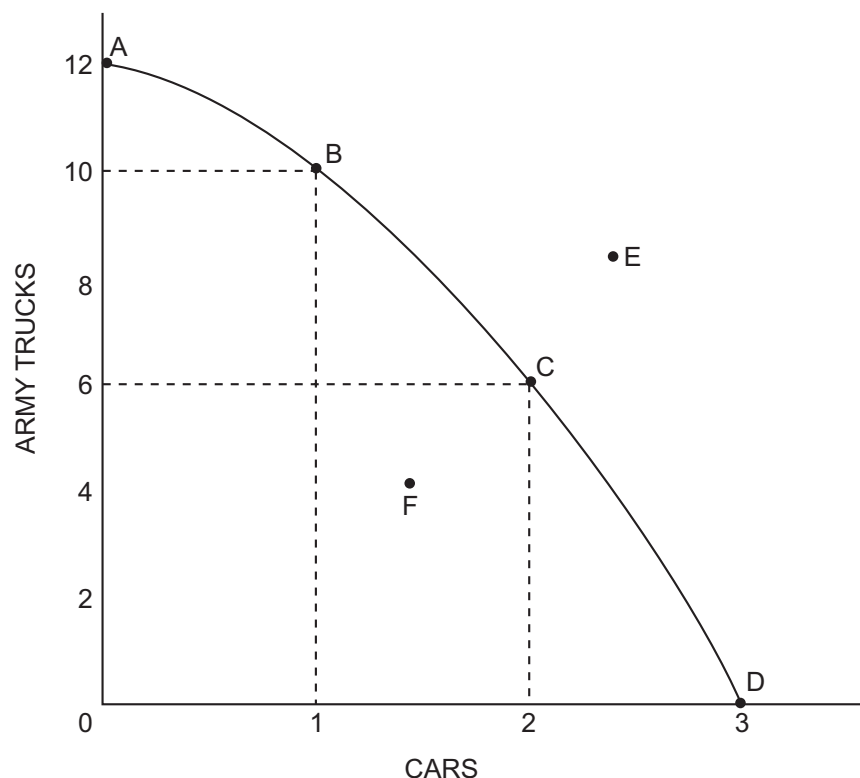


The Economic Way of Thinking

- Everything has a cost.
- People choose for good reasons.
- Incentives matter.
- People create economic systems to influence choices and incentives.
- People gain from voluntary trade.
- Economic thinking is marginal thinking.
- The value of a good or service is affected by people's choices.
- Economic actions create secondary effects.
- The test of a theory is its ability to predict correctly.

Production Possibilities Curve



- (1) What trade-offs are involved?
- (2) Why is the PPC concave, or bowed out, from the origin?
- (3) What does a point inside the PPC illustrate?
- (4) What is a historical example of a point inside the PPC?
- (5) What is the significance of a point outside the PPC?
- (6) Under what conditions can a point outside the PPC be reached?
- (7) What would a country's PPC look like if it did not have a scarcity of resources?

Determining Comparative Advantage (output method)

	Output per hour	
	CDs	Pounds of beef
Japan	20	5
Mexico	30	15

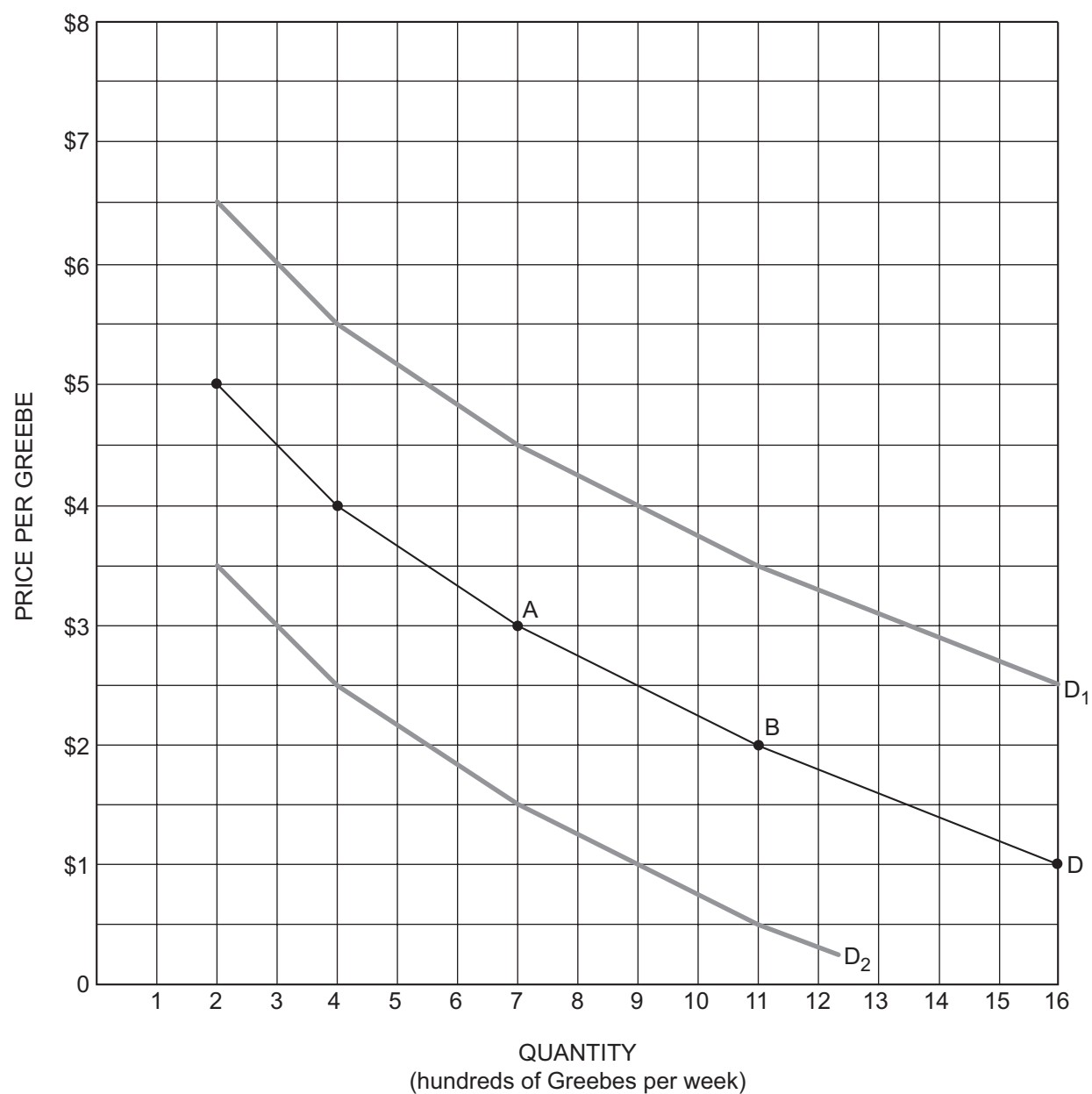
- (1) Which country has an absolute advantage in producing CDs?
- (2) Which country has an absolute advantage in producing beef?
- (3) Which country has a comparative advantage in producing CDs?
- (4) Which country has a comparative advantage in producing beef?
- (5) Which country should specialize in CD production?
- (6) Which country should specialize in beef production?

