



# Understanding Economics

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2<sup>nd</sup> edition  
by Mark Lovewell and Khoa Nguyen

## Chapter 2

# **Demand and Supply**

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# What Is Demand?

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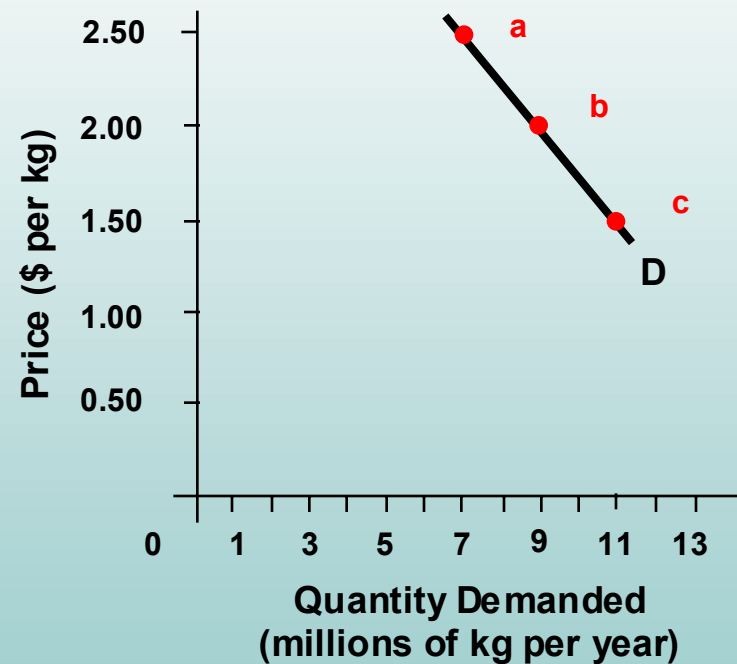
- Demand is a relationship between a product's price and quantity demanded.
  - Demand is shown using a schedule or curve.
  - The law of demand states that price and quantity demanded are inversely related.
  - Market demand is the sum of quantities demanded by all consumers in a market.

# The Demand Curve

Market Demand Curve for Strawberries

Market Demand Schedule for Strawberries

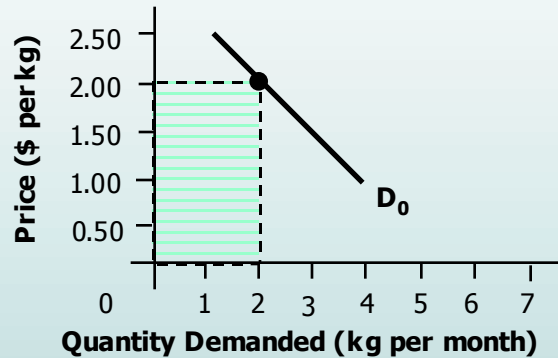
Price (\$ per kg)	Quantity Demanded (millions of kg)	Point on graph
2.50	7	a
2.00	9	b
1.50	11	c



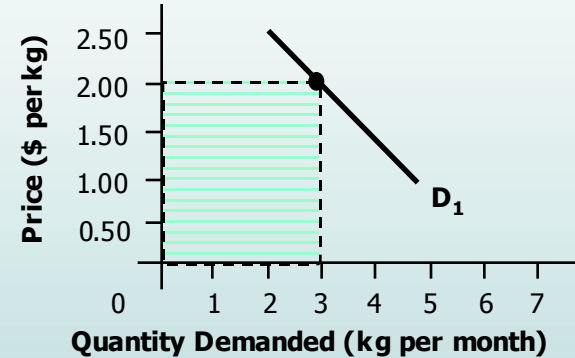
# Deriving Market Demand

Figure 2.2, page 31

Your Demand Curve for Strawberries



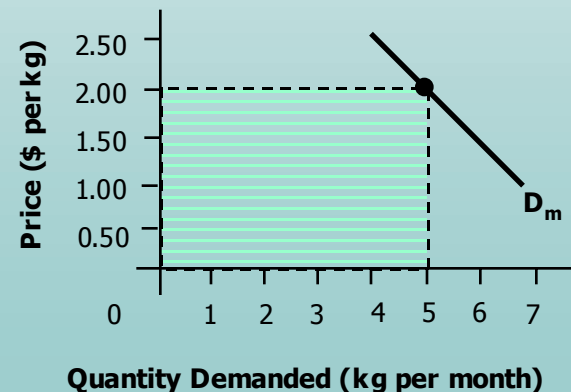
Your Friend's Demand Curve for Strawberries



Individual and Market Demand Schedules for Strawberries

Price (\$ per kg)	You ( $D_0$ )	Your Friend ( $D_1$ )	Market ( $D_m$ )
	(kg per month)		
2.50	1	2	3
2.00	2	3	5
1.50	3	4	7

Market Demand Curve for Strawberries



# Changes in Demand (a)

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- Changes in demand:
  - are shown by shifts in the demand curve
  - are caused by changes in demand determinants

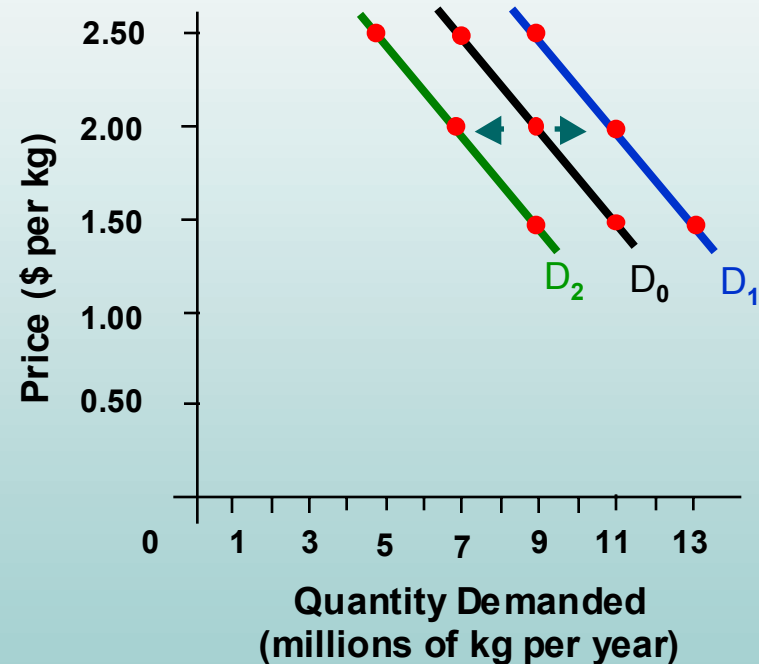
# Changes in Demand (b)

