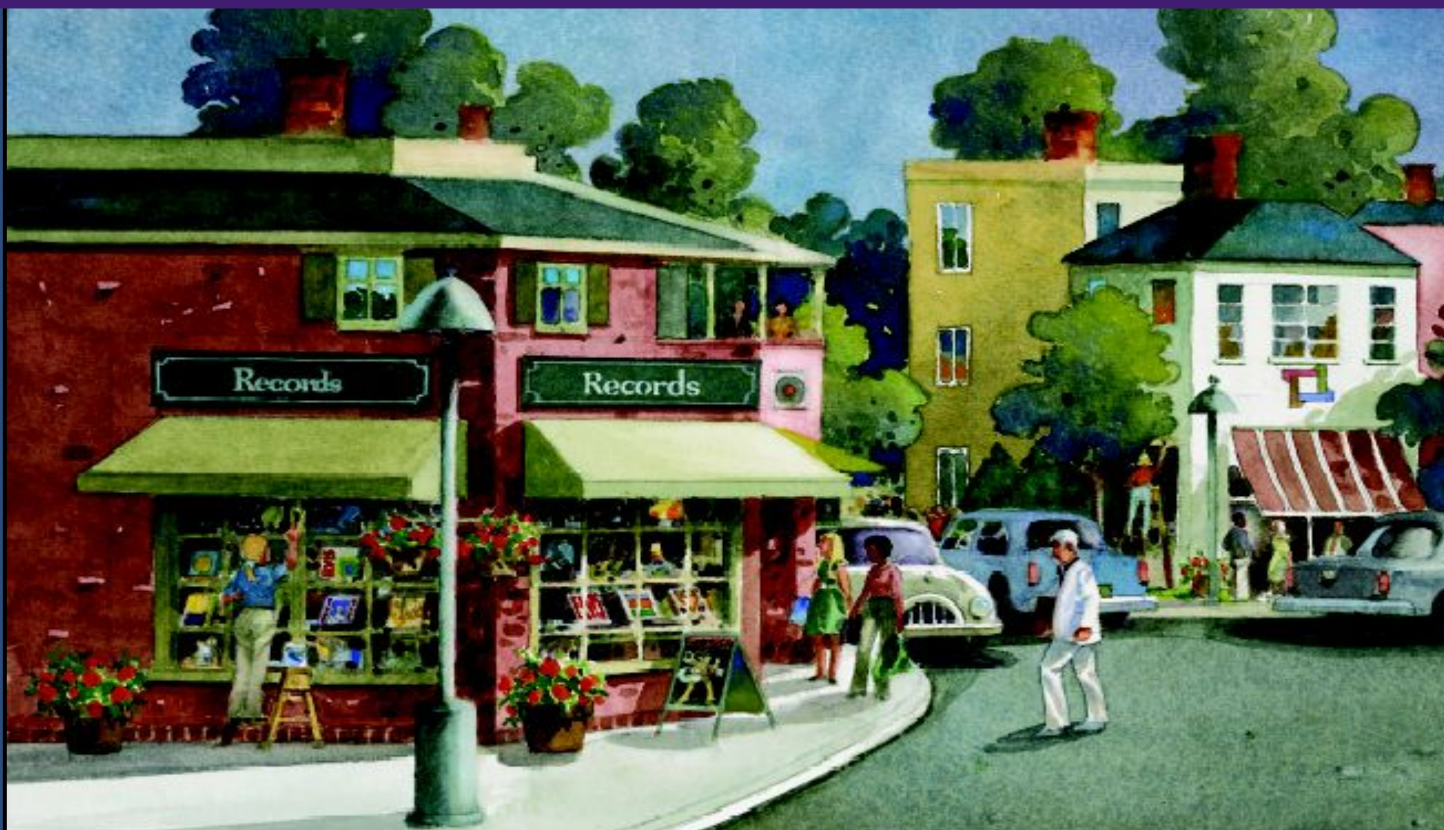
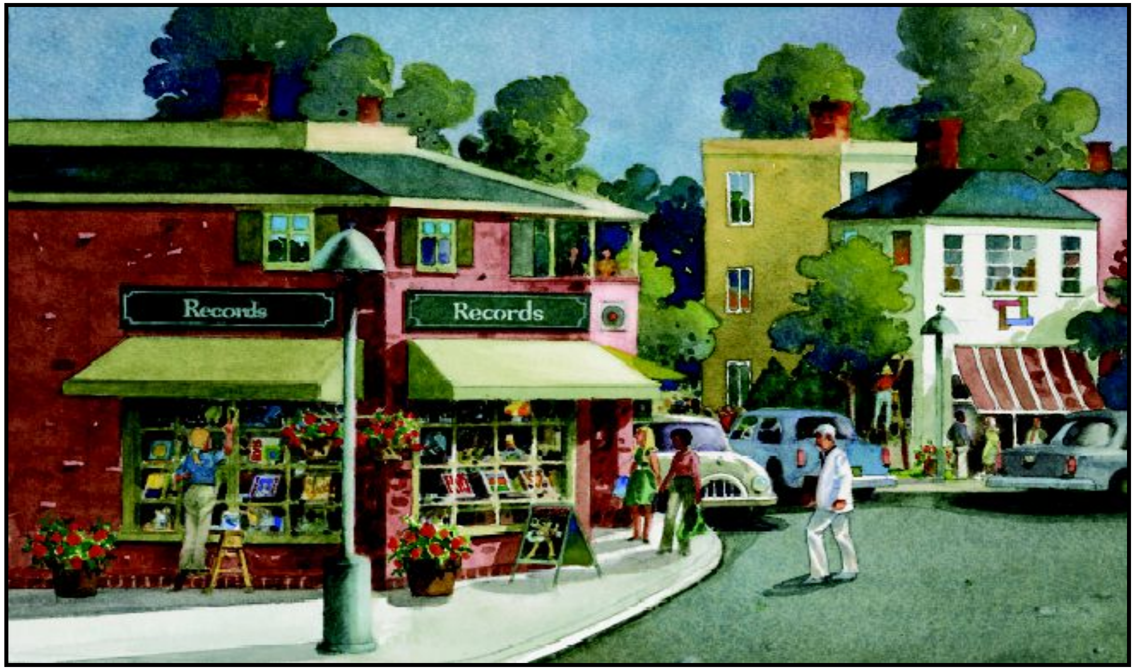
3

SUPPLY AND DEMAND II: MARKETS AND WELFARE





7

Consumers, Producers, and the Efficiency of Markets

REVISITING THE MARKET EQUILIBRIUM

- Do the equilibrium price and quantity maximize the total welfare of buyers and sellers?
- Market equilibrium reflects the way markets allocate scarce resources.
- Whether the market allocation is desirable can be addressed by welfare economics.

Welfare Economics

- *Welfare economics* is the study of how the allocation of resources affects economic well-being.
- Buyers and sellers receive benefits from taking part in the market.
- The equilibrium in a market maximizes the total welfare of buyers and sellers.

Welfare Economics

- Equilibrium in the market results in maximum benefits, and therefore maximum total welfare for both the consumers and the producers of the product.

Welfare Economics

- Consumer surplus measures economic welfare from the buyer's side.
- Producer surplus measures economic welfare from the seller's side.

CONSUMER SURPLUS

- *Willingness to pay* is the maximum amount that a buyer will pay for a good.
- It measures how much the buyer values the good or service.