Determining Comparative Advantage (input method)

	Time required for one unit	
	1 CD	1 pound of beef
Japan	3 minutes	12 minutes
Mexico	2 minutes	4 minutes

- (1) Which country has an absolute advantage in producing CDs?
- (2) Which country has an absolute advantage in producing beef?
- (3) Which country has a comparative advantage in producing CDs?
- (4) Which country has a comparative advantage in producing beef?
- (5) Which country should specialize in CD production?
- (6) Which country should specialize in beef production?

Illustrating the Difference between a Change in Demand and a Change in Quantity Demanded

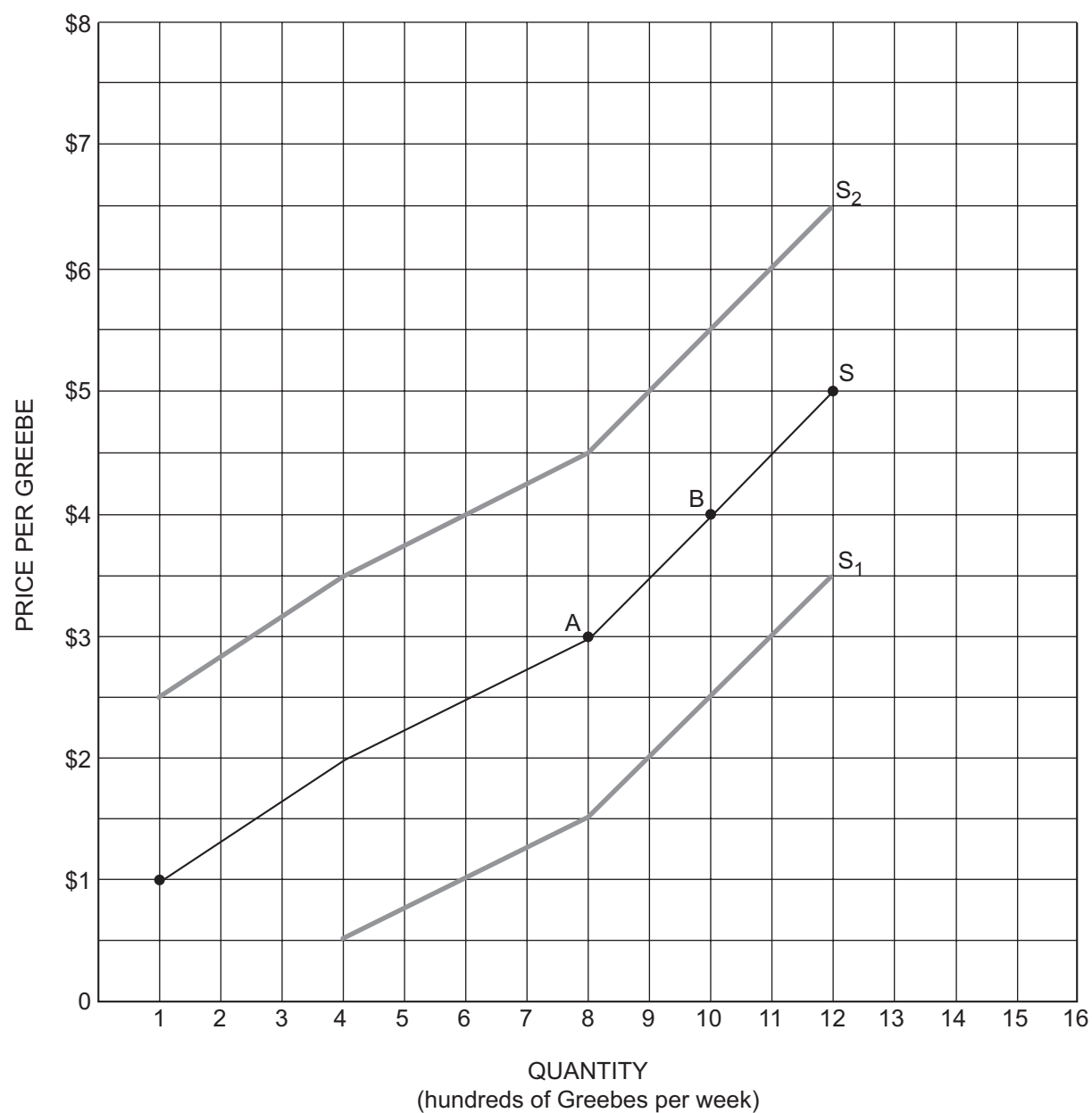


Determinants of Demand

FACTORS THAT SHIFT THE DEMAND CURVE

- Change in consumer tastes
- Change in the number of buyers
- Change in consumer incomes
- Change in the prices of complementary and substitute goods
- Change in consumer expectations

Illustrating the Difference between a Change in Supply and a Change in Quantity Supplied