Figure 2.3, page 32

**Market Demand Schedule  
for Strawberries**

Price (\$ per kg)	Quantity Demanded (millions of kg)		
	(D <sub>2</sub> )	(D <sub>0</sub> )	(D <sub>1</sub> )
2.50	5	7	9
2.00	7	9	11
1.50	9	11	13

**Market Demand Curve for Strawberries**



# Demand Determinants (a)

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- Demand determinants include the following factors:
  - The number of buyers (an increase causes a rightward demand shift)
  - Income
    - For normal products, an increase causes a rightward demand shift.
    - For inferior products, an increase causes a leftward demand shift.

# Demand Determinants (b)

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- Prices of other products
  - For substitute products, a rise in the other product's price causes a rightward demand shift.
  - For complementary products, a rise in the other product's price causes a leftward demand shift.
- Consumer preferences
- Consumer expectations

# Changes in Quantity Demanded (b)

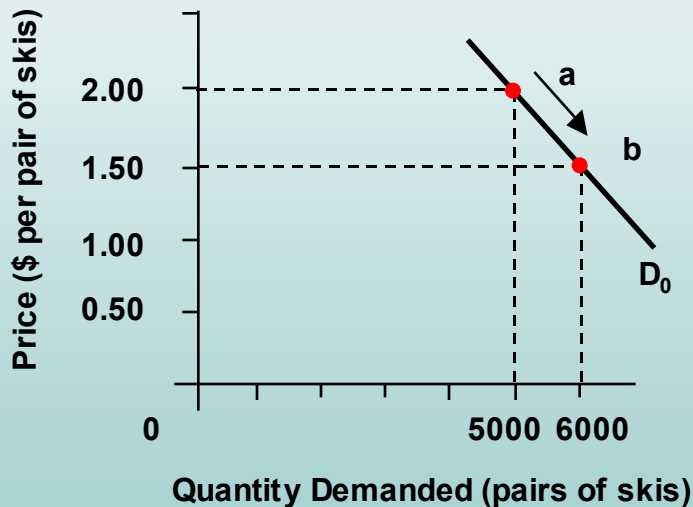
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- Changes in quantity demanded:
  - are shown by movements along demand curve
  - are caused by price changes

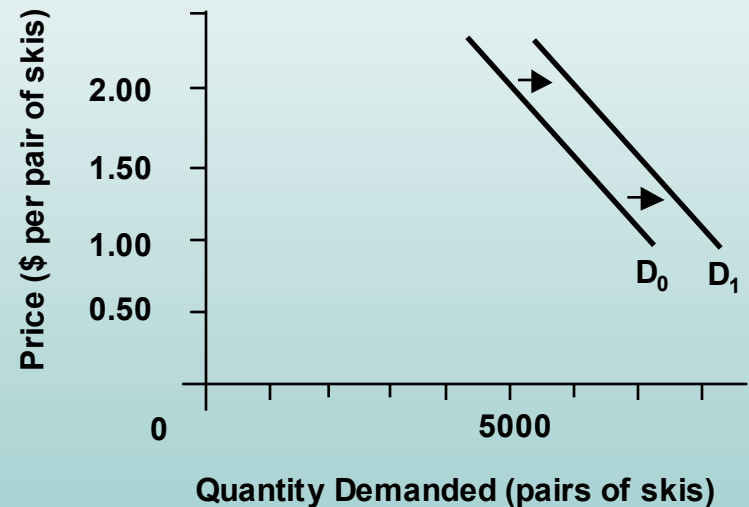
# Changes in Quantity Demanded (b)

Figure 2.4, page 36

Change in Quantity Demanded



Change in Demand



# What Is Supply?

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- Supply:
  - is a relationship between a product's price and quantity supplied
  - is shown using a schedule or curve
- The law of supply states there is a direct relationship between price and quantity supplied.

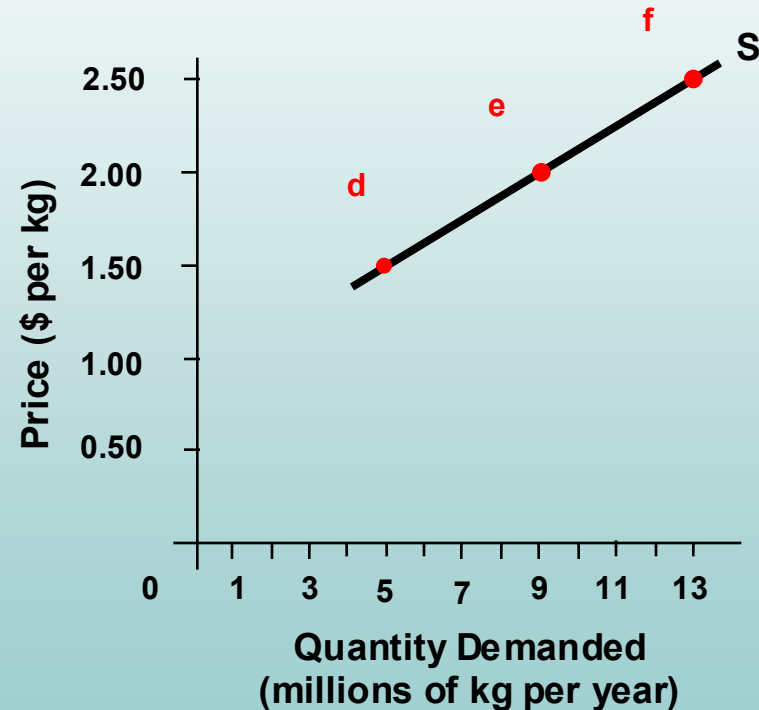
# The Supply Curve

Figure 2.5, page 35

## Market Supply Schedule for Strawberries

Price (\$ per kg)	Quantity Supplied (millions of kg)	Points on graph
1.50	5	d
2.00	9	e
2.50	13	f