CONSUMER SURPLUS

- *Consumer surplus* is the buyer's willingness to pay for a good minus the amount the buyer actually pays for it.

Table 1 Four Possible Buyers' Willingness to Pay

Buyer	Willingness to Pay
John	$100
Paul	80
George	70
Ringo	50

CONSUMER SURPLUS

- The market demand curve depicts the various quantities that buyers would be willing and able to purchase at different prices.

The Demand Schedule and the Demand Curve

Price	Buyers	Quantity Demanded
More than $100	None	0
$80 to $100	John	1
$70 to $80	John, Paul	2
$50 to $70	John, Paul, George	3
$50 or less	John, Paul, George, Ringo	4

Figure 1 The Demand Schedule and the Demand Curve

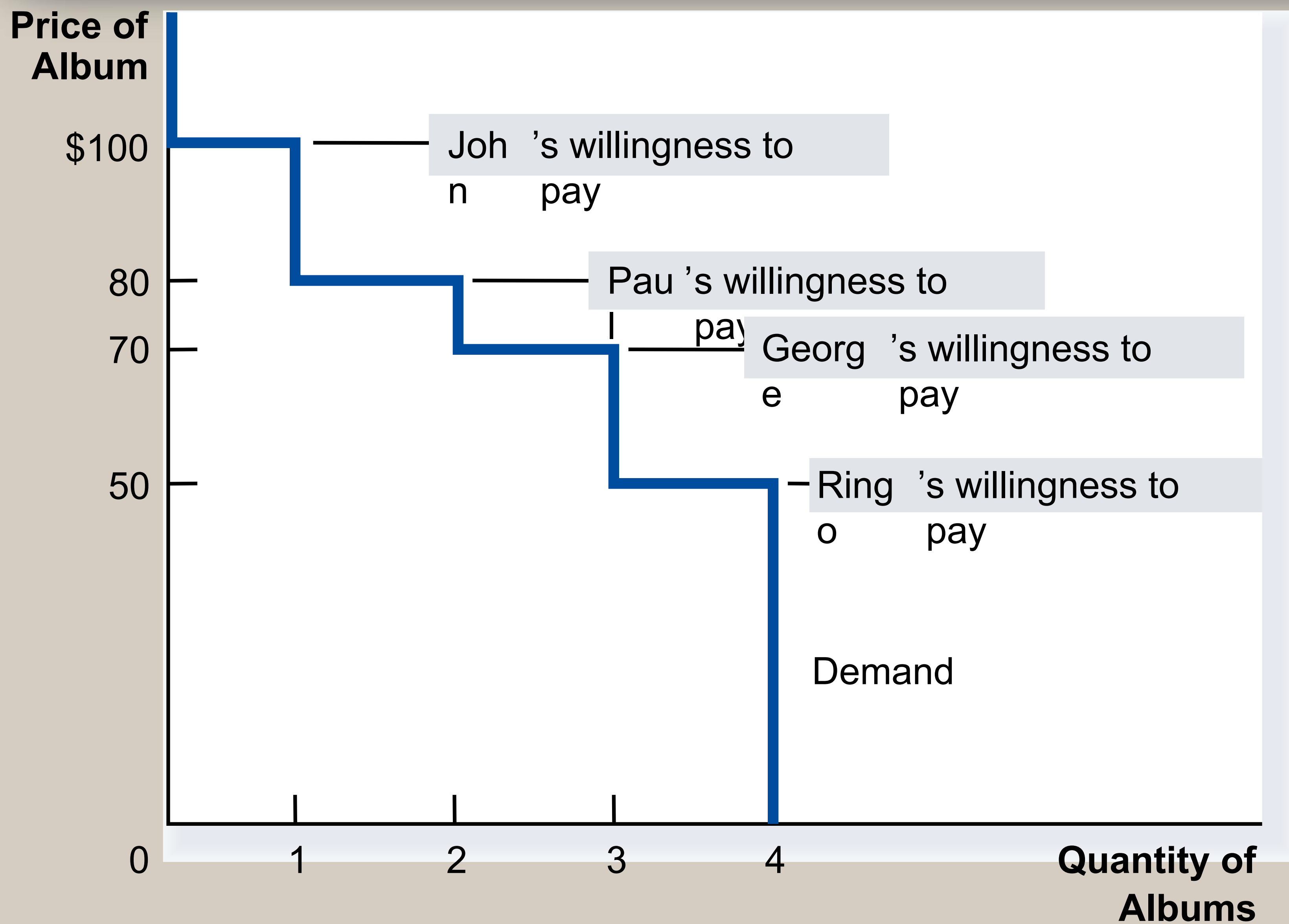


Figure 2 Measuring Consumer Surplus with the Demand Curve

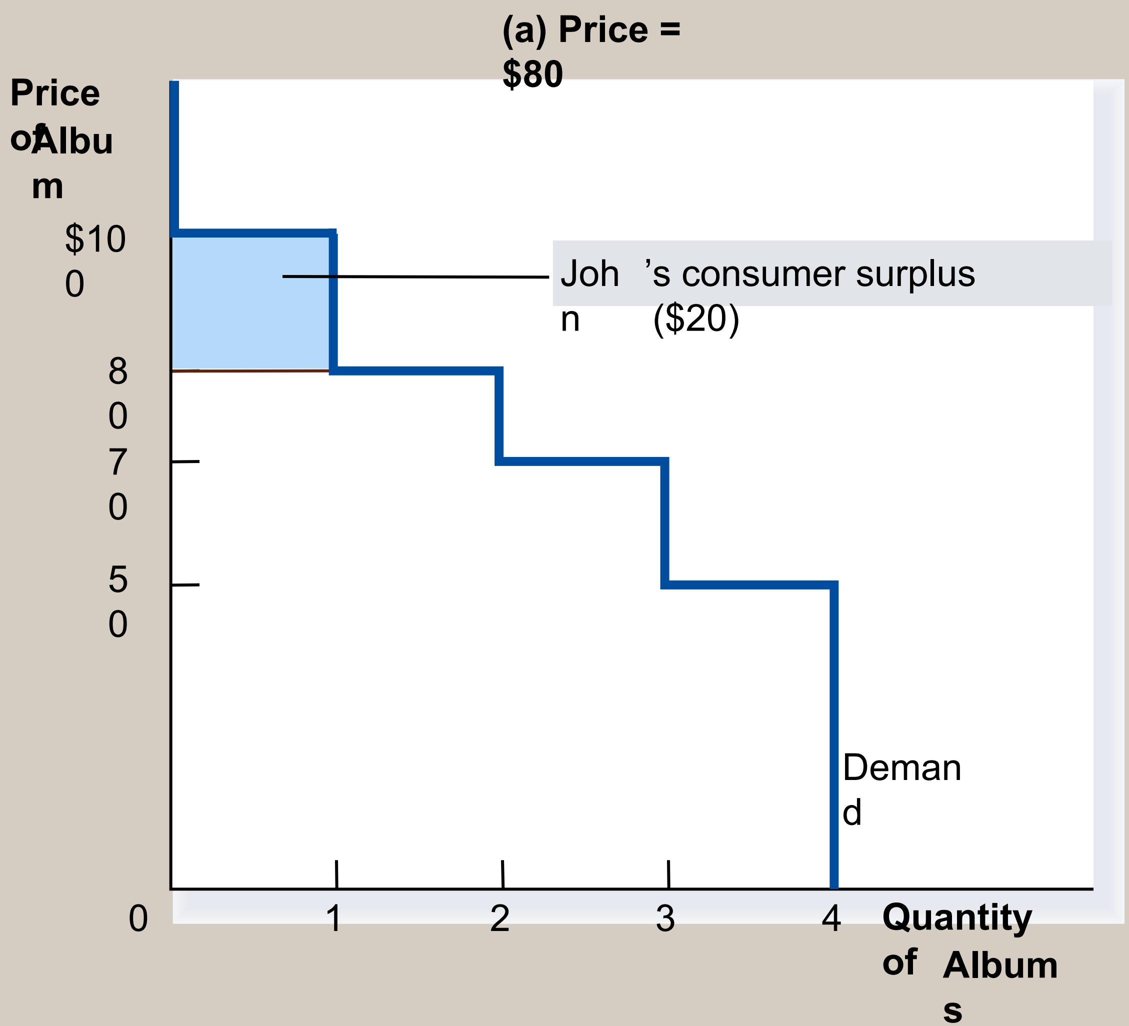
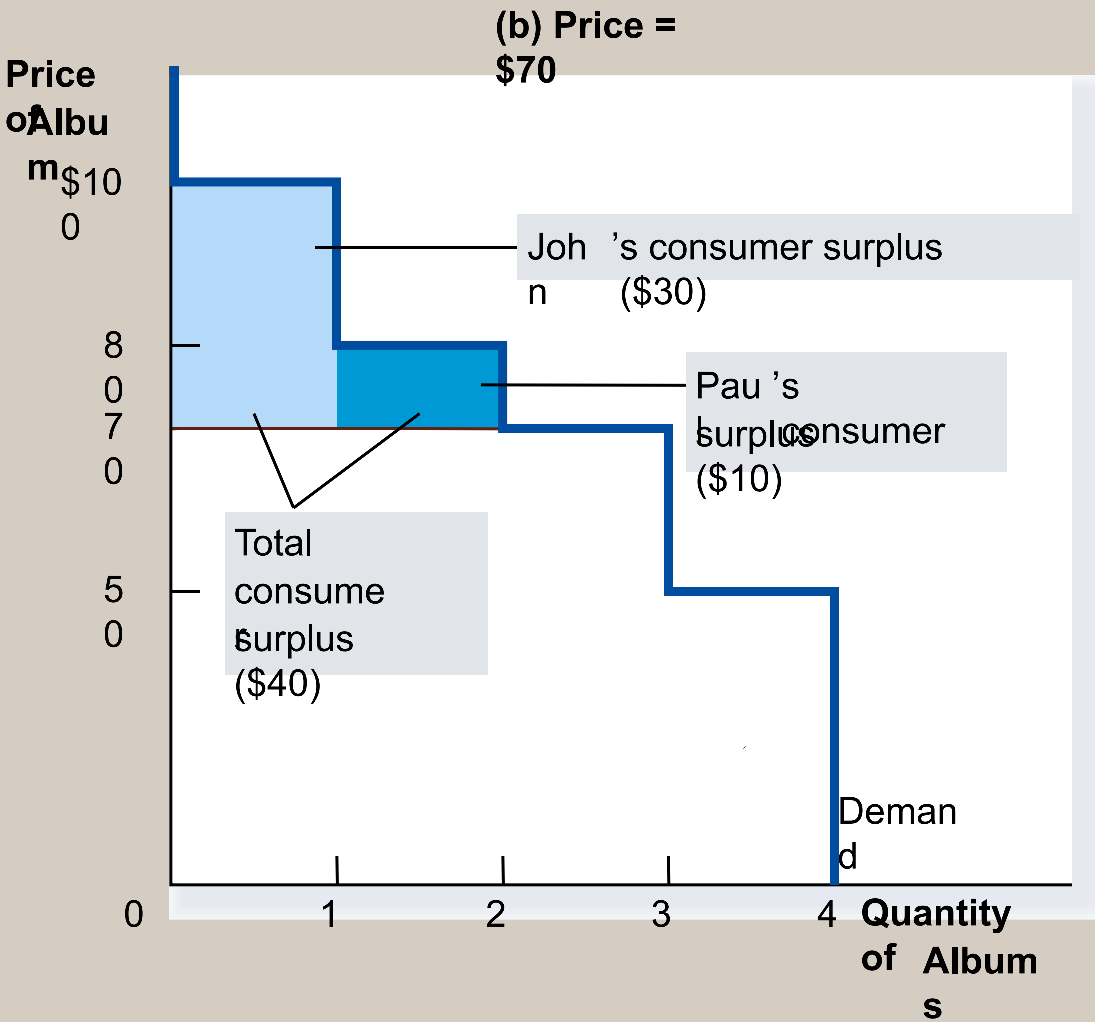


Figure 2 Measuring Consumer Surplus with the Demand Curve



Using the Demand Curve to Measure Consumer Surplus

- The area below the demand curve and above the price measures the consumer surplus in the market.

