ECON 202 - MACROECONOMIC PRINCIPLES

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Chapter 2-4: Microeconomic Review

Topics - Micro Review

- What is Economics
- Apply the Principle of
  - Opportunity Cost
  - Marginal Principle
  - Voluntary Exchange
  - Diminishing Returns
  - Real-Nominal Principle
- Specialization and Trade
- Demand and Supply
- Market Equilibrium

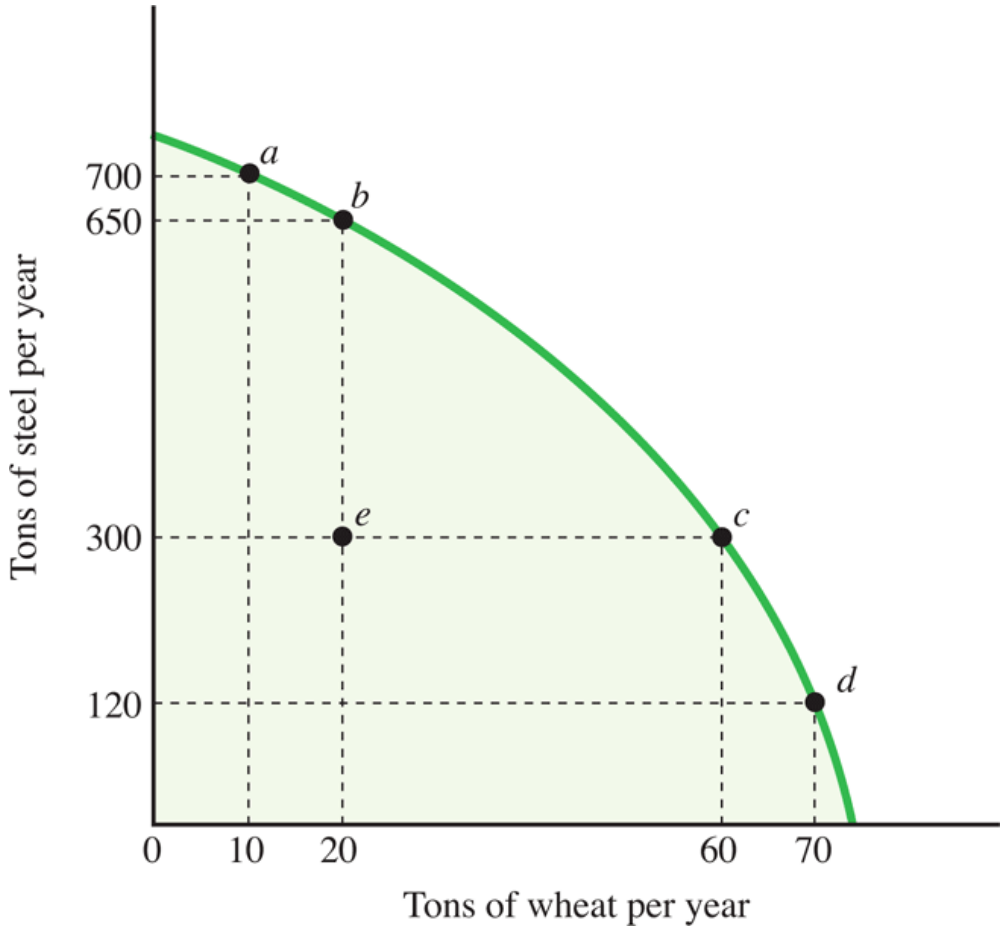
Factors of Production

The resources used for production are called factors of production:

- Natural resources
- Labor
- Physical capital
- Human capital
- Entrepreneurship

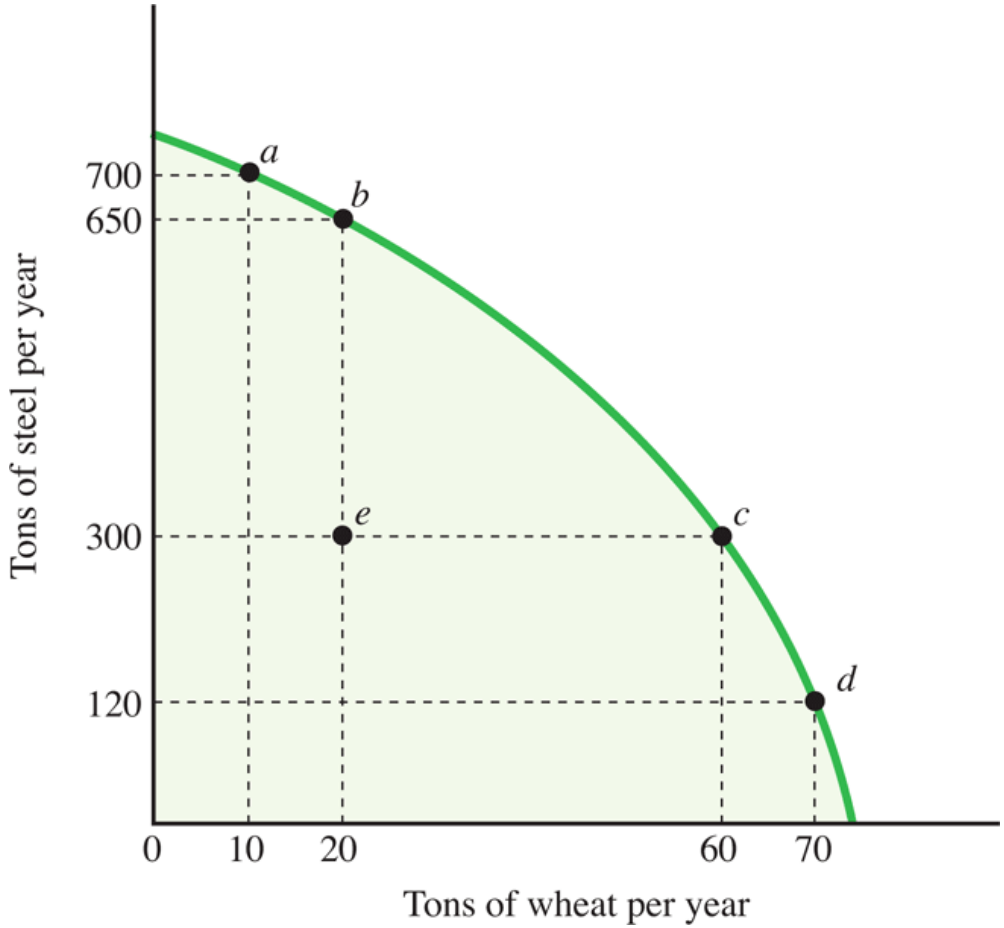
Production Possibility Frontier

PPF



- A curve that shows the possible combinations of products that an economy can produce
- Productive resources are fully employed and efficiently used

PPF



- When the economy is at point e, resources are not fully employed and/or they are not used efficiently

