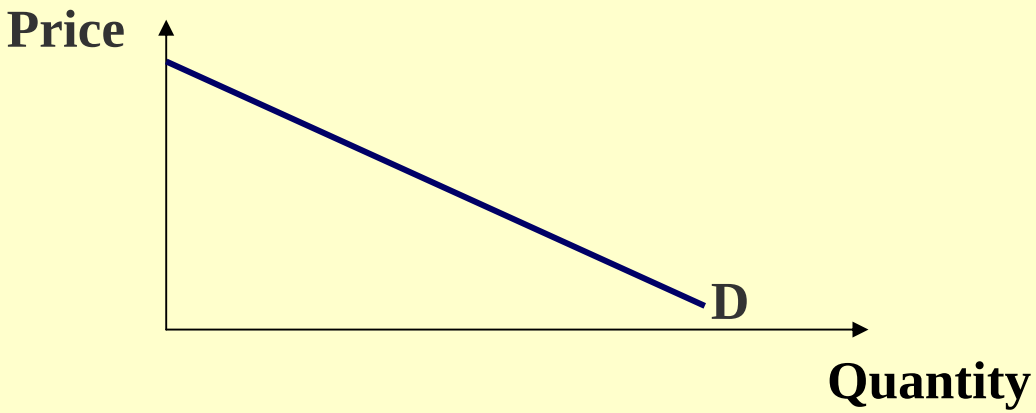
제 2 장

시장의 힘: 수요와 공급

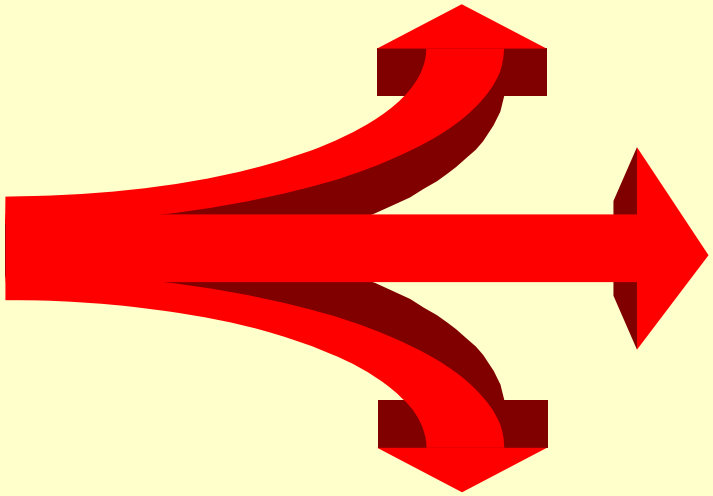
(Market Forces: Demand and Supply)

시장수요곡선
Market Demand Curve

- Shows the amount of a good that will be purchased at alternative prices, holding other factors constant.
- 수요의 법칙 (Law of Demand)
  - The demand curve is downward sloping.



수요의 결정요인
Determinants of Demand



- 소득 Income
  - 정상재 Normal good
  - 열등재 Inferior good
- 관련상품의 가격변화
  Prices of Related Goods
  - 대체재/경쟁재 substitutes
  - 보완재 complements
- 광고와 소비자선호
  Advertising and consumer tastes
- 인구규모 Population Dynamics
- 기대심리 Expectations
- 기타 요소 Other Factors

수요함수
Demand Function

- A general equation representing the demand curve

$$Q_X^d = f(P_X, P_Y, M, \text{Others})$$

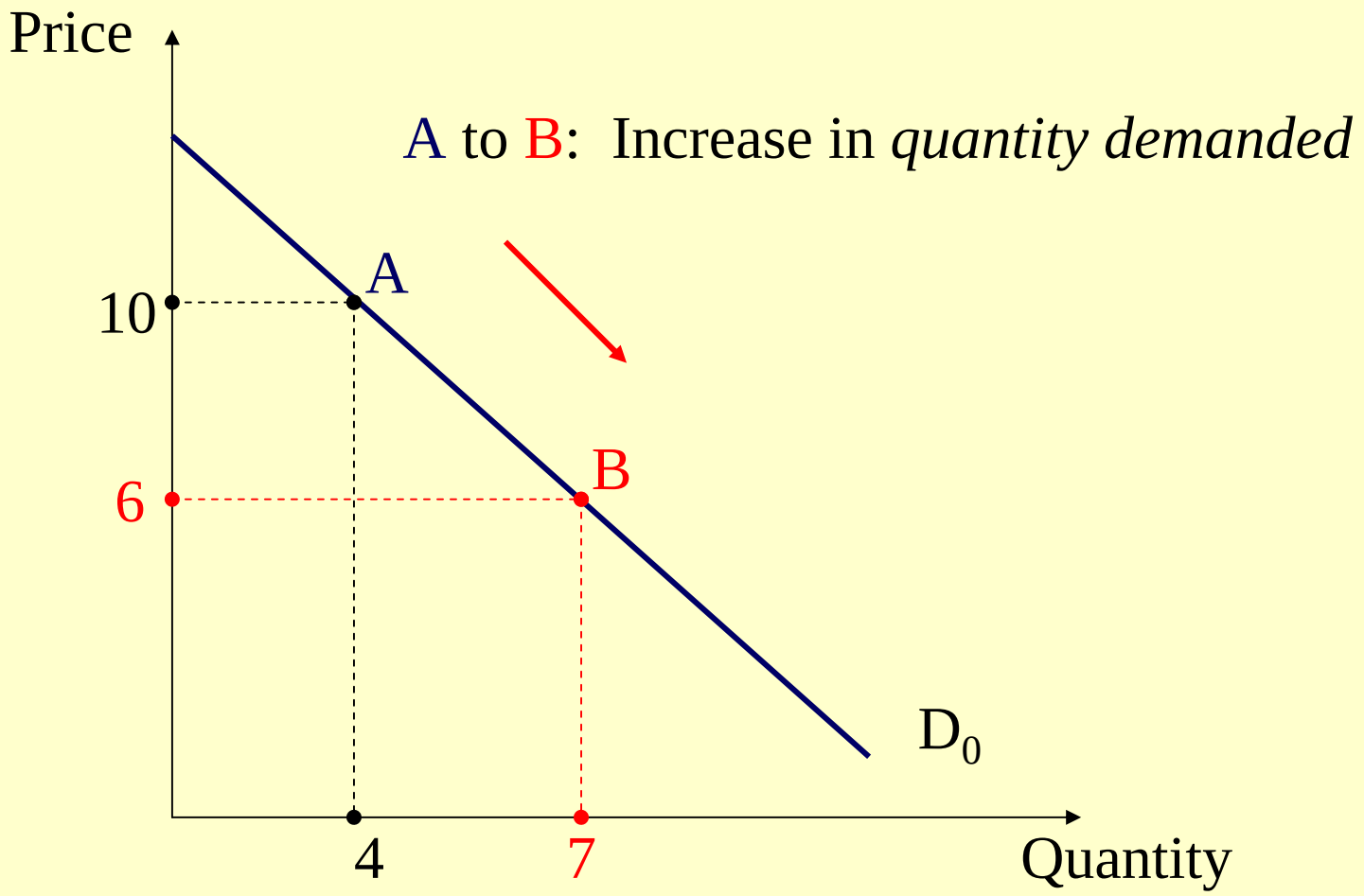
  - Q_X^d = quantity demand of good X.
  - P_X = price of good X.
  - P_Y = price of a related good Y.
    - Substitute good.
    - Complement good.
  - M = income.
    - Normal good.
    - Inferior good.
  - Others = any other variable affecting demand.

