

CHAPTER 4 The Market Forces of Supply and Demand

Worried about this?

- Suppose you bought an apple in the market for 1,000 Won.
 - Why 1,000 Won?
 - Who determined it?

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Markets and Competition

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

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Demand

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

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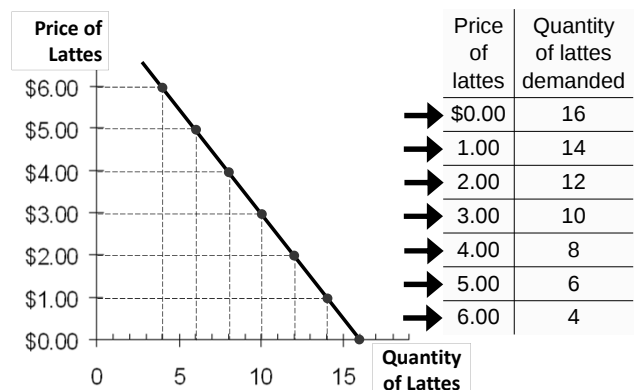
The Demand Schedule

- (): a table that shows the relationship between the price of a good and the quantity demanded
- Example: Helen's demand for lattes.
- Notice that Helen'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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Helen's Demand Schedule & Curve



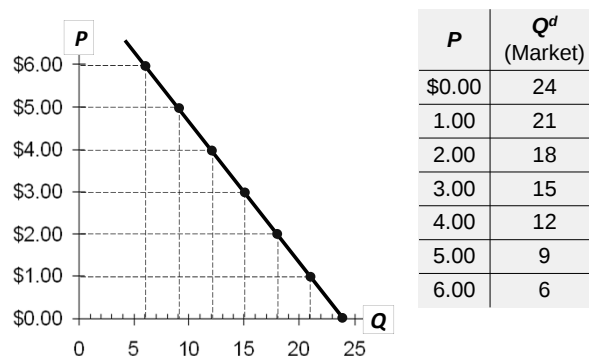
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Market Demand versus Individual Demand

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

Price	Helen's Q^d		Ken'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

The Market Demand Curve for Lattes



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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...

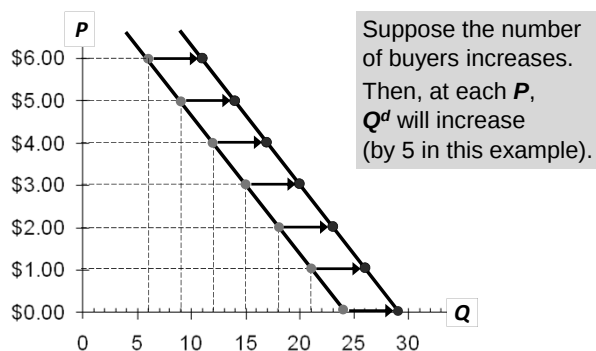
Demand Curve Shifters: # of Buyers

- 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



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Demand Curve Shifters: Income

- Demand for a () 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 () 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 () if an increase in the price of one causes an increase in demand for the other.
- Example: pizza and hamburgers.
An increase in the price of pizza increases demand for hamburgers, shifting hamburger 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 () 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, eggs and bacon

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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 '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 autos may fall now.

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Summary: Variables That Influence Buyers

Variable	A change in this variable...
Price	...causes a movement 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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Supply

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

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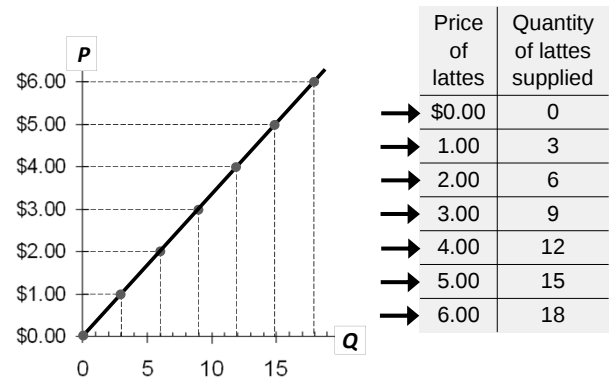
The Supply Schedule

- (): 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



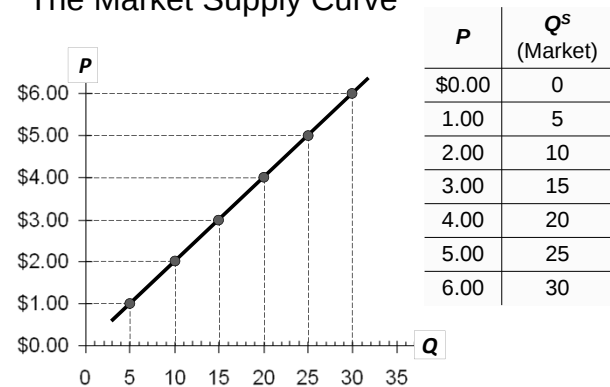
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Market Supply versus Individual Supply

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

Price	Starbucks		Peet's		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

The Market Supply Curve



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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...