Figure 3 How the Price Affects Consumer Surplus

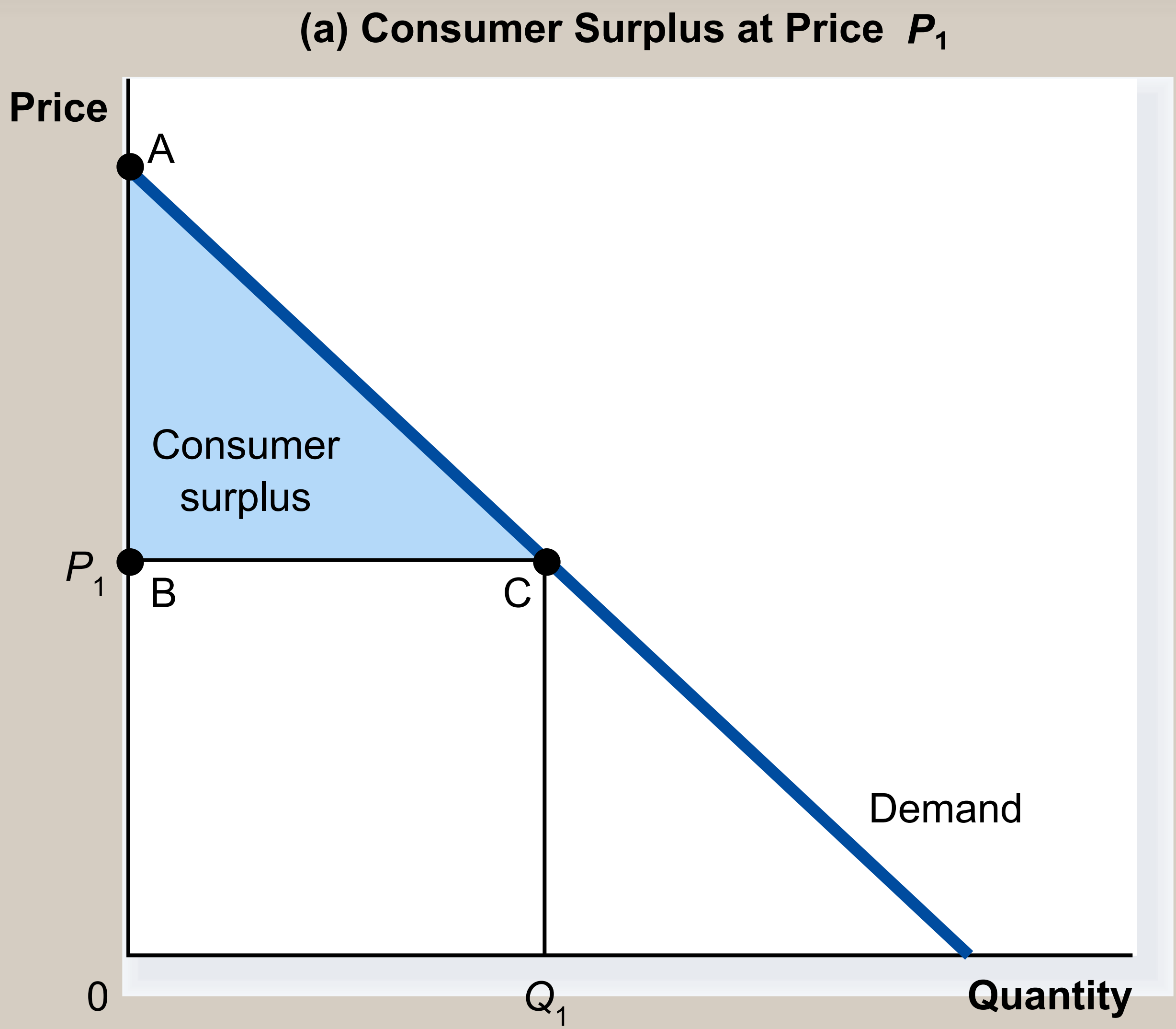
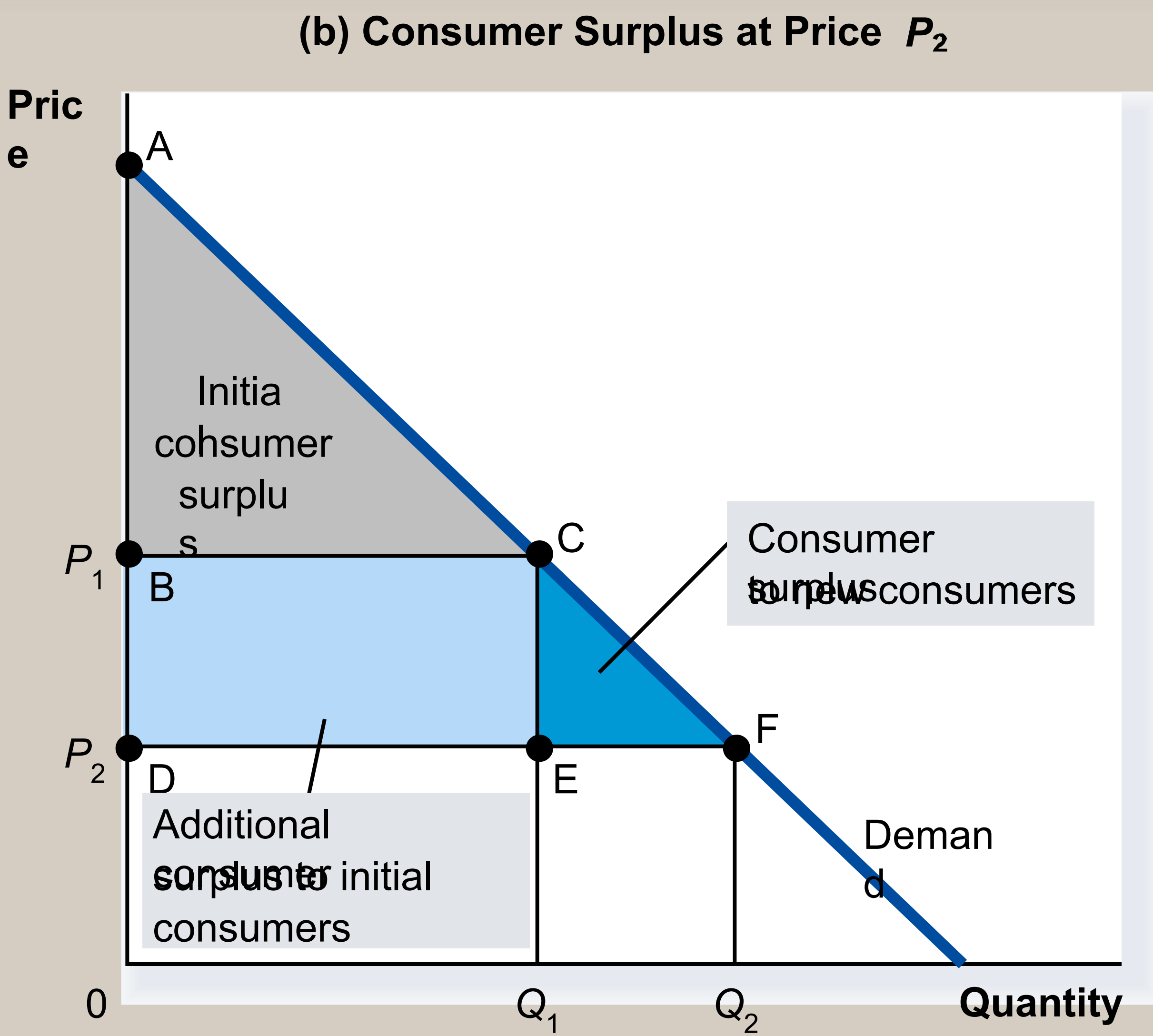


Figure 3 How the Price Affects Consumer Surplus



What Does Consumer Surplus Measure?

- *Consumer surplus*, the amount that buyers are willing to pay for a good minus the amount they actually pay for it, measures the benefit that buyers receive from a good *as the buyers themselves perceive it*.

PRODUCER SURPLUS

- *Producer surplus* is the amount a seller is paid for a good minus the seller's *cost*.
- It measures the benefit to sellers participating in a market.