逆수요함수
Inverse Demand Function

- Price as a function of quantity demanded: $P=f(Q_d)$
- Example:
  - Demand Function
    - $Q_x^d = 10 - 2P_x$
  - Inverse Demand Function:
    - $2P_x = 10 - Q_x^d$
    - $P_x = 5 - 0.5Q_x^d$

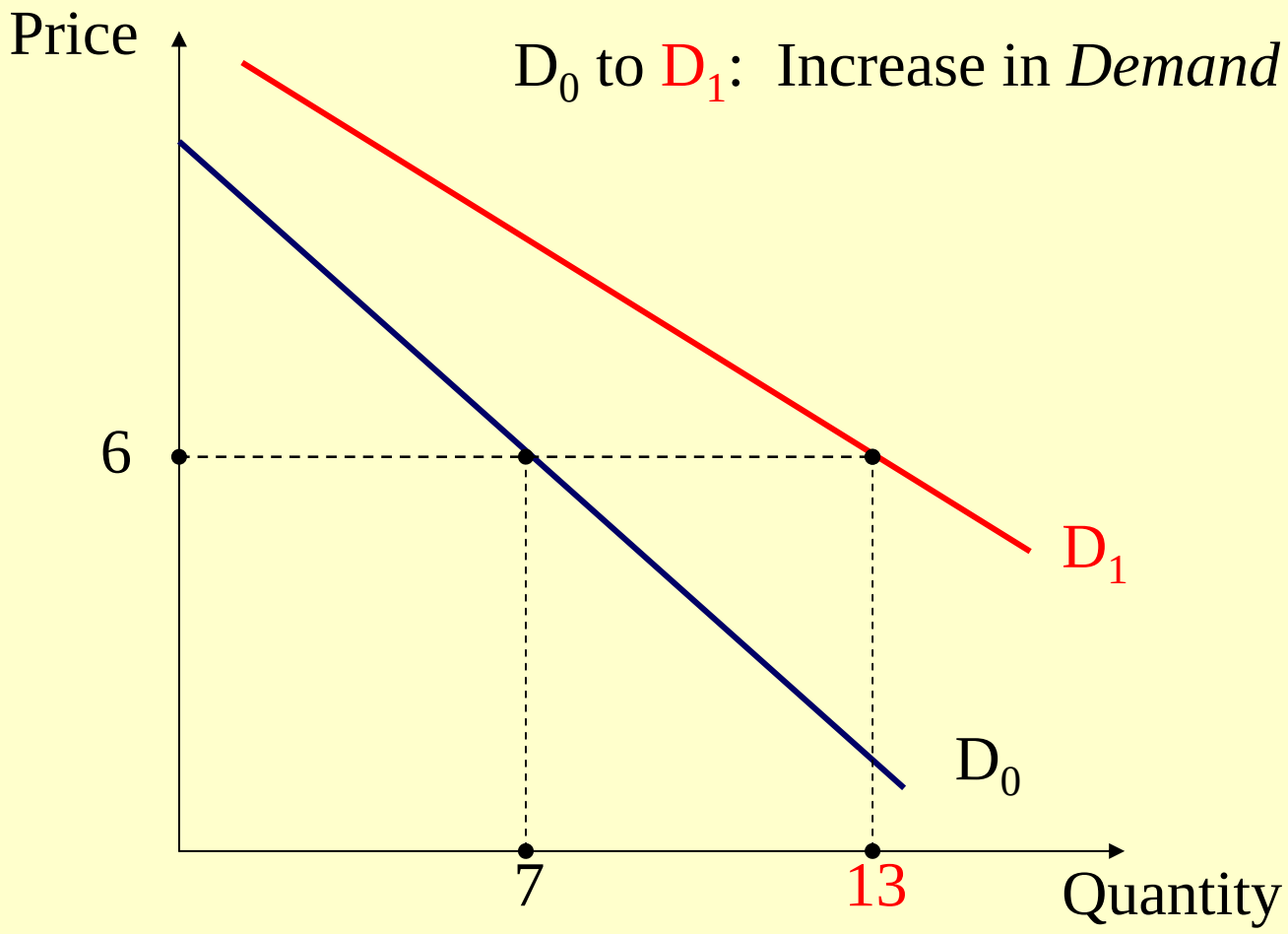
수요량의 변화

Change in Quantity Demanded



수요의 변화

Change in Demand



소비자 잉여

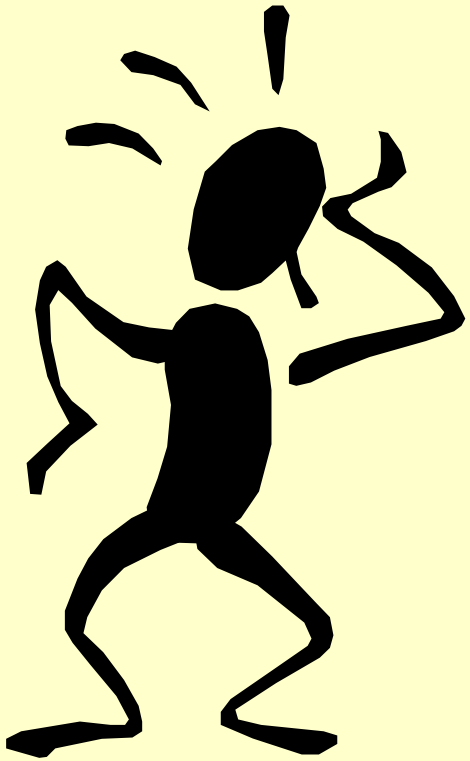
Consumer Surplus

- The value consumers get from a good but do not have to pay for.

I got a great deal!

- That company offers a lot of bang for the buck!
- Dell provides good value.
- Total value greatly exceeds total amount paid.
- Consumer surplus is large.

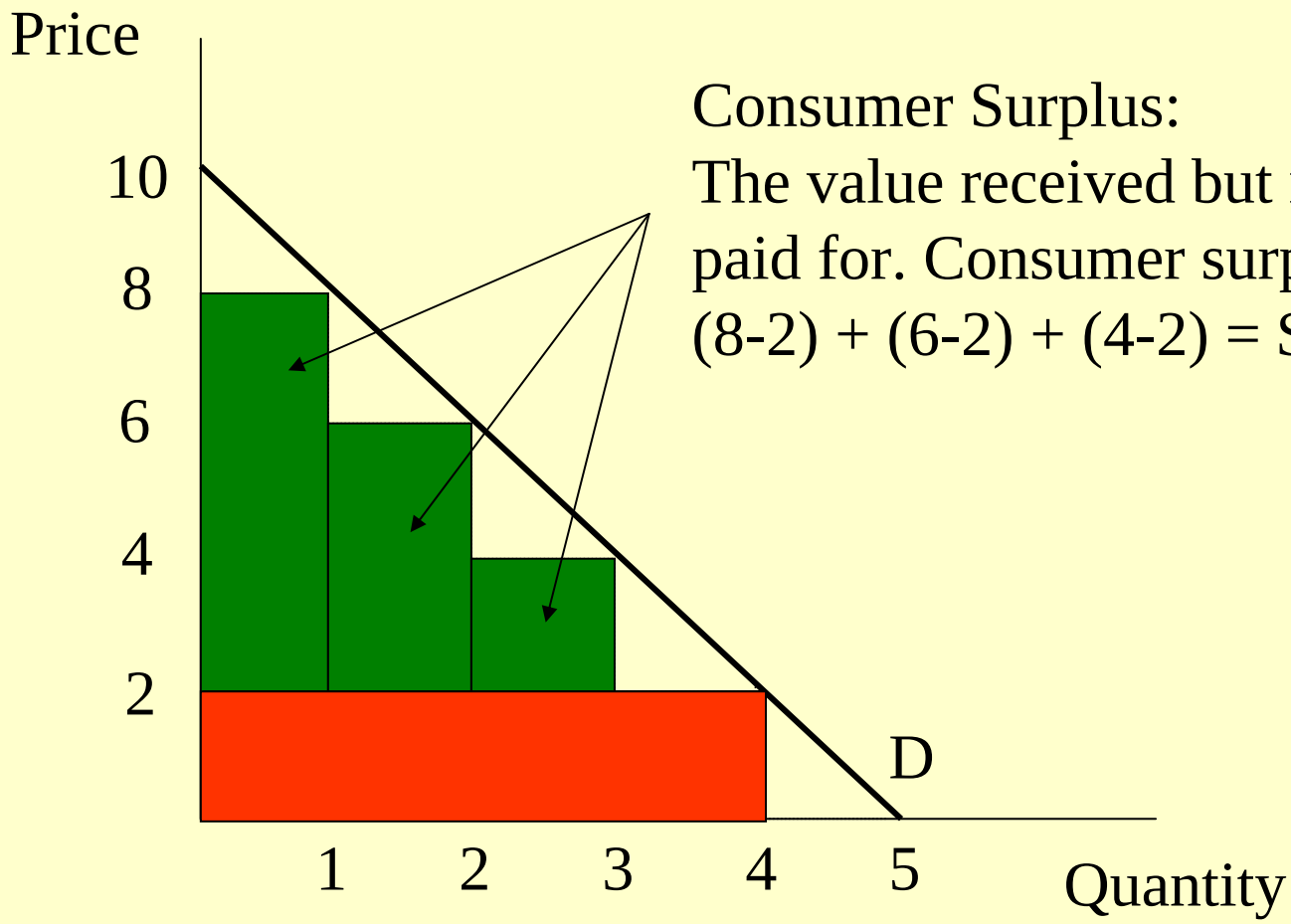
I got a lousy deal!