## Market Supply Curve for Strawberries



# Changes in Supply (a)

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- Changes in supply:
  - are shown by shifts in the supply curve
  - are caused by changes in supply determinants

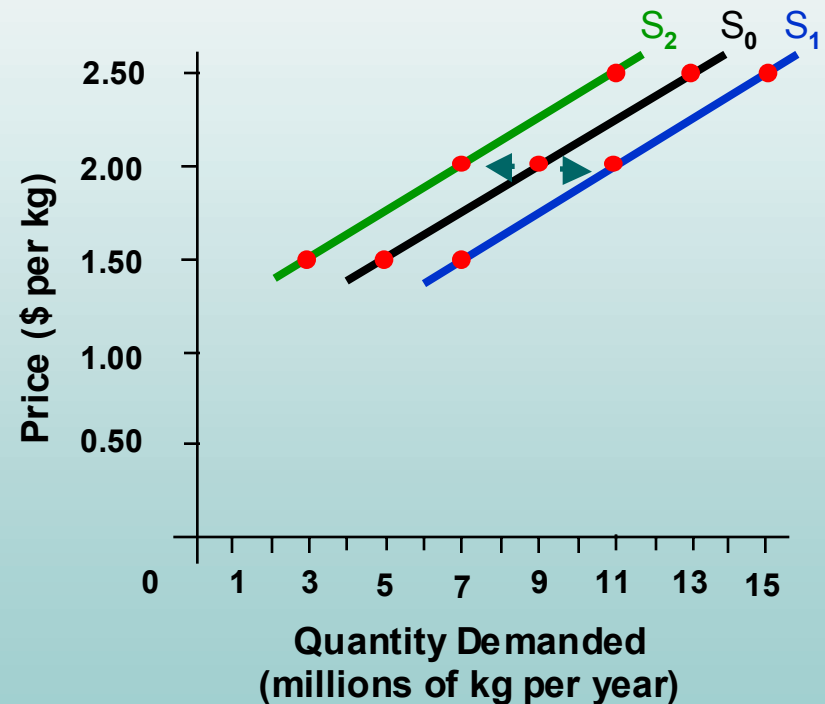
# Changes in Supply (b)

Figure 2.6, page 36

## Market Supply Schedule for Strawberries

Price (\$ per kg)	Quantity Supplied (millions of kg)		
	(S <sub>2</sub> )	(S <sub>0</sub> )	(S <sub>1</sub> )
2.50	11	13	15
2.00	7	9	11
1.50	3	5	9

## Market Supply Curve for Strawberries



# Supply Determinants (a)

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- Supply determinants include the following factors:
  - Number of producers (an increase causes a rightward supply shift)
  - Resource prices (an increase causes a leftward supply shift)
  - State of technology (an improvement causes a rightward supply shift)
  - Prices of related products (an increase causes a leftward supply shift)

# Supply Determinants (b)

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- changes in nature (an improvement causes a rightward shift for some products)
- producer expectations (an expectation of lower prices in the future causes an immediate rightward supply shift)

# Changes in Quantity Supplied (a)

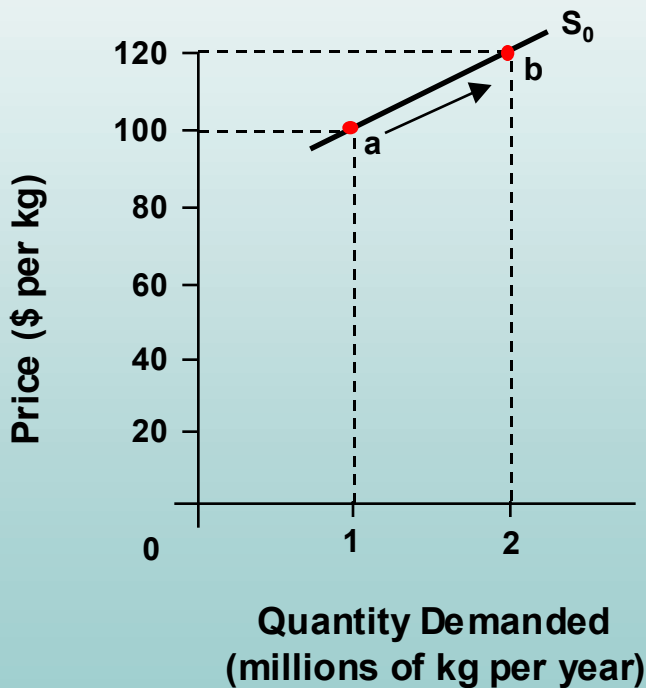
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- Changes in quantity supplied:
  - are shown by movements along the supply curve
  - are caused by price changes