Table 2 The Costs of Four Possible Sellers

Seller	Cost
Mary	$900
Frida	800
Georgia	600
Grandma	500

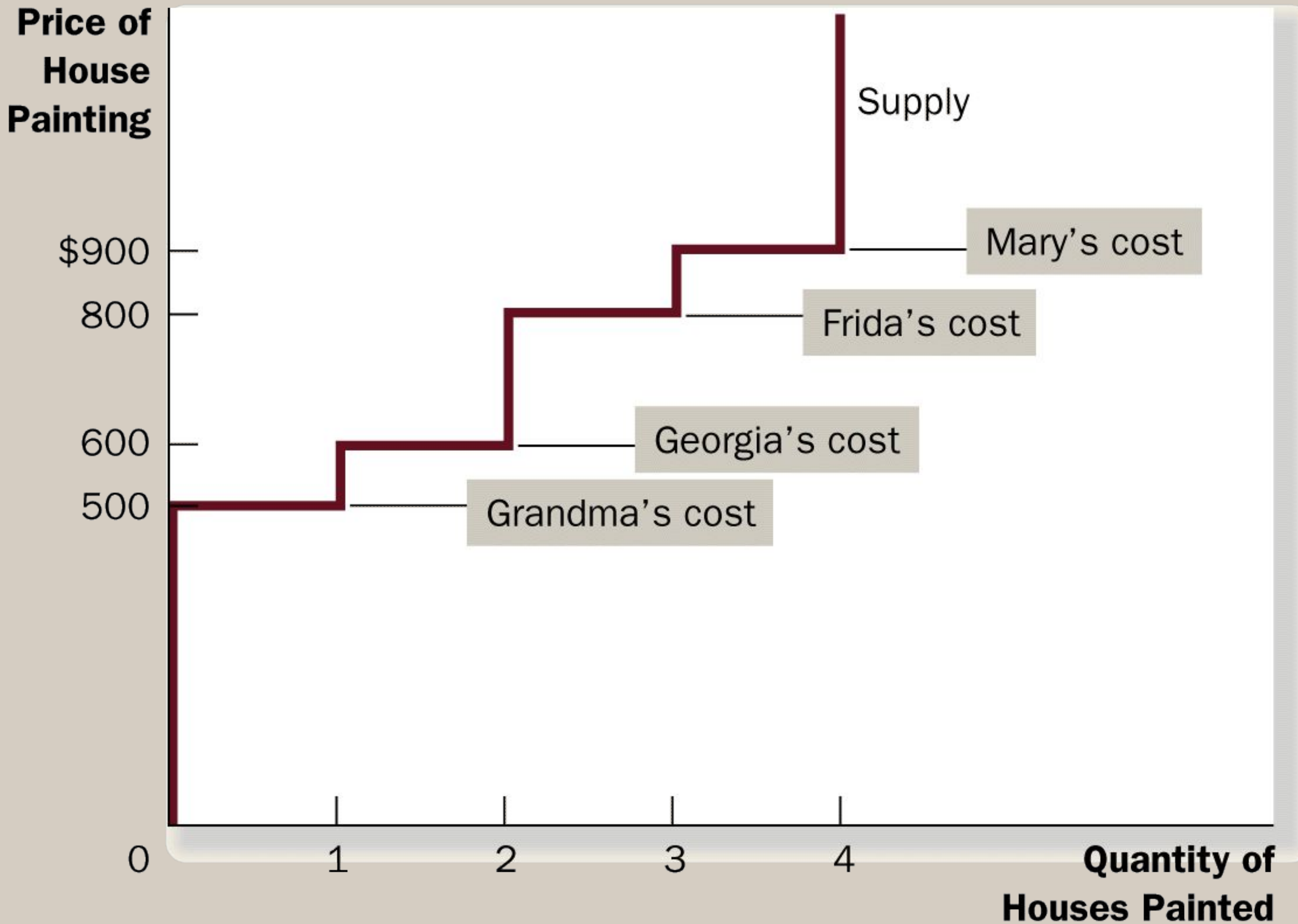
Using the Supply Curve to Measure Producer Surplus

- Just as consumer surplus is related to the demand curve, producer surplus is closely related to the supply curve.

The Supply Schedule and the Supply Curve

Price	Sellers	Quantity Supplied
$900 or more	Mary, Frida, Georgia, Grandma	4
$800 to $900	Frida, Georgia, Grandma	3
$600 to $800	Georgia, Grandma	2
$500 to $600	Grandma	1
Less than $500	None	0

Figure 4 The Supply Schedule and the Supply Curve



Using the Supply Curve to Measure Producer Surplus

- The area below the price and above the supply curve measures the producer surplus in a market.