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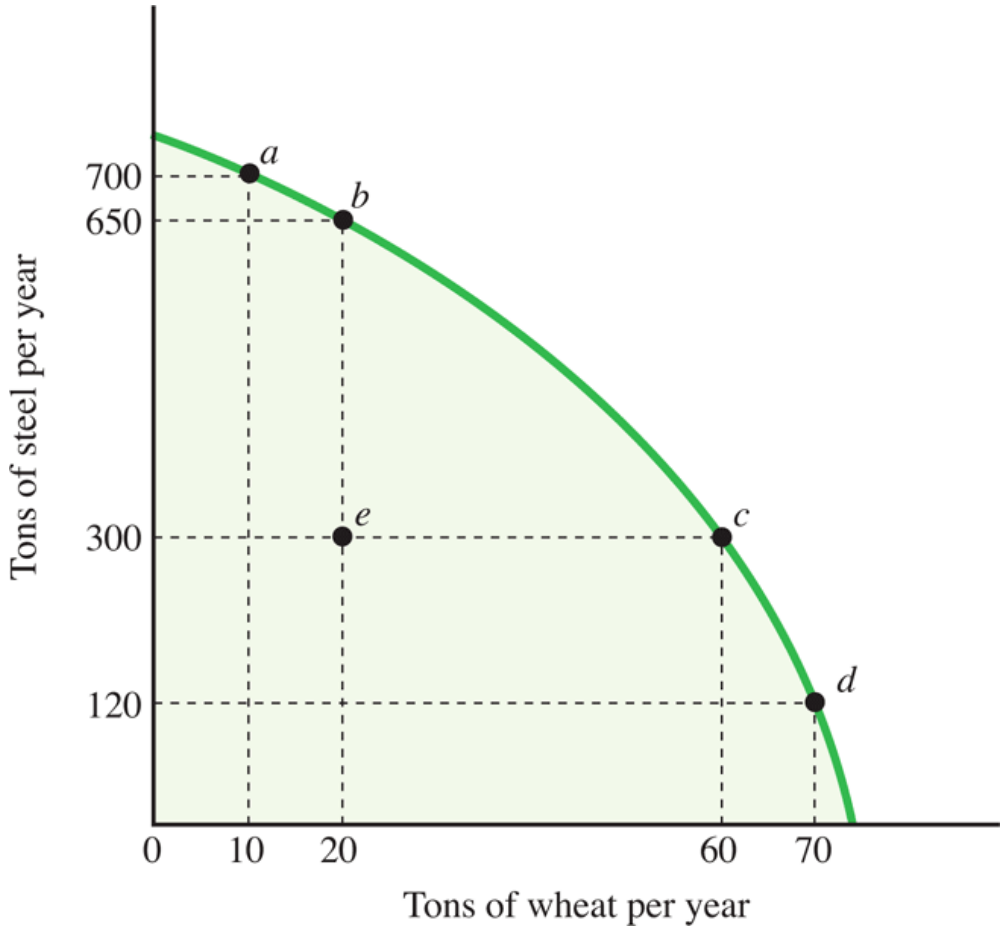

- A Point to the right of the green curve is desirable because it yields more of both goods
- But it is not attainable given the amount of resources available

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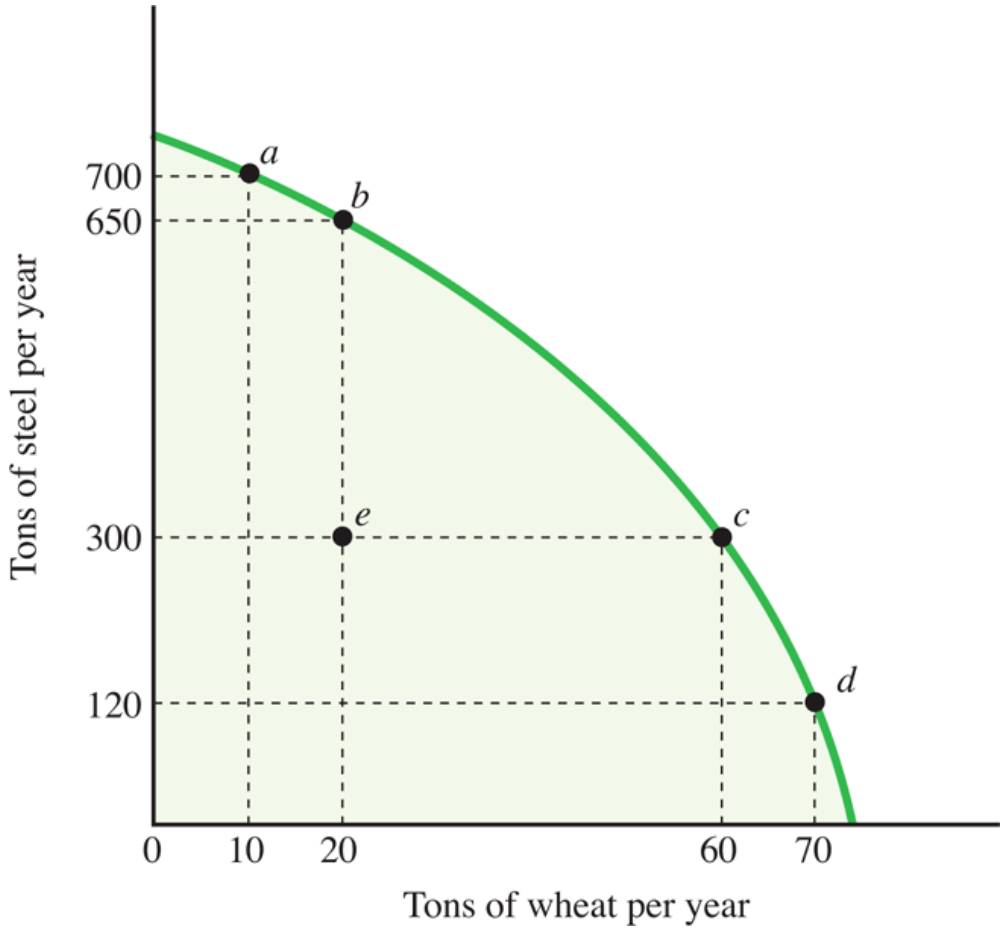
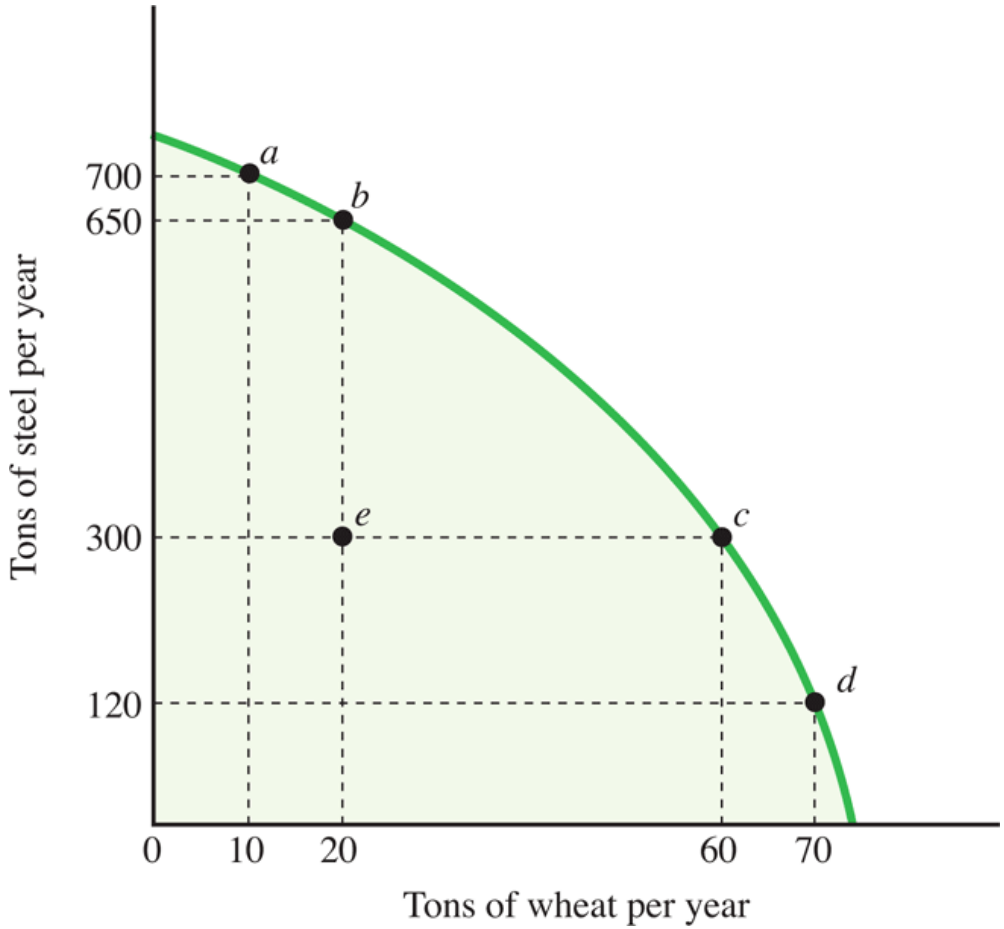


