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The Theory of Consumer Choice

The theory of consumer choice addresses the following questions:

Do all demand curves slope downward?

How do wages affect labor supply?

How do interest rates affect household saving?

THE BUDGET CONSTRAINT: WHAT THE CONSUMER CAN AFFORD

The *budget constraint* depicts the limit on the consumption "bundles" that a consumer can afford.

People consume less than they desire because their spending is constrained, or limited, by their income.

THE BUDGET CONSTRAINT: WHAT THE CONSUMER CAN AFFORD

The budget constraint shows the various combinations of goods the consumer can afford given his or her income and the prices of the two goods.

The Consumer's Budget Constraint

Pints of Pepsi	Number of Pizzas	Spending on Pepsi	Spending on Pizza	Total Spending
0	100	$ 0	$1,000	$1,000
50	90	100	900	1,000
100	80	200	800	1,000
150	70	300	700	1,000
200	60	400	600	1,000
250	50	500	500	1,000
300	40	600	400	1,000
350	30	700	300	1,000
400	20	800	200	1,000
450	10	900	100	1,000
500	0	1,000	0	1,000

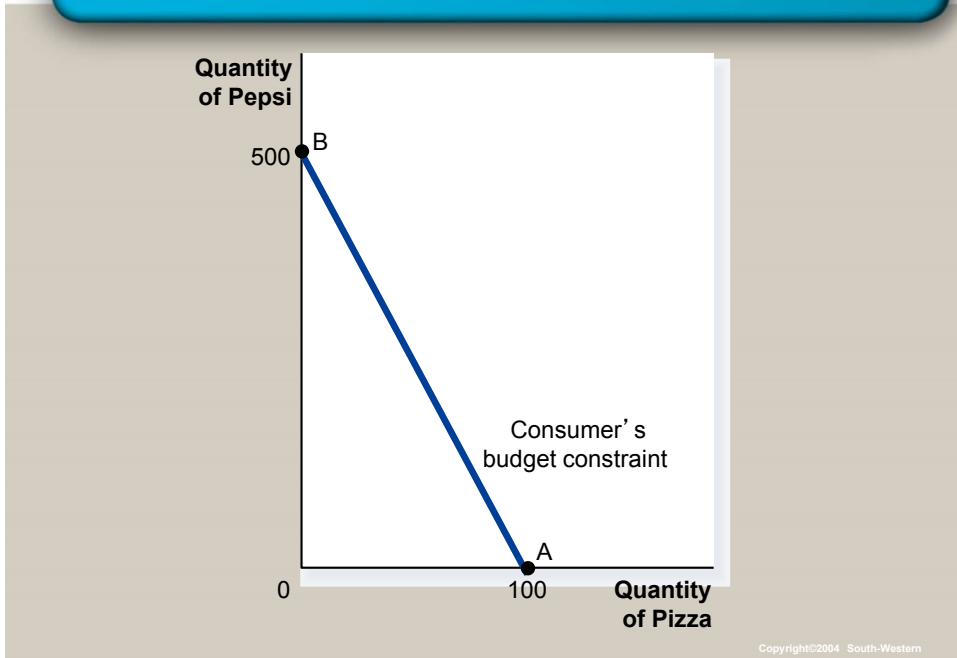# THE BUDGET CONSTRAINT: WHAT THE CONSUMER CAN AFFORD

The Consumer's Budget Constraint

Any point on the budget constraint line indicates the consumer's combination or tradeoff between two goods.

For example, if the consumer buys no pizzas, he can afford 500 pints of Pepsi (point B). If he buys no Pepsi, he can afford 100 pizzas (point A).