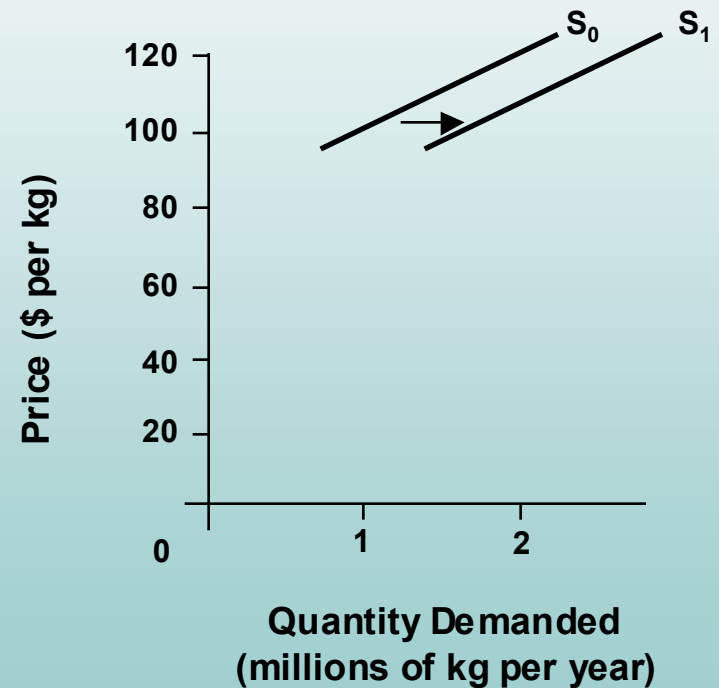
# Changes in Quantity Supplied (b)

Figure 2.7, page 38

### Change in Quantity Supplied



### Change in Supply



# Market Equilibrium (a)

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- When a product is in surplus:
  - there is excess supply
  - price is pushed down
- When a product is in shortage:
  - there is excess demand
  - price is pushed up

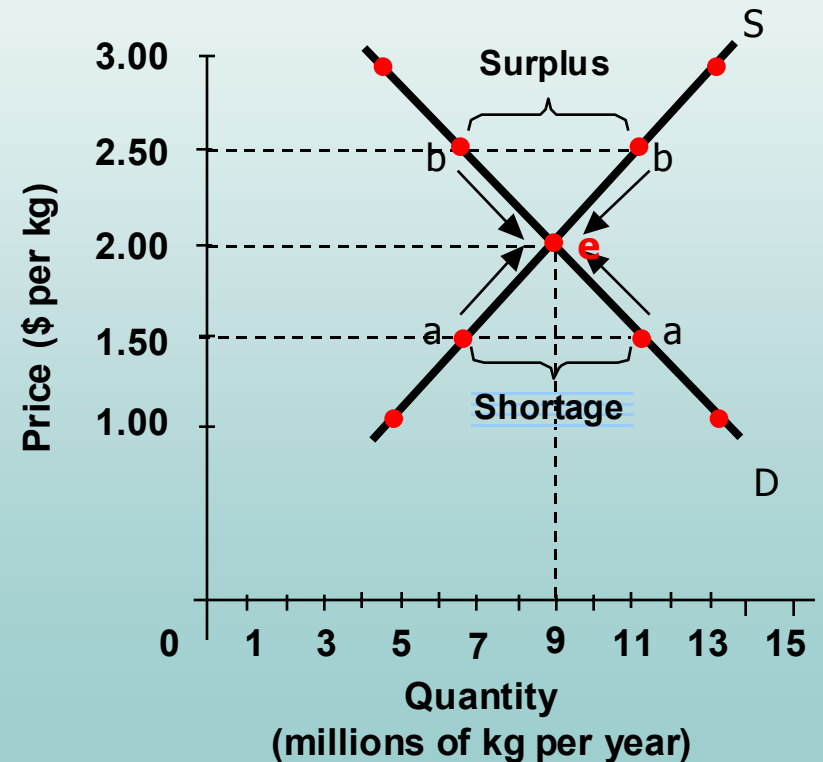
# Market Equilibrium (b)

Figure 2.8, page 39

**Market Demand and Supply Schedules for Strawberries**

Price (\$ per kg)	Quantities (millions of kg)		Surplus (+) or Shortage (-) (millions of kg)
	D	S	
3.00	5	13	+8
2.50	7	11	+4
2.00	9	9	0
1.50	11	7	-4
1.00	13	5	-8

**Market Demand and Supply Curves for Strawberries**



# Changes in Equilibrium

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- A rightward demand shift pushes up both equilibrium price and quantity.
- A leftward demand shift pushes down both equilibrium price and quantity.
- A rightward supply shift pushes equilibrium price down and equilibrium quantity up.
- A leftward supply shift pushes equilibrium price up and equilibrium quantity down.