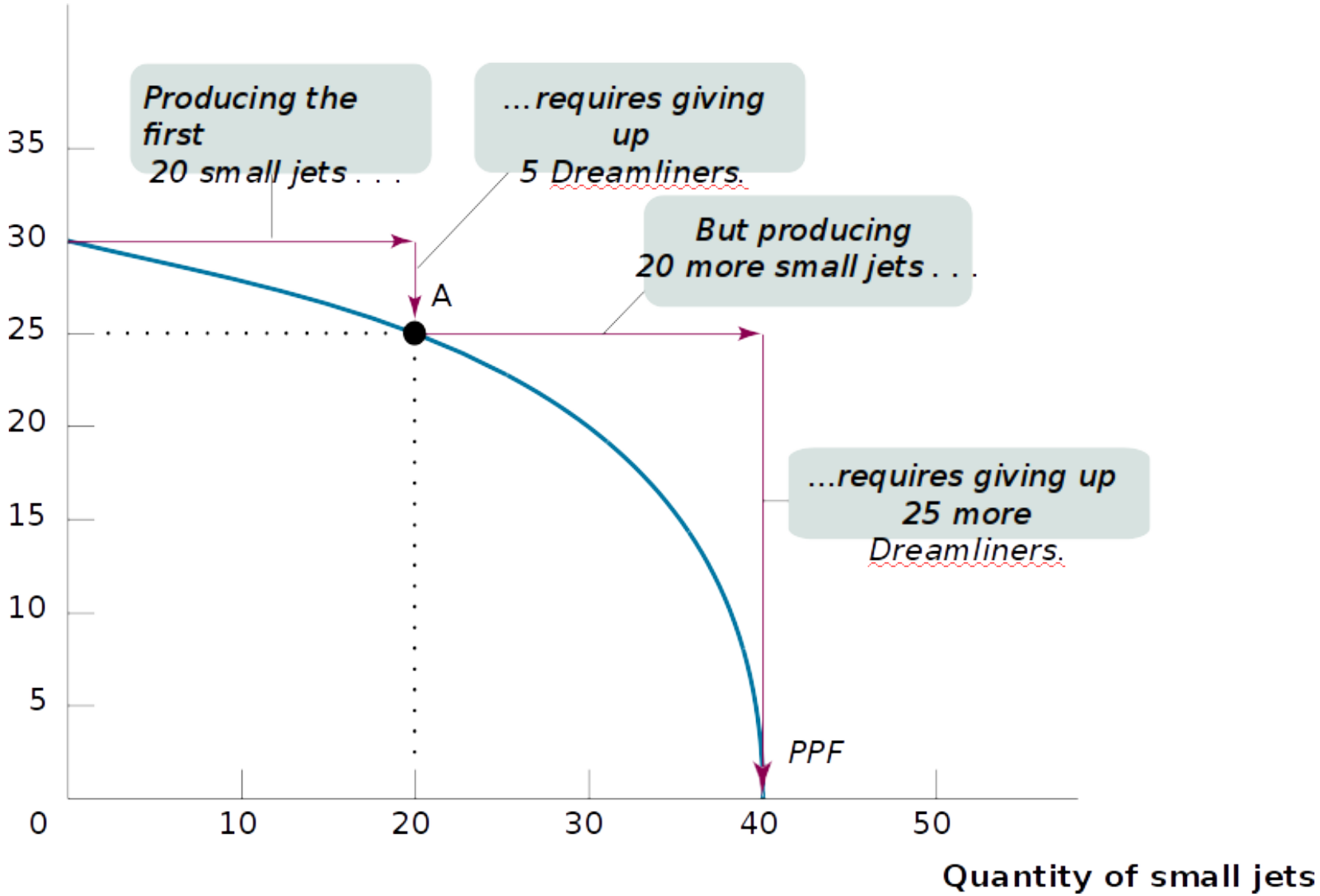
- To increase the amount of farm goods by 40 tons, we must sacrifice 350 tons of factory goods: move from $b \rightarrow c$

PPF

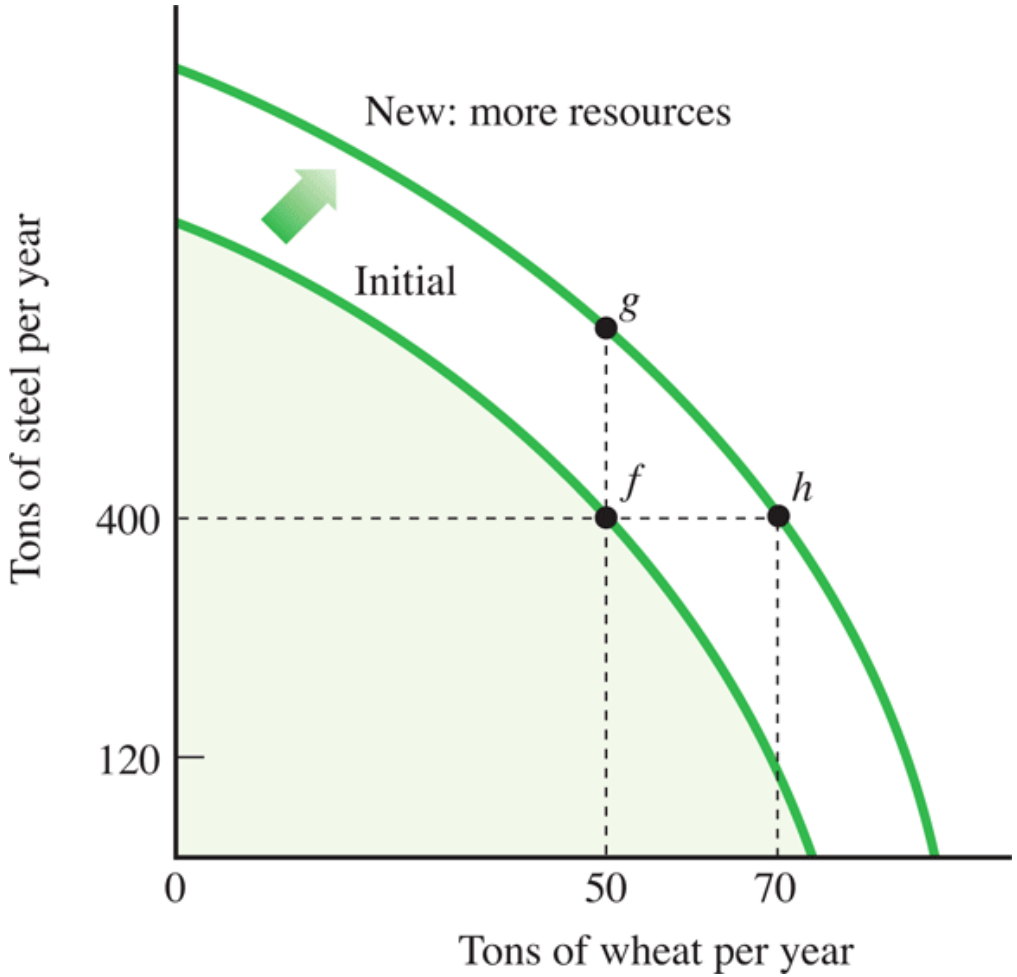


- The PPF curve is bowed out because resources are not perfectly adaptable to the production of the two goods $\rightarrow$As we increase the production of one good, we sacrifice progressively more of the other