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Figure 1 The Consumer's Budget Constraint

Quantity of Pepsi

B
500

Consumer's
budget constraint

A

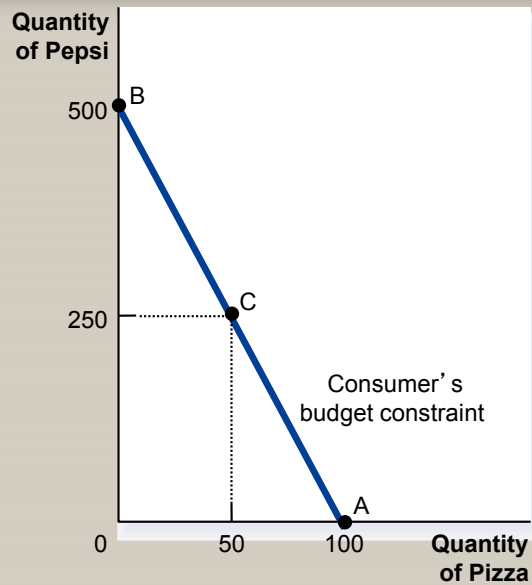0   100   **Quantity of Pizza**

THE BUDGET CONSTRAINT: WHAT THE CONSUMER CAN AFFORD

The Consumer's Budget Constraint

Alternately, the consumer can buy 50 pizzas and 250 pints of Pepsi.

Figure 1 The Consumer's Budget Constraint

Quantity
of Pepsi

500 ● B

250 ─ ● C

Consumer's
budget constraint

● A

0   50   100   **Quantity
of Pizza**

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THE BUDGET CONSTRAINT: WHAT THE CONSUMER CAN AFFORD

The *slope* of the budget constraint line equals the relative price of the two goods, that is, *the price of one good compared to the price of the other*.

It measures the rate at which the consumer can trade one good for the other.

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PREFERENCES: WHAT THE CONSUMER WANTS

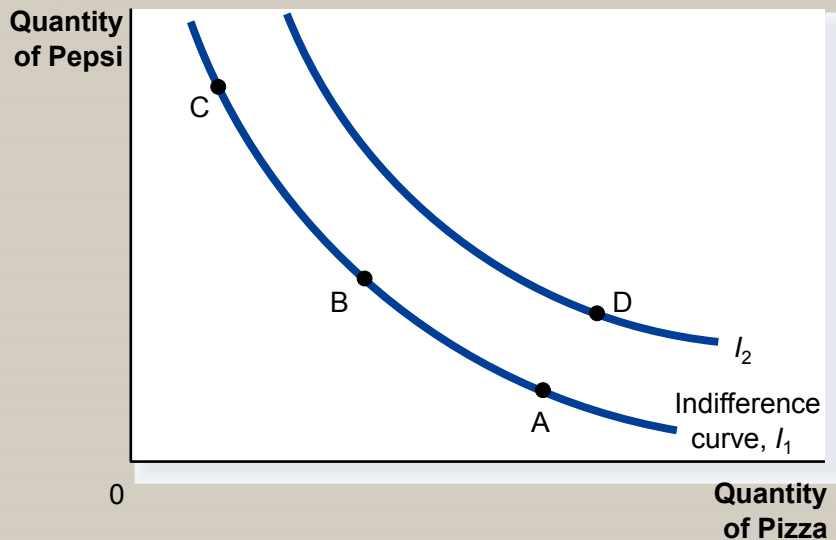A consumer's preference among consumption bundles may be illustrated with indifference curves.

Representing Preferences with Indifference Curves

An *indifference curve* is a curve that shows consumption bundles that give the consumer the same level of satisfaction.