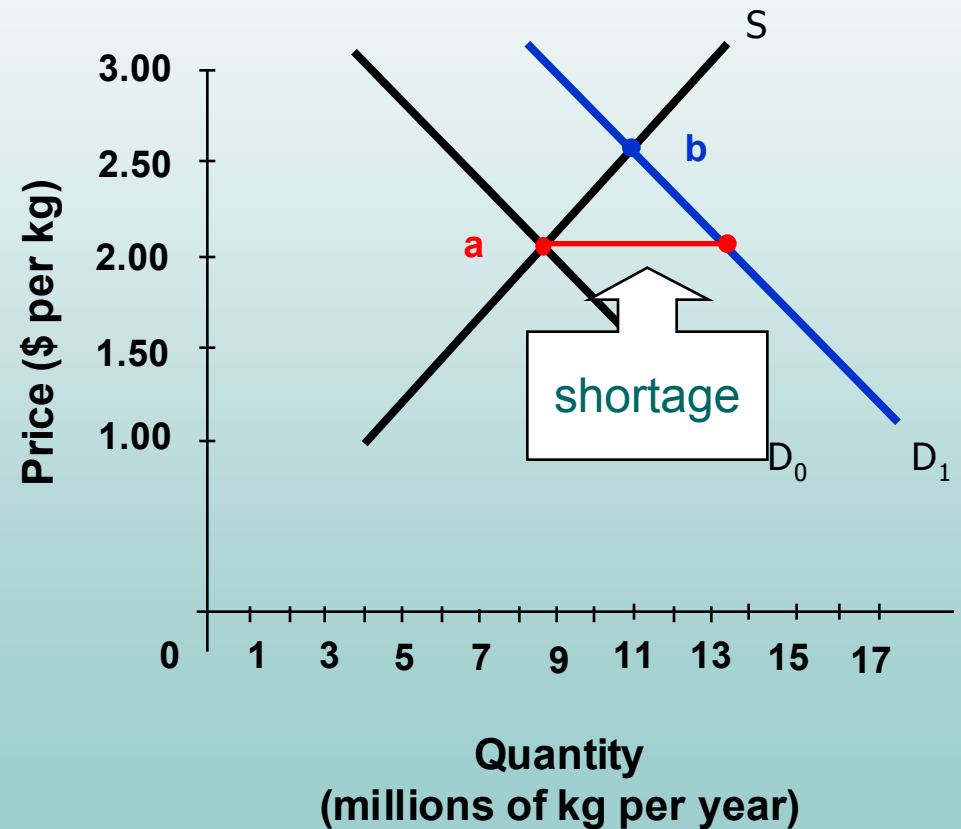
# Demand Changes and Equilibrium

Figure 2.9, page 40

## Market Demand and Supply Schedules for Strawberries

Price (\$ per kg.)	Quantities (millions of kg)		
	(D <sub>0</sub> )	(D <sub>1</sub> )	(S)
3.00	5	9	13
2.50	7	11	11
2.00	9	13	9
1.50	11	15	7
1.00	13	17	5

## Market Demand and Supply Curves for Strawberries



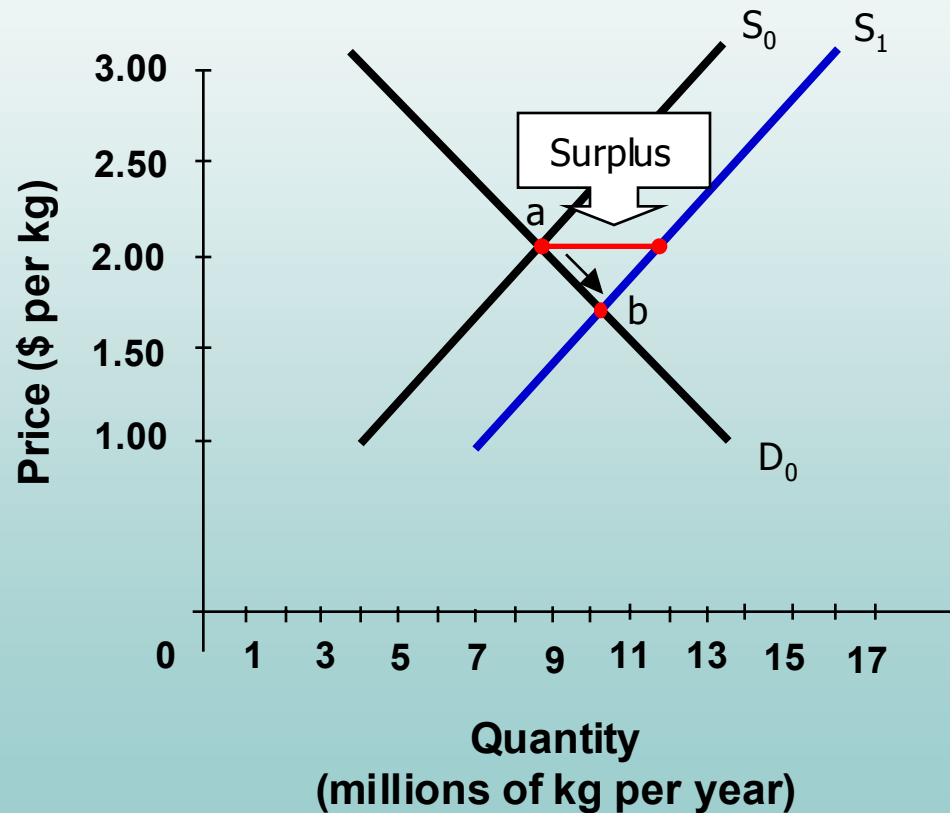
# Supply Changes and Equilibrium

Figure 2.10, page 43

## Market Demand and Supply Schedules for Strawberries

Price (\$ per kg)	Quantities (millions of kg)		
	(D <sub>0</sub> )	(S <sub>0</sub> )	(S <sub>1</sub> )
3.00	5	13	17
2.50	7	11	15
2.00	9	9	13
1.50	11	7	11
1.00	13	5	9

## Market Demand and Supply Curves for Strawberries



# Spoilt for Choice

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- William Stanley Jevons:
  - assumed measurable utility
  - outlined the law of diminishing marginal utility which states that a consumer's marginal utility declines as more of a product is consumed
  - this law can be shown by deriving the downward-sloping marginal utility graph for a given consumer and product, based on that consumer's total utility graph

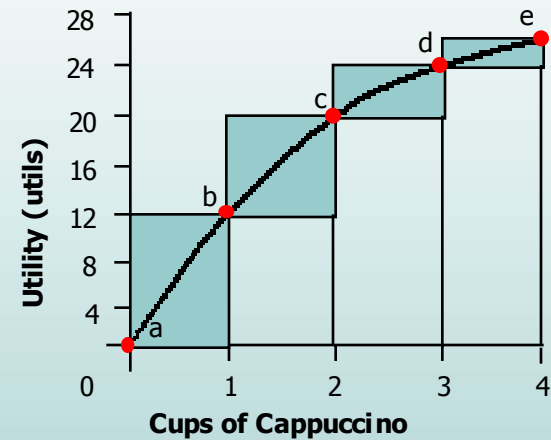
# Spoilt for Choice (b)

Figure A, page 47

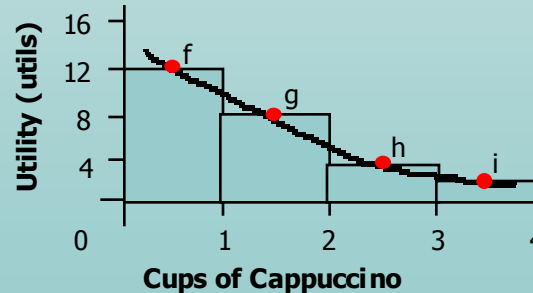
**Consumer's Total and Marginal Utility From Cappuccino**