Determinants of Supply

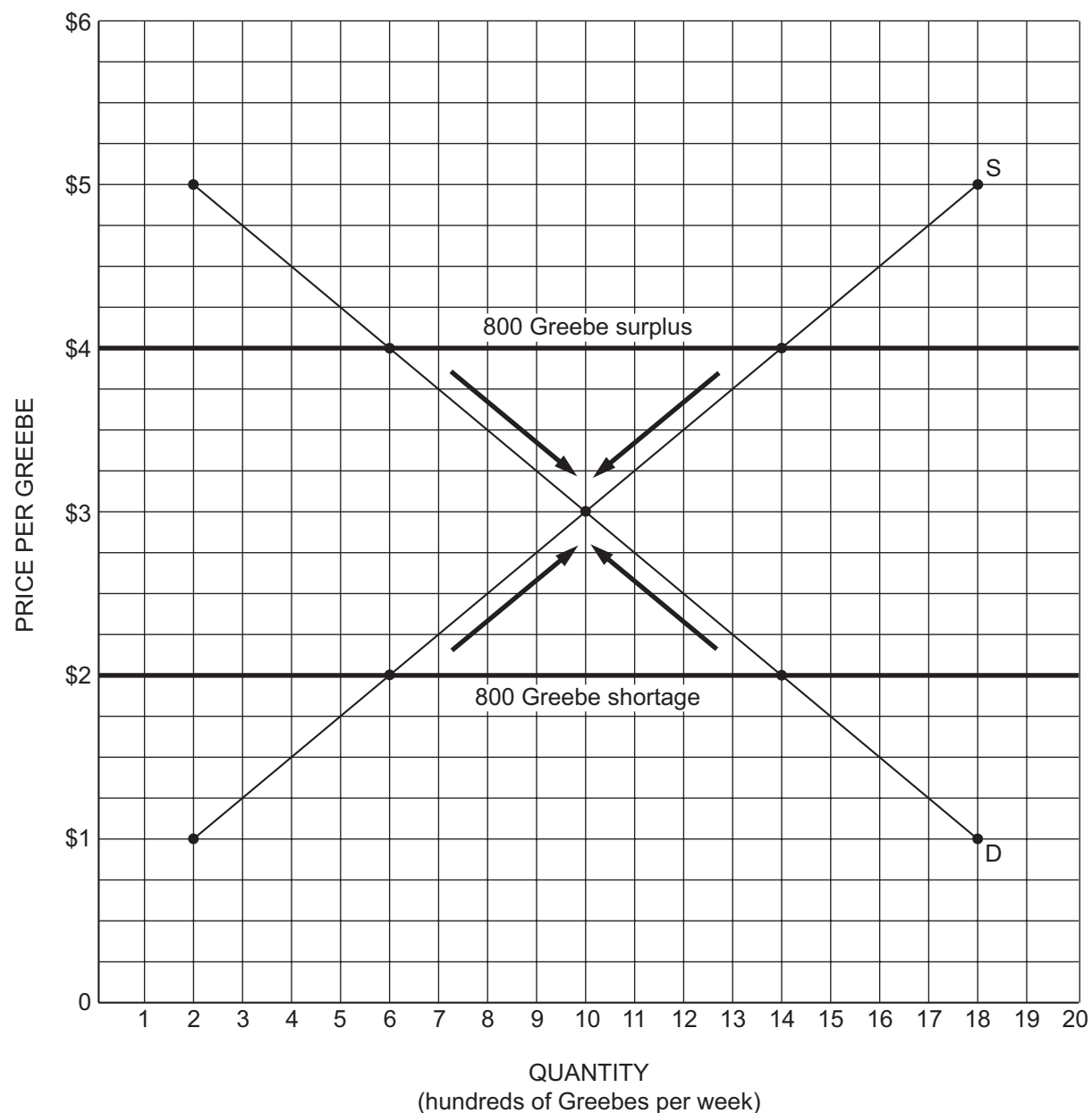
FACTORS THAT SHIFT THE SUPPLY CURVE

- Change in resource prices or input prices
- Change in technology
- Change in taxes and subsidies
- Change in the prices of other goods
- Change in producer expectations
- Change in the number of suppliers

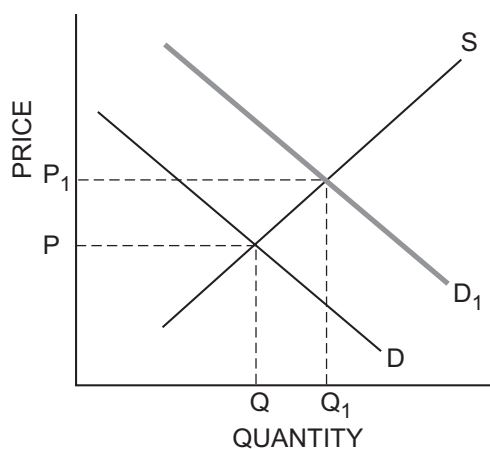
Any factor that *increases* the cost of production *decreases* supply.

Any factor that *decreases* the cost of production *increases* supply.

Equilibrium and Disequilibrium

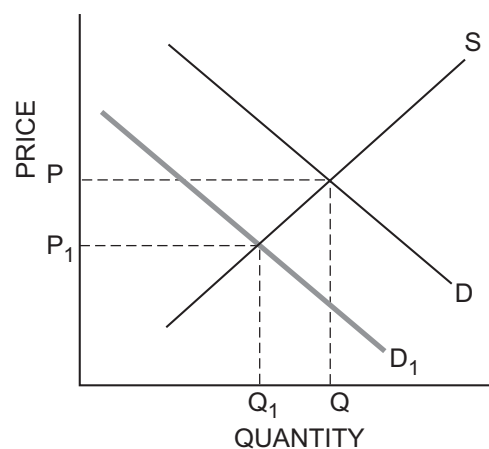


The Effects of Shifts in Demand or Supply



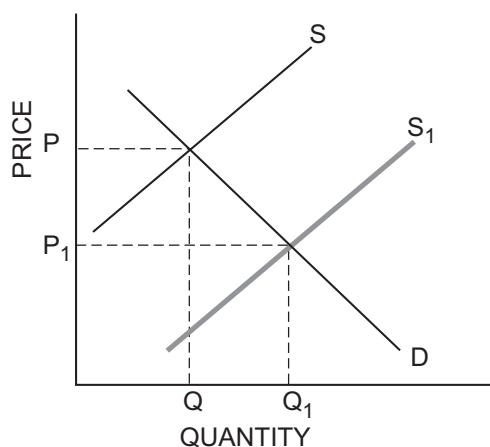
A. INCREASE IN DEMAND

$D \uparrow$
 $P \uparrow$
 $Q \uparrow$



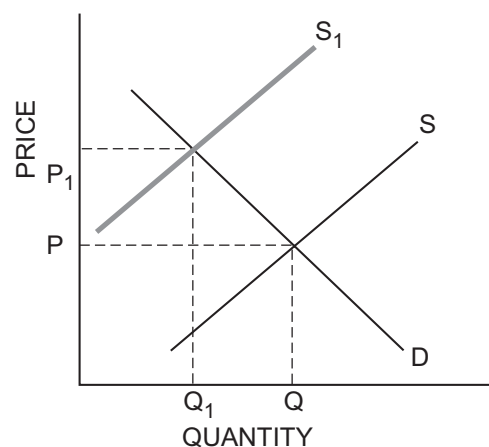
B. DECREASE IN DEMAND

$D \downarrow$
 $P \downarrow$
 $Q \downarrow$



C. INCREASE IN SUPPLY

$S \uparrow$
 $P \downarrow$
 $Q \uparrow$



D. DECREASE IN SUPPLY

$S \downarrow$
 $P \uparrow$
 $Q \downarrow$

Price Elasticity of Demand

$$(1) \epsilon_d = \frac{\text{percentage change in quantity demanded of Good X}}{\text{percentage change in price of Good X}} = \frac{\% \Delta Q_d}{\% \Delta P}.$$

(2) The Midpoint or Arc Method:

$$\epsilon_d = \frac{\left[\frac{(Q_2 - Q_1)}{(Q_2 + Q_1)/2} \right]}{\left[\frac{(P_2 - P_1)}{(P_2 + P_1)/2} \right]}.$$

Example: When price increases from \$9 to \$10, the quantity demanded decreases from 12 units to 10 units.

$$\epsilon_d = \frac{\left[\frac{(10 - 12)}{(10 + 12)/2} \right]}{\left[\frac{(\$10 - \$9)}{(\$10 + \$9)/2} \right]} = \frac{\left(\frac{-2}{11} \right)}{\left(\frac{+\$1}{\$9.50} \right)} = \frac{-18.2\%}{+10.5\%} = -1.7.$$

As a result of the price rising by 10.5 percent, the quantity demanded fell by 18.2 percent. Since the absolute value of ϵ_d is greater than 1.0, the demand for the good is elastic over this price range.

(3) When price *increased*, total revenue *decreased* from \$108 to \$100. This means demand is elastic over this price range.

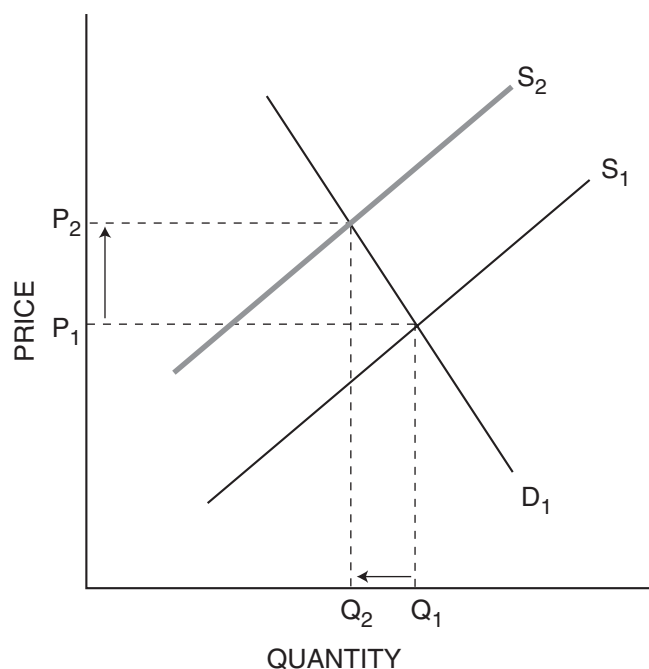
(4) Interpretation of the absolute value of the price elasticity of demand:

Absolute value of ϵ_d	Meaning
Greater than 1.0	Demand is <i>elastic</i> over this price range.
Equal to 1.0	Demand is <i>unit elastic</i> over this price range.
Less than 1.0	Demand is <i>inelastic</i> over this price range.