Increasing Opportunity Cost



Expansion of PPF



- An increase in the quantity of resources or technological innovation in an economy shifts the production possibilities curve outward

Basic Principles

Opportunity Cost Principle

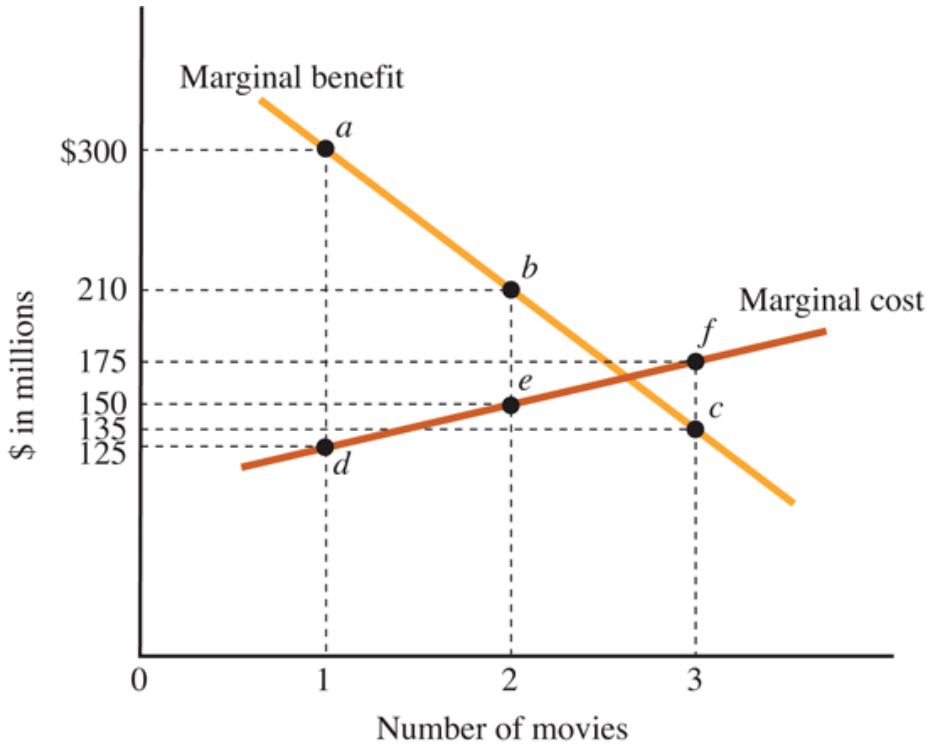
- The opportunity cost of something is what you sacrifice to get it
- You calculate the opportunity cost of something by picking the best alternative to it
- The principle of opportunity cost also explains why the production possibilities frontier is negatively sloped

Marginal Principle

- A small change in one variable is called a marginal change: Δy (delta y) or y'
- Marginal Benefit (MB): is the extra benefit resulting from small (one unit) increase in an activity
- Marginal Cost (MC): is the extra cost resulting from a small (one unit) increase in an activity
- The Principle $\rightarrow$ Increase/decrease the level of an activity until

$$MB = MC$$

Marginal Principle



Number of Movies	Marginal Benefit ($ millions)	Marginal Cost ($ millions)
1	$300	$125
2	210	150
3	135	175

Principle of Diminishing Returns

Example:

- 1 copy machine and 1 worker produce 1000 pages
- 1 copy machine and 2 workers produce how many pages?
- 1 copy machine and 100 workers produce how many pages?
- As we increase the number of workers and hold the number of copy machines constant output per additional worker decreases

Principle of Voluntary Exchange

- A voluntary exchange between two people makes both people better off

Percentage Change

- Percentage change $= \left(\frac{\text{absolute change}}{\text{initial value}} \right) \times 100$
- $\%\Delta = \frac{(new - old)}{old} \times 100$

Real vs. Nominal

- Nominal value
  - The face value of an amount of money
- Real value
  - The value of an amount of money in terms of what it can buy

Example of Real vs Nominal

TABLE 2.2 The Real Value of the Minimum Wage, 1974–2011

	1974	2011
Minimum wage per hour	$ 2.00	$ 7.25
Weekly income from minimum wage	80	290
Cost of a standard basket of goods	47	225
Number of baskets per week	1.70	1.29

Markets

Markets

- A market is an arrangement that allows buyers and sellers to exchange things $\rightarrow$ trading what they have for what they want
- Markets determine the price of goods and services purely by bringing together people who act in their self interest
- The invisible hand (Adam Smith, 1776, The Wealth of Nations)
  - "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages. [Man is] led by an invisible hand to promote an end which was not part of his intention .... By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it."