Figure 2 The Consumer's Preferences

Quantity of Pepsi

C

B

D

I_2

A

Indifference curve, I_1

0

Quantity of Pizza

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Representing Preferences with Indifference Curves

The Consumer's Preferences

The consumer is indifferent, or equally happy, with the combinations shown at points A, B, and C because they are all on the same curve.
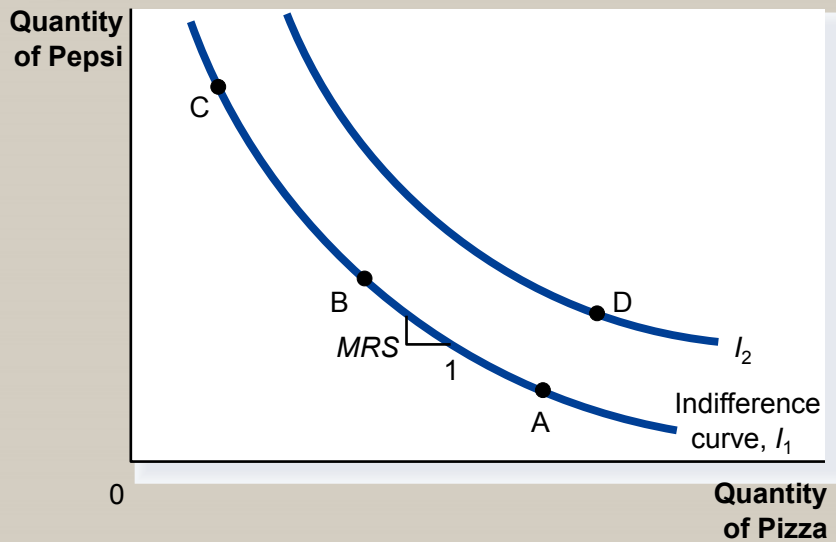
The Marginal Rate of Substitution

The slope at any point on an indifference curve is the *marginal rate of substitution*.

It is the rate at which a consumer is willing to trade one good for another.

It is the amount of one good that a consumer requires as compensation to give up one unit of the other good.

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Figure 2 The Consumer's Preferences

Quantity of Pepsi

C

B

MRS

1

A

D

I_2

Indifference curve, I_1

0

Quantity of Pizza

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Four Properties of Indifference Curves

Higher indifference curves are preferred to lower ones.

Indifference curves are downward sloping.

Indifference curves do not cross.

Indifference curves are bowed inward.

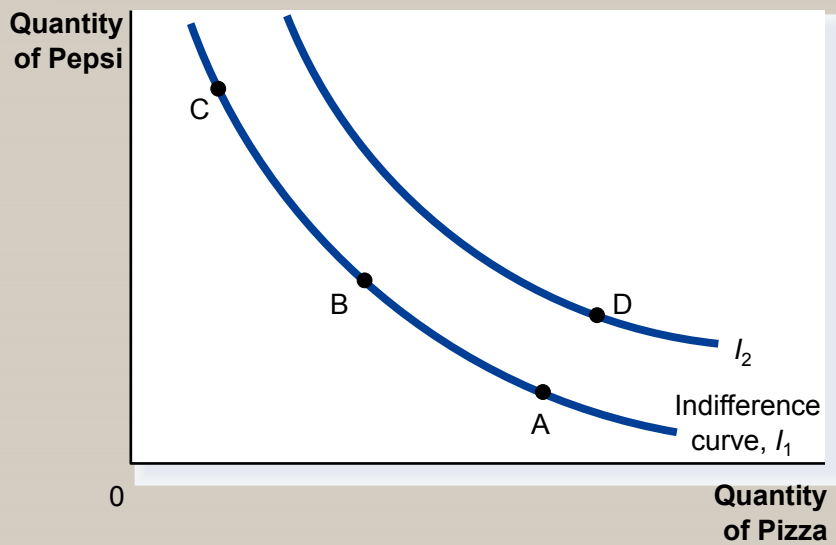Copyright © 2004 South-Western

Four Properties of Indifference Curves

Property 1: Higher indifference curves are preferred to lower ones.

  Consumers usually prefer more of something to less of it.

  Higher indifference curves represent larger quantities of goods than do lower indifference curves.