Quantity Consumed (cups)	Total Utility (utils)	Marginal Utility (utils)
0	0 (a)	→ 12 (f)
1	12 (b)	→ 8 (g)
2	20 (c)	→ 4 (h)
3	24 (d)	→ 2 (i)
4	26 (e)	

**Total Utility**



**Marginal Utility**



# The Utility-Maximizing Rule

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- Jevons devised the utility-maximizing rule
  - this rule states a consumer should reach the same marginal utility per dollar for all products consumed
  - in mathematical terms:

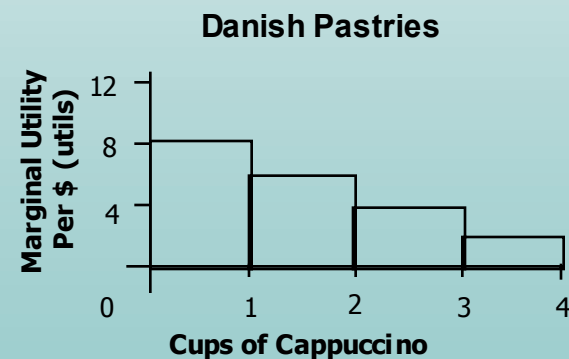
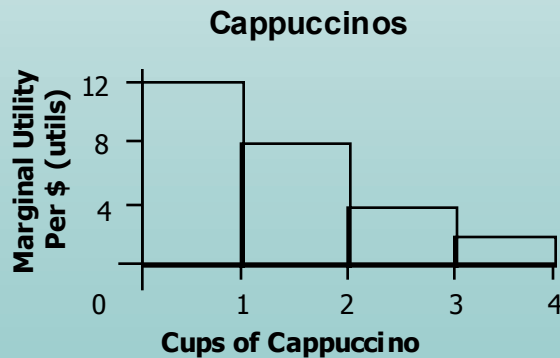
$$\frac{MU_1}{P_1} = \frac{MU_2}{P_2}$$

# Spoilt for Choice (c)

Figure B, page 47

Cups of Cappuccino (price = \$1)		
Quantity	Marginal Utility (MU) (utils)	Marginal Utility per \$ ( $MU/P1=MU/\$1$ ) (utils)
0		
1	12	12
2	8	8
3	4	4
4	2	2

Danish Pastries (price = \$2)		
Quantity	Marginal Utility (MU) (utils)	Marginal Utility per \$ ( $MU/P1=MU/\$2$ ) (utils)
0		
1	16	8
2	12	6
3	8	4
4	4	2



# Indifference Curves

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- Using indifference curves, consumer preferences can be shown without the need to assume measurable utility
- An individual consumers must merely rank his/her options for various bundles of two products in order of preference
- A consumer may prefer one bundle to another, or be indifferent between the two

# An Indifference Curve (a)

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- An indifference curve shows all bundles of two goods to which a particular consumer is indifferent.
- The curve is downward-sloping because, for any point on the curve, all points to the northeast provide more utility and all points to the southwest provide less utility

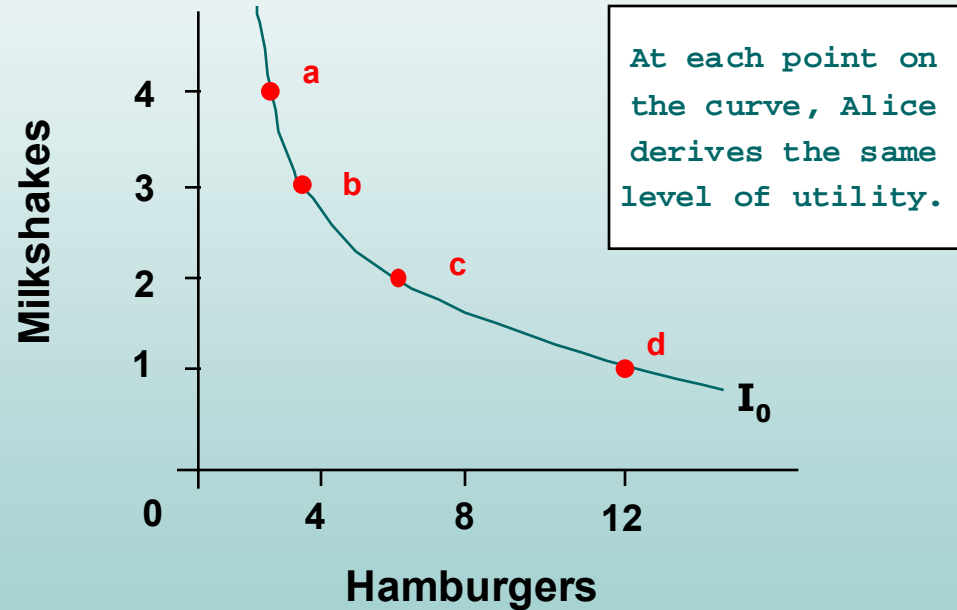
# An Indifference Curve (b)

Figure A, page 50

## Alice's Indifference Schedule

Milkshakes	Hamburgers	point on graph
4	3	a
3	4	b
2	7	c
1	12	d

## Alice's Indifference Curve



# The Marginal Rate of Substitution

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- The absolute value of an indifference curve's slope is the marginal rate of substitution (MRS).
- An indifference curve is convex, since the curve's MRS diminishes as more of the product on the horizontal axis (hamburgers), and less on the vertical axis (milkshakes) is consumed.