Specialization and Comparative Advantage

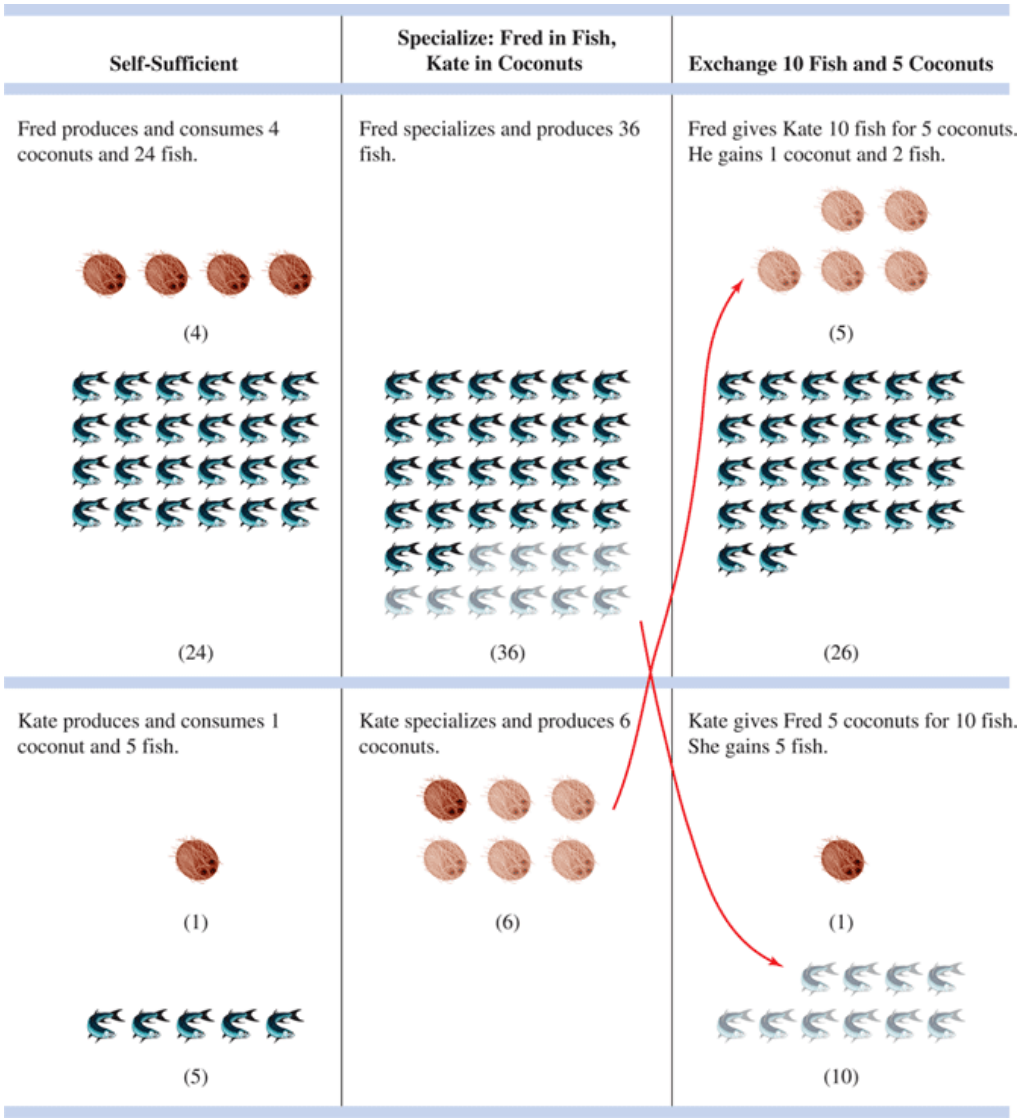
TABLE 3.1 Productivity and Opportunity Costs

	Fred		Kate	
	Coconuts	*Fish*	*Coconuts*	*Fish*
Output per day	2	6	1	1
Opportunity cost	3 fish	1/3 coconut	1 fish	1 coconut

Comparative Advantage vs Absolute Advantage with Weekly Output

- Comparative Advantage
  - The ability of one person or nation to produce a good at a lower opportunity cost than another person or nation
- Absolute advantage
  - The ability of one person or nation to produce a product at a lower resource cost than another person or nation

Gains from Voluntary Trade



Efficiency Idea of Market Economies

- Competitive markets are (Pareto-)efficient
- Positive economics answers the questions:
  - What is or
  - What will be?
- Normative economics answers the question:
  - What ought to be?

Specialization

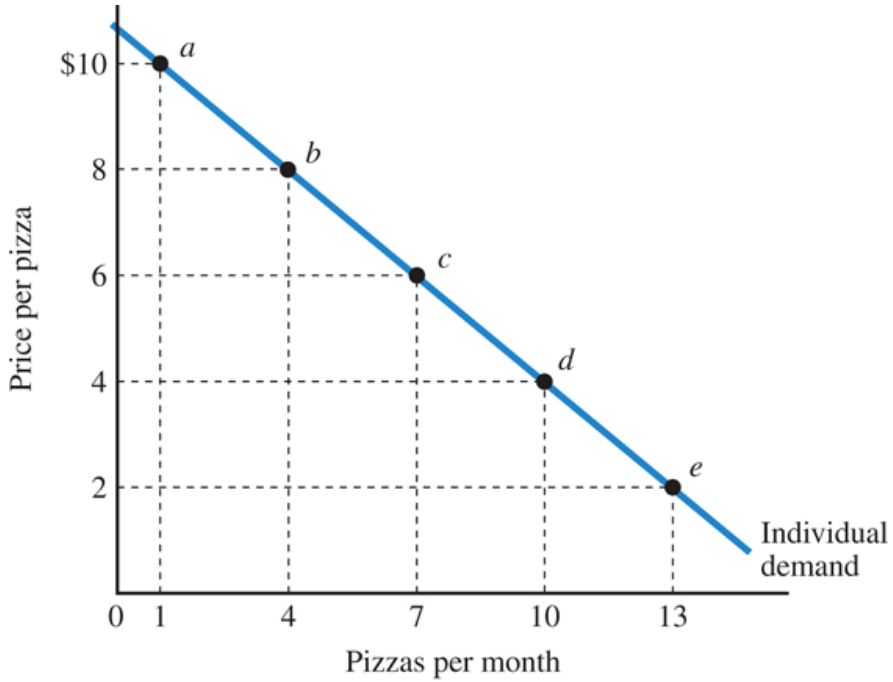
- In his 1776 book, An Inquiry into the Nature and Causes of the Wealth of Nations, Adam Smith noted that specialization actually increased productivity through the division of labor
  1. Repetition
  2. Continuity
  3. Innovation

Market Failure

- Market failure happens when a market doesn't generate the most efficient outcome
- There are several sources of market failure and possible responses by government.
  - Externalities
  - Public goods
  - Imperfect information
  - Imperfect competition