Figure 2 The Consumer's Preferences

Four Properties of Indifference Curves

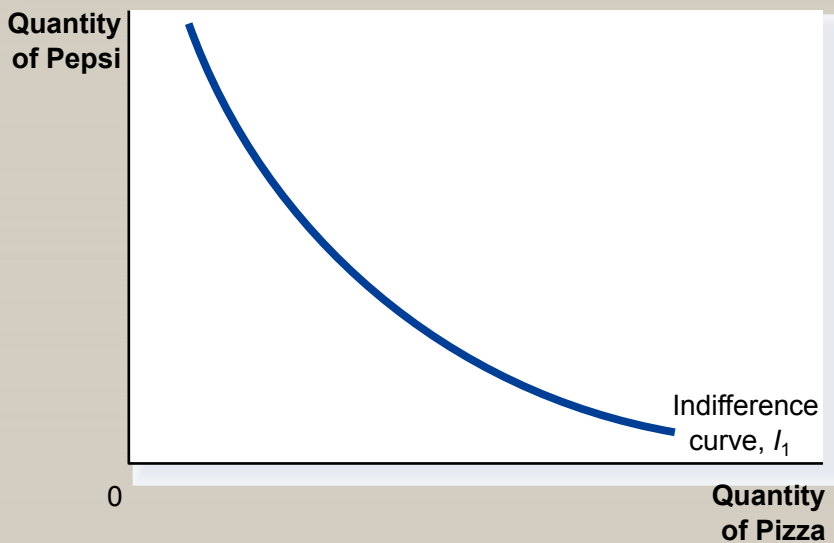Property 2: Indifference curves are downward sloping.

- A consumer is willing to give up one good only if he or she gets more of the other good in order to remain equally happy.
- If the quantity of one good is reduced, the quantity of the other good must increase.
- For this reason, most indifference curves slope downward.

Figure 2 The Consumer's Preferences

Four Properties of Indifference Curves

Property 3: Indifference curves do not cross.

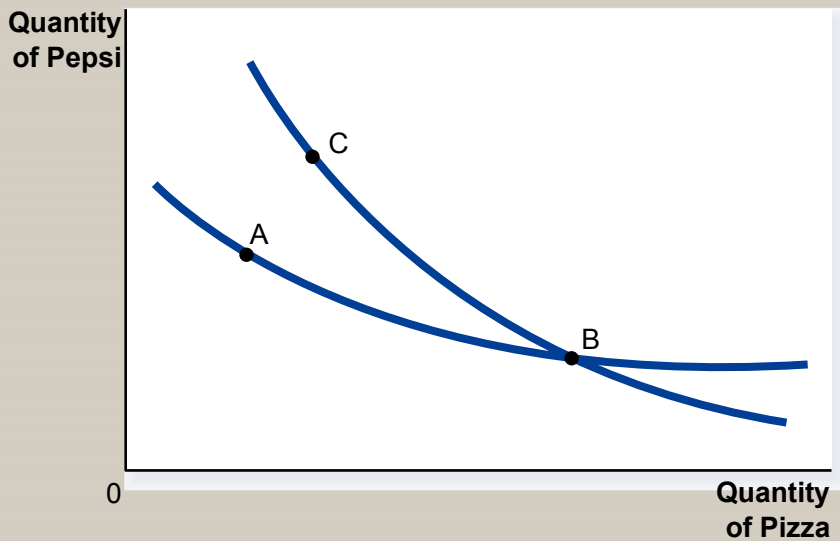- Points A and B should make the consumer equally happy.
- Points B and C should make the consumer equally happy.
- This implies that A and C would make the consumer equally happy.
- But C has more of both goods compared to A.