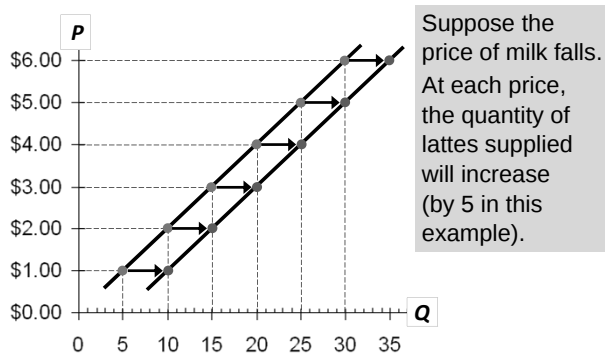
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Supply Curve Shifters: Input Prices

- 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**



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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 Texas 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)

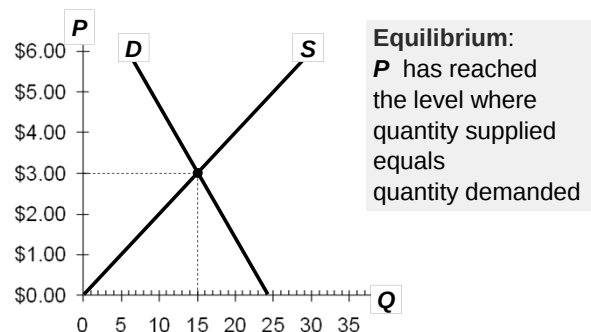
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Summary: Variables that Influence Sellers

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

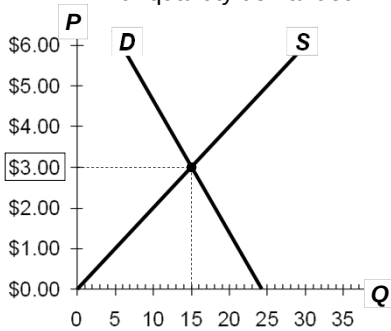
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Supply and Demand Together



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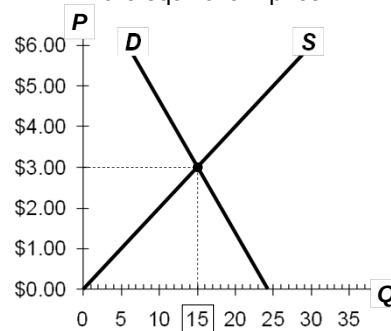
Equilibrium price:
the price that equates quantity supplied with quantity demanded



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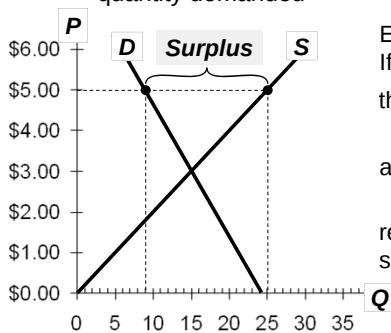
Equilibrium quantity:
the quantity supplied and demanded at the equilibrium price



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

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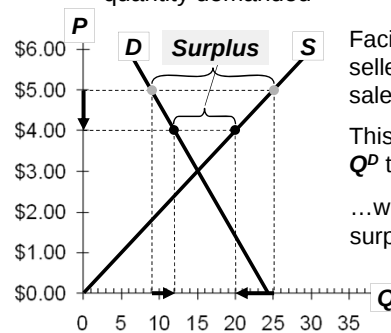
Surplus (a.k.a. excess supply):
when quantity supplied is greater than quantity demanded



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

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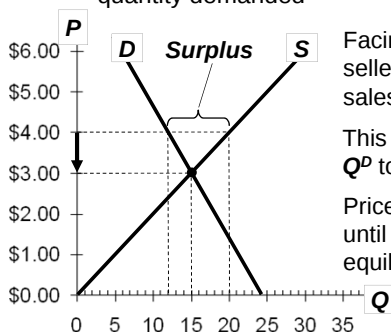
Surplus (a.k.a. excess supply):
when quantity supplied is greater than quantity demanded



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.

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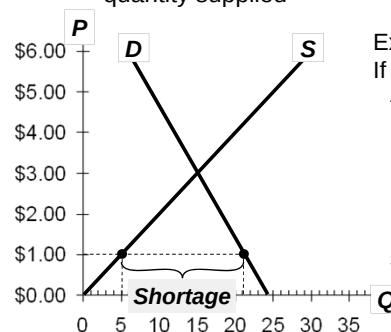
Surplus (a.k.a. excess supply):
when quantity supplied is greater than quantity demanded



Facing a surplus,
sellers try to increase
sales by cutting price.
This causes
 Q^D to rise and Q^S to fall.
Prices continue to fall
until market reaches
equilibrium.

