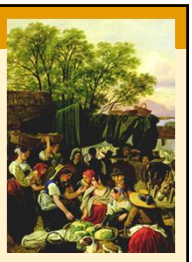
N. Gregory Mankiw

Principles of
Macroeconomics
Sixth Edition



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The Market Forces of Supply and Demand

Premium PowerPoint Slides by Ron Cronovich

In this chapter, look for the answers to these questions:

- What factors affect buyers' demand for goods?
- What factors affect sellers' supply of goods?
- 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?

1

Markets and Competition

§ A **market** is

§ A **competitive market** is one with many buyers and sellers,

§ In a **perfectly competitive** market:

  §

  §

§ In this chapter, we assume markets are perfectly competitive.

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Demand

§ The **quantity demanded** of any good

§ **Law of demand**: the claim that

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The Demand Schedule

§ **Demand schedule**:

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

§ Example:
Helen's demand for lattes.

§ Notice that Helen's preferences obey the law of demand.

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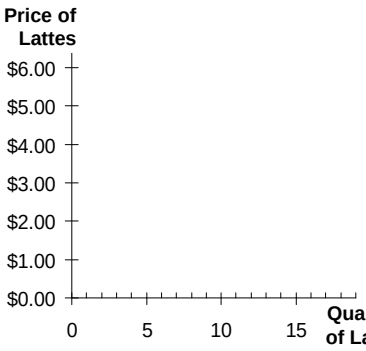
Helen's Demand Schedule & Curve



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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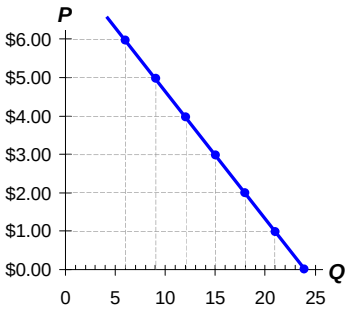
Market Demand versus Individual Demand

- The quantity demanded in the market is the sum of the quantities demanded by all buyers at each price.
- Suppose 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	
1.00	14	7	
2.00	12	6	
3.00	10	5	
4.00	8	4	
5.00	6	3	
6.00	4	2	

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.,

- Changes in them shift the ***D*** curve…

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Demand Curve Shifters: # of Buyers

- Increase in # of buyers

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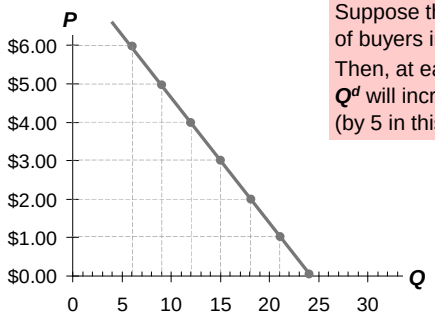
Demand Curve Shifters: # of Buyers



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 _____ to income.
  - Increase in income causes

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

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Demand Curve Shifters: Prices of Related Goods

- Two goods are **substitutes** if
- Example:
- Other examples:

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Demand Curve Shifters: Prices of Related Goods

- Two goods are **complements** if
- Example:
- Other examples:

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Demand Curve Shifters: Tastes

- Anything that causes a shift in tastes *toward* a good
- 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:

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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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ACTIVE LEARNING 1

Demand Curve

Draw a demand curve for music downloads. What happens to it in each of the following scenarios? Why?

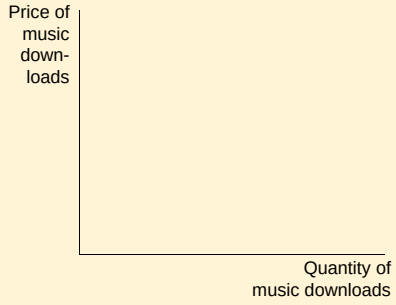
A. The price of iPods falls

B. The price of music downloads falls

C. The price of CDs falls

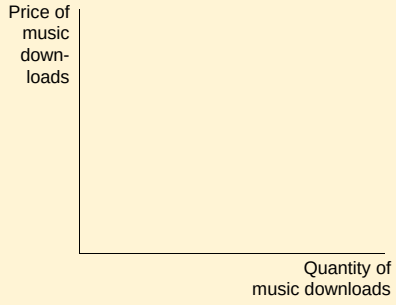
ACTIVE LEARNING 1

A. Price of iPods falls



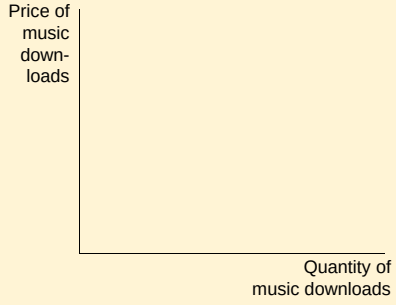
ACTIVE LEARNING 1

B. Price of music downloads falls



ACTIVE LEARNING 1

C. Price of CDs falls



Supply

§ The **quantity supplied** of any good

§ **Law of supply**:

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The Supply Schedule

§ **Supply schedule**:

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

§ Example: Starbucks' supply of lattes.