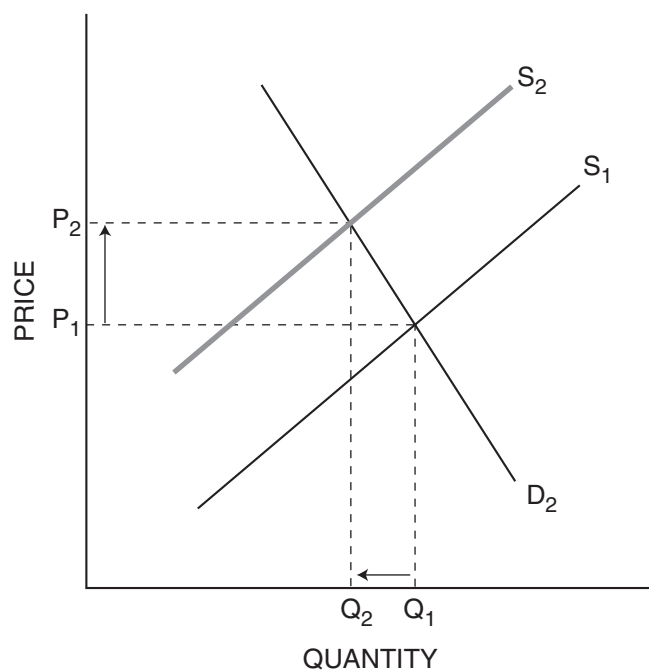
Summarizing Price Elasticity of Demand

Elasticity coefficient	Term	Description	Impact on total revenue of	
			Price increase	Price decrease
Greater than 1 $ \epsilon_d > 1$	Elastic	Quantity demanded changes by a larger percentage than does price.	Total revenue decreases.	Total revenue increases.
Equal to 1 $ \epsilon_d = 1$	Unit elastic	Quantity demanded changes by the same percentage as does price.	Total revenue is unchanged.	Total revenue is unchanged.
Less than 1 $ \epsilon_d < 1$	Inelastic	Quantity demanded changes by a smaller percentage than does price.	Total revenue increases.	Total revenue decreases.