# The Diminishing Marginal Rate of Substitution

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- The diminishing marginal rate of substitution occurs because, as hamburger consumption rises, more hamburgers must be gained to make the consumer willing to sacrifice another milkshake

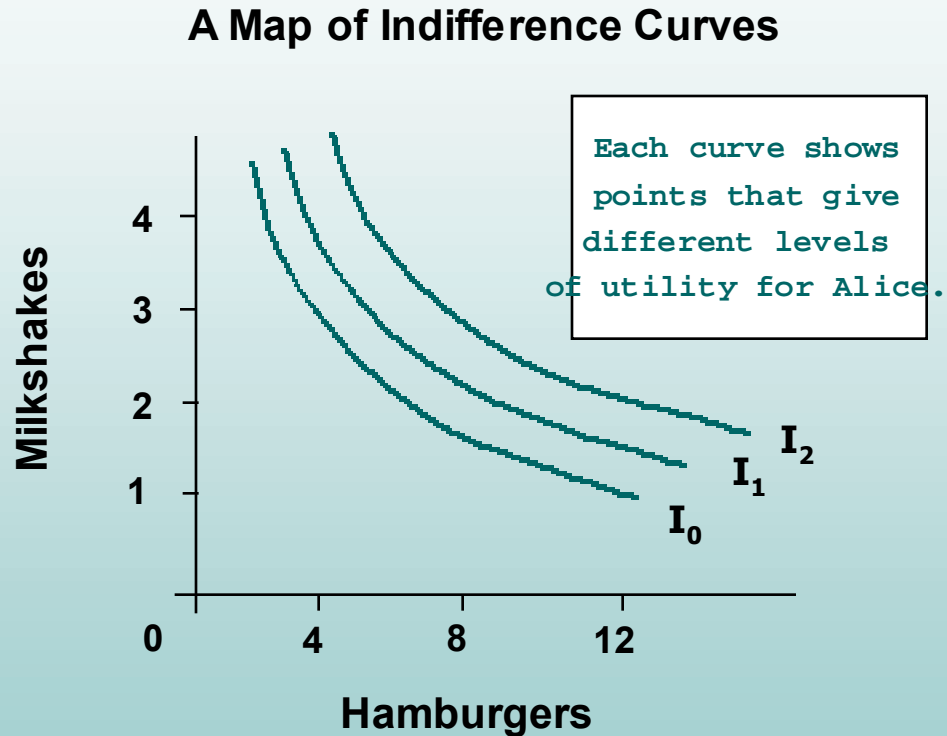
# A Map of Indifference Curves (a)

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- A map of indifference curves can be drawn for an individual consumer, with each indifference curve further to the northeast representing a higher level of utility

# A Map of Indifference Curves (b)

Figure B, page 51



# The Budget Line (a)

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- A consumer's budget line:
  - is drawn based on the assumption that all the consumer's budget is spent on hamburgers and milkshakes
  - has a vertical intercept equal to the consumer's budget divided by the price of milkshakes
  - a horizontal intercept equal to the consumer's budget divided by the price of hamburgers

# The Budget Line (b)

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- has a slope whose absolute value equals the ratio of the two prices (the price of hamburgers divided by the price of milkshakes)
- divides the graph into an attainable region southwest of the line, and an unattainable region northeast of the line