Figure 3 The Impossibility of Intersecting Indifference Curves
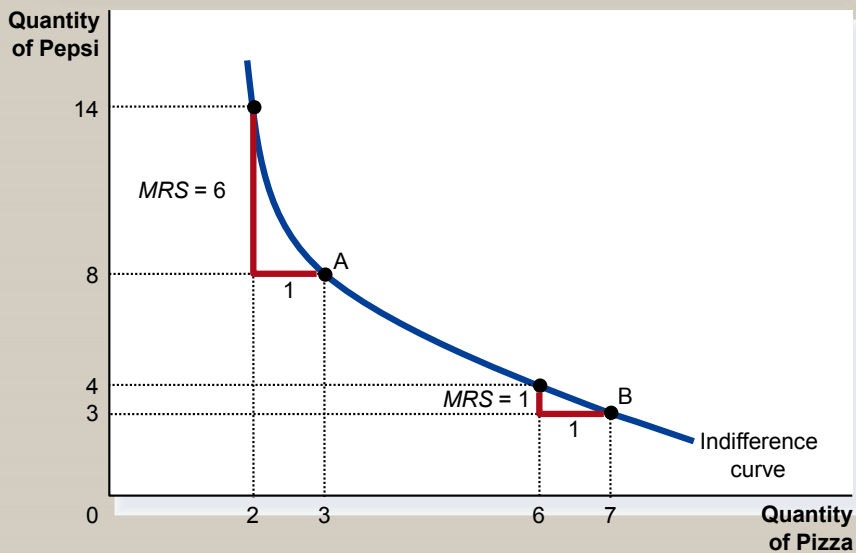
Four Properties of Indifference Curves

Property 4: Indifference curves are bowed inward.

- People are more willing to trade away goods that they have in abundance and less willing to trade away goods of which they have little.

- These differences in a consumer's marginal substitution rates cause his or her indifference curve to bow inward.

Figure 4 Bowed Indifference Curves

Two Extreme Examples of Indifference Curves

Perfect substitutes

Perfect complements
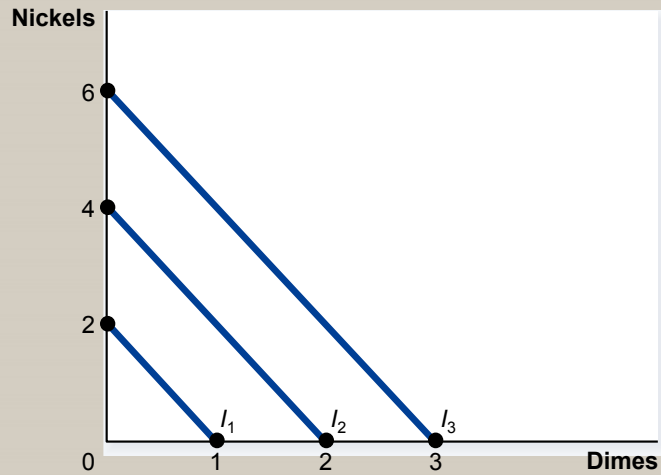
Two Extreme Examples of Indifference Curves

Perfect Substitutes

Two goods with straight-line indifference curves are perfect substitutes.

The marginal rate of substitution is a fixed number.

Figure 5 Perfect Substitutes and Perfect Complements
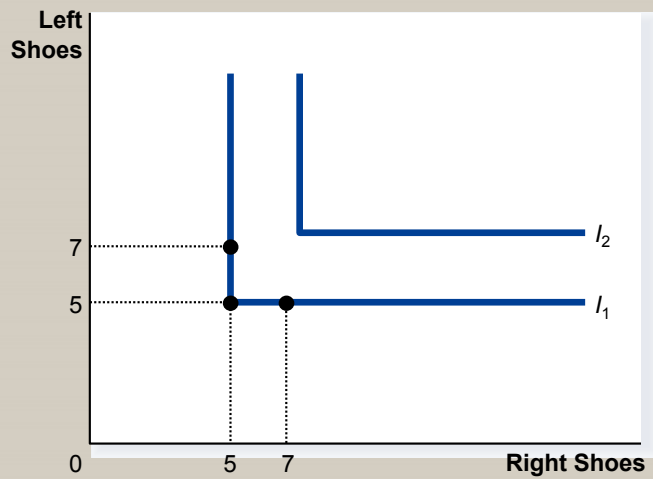
(a) Perfect Substitutes

Two Extreme Examples of Indifference Curves

Perfect Complements

Two goods with right-angle indifference curves are perfect complements.

