**Effect of income change**

Suppose income increases from $100 to $150

Case I: Normal Good

Food

Shelter

B

B’

U2

b

a

A

A’

U1

Budget constraint AA’ (with M=$100, PF=$10, PS=$5): F = 10 – ½ S

Budget constraint BB’ (with M=$150, PF=$10, PS=$5): F = 15 – ½ S [solve for B, B’]

[Use demand equations for F and S to solve for baskets a, b]

1. Consumer equilibrium MRS unchanged at the two equilibrium baskets

 at points a and b: MRSS,F = $\frac{P\_{S}}{P\_{F}}$ = ½

2. Consumer well-being increased; consumer reaches higher indifference curve, U2

3. Both goods are normal goods for consumer

Normal good – positive relationship between consumption of good and income

Is it the case that the consumer’s marginal willingness to substitute food for shelter at basket a equals that at basket b?

For these convex indifference curves, could the MRS at any two points along a given curve equal one another?

If the consumer gains utility from both food and shelter, explain why it would be impossible for points a and b to ever be on the same indifference curve.

Case II: Inferior Good [Illustration](http://milesfinney.net/410/handout/Inferior_Good.pdf)

1. MRSS,F is unchanged

2. Food consumption has fallen with increase in income (food is the inferior good)

Goods found to be inferior for some consumers:

A. used cars

B. margarine

C. pork

[differences in preferences: book lover/nonlover]

**Analysis of price change**

Price of shelter falls from $5/sq. yd. to $2.50/sq. yd.

Food

Shelter

S’

U2

b

a

A

S1

U1

S2

Budget constraint AS2 (with M=$100, PF=$10, Ps=$5): F = 10 – ½ S

Budget constraint AS’ (with M=$100, PF=$10, Ps=$2.50): F = 10 – ¼ S [solve for S’]

Decrease in price induces consumer to move from basket a to b

[Use demand equations for F and S to solve for baskets a, b]

1. Shelter consumption increases S1 to S2. Food consumption remained unchanged.

2. Consumer reaches higher utility level U2

3. MRSS,F is different at basket b compared to basket a.

|  |  |
| --- | --- |
| Basket | MRSS,F |
| a | ½ |
| b | ¼ |

Consumer willing to give up less food for marginal increase in shelter at point b, compare to a.

P

q (shelter)

d

S1

S2

$5

$2.50

Relationship to demand curve

d - demand curve for shelter

Why does a price change induce the consumer to adjust to a new basket in which their marginal willingness to trade off goods is now different? Why didn’t an income change produce the same effect?

Why would a decrease in price increase consumer utility?

Why would an increase in price decrease consumer utility?

Two effects of a price change

When the rent of shelter fell, consumer increased consumption of shelter for two reasons:

1. Consumer’s real income increased

2. Consumer adjust consumption to where her marginal willingness to pay (MRSS,F) equals changed relative price

Food

Shelter

S’

U2

b

a

A

S1

U1

S2

**Sj**

**j**

Consumer move from point a to point **j** if income effect of price decrease taken away

Point **j** is on original indifference curve U1

MRS at point **j** is ¼

Move from S1 to Sj substitution effect

 Sj to S2 income effect

Substitution effect – reflects consumer increasing shelter because opportunity cost is lower given price change; consumer has to give up less in other goods/services for each sq.yd. of shelter acquired

Income effect – reflects the fact that decreased price increased capacity to consume all goods (real income changed)

For normal goods, the income and substitution effect of a price change should influence consumption in the same direction. Explain why for an inferior good, the substitution effect of a price decrease would induce greater consumption but the income effect would induce less consumption.

[Example of Carter tax rebate](http://milesfinney.net/410/lecture/rebate.pdf)