Figure 5 Measuring Producer Surplus with the Supply Curve

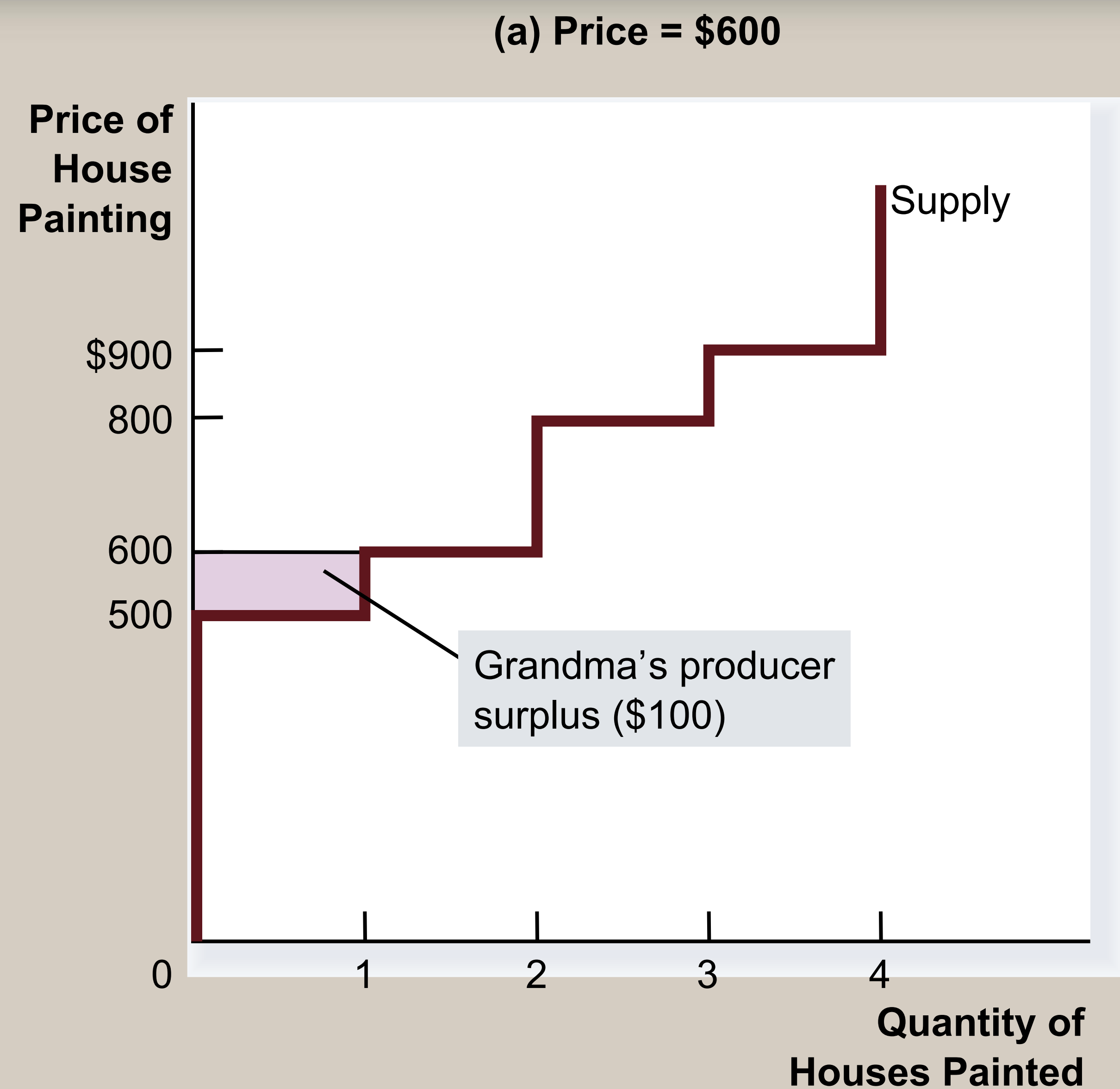


Figure 5 Measuring Producer Surplus with the Supply Curve

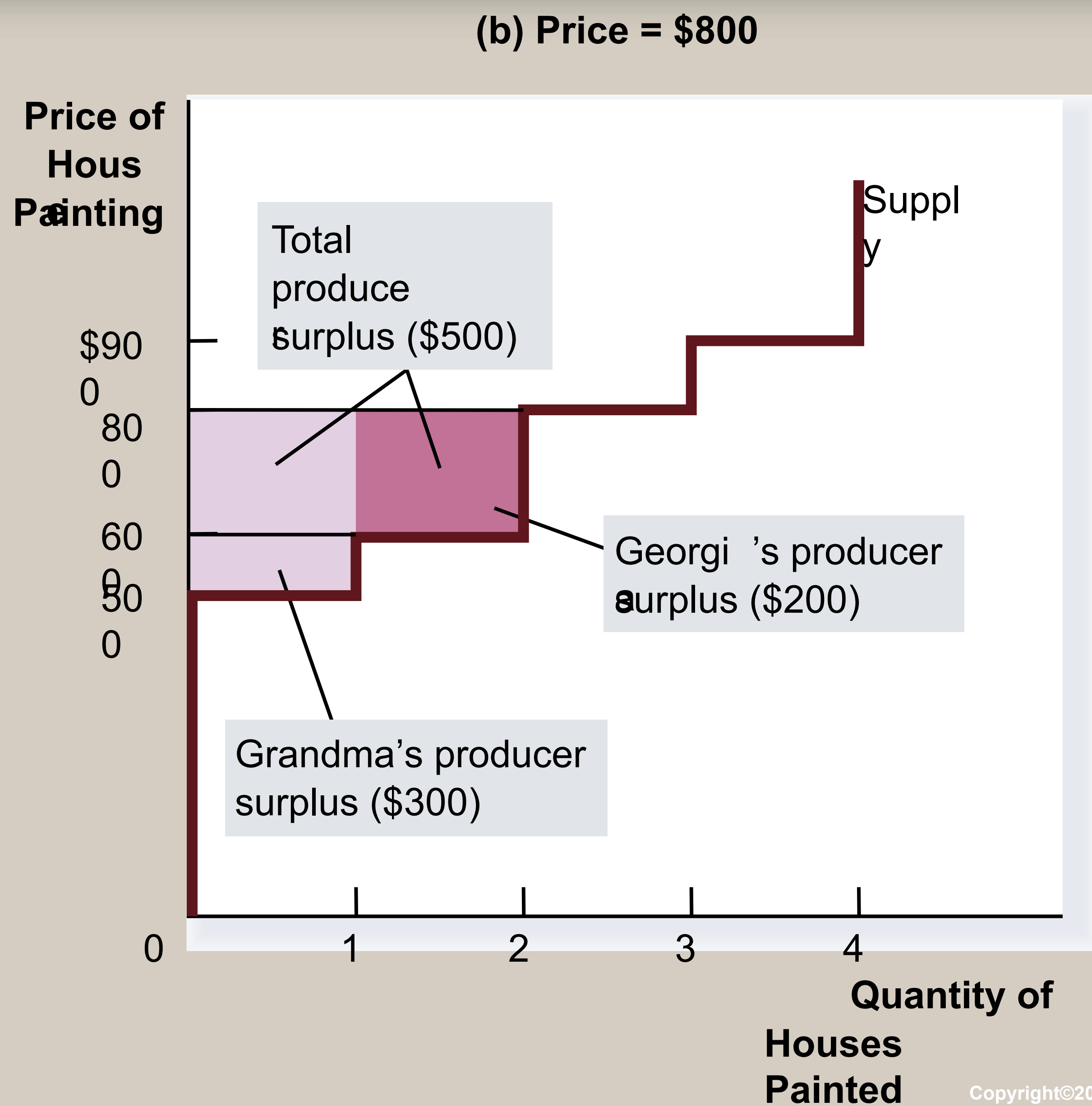


Figure 6 How the Price Affects Producer Surplus

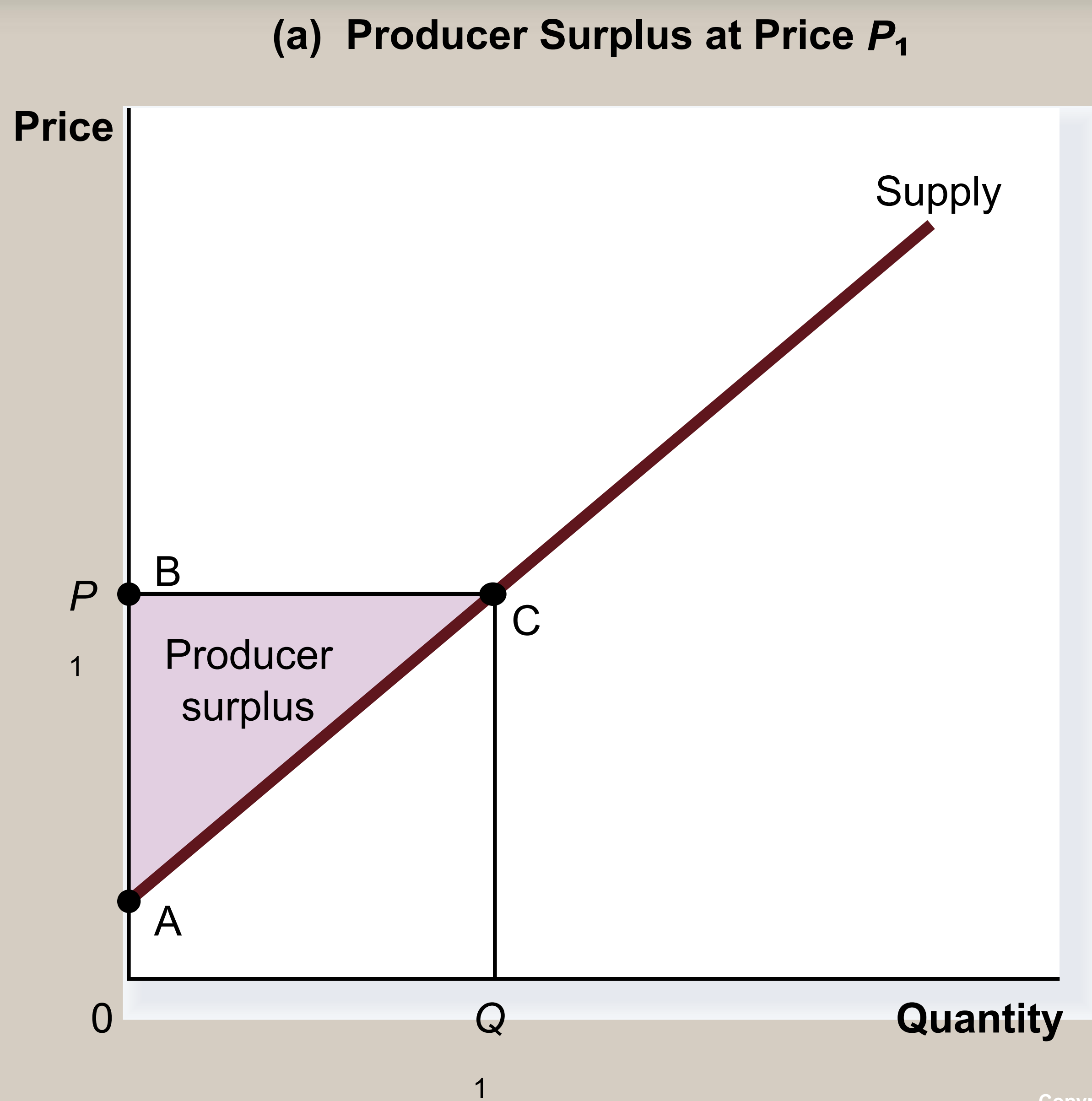