- That car dealer drives a hard bargain!
- I almost decided not to buy it!
- They tried to squeeze the very last cent from me!
- Total amount paid is close to total value.
- Consumer surplus is low.

소비자 잉여의 계산

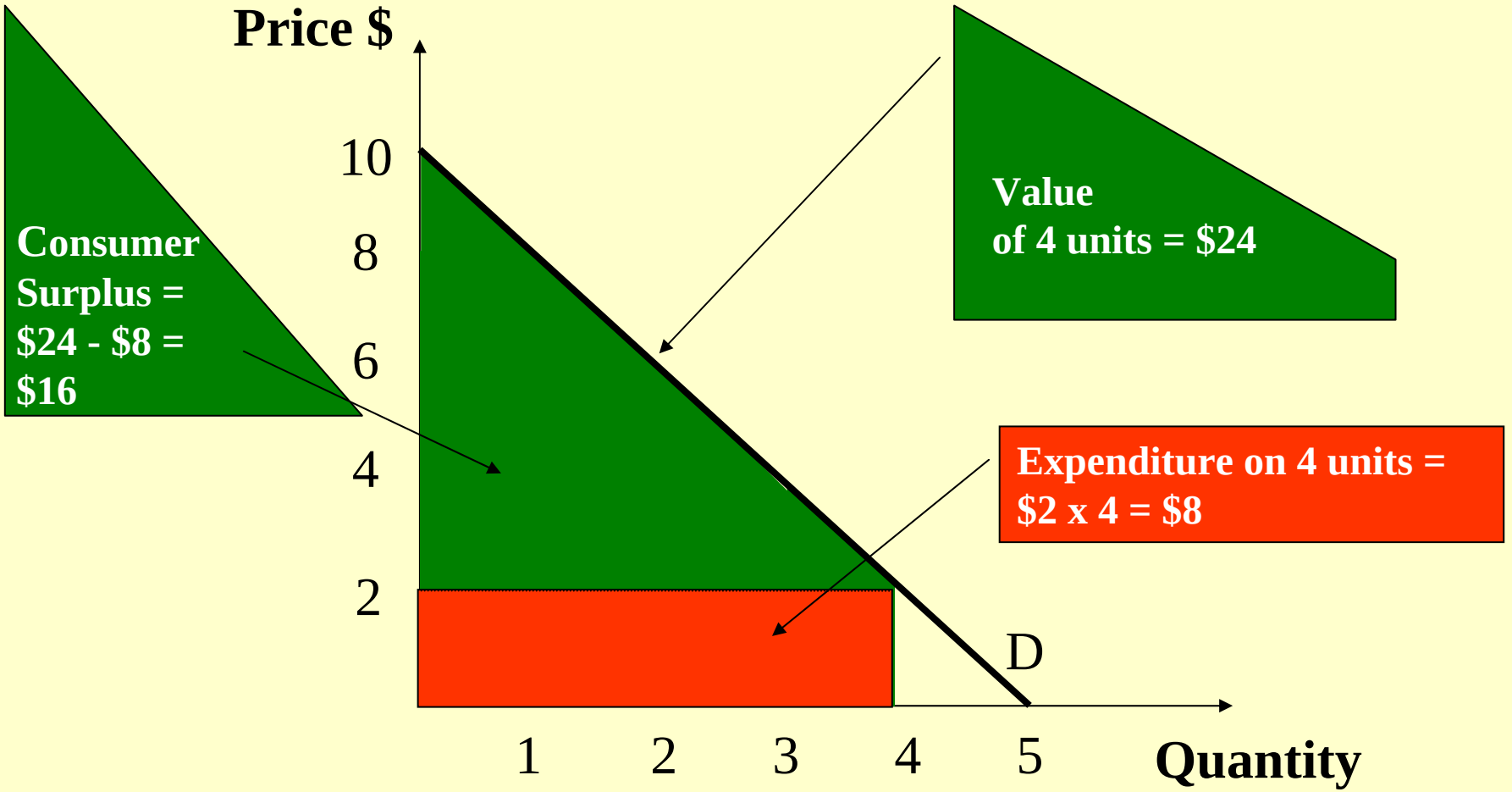
Consumer Surplus: The Discrete Case



Consumer Surplus:
The value received but not paid for. Consumer surplus = (8-2) + (6-2) + (4-2) = $12.

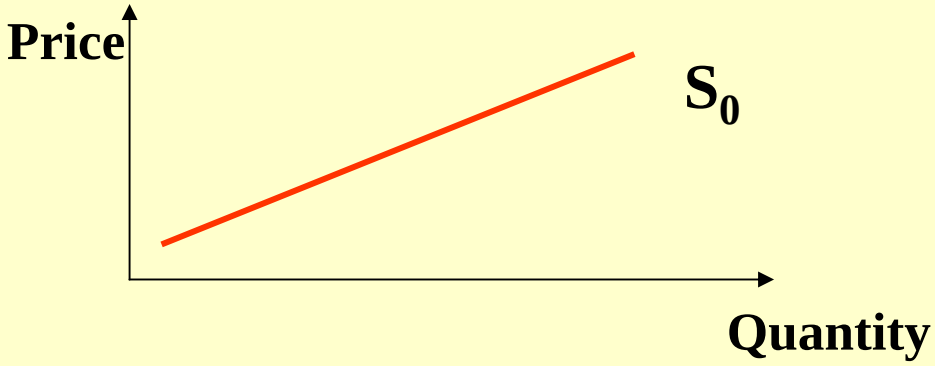
소비자 잉여의 계산

Consumer Surplus: The Continuous Case

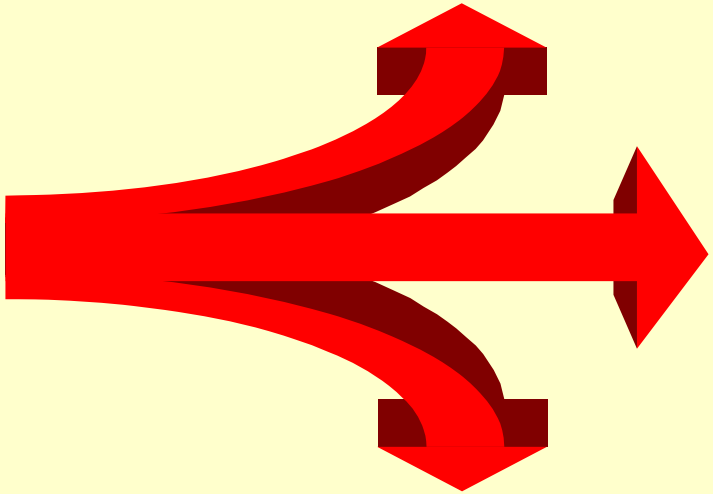


시장공급곡선
Market Supply Curve

- The supply curve shows the amount of a good that will be produced at alternative prices.
- 공급의 법칙 (Law of Supply)
  - The supply curve is upward sloping.