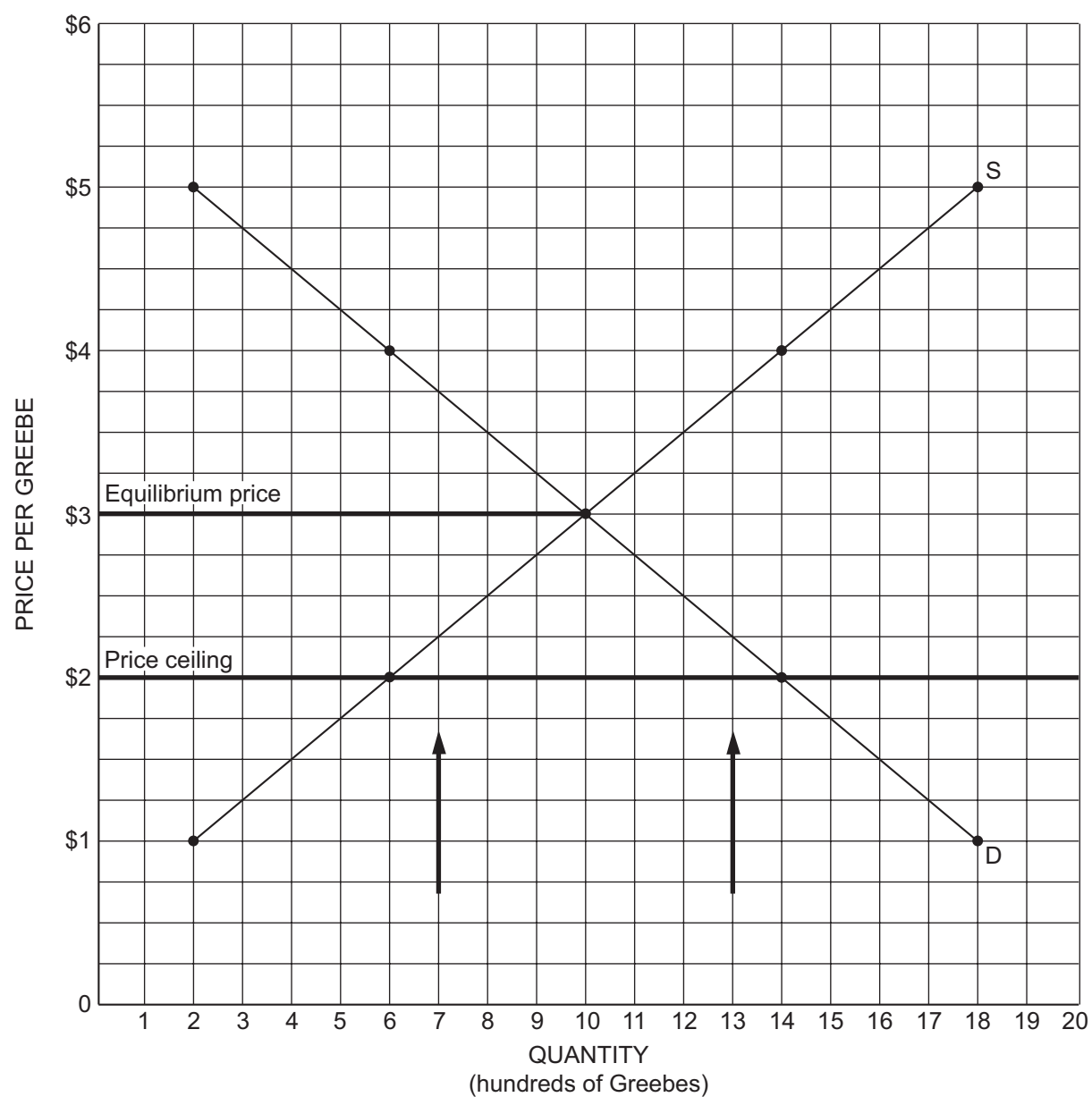
Tax Incidence and Elasticity of Demand



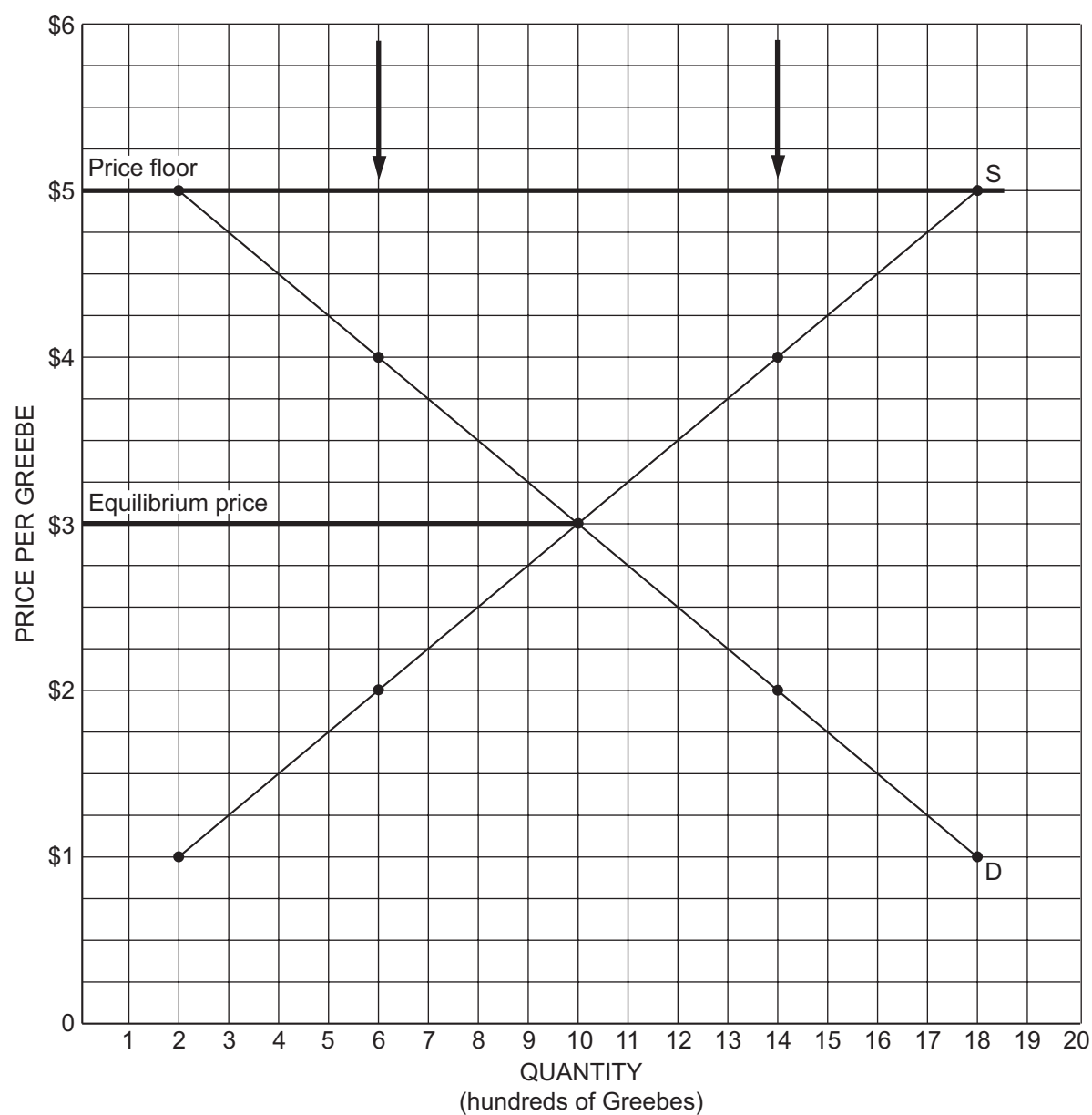
The more inelastic the demand for a good, the more the incidence of an excise tax can be shifted to the consumer.