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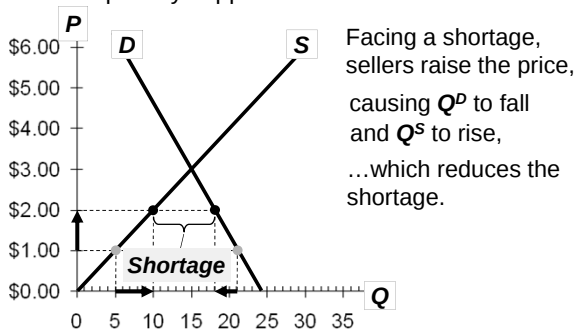
Shortage (a.k.a. excess demand):
when quantity demanded is greater than quantity supplied



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

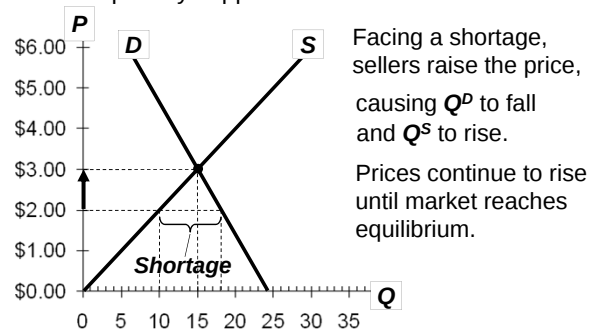
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Shortage (a.k.a. excess demand):
when quantity demanded is greater than
quantity supplied



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



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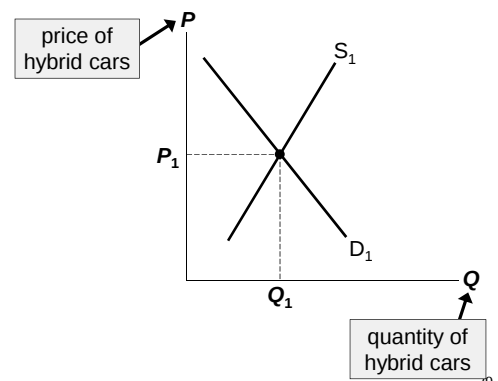
Three Steps to Analyzing Changes in Eq'm

To determine the effects of any event,

1. Decide whether the 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:

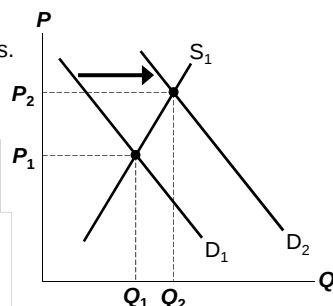
D curve shifts

STEP 2:

D shifts right

STEP 3:

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



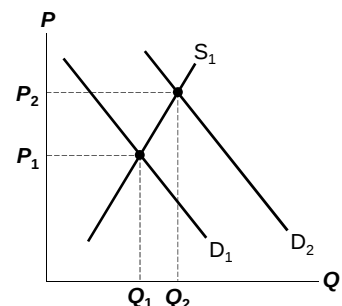
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EXAMPLE 1: A Shift in Demand

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

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

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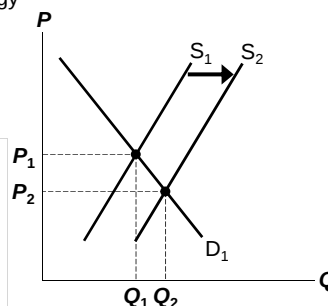
EXAMPLE 2: A Shift in Supply

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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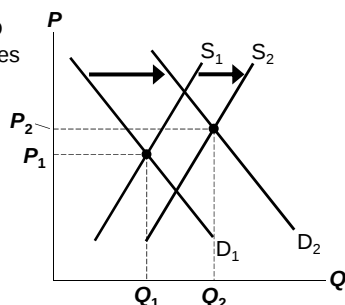
EXAMPLE 3: A Shift in Both Supply and Demand

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.

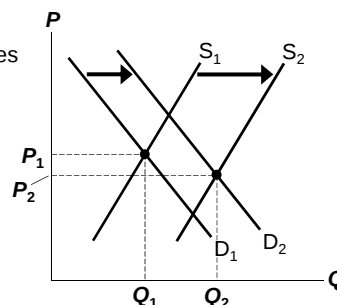


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EXAMPLE 3: A Shift in Both Supply and Demand

EVENTS:
price of gas rises AND new technology reduces production costs

STEP 3, cont.
But if supply increases more than demand, **P** falls.



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Q: Why do the prices of some goods, like apples, go down during the months of heaviest consumption while others, like beachfront cottages, go up?

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CONCLUSION:

How Prices Allocate Resources

- One of the Ten Principles from Chapter 1:
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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