공급결정요인 **Supply Shifters**



- 요소가격 Input prices
- 기술 및 규제 Technology or government regulations
- 경쟁기업의 수 Number of firms
  - 진입 Entry
  - 퇴출 Exit
- Substitutes in production
- 세금 Taxes
  - Excise tax
  - Ad valorem tax
- 생산자 기대심리 Producer expectations

공급함수
Supply Function

- An equation representing the supply curve:

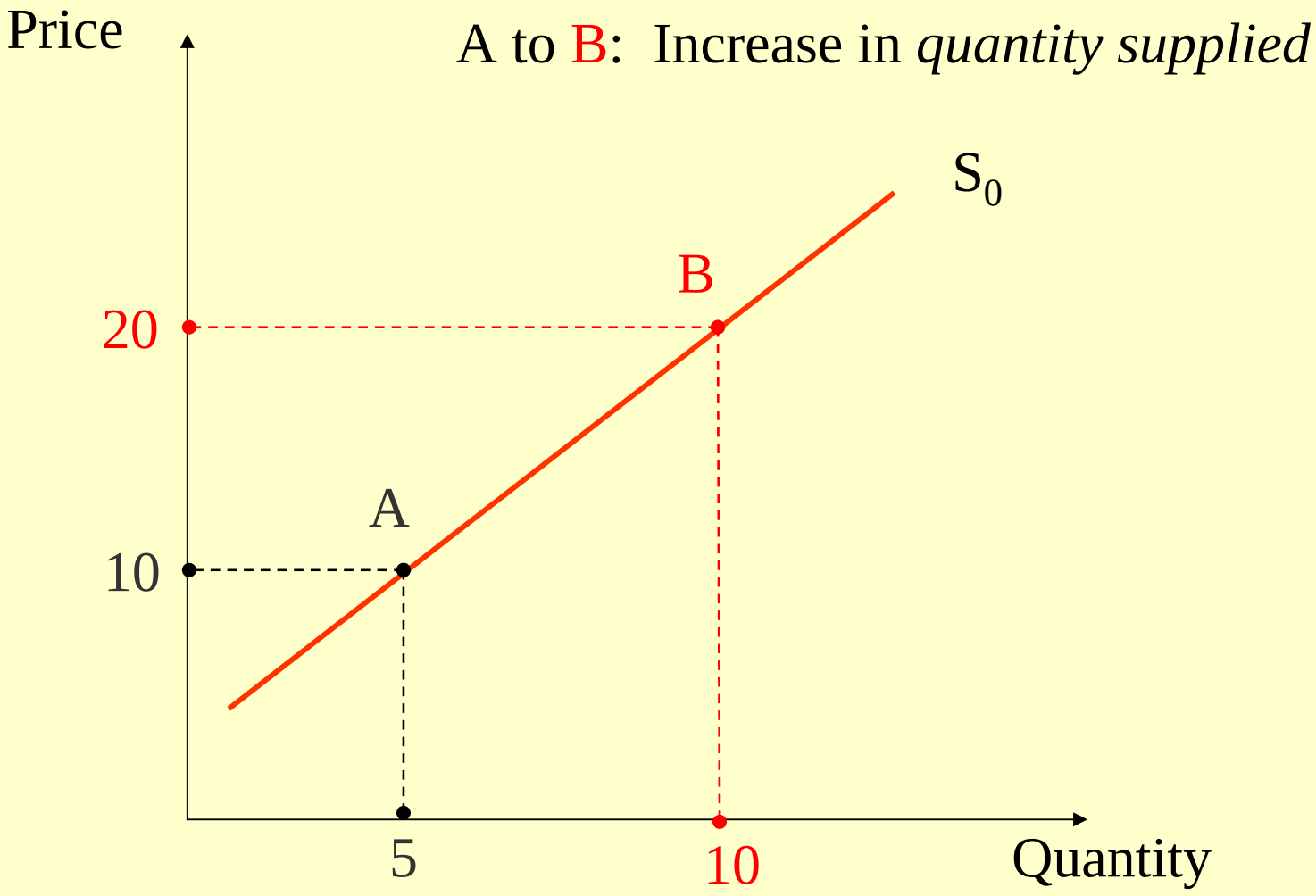
$$Q_x^S = f(P_x, P_R, W, \text{Others})$$

  - Q_x^S = quantity supplied of good X.
  - P_x = price of good X.
  - P_R = price of a production substitute.
  - W = price of inputs (e.g., wages).
  - Others = other variable affecting supply.

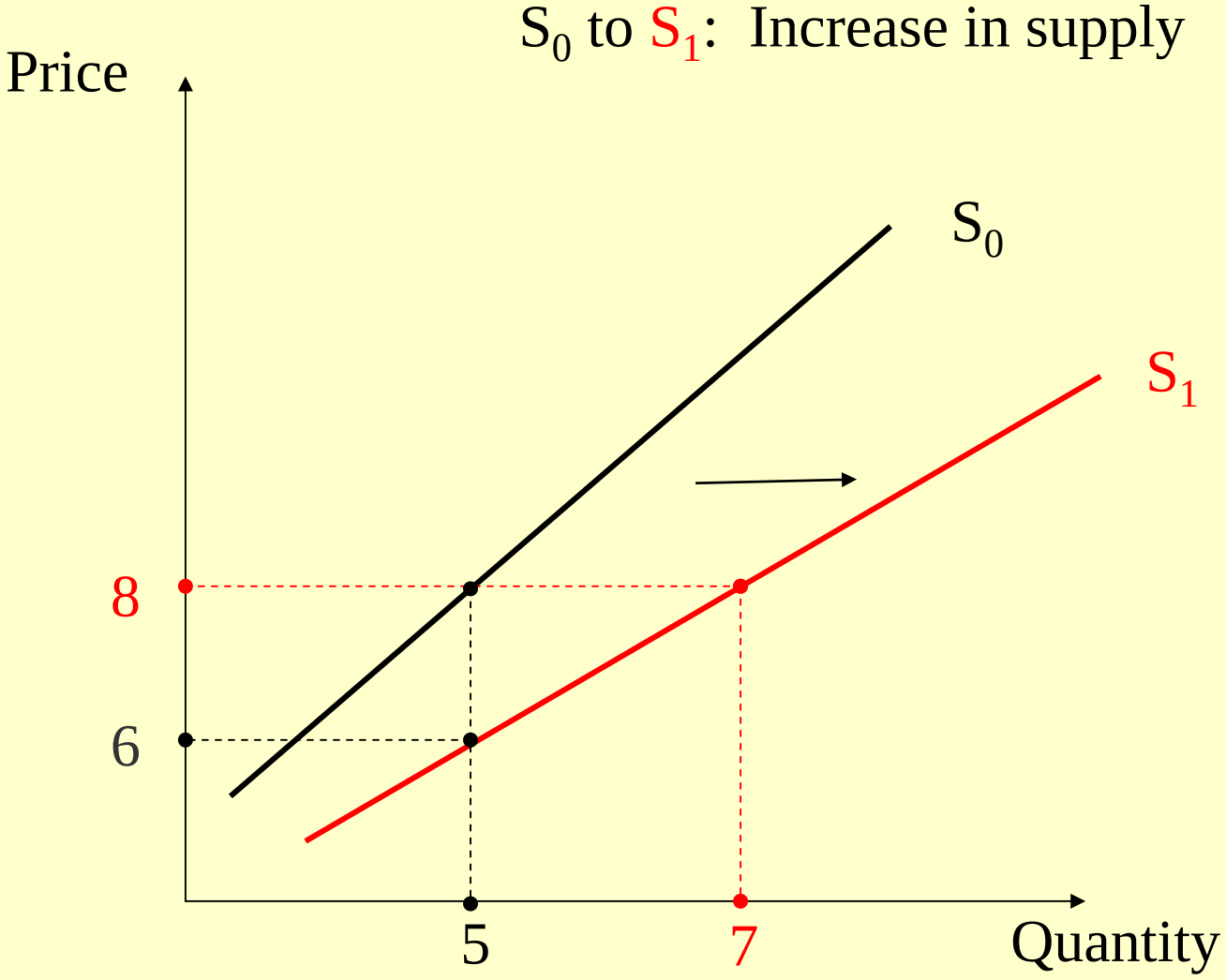
逆공급함수
Inverse Supply Function

- Price as a function of quantity supplied.
- Example:
  - Supply Function
    - $Q_x^s = 10 + 2P_x$
  - Inverse Supply Function:
    - $2P_x = 10 + Q_x^s$
    - $P_x = 5 + 0.5Q_x^s$