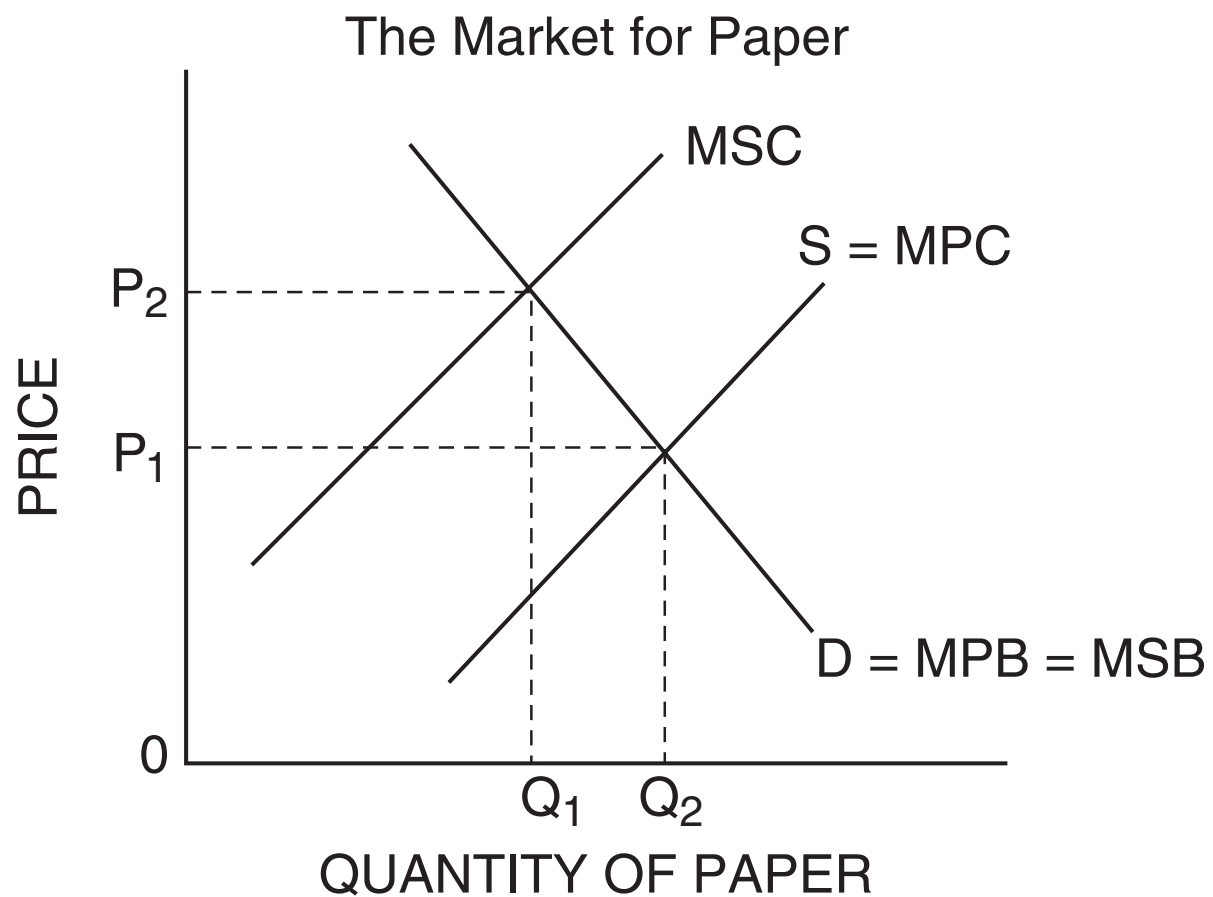
A Price Ceiling



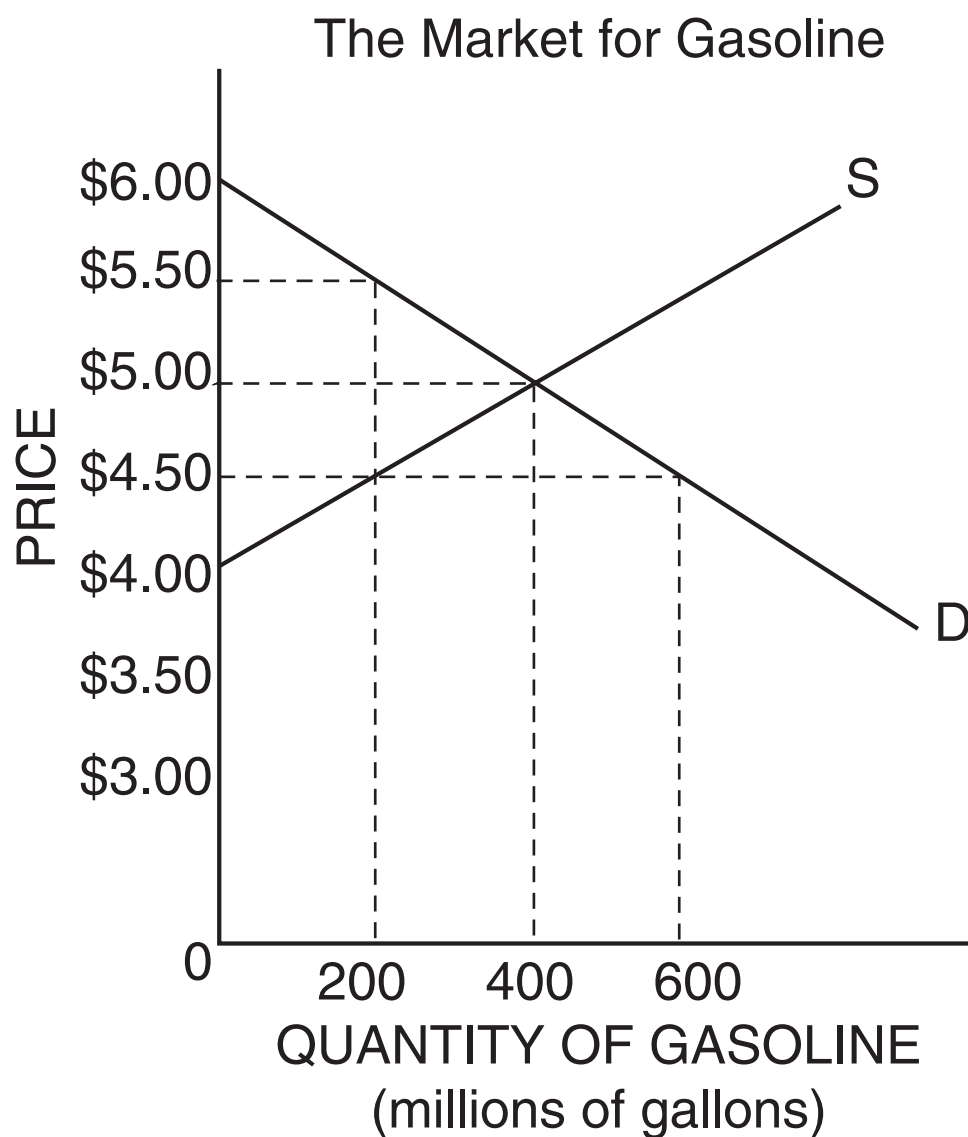
A Price Floor



The Effect of Pollution



Deadweight Loss of a Price Ceiling



Big Ideas about Factor (or Resource) Markets

1. The economic concepts are similar to those for product markets.
2. The demand for a factor of production is derived from the demand for the good or service produced from this resource.
3. A firm tries to hire additional units of a resource up to the point where the resource's marginal revenue product (MRP) is equal to its marginal resource cost (MRC).
4. In hiring labor, a perfectly competitive firm will do best if it hires up to the point where $MRP = \text{the wage rate}$. Wages are the marginal resource cost of labor if the labor market is perfectly competitive.
5. If you want a high wage:
 - (A) Make something people will pay a lot for.
 - (B) Work for a highly productive firm.
 - (C) Be in relatively short supply.
 - (D) Invest in your human capital.
6. Real wages depend on productivity.
7. Productivity depends on real or physical capital, human capital, labor quality, and technology.

The Demand for a Resource When the Product Market and Resource Market Are Perfectly Competitive

(1) Units of resource	(2) Total product (Q)	(3) Marginal physical product (MPP) = $\Delta(2)/\Delta(1)$	(4) Product price (P)	(5) Total revenue (TR) = (2)x(4)	(6) Marginal revenue product (MRP) = $\Delta(5)/\Delta(1)$
0	0	—	\$5.00	\$0.00	—
1	12	+12	\$5.00	\$60.00	+\$60.00
2	26	+14	\$5.00	\$130.00	+\$70.00
3	38	+12	\$5.00	\$190.00	+\$60.00
4	48	+10	\$5.00	\$240.00	+\$50.00
5	56	+8	\$5.00	\$280.00	+\$40.00
6	62	+6	\$5.00	\$310.00	+\$30.00
7	66	+4	\$5.00	\$330.00	+\$20.00
8	68	+2	\$5.00	\$340.00	+\$10.00

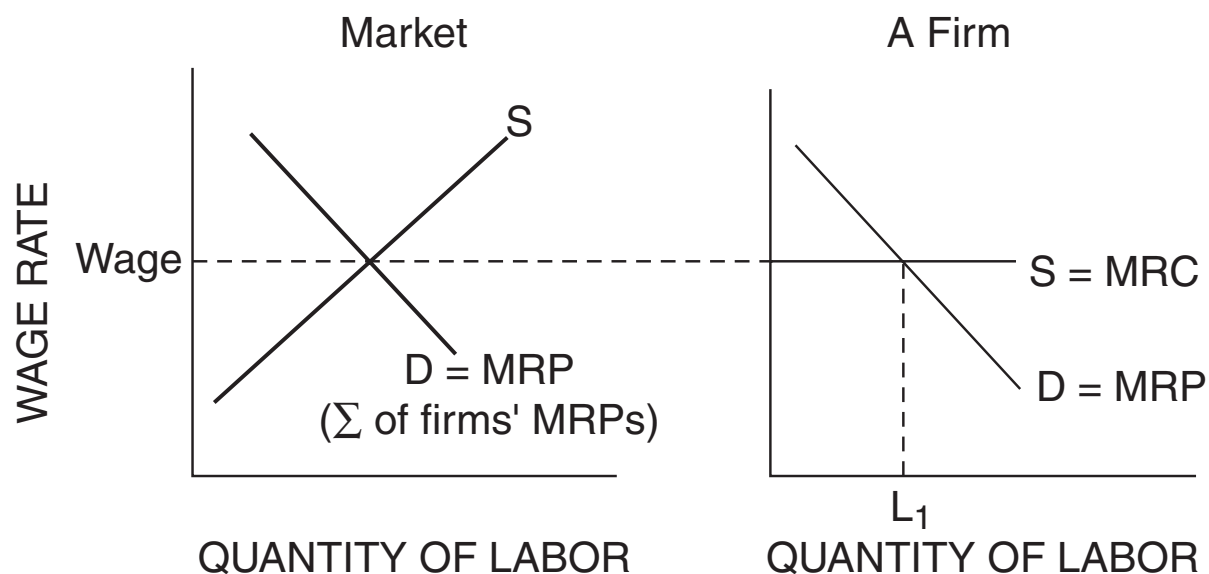
1. How many units of the resource would be hired at each of these perfectly competitive resource prices: \$45, \$35, and \$25?
2. Why does the value of MRP decrease as more units of the resource are added by the firm?
3. Is the MRP curve the firm's demand curve for the resource?