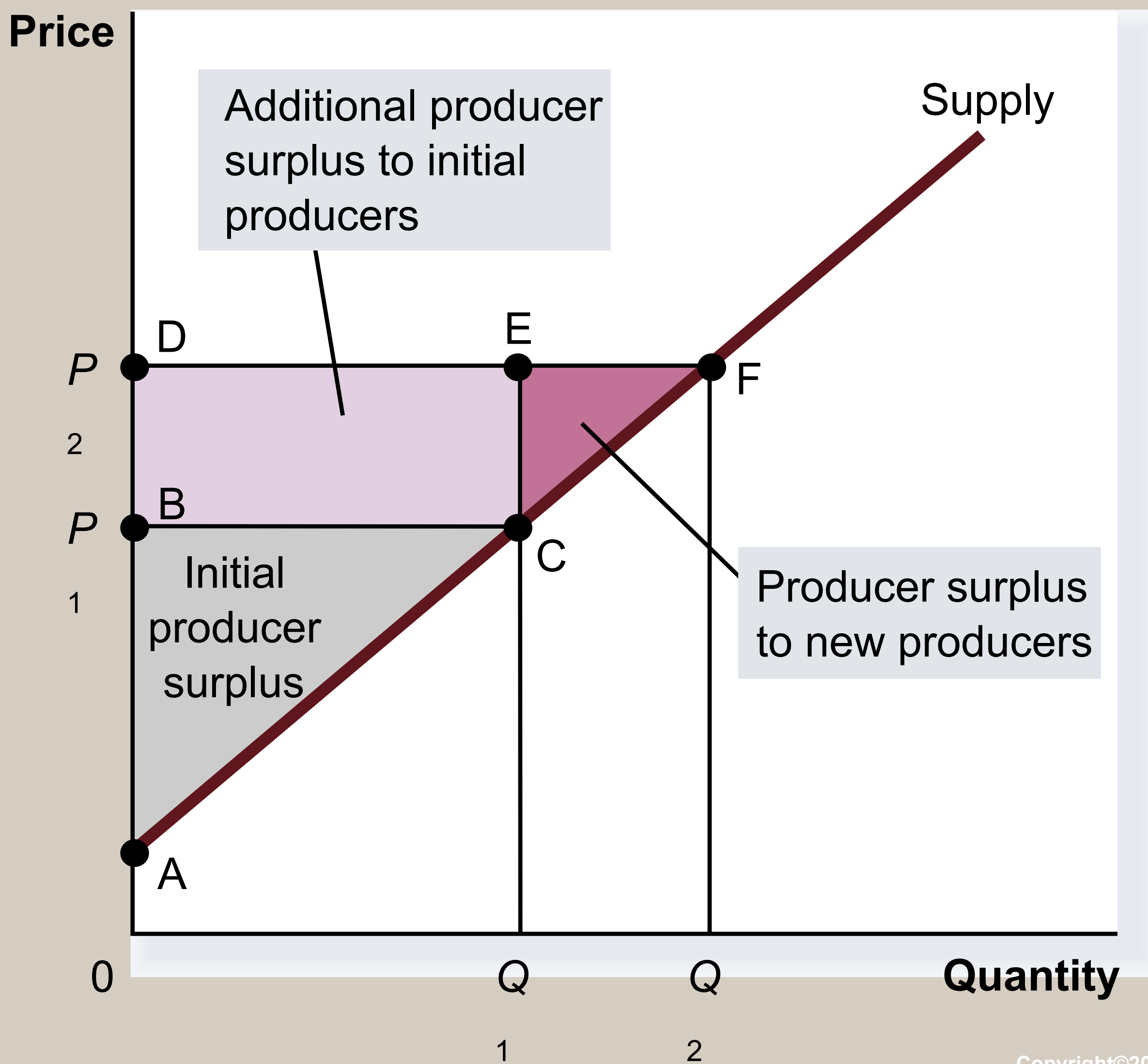


Figure 6 How the Price Affects Producer Surplus

(b) Producer Surplus at Price P_2



MARKET EFFICIENCY

- Consumer surplus and producer surplus may be used to address the following question:
  - Is the allocation of resources determined by free markets in any way desirable?