공급량의 변화
Change in Quantity Supplied

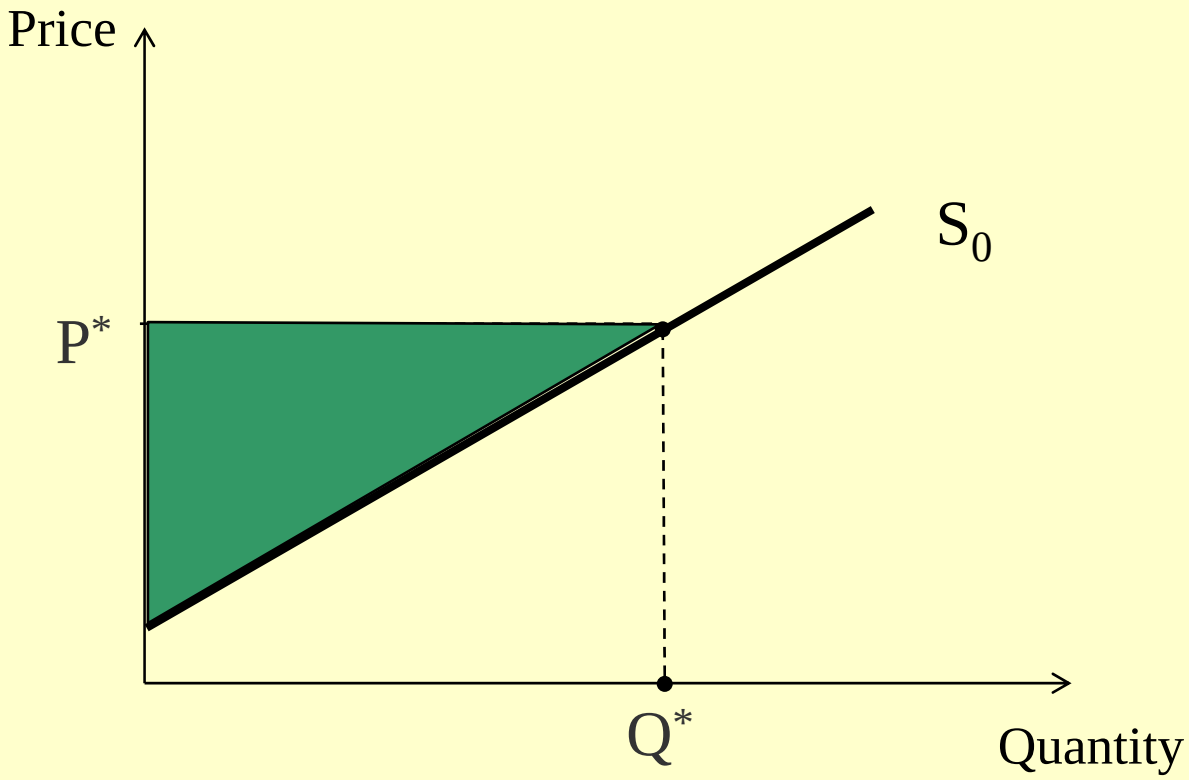


공급의 변화
Change in Supply



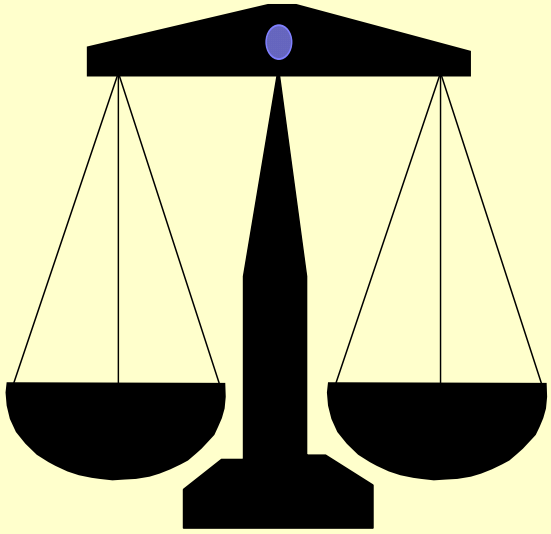
생산자 잉여
Producer Surplus

- The amount producers receive in excess of the amount necessary to induce them to produce the good.