# The Budget Line (c)

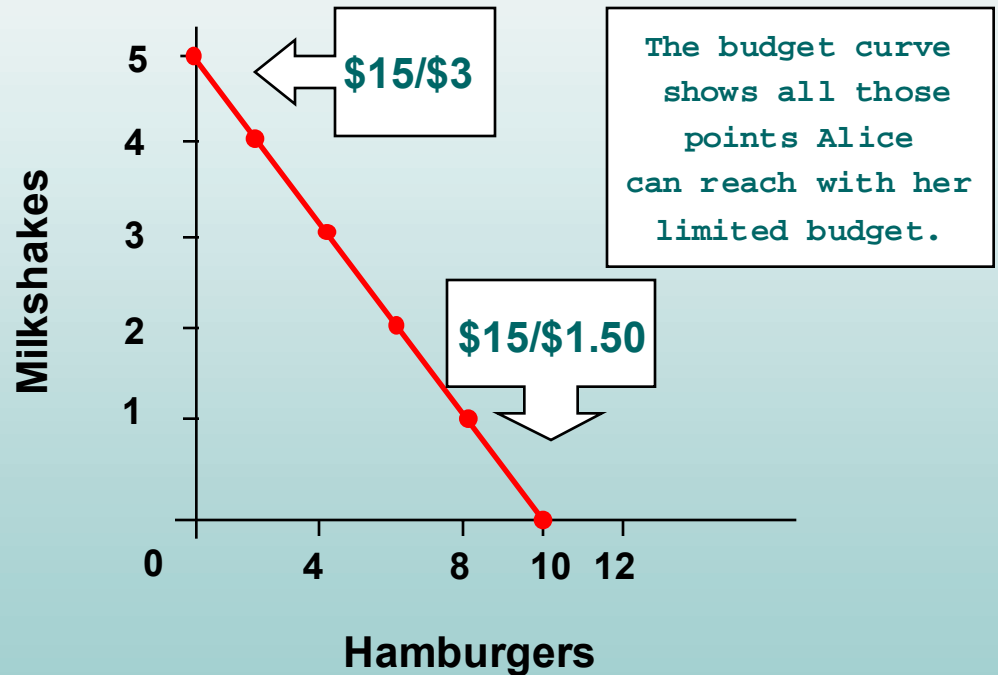
Figure C, page 52

## Alice's Budget Line

Milkshakes Hamburgers

5	0
4	2
3	4
2	6
1	8
0	10

## Alice's Budget Curve



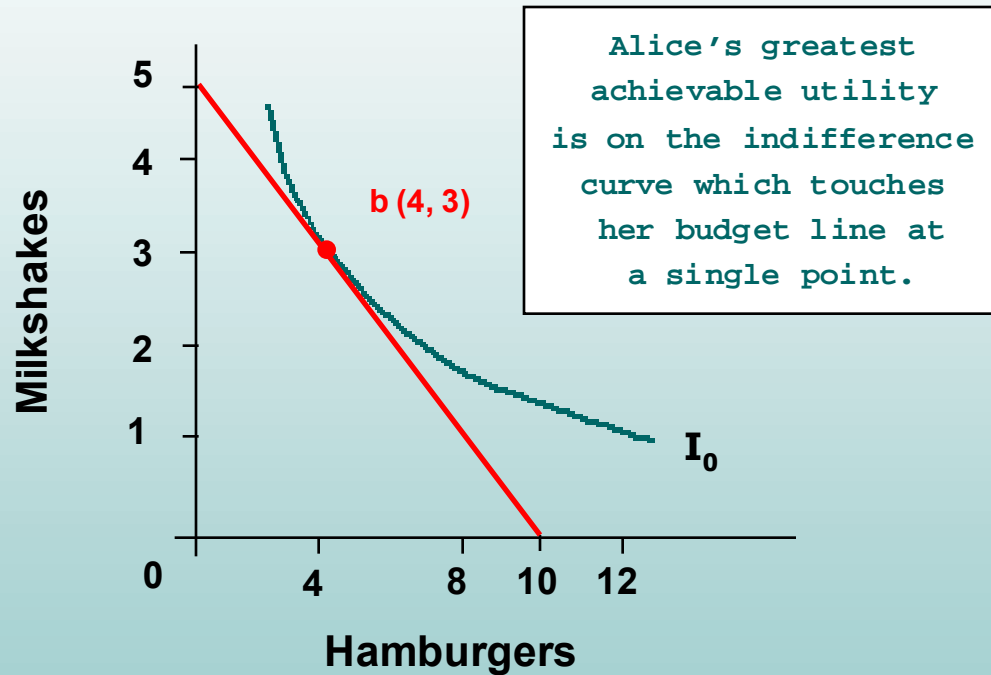
# The Utility-Maximizing Point (a)

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- The consumer maximized utility by reaching the highest possible indifference curve on the budget line.
- This utility-maximizing point occurs on the indifference curve that just touches the budget line at a single point.

# The Utility-Maximizing Point (b)

Figure D, page 51



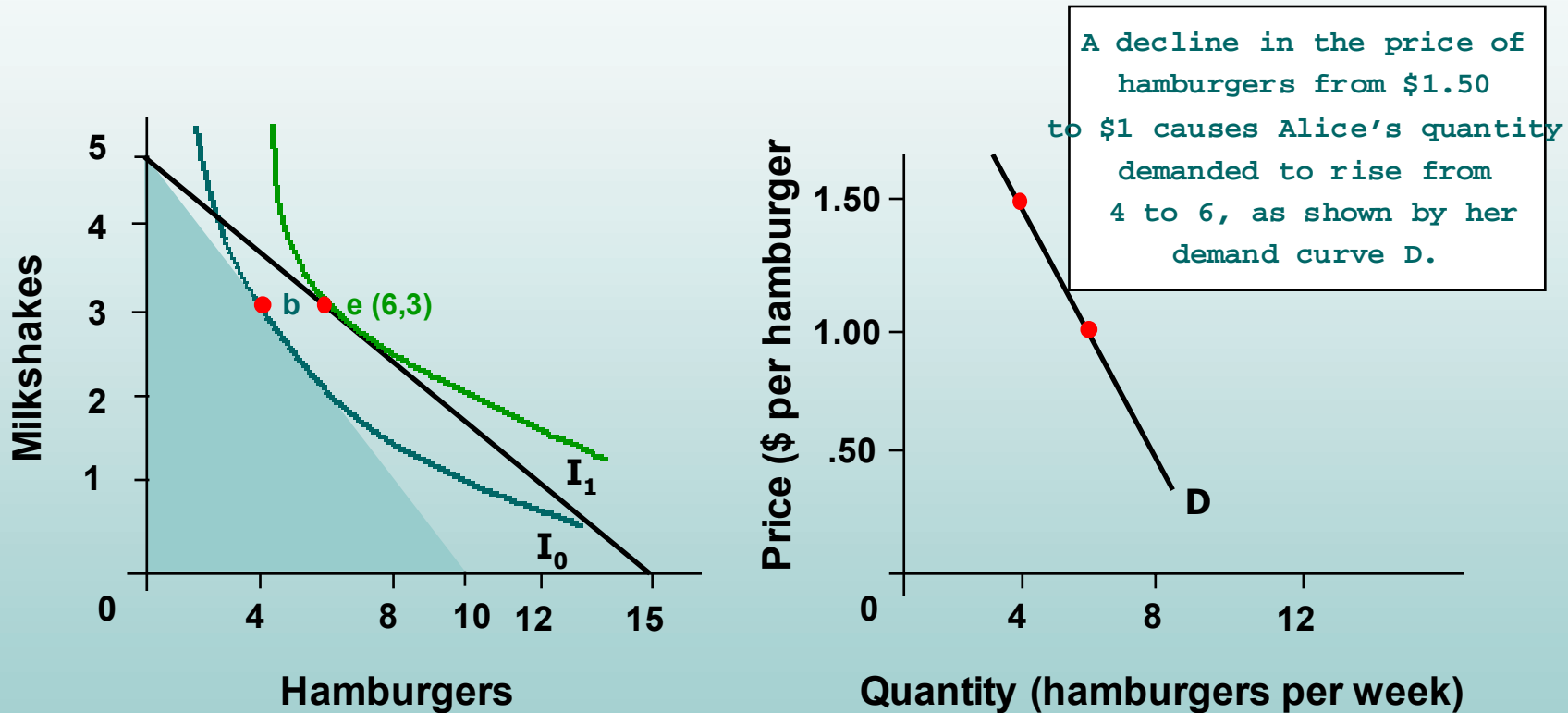
# Deriving a Demand Curve (a)

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- The consumer's demand curve for hamburgers can be found by tracing out the results of a change in the price of hamburgers given a constant money budget and price for milkshakes.

# Deriving a Demand Curve (b)

Figure E, p. 53





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## Chapter 2

# **The End**

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