The Demand for a Resource When the Product Market Is Imperfectly Competitive and the Resource Market Is Perfectly Competitive

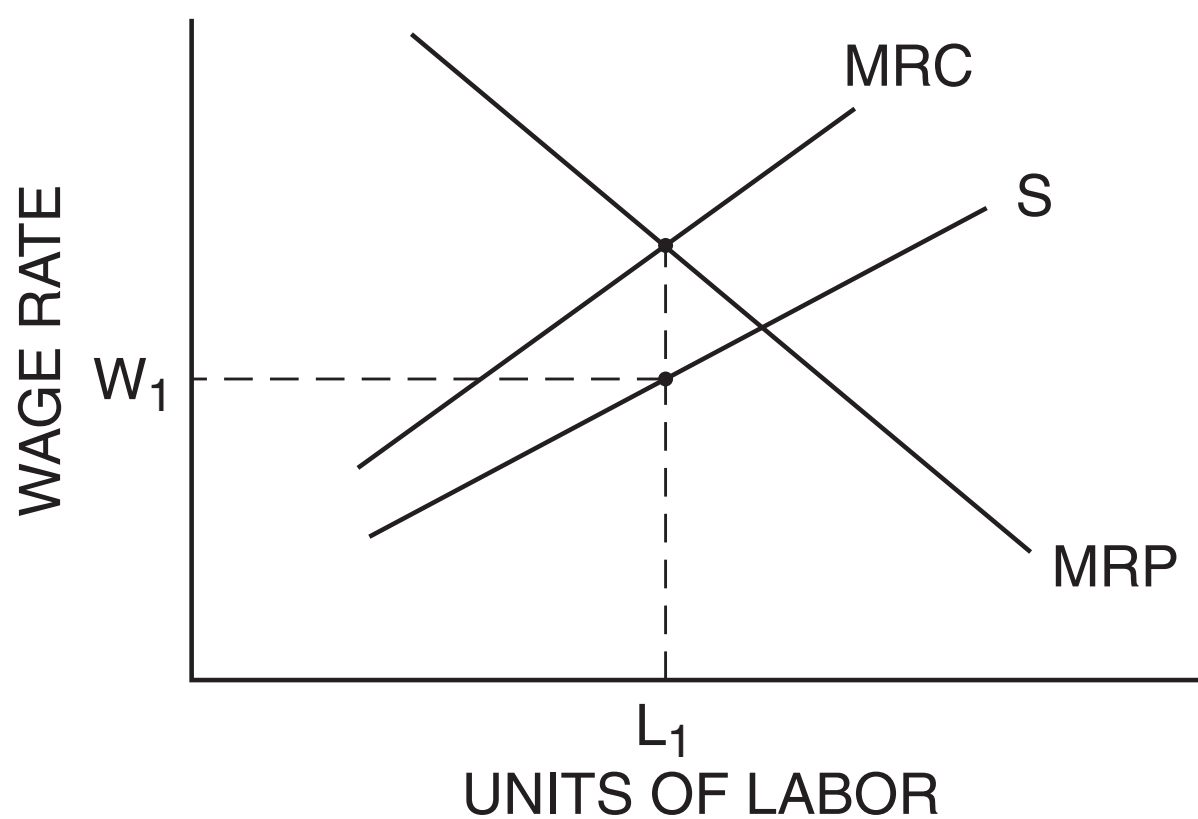
(1) Units of resource	(2) Total product (Q)	(3) Marginal physical product (MPP) = $\Delta(2)/\Delta(1)$	(4) Product price (P)	(5) Total revenue (TR) = (2)x(4)	(6) Marginal revenue product (MRP) = $\Delta(5)/\Delta(1)$
0	0	—	\$5.80	\$0.00	—
1	12	+12	\$5.60	\$67.20	+\$67.20
2	26	+14	\$5.40	\$140.40	+\$73.20
3	38	+12	\$5.20	\$197.60	+\$57.20
4	48	+10	\$5.00	\$240.00	+\$42.40
5	56	+8	\$4.80	\$268.80	+\$28.80
6	62	+6	\$4.60	\$285.20	+\$16.40
7	66	+4	\$4.40	\$290.40	+\$5.20
8	68	+2	\$4.20	\$285.60	−\$4.80

1. How many units of the resource would be hired at each of these perfectly competitive resource prices: \$45, \$35, and \$25?
2. Why does the value of MRP decrease as more units of the resource are added by the firm?
3. Is the MRP curve the firm's demand curve for the resource?

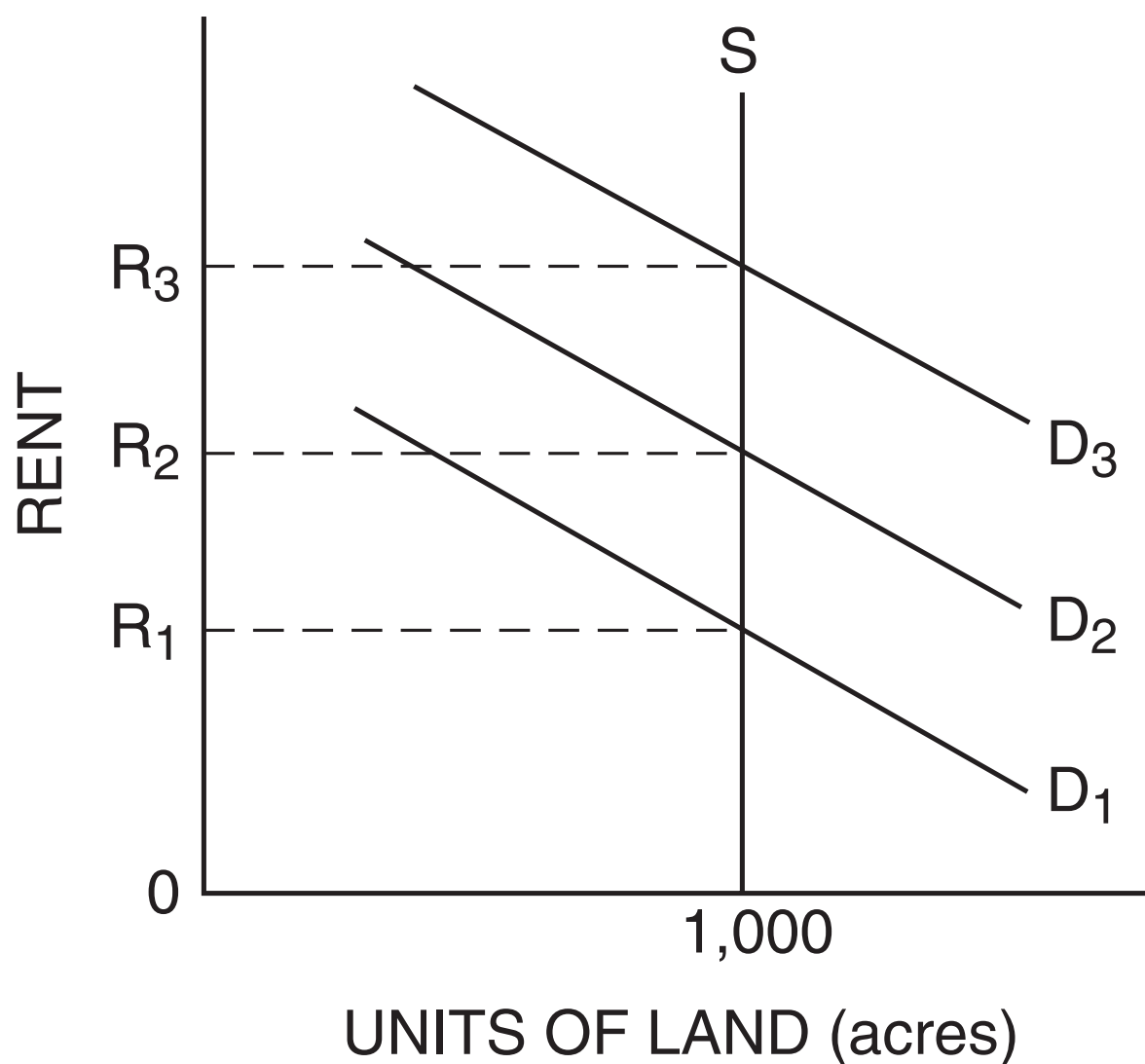
The Supply of and Demand for Labor in a Competitive Labor Market



