Economics I

Consumer Behavior and Demand Shaping

Course Objectives 1/3:

The aim of the first lecture is to identify the consumer as one of the players in the market, the characteristics of rational consumers, which is a prerequisite for the functioning of the market and clarify the axioms of rationality.

Course Objectives 2/3 :

Another aim is to explain the concept of usefulness, clarifying the difference between marginal and total benefit, clarification creating balance in the consumer's cardinal and ordinal utility measurement method and derive a demand curve for the direct and indirect measurability of utility.

Course Objectives 3/3 :

The second lecture is explaining the effect of changes in íncome and prices of other goods on demand, to clarify the concept of elasticity of demand, distinguish between different typesof price elasticity. Attention will be paid to the basic economic operators to whom the consumer and his behavior rationally to market products and services.

Content:

1. Introduction
2. Utility and its measurement
3. Cardinalistic version of measurement of utility

   The balance of consumer

   Derivation of the demand curve
4. Ordinalistic version of measurement of utility
   1. Indifference analysis
   2. The budget line
   3. Optimum consumers
   4. Derivation of the demand curve
5. Demand and its functions
6. Elasticity of demand
7. Conclusion

References and further reading:

1. MACÁKOVÁ, L. aj. *Mikroekonomie – základní kurs*. 10. vyd. Praha: Melandrium Slaný, 2007. ISBN 978-80-86175-56-0. s. 12-45.
2. SIRŮČEK, P., NEČADOVÁ, M. *Mikroekonomická teorie 1 – cvičebnice.* 1. vyd. Praha: Melandrium Slaný, 2001. ISBN 80-86175-17-0. s. 11-62.
3. BRADLEY, R. SCHILLER. *Mikroekonomie.* Brno: Computer Press, 2004. ISBN 80-251-0109-6.
4. HOLMAN, R. *Mikroekonomie – středně pokročilý kurz.* 1. vyd. Praha: C. H. Beck, 2002. ISBN 80-7179-737-5.
5. HOLMAN, R. *Ekonomie.* 3. vyd. Praha: C. H. Beck, 2002. ISBN 80-7179-681-6.
6. TULEJA, P., NEZVAL, P., MAJEROVÁ, I. *Základy mikroekonomie* (Učebnice pro ekonomické a obchodně podnikatelské fakulty). 1. vyd. Brno: Nakladatelství CP Books, a. s., 2005. ISBN 80-251-0603-9.

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1.

UTILITY AND ITS MEASUREMENT

Consumption is one of the basic conditions of existence of human society. In the market economy is a crucial part of the power provided through the purchase of market goods and services.

The consumer buys goods to satisfy their needs. Its objective is to maximize the benefits that it brings consumption of goods and services.

Every consumer on the market performs his choice threw a Consumer basket. This option has two aspects:

- **Qualitative**
- **Quantitative**

We assume that the consumer is able to rational considerations.

Consumer choice about which specific goods purchases, in what quantities and when it is constrained by many factors.

The basic prerequisite for consumer decision is:

- plenty of different kinds of goods in the market,
- his adequate disposable income,
- physical and time boundaries consumption.

The consumer´s choise is based on the **price of purchased goods** due to the versatility and their needs must take into account also the **prices of other goods**.

The decision to purchase a combination of products also depends on their individual needs, interests and goals, thus the system's individual preferences. Standard consumer behaves when deciding rationally.

Consumer choice is always looking for content (structure) and size (volume) of the consumer basket, which he gives the consumption of most benefit.

In making this decision the consumer compares the situation in terms of consumer preferences.

In the theory of consumer demand for individuals assumed to be governed by the axioms of rationality and other behavioral rules, which together form a testable theory of consumer behavior:

- **axiom of completeness comparison,**
- **axiom of tranzitivity**
- **axiom of choice.**

Axioms 1-3 are generally regarded as axioms of rationality. The remaining axioms are already own assumptions concerning the behavior of consumers. These are:

- **axiom of greed**
- **axiom of continuity,**
- **axiom of convexity (preferences).**

Total utility (TU)

expresses the satisfaction of the consumer from all over the quantity of goods.

The total benefit is the sum of the marginal benefits of consumed units of the goods.
It depends on:

- the volume of consumed goods and services,
- the characteristics and quality of the goods,
- the extent to which it is able to meet the needs,
- the subjective relation to consumer goods preferences.

Marginal utility (MU)

expresses how much the total benefit will increase if the amount of consumed goods increases by one unit.