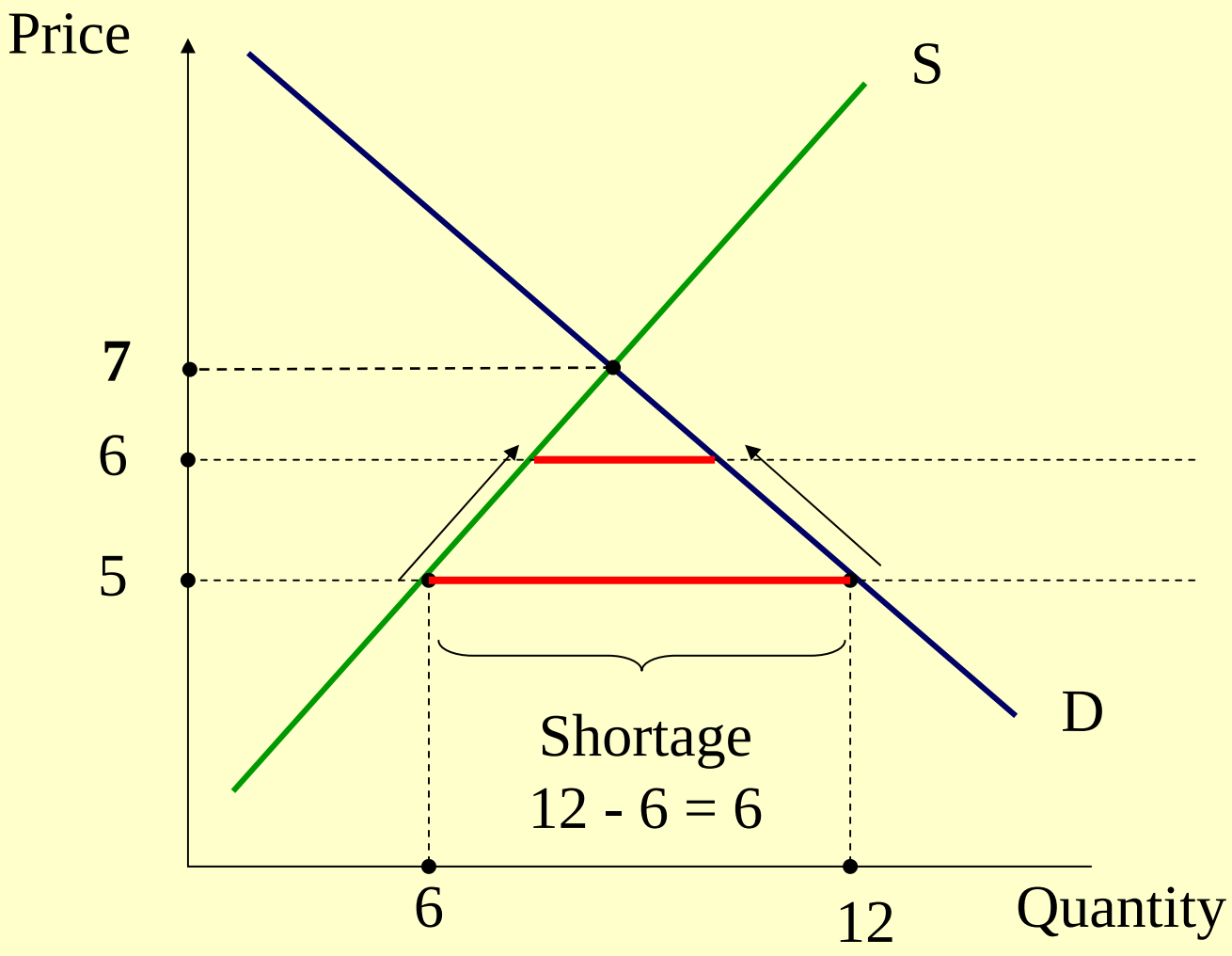


시장의 균형
Market Equilibrium

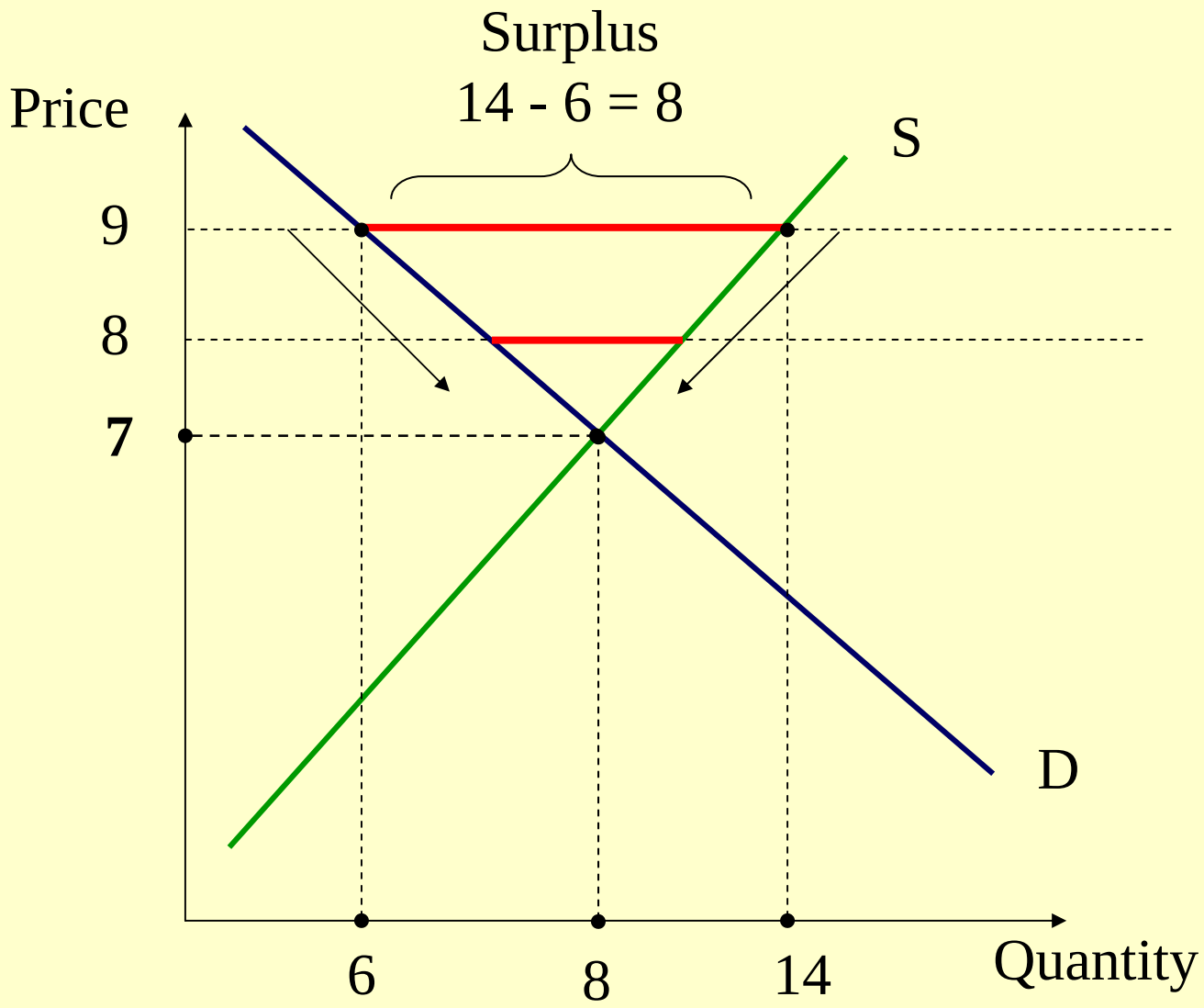
- Balancing supply and demand
  - $Q_x^S = Q_x^d$
- Steady-state