Demand - Supply

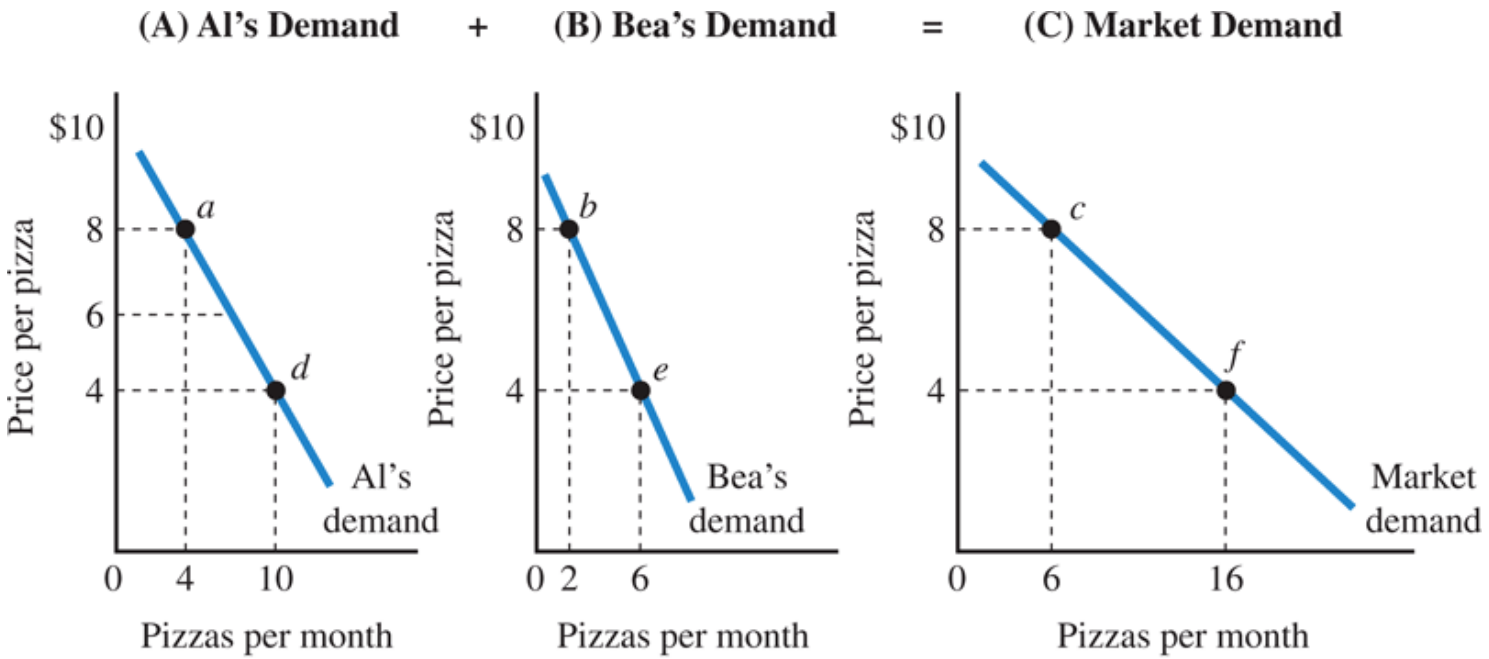
Consumer Demand



AL'S DEMAND SCHEDULE FOR PIZZAS

Point	Price	Quantity of Pizzas per Month
a	$10	1
b	8	4
c	6	7
d	4	10
e	2	13

Individual and Aggregate Demand



QUANTITY OF PIZZA DEMANDED			
Price	Al +	Bea =	Market Demand
$8	4	2	6
6	7	4	11
4	10	6	16
2	13	8	21

Demand Shifters

What affects consumer demand?

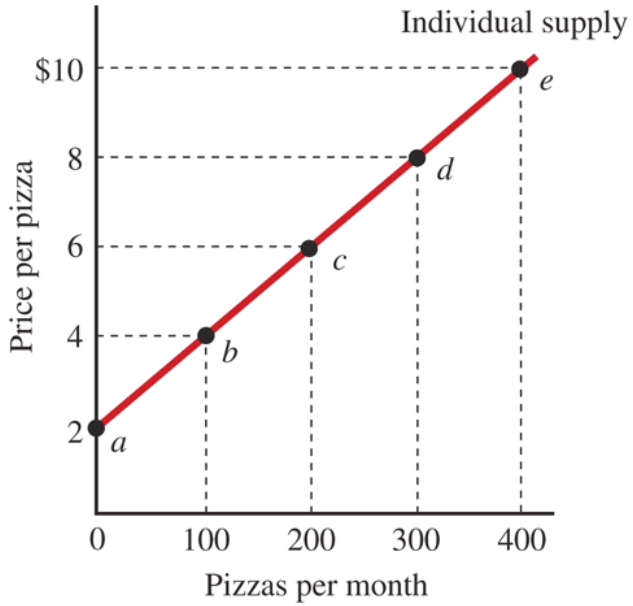
1. Price of the product
2. Consumer income
3. Price of substitute goods
4. Price of complementary goods
5. Consumer tastes and advertising
6. Consumer expectations about future prices

- Item 2 to 6 are held constant in the demand schedule
- Holding 2-6 constant the demand curve is downward sloping
- That is, as prices increase, demand goes down

Prices Changes

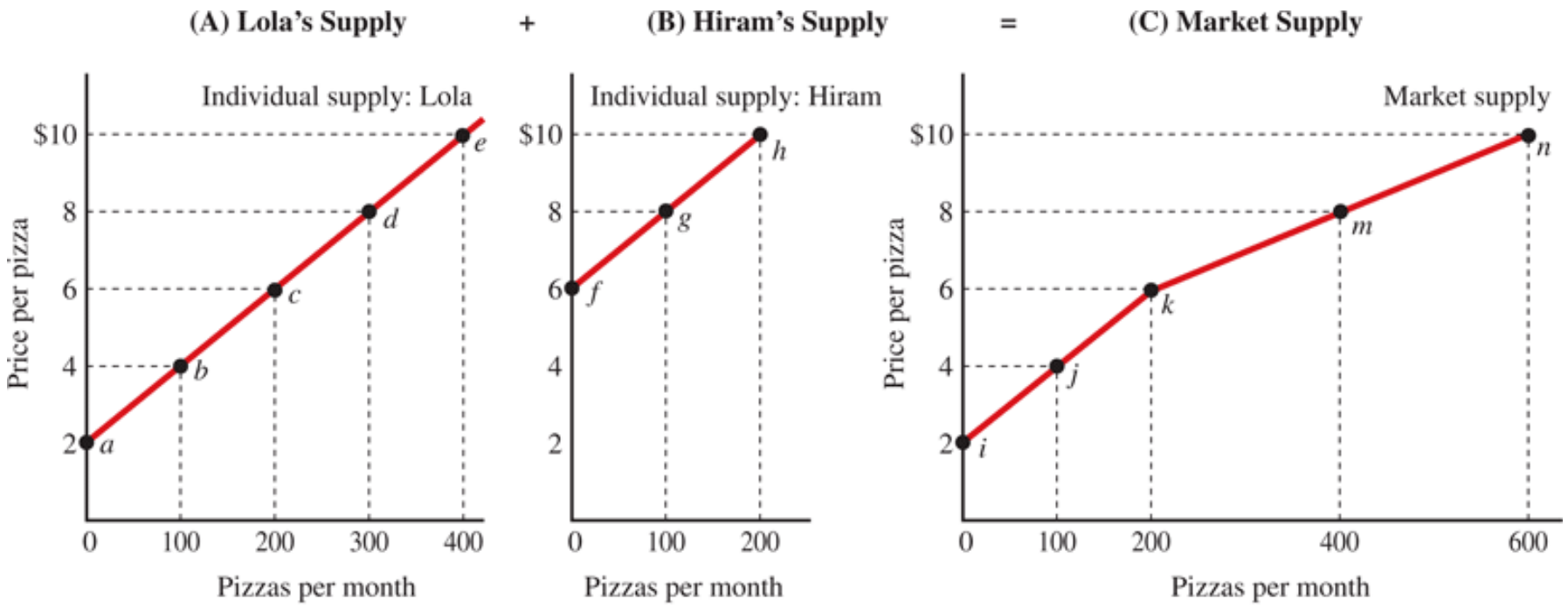
- Income effect
- Substitution effect

Supply Curve



INDIVIDUAL SUPPLY SCHEDULE FOR PIZZA		
Point	Price	Quantity of Pizzas per Month
a	$2	0
b	4	100
c	6	200
d	8	300
e	10	400

Aggregate Supply



QUANTITY OF PIZZA SUPPLIED			
Price	Lola +	Hiram =	Market Supply
2	0	0	0
4	100	0	100
6	200	0	200
8	300	100	400
10	400	200	600

Supply

Sellers decisions are influenced by

1. Price of the product
2. Cost of the inputs used in production (e.g. wages, cost of electricity, etc.)
3. State of production technology
4. Number of producers in the market
5. Producer expectation about future prices
6. Taxes or subsidies from the government