MARKET EFFICIENCY

Consumer Surplus

= Value to buyers – Amount paid by buyers

and

Producer Surplus

= Amount received by sellers – Cost to sellers

MARKET EFFICIENCY

Total surplus
= Consumer surplus + Producer surplus

or

Total surplus
= Value to buyers – Cost to sellers

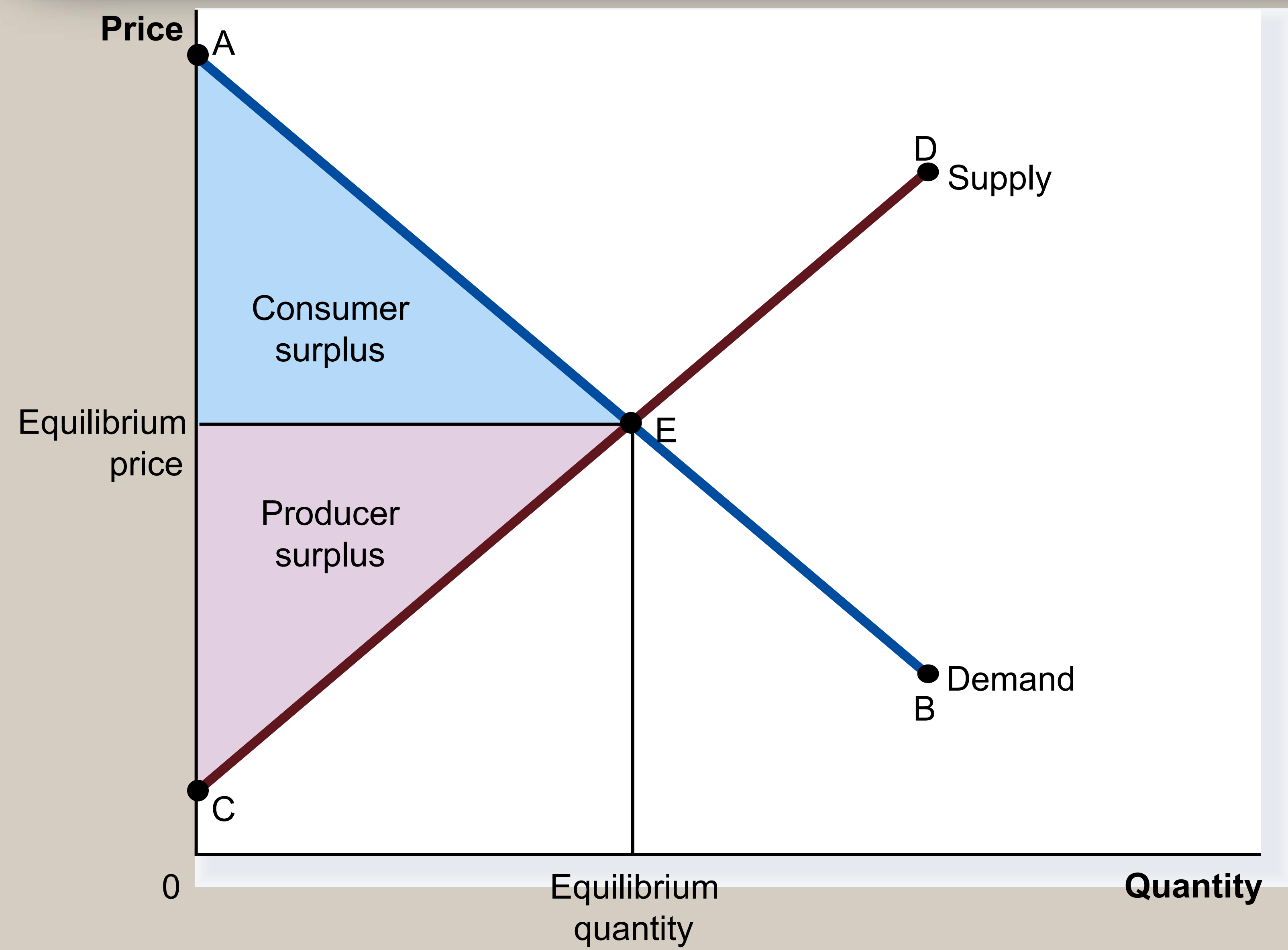
MARKET EFFICIENCY

- *Efficiency* is the property of a resource allocation of maximizing the total surplus received by all members of society.

MARKET EFFICIENCY

- In addition to market efficiency, a social planner might also care about *equity* – the fairness of the distribution of well-being among the various buyers and sellers.

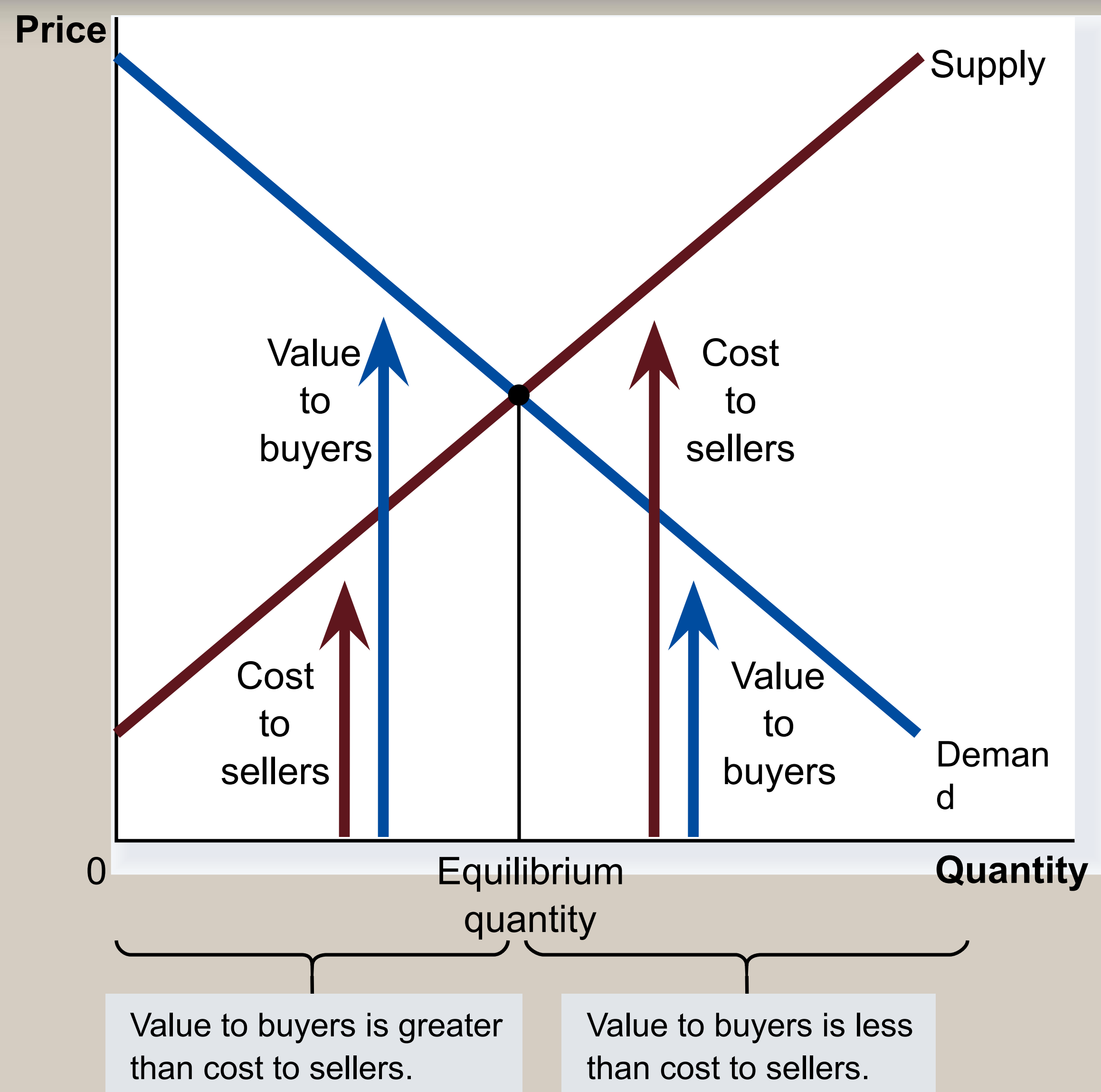
Figure 7 Consumer and Producer Surplus in the Market Equilibrium



MARKET EFFICIENCY

- Three Insights Concerning Market Outcomes
  - Free markets allocate the supply of goods to the buyers who value them most highly, as measured by their willingness to pay.
  - Free markets allocate the demand for goods to the sellers who can produce them at least cost.
  - Free markets produce the quantity of goods that maximizes the sum of consumer and producer surplus.

Figure 8 The Efficiency of the Equilibrium Quantity



Evaluating the Market Equilibrium

- Because the equilibrium outcome is an efficient allocation of resources, the social planner can leave the market outcome as he/she finds it.
- This policy of leaving well enough alone goes by the French expression *laissez faire*.

Evaluating the Market Equilibrium

- Market Power
  - If a market system is not perfectly competitive, *market power* may result.
    - Market power is the ability to influence prices.
    - Market power can cause markets to be inefficient because it keeps price and quantity from the equilibrium of supply and demand.

Evaluating the Market Equilibrium

- Externalities
  - created when a market outcome affects individuals other than buyers and sellers in that market.
  - cause welfare in a market to depend on more than just the value to the buyers and cost to the sellers.
- When buyers and sellers do not take externalities into account when deciding how much to consume and produce, the equilibrium in the market can be inefficient.

Summary

- Consumer surplus equals buyers' willingness to pay for a good minus the amount they actually pay for it.
- Consumer surplus measures the benefit buyers get from participating in a market.
- Consumer surplus can be computed by finding the area below the demand curve and above the price.

Summary

- Producer surplus equals the amount sellers receive for their goods minus their costs of production.
- Producer surplus measures the benefit sellers get from participating in a market.
- Producer surplus can be computed by finding the area below the price and above the supply curve.

Summary

- An allocation of resources that maximizes the sum of consumer and producer surplus is said to be efficient.
- Policymakers are often concerned with the efficiency, as well as the equity, of economic outcomes.

Summary

- The equilibrium of demand and supply maximizes the sum of consumer and producer surplus.
- This is as if the invisible hand of the marketplace leads buyers and sellers to allocate resources efficiently.
- Markets do not allocate resources efficiently in the presence of market failures.