If price is too low…



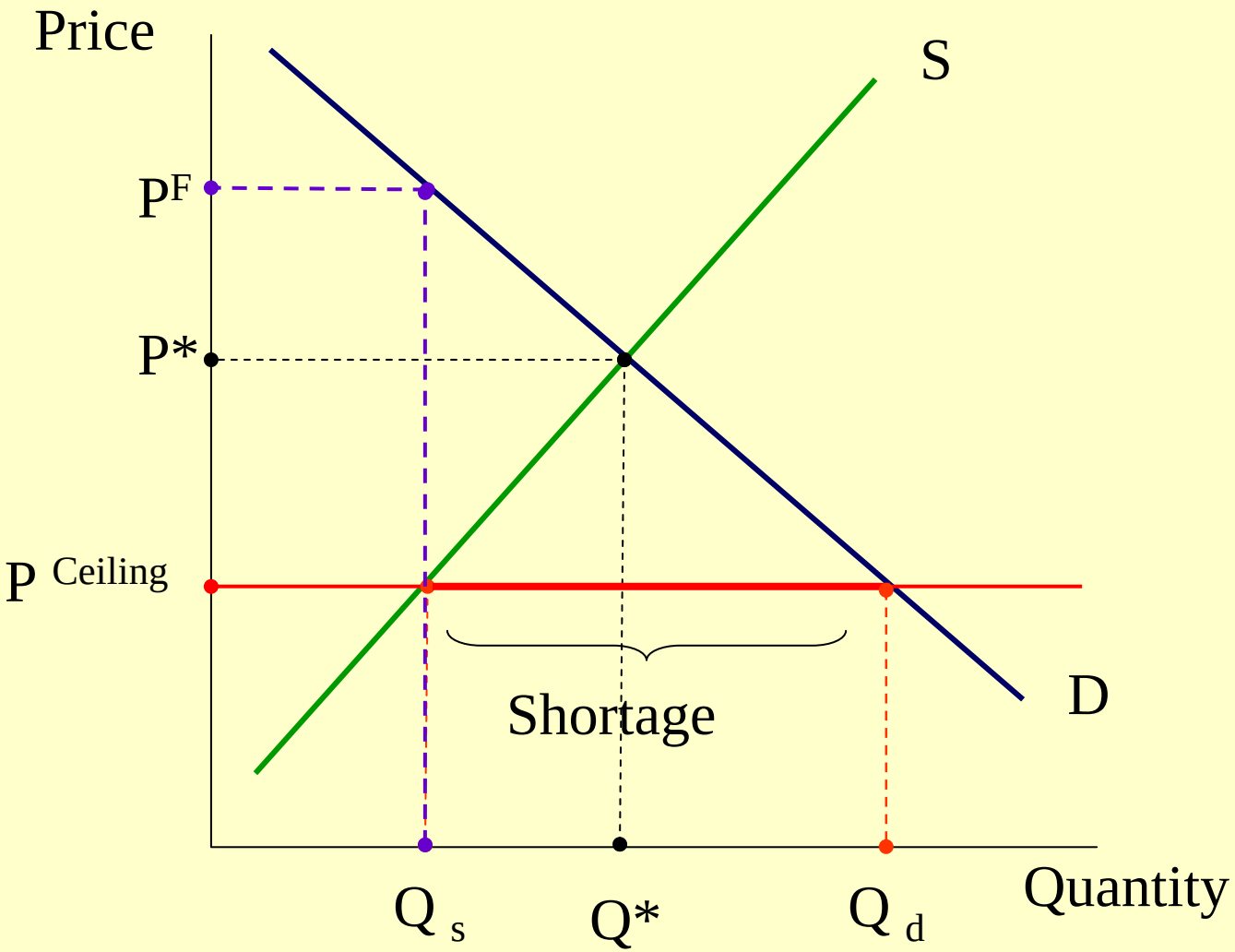
If price is too high…



가격통제
Price Restrictions

- Price Ceilings
  - The *maximum* legal price that can be charged.
  - Examples:
    - Gasoline prices in the 1970s.
    - Housing in New York City.
    - Proposed restrictions on ATM fees.
- Price Floors
  - The *minimum* legal price that can be charged.
  - Examples:
    - Minimum wage.
    - Agricultural price supports.

Impact of a Price Ceiling



Full Economic Price

- The dollar amount paid to a firm under a price ceiling, plus the nonpecuniary price.

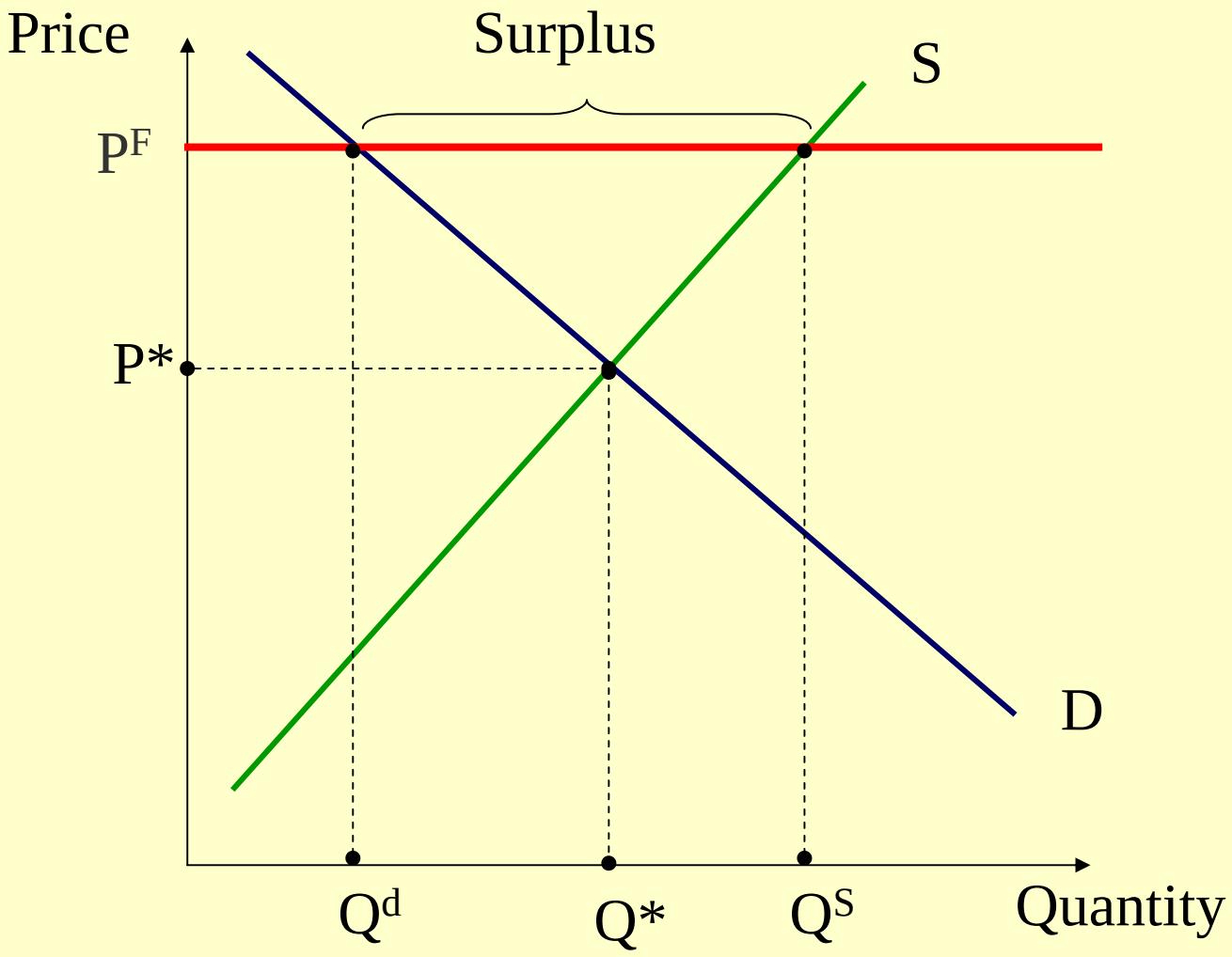
$$P^F = P^c + (P^F - P^C)$$

- P^F = full economic price
- P^C = price ceiling
- $P^F - P^C$ = nonpecuniary price

An Example from the 1970s

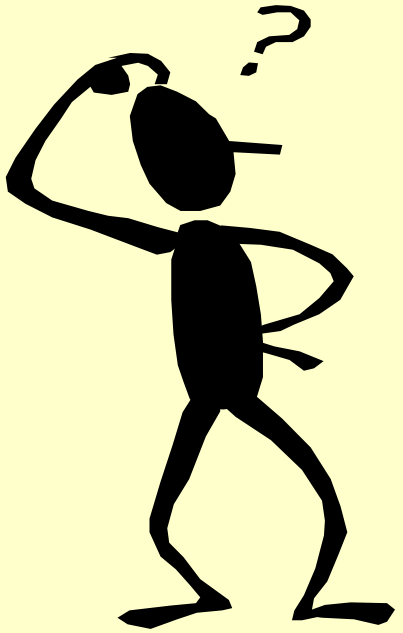
- Ceiling price of gasoline: $1.
- 3 hours in line to buy 15 gallons of gasoline
  - Opportunity cost: $5/hr.
  - Total value of time spent in line: 3 × $5 = $15.
  - Non-pecuniary price per gallon: $15/15=$1.
- Full economic price of a gallon of gasoline: $1+$1=2.

Impact of a Price Floor



비교정학분석
Comparative Static Analysis

- How do the equilibrium price and quantity change when a determinant of supply and/or demand change?



