts** <u>right</u>

because event reduces cost, makes production more profitable at any given price.

**STEP 3:** The shift causes price to fall and quantity to rise.



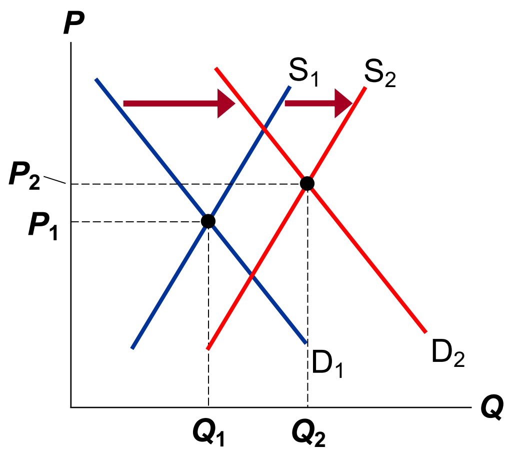
## A Shift in Both Supply and Demand

**EVENTS:** Prie 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 the effect on ***P*** is ambiguous:

If demand increases more than supply, ***P*** rises.

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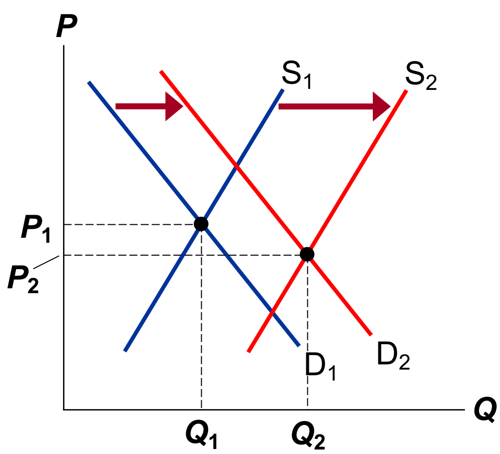
## A Shift in Both Supply and Demand

**EVENTS:** Price of gas rises AND new technology reduces production costs

**STEP 3:** ***Q*** rises, but the effect on ***P*** is ambiguous:

But if supply increases more than demand, ***P*** falls.

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**9. Equilibrium market price will definitely rise when:**

a. demand decreases, with supply constant.
b. supply increases, with demand constant.
c. demand decreases and supply increases.
d. supply decreases and demand increases.

**10. Beef is a normal good. You observe that both the equilibrium price and quantity of beef have fallen over time. Which of the following explanations would be most consistent with this observation?**

a. Consumers have experienced an increase in income and beef-production technology has improved.
b. The price of chicken has risen and the price of steak sauce has fallen.
c. New medical evidence has been released that indicates a negative correlation between a person's beef consumption and his or her longevity.
d. The demand curve for beef must be positively sloped.



**11. Suppose the number of buyers in a market increases and a technological advancement occurs also. What would we expect to happen in the market?**

a. Equilibrium price would decrease, but the impact on equilibrium quantity would be ambiguous.
b. Equilibrium price would increase, but the impact on equilibrium quantity would be ambiguous.
c. Equilibrium quantity would decrease, but the impact on equilibrium price would be ambiguous.
d. Equilibrium quantity would increase, but the impact on equilibrium price would be ambiguous.

**12. Equilibrium price will unambiguously increase when**

a. demand increases and supply does not change, when demand does not change and supply decreases, and when demand decreases and supply increases simultaneously.
b. demand increases and supply does not change, when demand does not change and supply decreases, and when demand increases and supply decreases simultaneously.
c. demand decreases and supply does not change, when demand does not change and supply increases, and when demand decreases and supply increases simultaneously.
d. demand decreases and supply does not change, when demand does not change and supply increases, and when demand increases and supply decreases simultaneously.