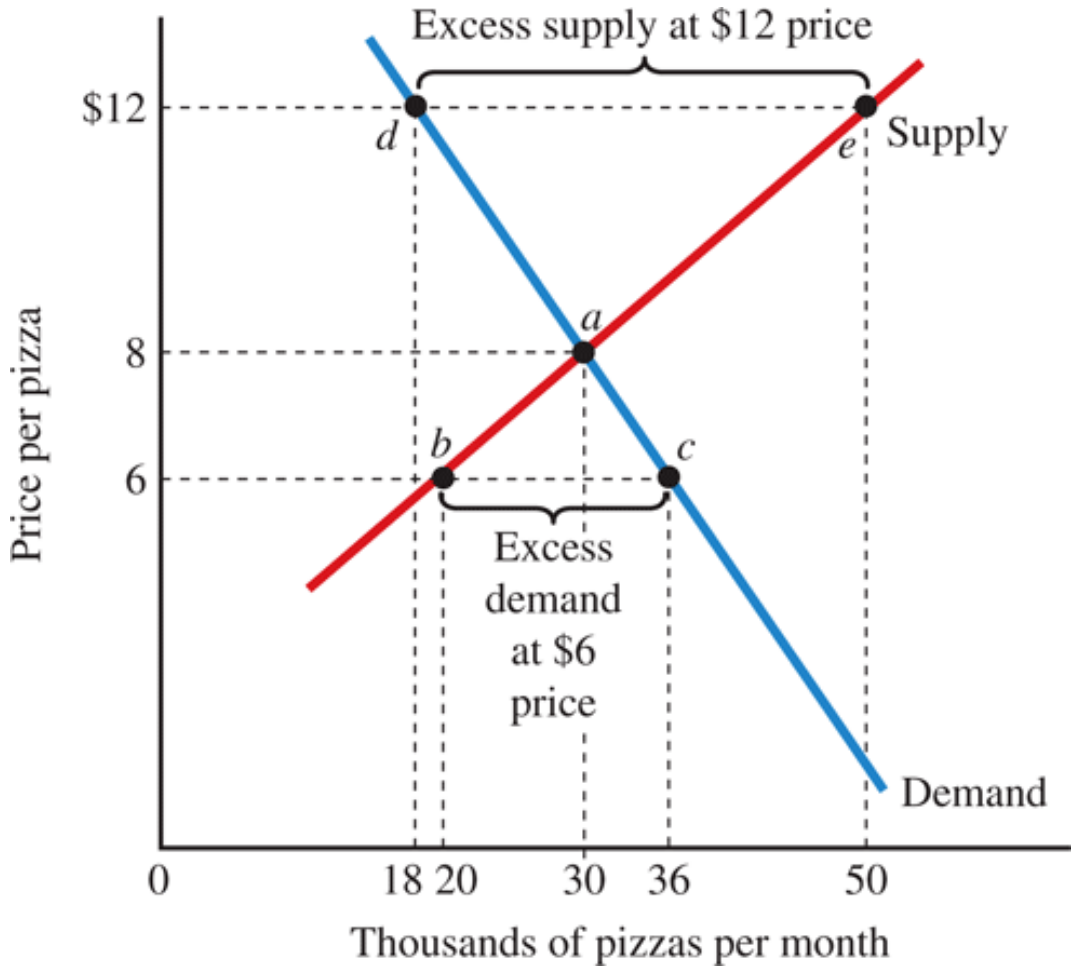
2-6 are supply shifters

Market Equilibrium

Market Equilibrium

- When the quantity of the product supplied equals the quantity of the product demanded, this is called a market equilibrium
- Excess demand causes prices to rise
- Excess supply causes prices to drop
- In equilibrium there is no pressure to change the price

Market Equilibrium



Price Increase

- As prices increase two things will happen,
  - Fewer goods are demanded as the market moves upward on the demand curve
  - More goods are supplied as the market moves up the supply curve
- Hence the gap between quantity demanded and supplied narrows
- Price continuous to rise until excess demand is eliminated

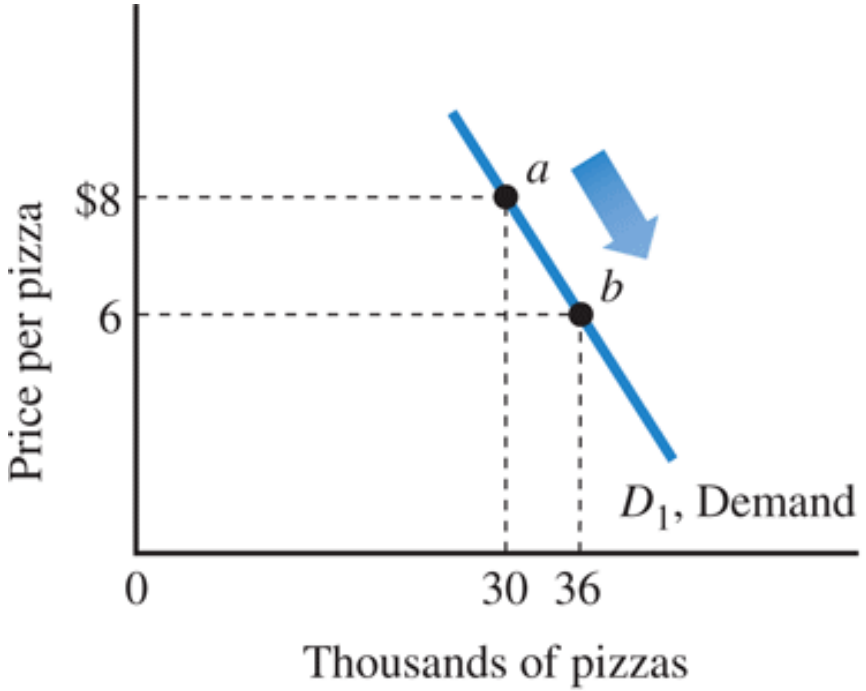
Excess Supply

- Excess supply causes prices to drop
- Producers are willing to sell more than consumers are willing to buy
- To sell the extra goods firms lower prices
- The market moves downward along the demand curve as prices drop
- The market moves downward on the supply curve

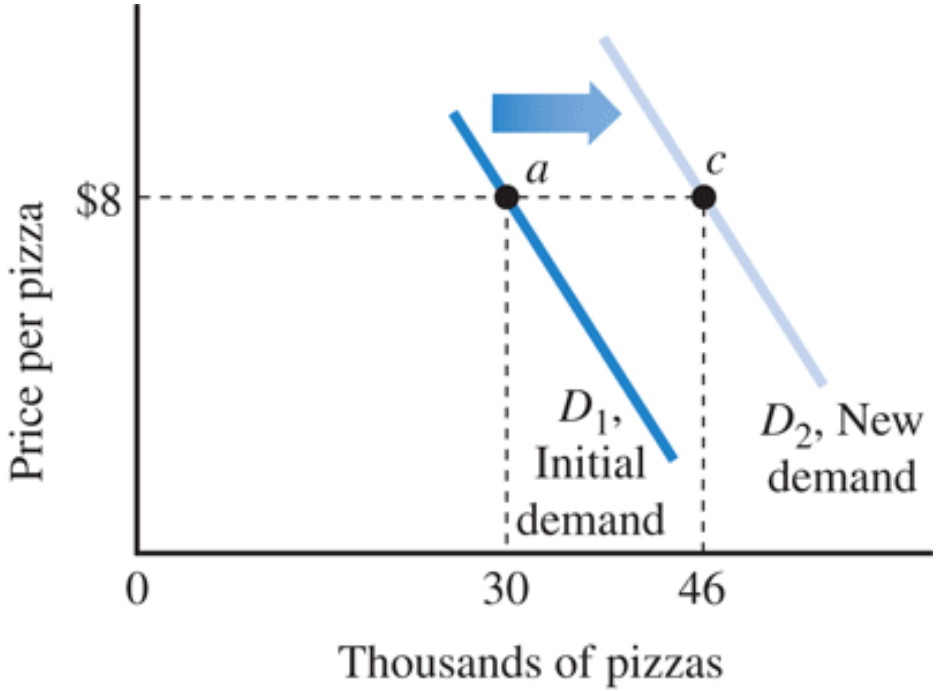
Market Effects of Demand Changes

- What shifts the demand curve to the right?
  1. Income increase (given it is a normal good)
  2. Increase in price of a substitute good
  3. Decrease in price of a complementary good
  4. Increase in population
  5. Shift in consumer tastes
  6. Favorable advertising
  7. Expectations of higher future prices
- The effect is an excess demand $\rightarrow$ prices go up