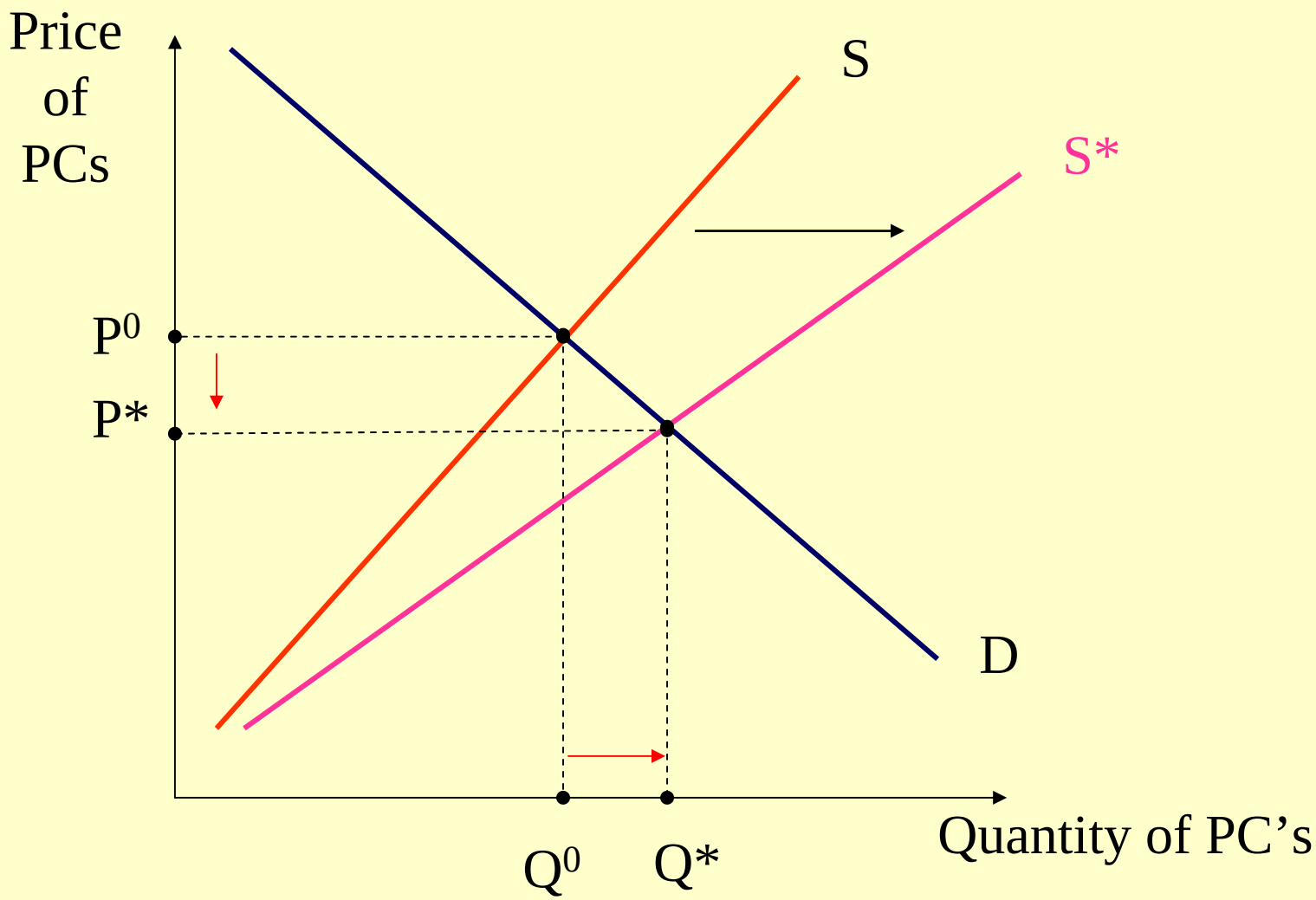
수요/공급분석의 응용
Applications of Demand and Supply Analysis

- Event: The *WSJ* reports that the prices of PC components are expected to fall by 5-8 percent over the next six months.
- Scenario 1: You manage a small firm that manufactures PCs.
- Scenario 2: You manage a small software company.

Scenario 1: Implications for a Small PC Maker

- Step 1: Look for the “Big Picture.”
- Step 2: Organize an action plan (worry about details).

Big Picture: Impact of decline in component prices on PC market



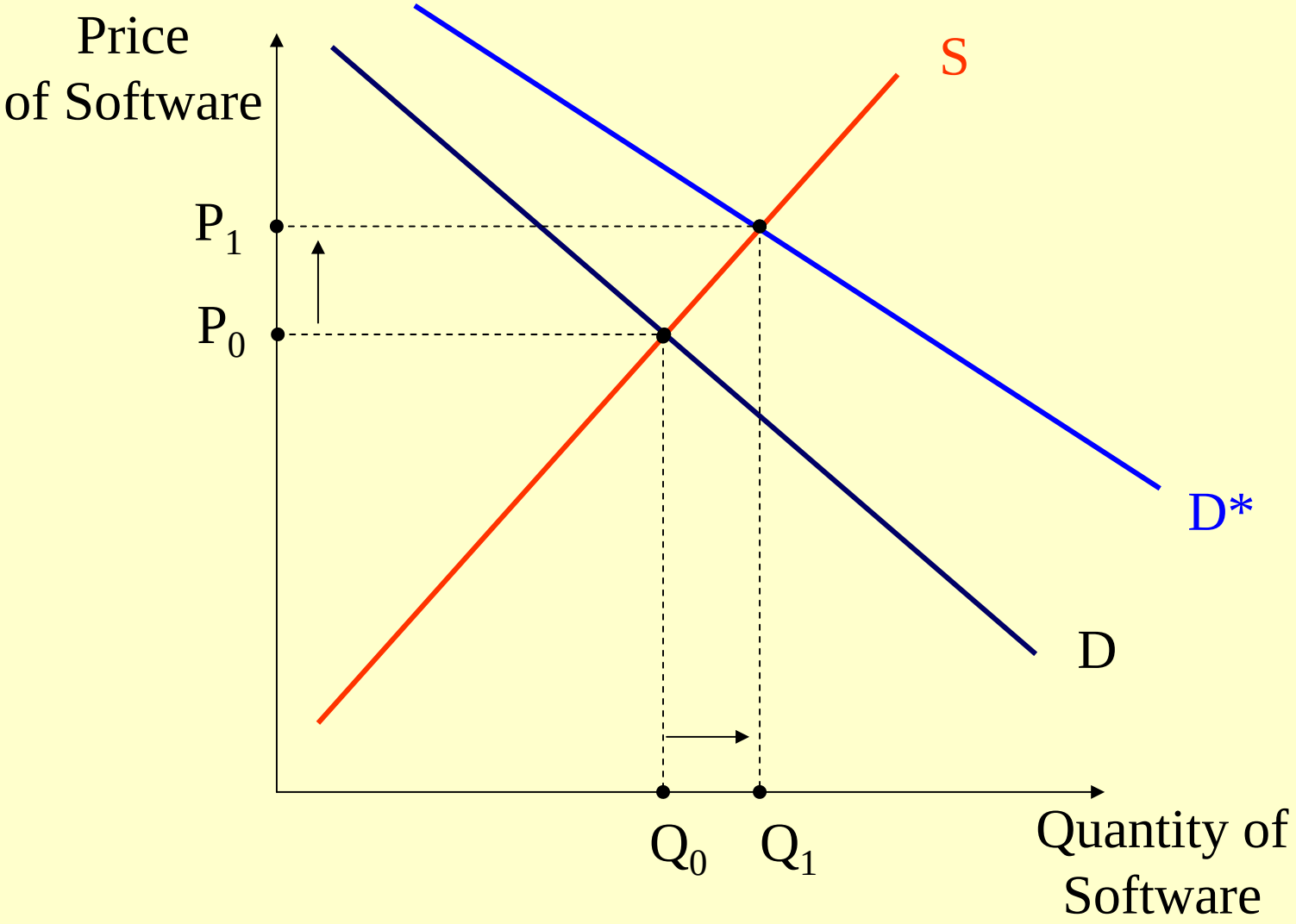
Big Picture Analysis: PC Market

- Equilibrium price of PCs will fall, and equilibrium quantity of computers sold will increase.
- Use this to organize an action plan
  - contracts/suppliers?
  - inventories?
  - human resources?
  - marketing?
  - do I need quantitative estimates?

Scenario 2: Software Maker

- More complicated chain of reasoning to arrive at the “Big Picture.”
- Step 1: Use analysis like that in Scenario 1 to deduce that lower component prices will lead to
  - a lower equilibrium price for computers.
  - a greater number of computers sold.
- Step 2: How will these changes affect the “Big Picture” in the software market?

Big Picture: Impact of lower PC prices on the software market



Big Picture Analysis: Software Market

- Software prices are likely to rise, and more software will be sold.
- Use this to organize an action plan.

Conclusion

- Use supply and demand analysis to
  - clarify the “big picture” (the general impact of a current event on equilibrium prices and quantities).
  - organize an action plan (needed changes in production, inventories, raw materials, human resources, marketing plans, etc.).