Figure 5 Perfect Substitutes and Perfect Complements

(b) Perfect Complements

OPTIMIZATION: WHAT THE CONSUMER CHOOSES

Consumers want to get the combination of goods on the highest possible indifference curve.

However, the consumer must also end up on or below his budget constraint.

The Consumer's Optimal Choices

Combining the indifference curve and the budget constraint determines the consumer's optimal choice.

Consumer optimum occurs at the point where the *highest* indifference curve and the budget constraint are tangent.

The Consumer's Optimal Choice

The consumer chooses consumption of the two goods so that the *marginal rate of substitution equals the relative price*.
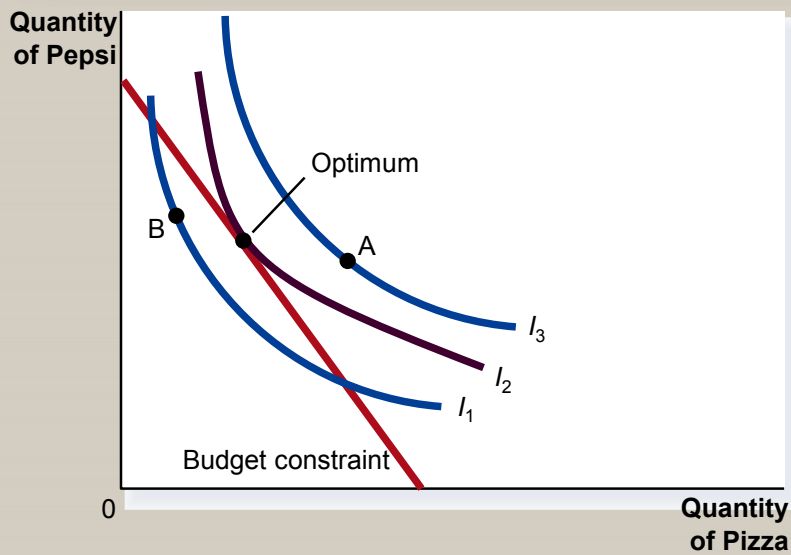
The Consumer's Optimal Choice

At the consumer's optimum, the consumer's valuation of the two goods equals the market's valuation.

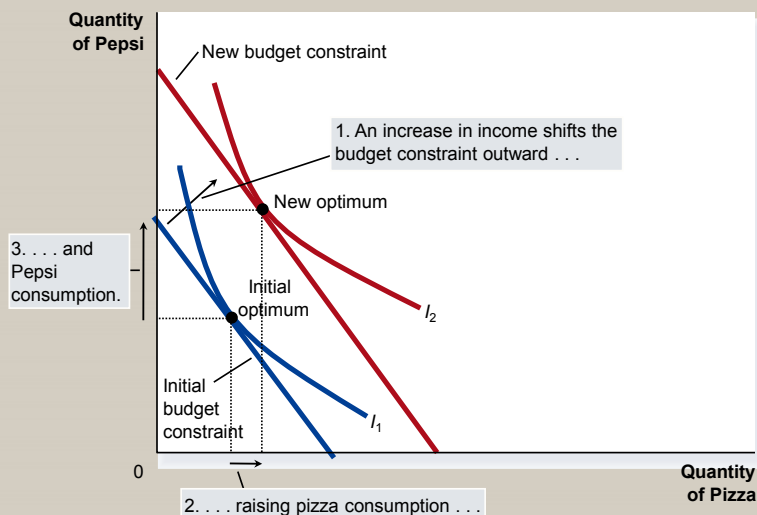### Figure 6 The Consumer's Optimum

How Changes in Income Affect the Consumer's Choices

An increase in income shifts the budget constraint outward.

The consumer is able to choose a better combination of goods on a higher indifference curve.