Change in Price vs Change in Demand



(A) A Change in Quantity Demanded



(B) A Change in Demand

Change in Price vs Change in Demand

- A change in price causes a change in quantity demanded, a movement along a single demand curve
  - For example, a decrease in price causes a move from point a to point b, increasing the quantity demanded
- A change in demand caused by changes in a variable other than the price of the good shifts the entire demand curve
  - For example, an increase in demand shifts the demand curve from D1 to D2

Types of Goods

- Normal Good
  - A good for which an increase in income increases demand
- Inferior Good
  - A good for which an increase in income decreases demand. Goods with a more expensive alternative
- Substitutes
  - Two goods for which an increase in the price of one good increases the demand for the other good
- Complements
  - Two goods for which a decrease in the price of one good increases the demand for the other good

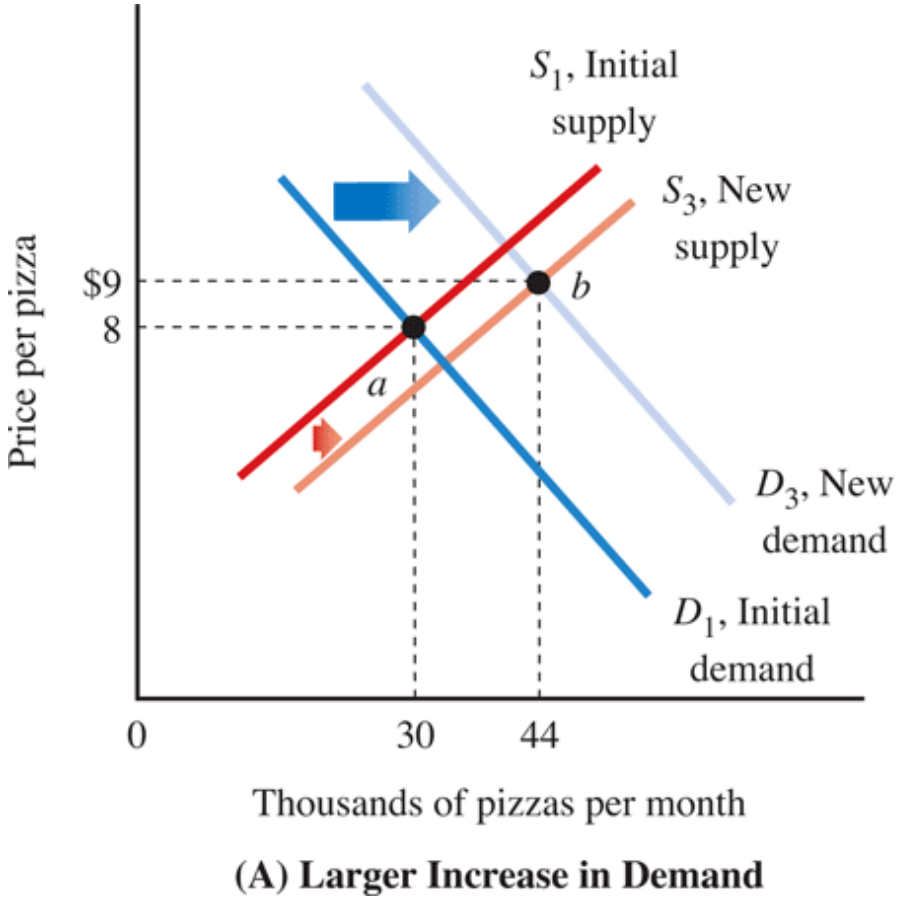
Market Effects of Supply Changes

- Supply increases , shifts to the right, if
  1. Decrease in inputs costs
  2. Advance in technology
  3. Increase in the number of producers
  4. Expectations of lower future prices Subsidy.
- As supply shifts to the right, excess supply $\rightarrow$ prices drop.

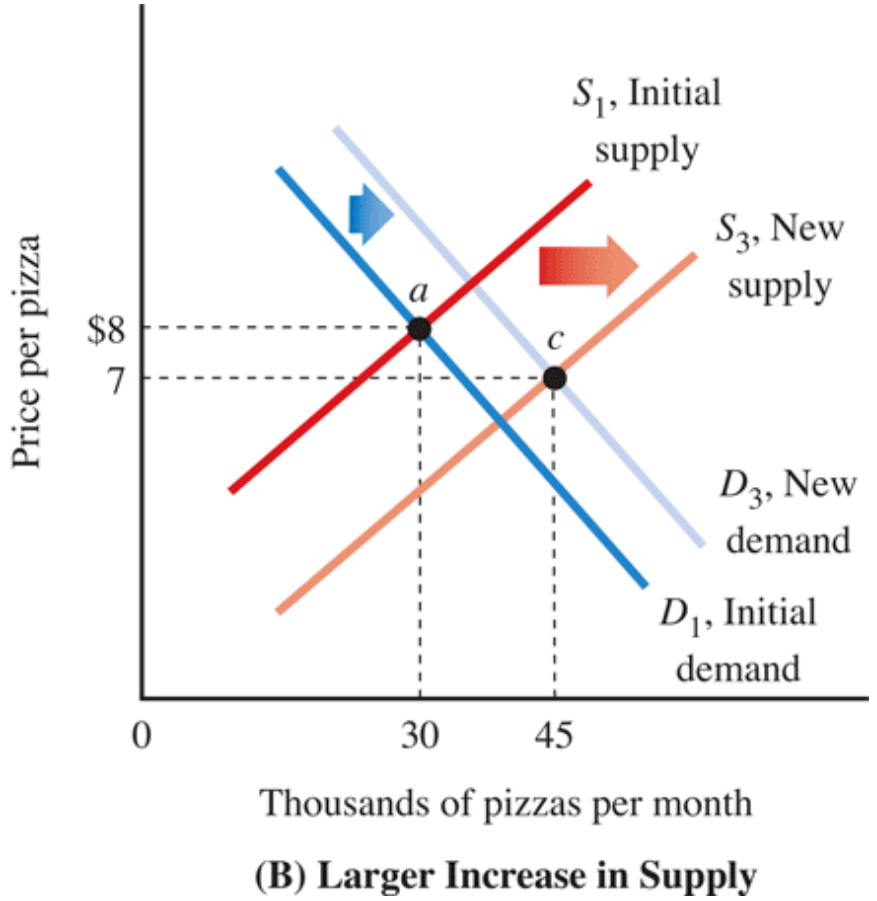
Demand and Supply Shifts

- When both, demand and supply increase, then the quantity 'traded' increases
- The new price depends on the magnitude of supply change vs. demand change

Demand and Supply Shifts



(A) Larger Increase in Demand



(B) Larger Increase in Supply

The Short-Run

- Is the time period over which one or more variable are fixed (wages, factors of production etc.)
- In the long run most variables are flexible
- In the long run, more photo copy machines would be acquired and we would not see diminishing returns to labor
- Since firms can duplicate or replicate production facilities