A Monopsonistic Labor Market



Economic Rent

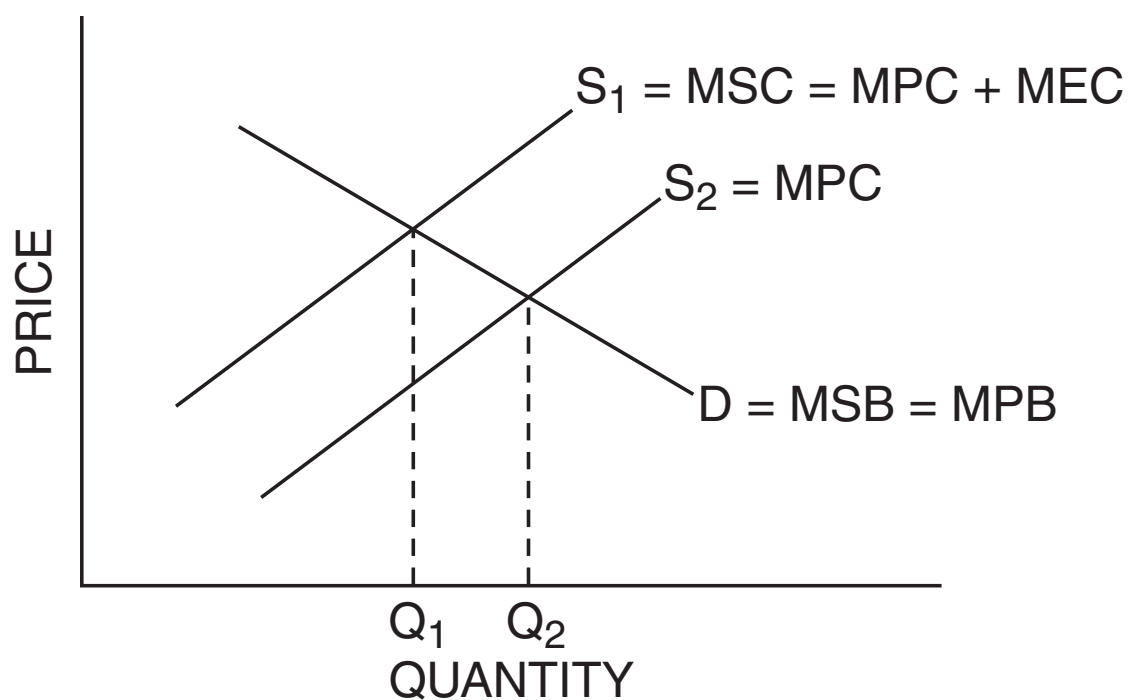


Economic rent is the amount by which the price of a resource exceeds the minimum level required to keep that resource in its current use. This graph assumes the quantity of land is fixed at 1,000 acres. The greater the demand for the land, the higher is the economic rent.

The Economic Functions of Government

1. Enforce laws and contracts.
2. Maintain competition.
3. Redistribute income. Provide an economic safety net.
4. Provide public goods:
 - Nonexclusion
 - Shared consumption
5. Correct market failures:
 - Provide market information.
 - Correct negative externalities.
 - Subsidize goods with positive externalities.
6. Stabilize the economy:
 - Fight unemployment.
 - Encourage price stability.
 - Promote economic growth.

Illustrating a Negative Externality



MSC = marginal social cost

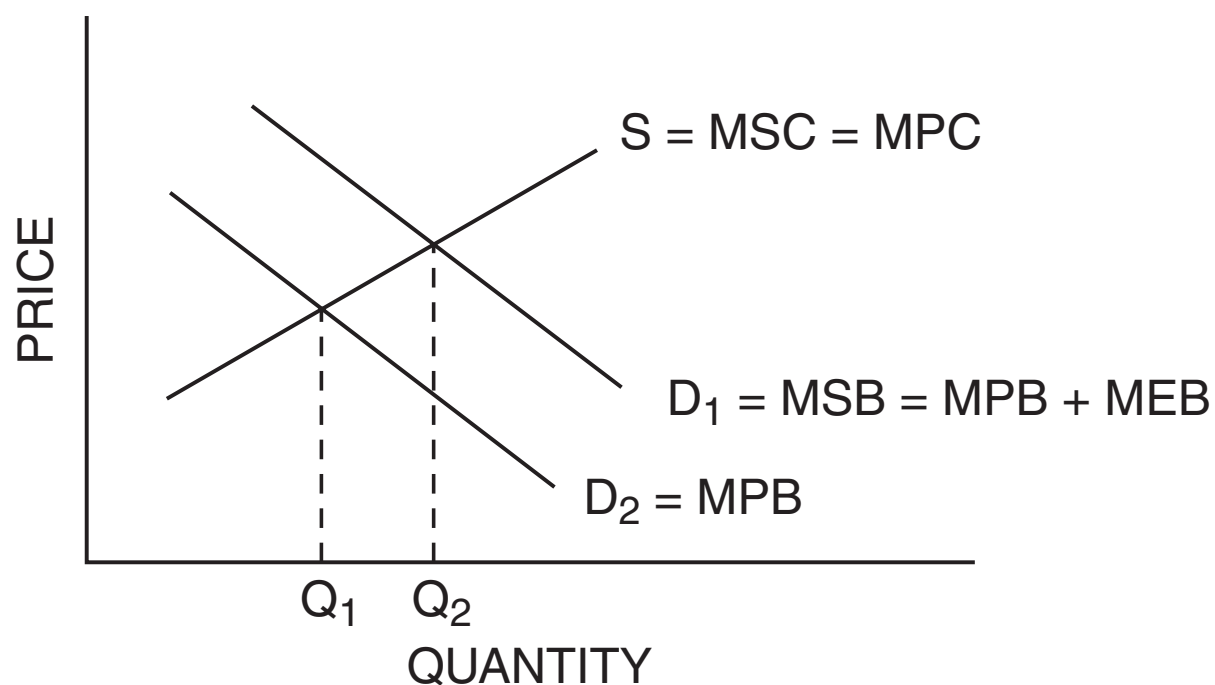
MPC = marginal private cost

MEC = marginal external cost

MSB = marginal social benefit

MPB = marginal private benefit

Illustrating a Positive Externality



MSB = marginal social benefit

MPB = marginal private benefit

MEB = marginal external benefit

MSC = marginal social cost

MPC = marginal private cost