§ Notice that Starbucks' supply schedule obeys the law of supply.

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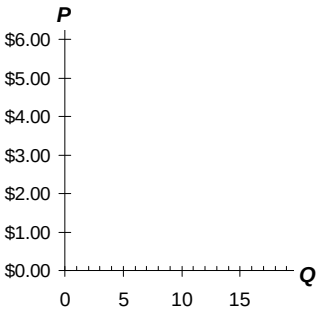
Starbucks' Supply Schedule & Curve



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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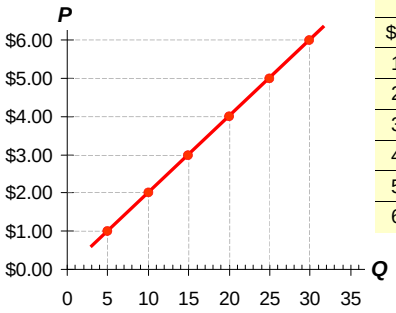
Market Supply versus Individual Supply

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

Price	Starbucks	Jitters	Market Q^S
$0.00	0	0	
1.00	3	2	
2.00	6	4	
3.00	9	6	
4.00	12	8	
5.00	15	10	
6.00	18	12	

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*.

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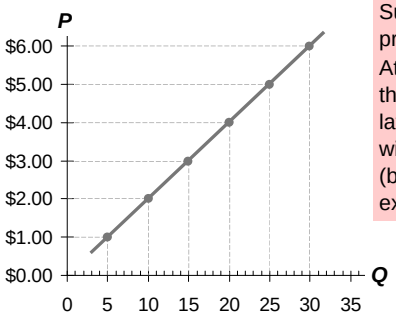
Supply Curve Shifters: Input Prices

- Examples of input prices:

- A fall in input prices

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).

Supply Curve Shifters: Technology

- Technology determines how much inputs are required to produce a unit of output.

Supply Curve Shifters: # of Sellers

- An increase in the number of sellers

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Supply Curve Shifters: Expectations

- Example:
  - Events in the Middle East lead to expectations of higher oil prices.
  - In response,
  -
- 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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ACTIVE LEARNING 2

Supply Curve

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

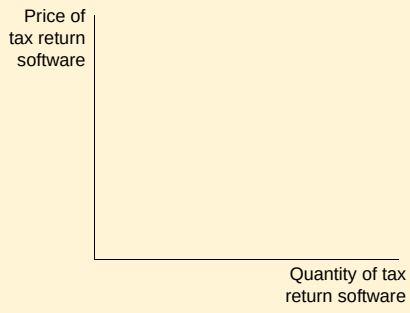
A. Retailers cut the price of the software.

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.

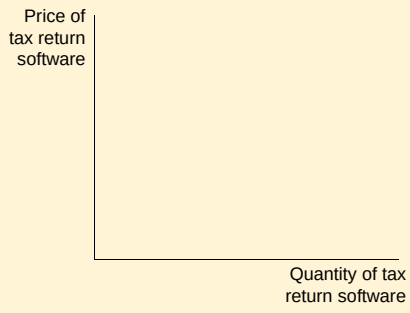
ACTIVE LEARNING 2

A. Fall in price of tax return software



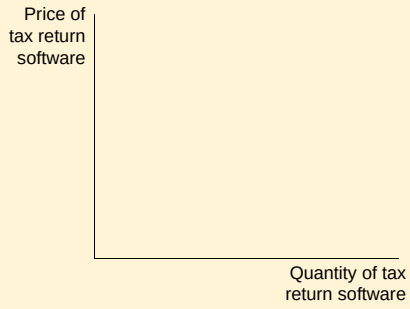
ACTIVE LEARNING 2

B. Fall in cost of producing the software

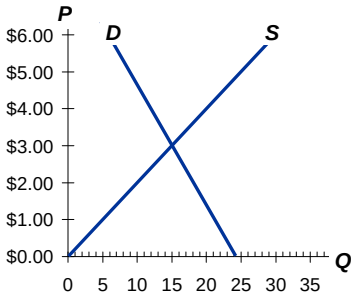


ACTIVE LEARNING 2

C. Professional preparers raise their price



Supply and Demand Together



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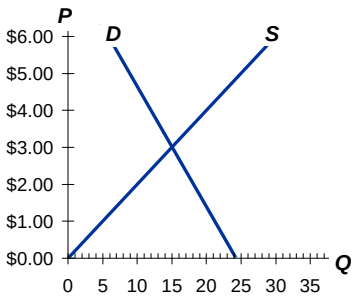