Figure 7 An Increase in Income

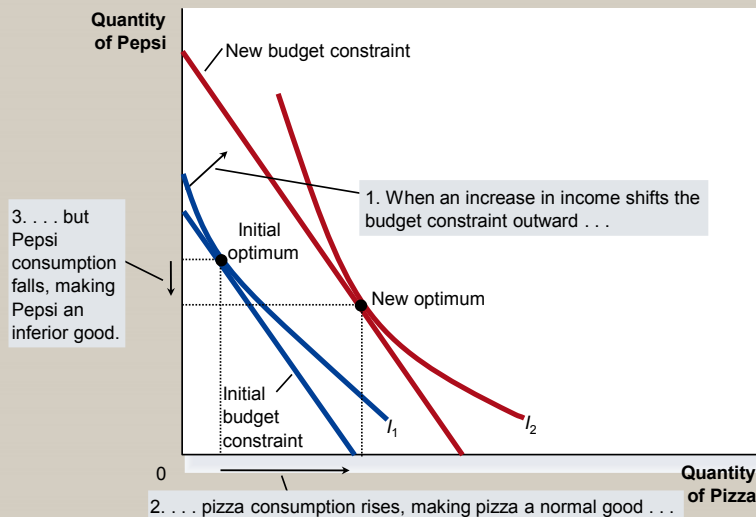## How Changes in Income Affect the Consumer's Choices

Normal versus Inferior Goods

If a consumer buys more of a good when his or her income rises, the good is called a *normal good*.

If a consumer buys less of a good when his or her income rises, the good is called an *inferior good*.

Figure 8 An Inferior Good

Quantity of Pepsi

New budget constraint

1. When an increase in income shifts the budget constraint outward . . .

Initial optimum

New optimum

3. . . . but Pepsi consumption falls, making Pepsi an inferior good.

Initial budget constraint

I_1

I_2

0

Quantity of Pizza

2. . . . pizza consumption rises, making pizza a normal good . . .

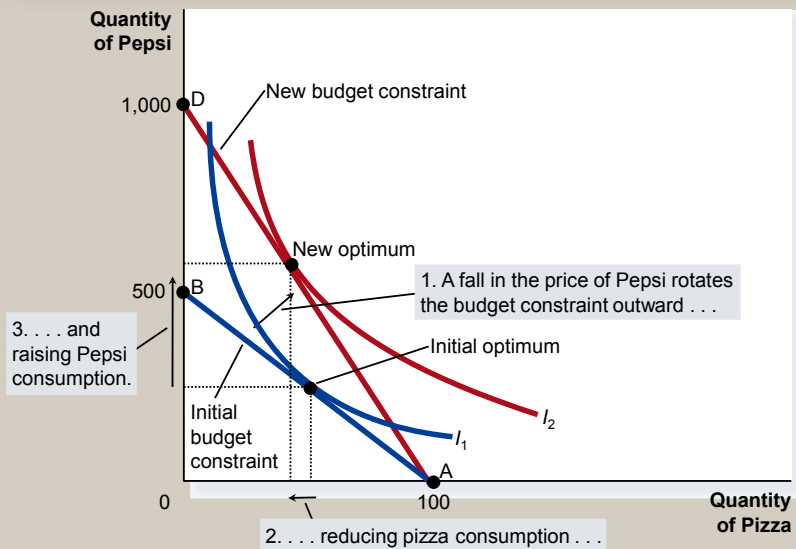## How Changes in Prices Affect Consumer's Choices

A fall in the price of any good rotates the budget constraint outward and changes the slope of the budget constraint.

Figure 9 A Change in Price

Quantity of Pepsi

1,000 ● D — New budget constraint

New optimum

500 ● B

1. A fall in the price of Pepsi rotates the budget constraint outward . . .

3. . . . and raising Pepsi consumption.

Initial optimum

Initial budget constraint

I_2

I_1

A

0

100

Quantity of Pizza

2. . . . reducing pizza consumption . . .