P	Q^D	Q^S
$0	24	0
1	21	5
2	18	10
3	15	15
4	12	20
5	9	25
6	6	30

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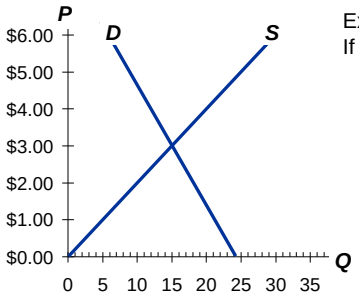
Surplus



Example:
If ***P*** = $5,

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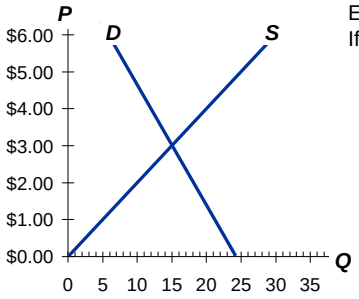
Shortage



Example:
If ***P*** = $1,

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Three Steps to Analyzing Changes in Eq'm

To determine the effects of any event,

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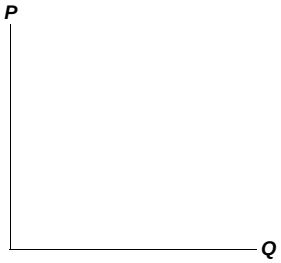
EXAMPLE 1: A Shift in Demand

EVENT TO BE ANALYZED:
Increase in price of gas.

STEP 1:

STEP 2:

STEP 3:



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Terms for Shift vs. Movement Along Curve

- **Change in supply**:
  occurs when a non-price determinant of supply changes (like technology or costs)
- **Change in the quantity supplied**:

  occurs when ***P*** changes
- **Change in demand**:
  occurs when

- **Change in the quantity demanded**:
  a movement along a fixed ***D*** curve
  occurs when

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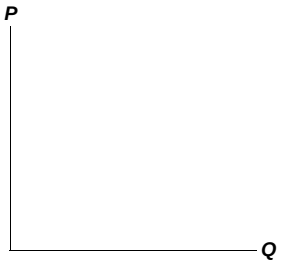
EXAMPLE 2: A Shift in Supply

EVENT: New technology reduces cost of producing hybrid cars.

STEP 1:

STEP 2:

STEP 3:



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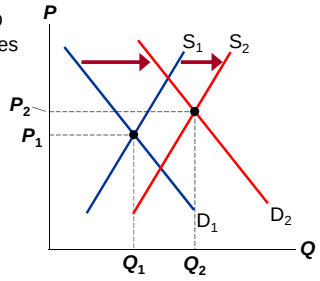
EXAMPLE 3: A Shift in Both Supply and Demand

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



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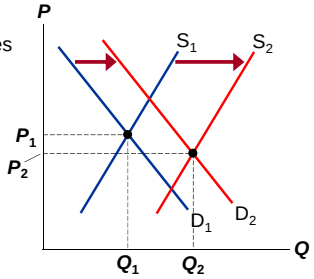
EXAMPLE 3: A Shift in Both Supply and Demand

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

STEP 3, cont.



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ACTIVE LEARNING 3

Shifts in supply and demand

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

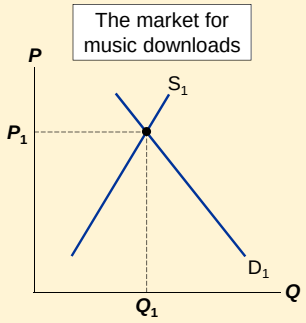
Event A: A fall in the price of CDs

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.

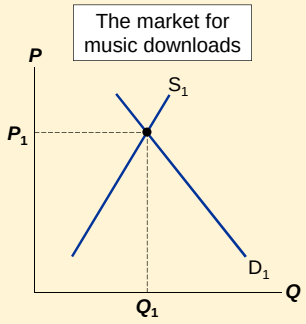
ACTIVE LEARNING 3

A. Fall in price of CDs



ACTIVE LEARNING 3

B. Fall in cost of royalties



ACTIVE LEARNING 3

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

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,