Marginal utility depends on:

- the importance and intensity of needs,
- disposable quantity of a particular product.

CARDINAL VERSION OF PROFITS MEASUREMENT

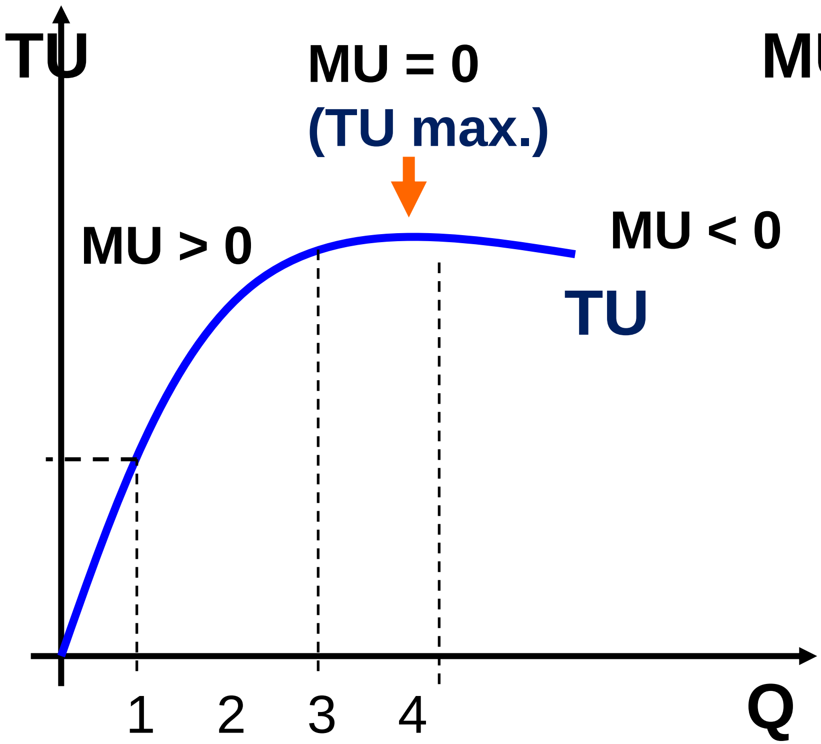
Cardinal version of measurement of utility is based on the assumption that the consumer is able to express his benefit from the consumption of certain good price, what he is willing to pay for this good.

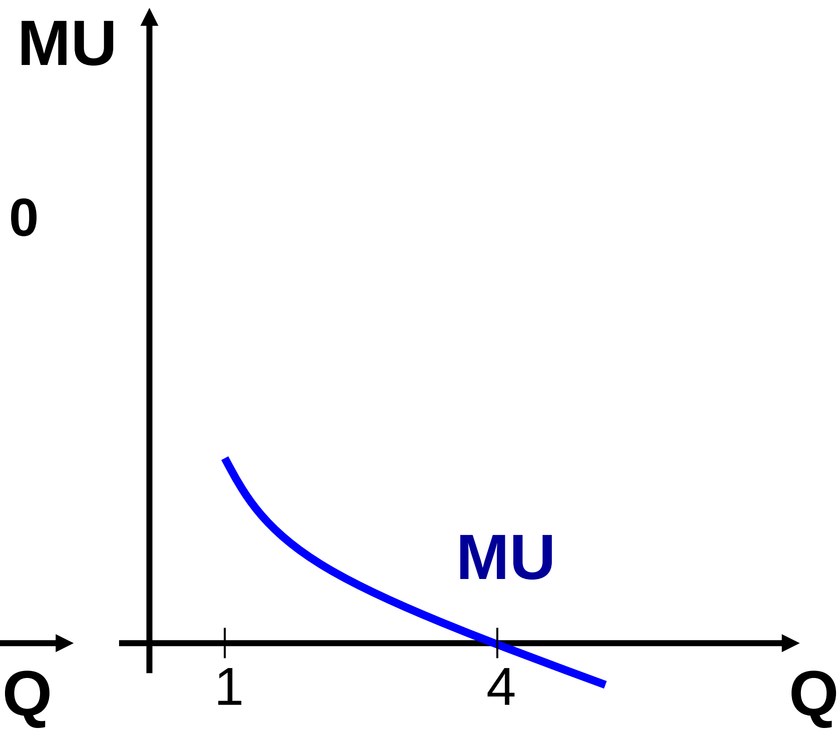
The optimal amount of purchases is, when the marginal benefit equals the price: MU = P.

Optimum condition (balance) of the consumer is equal marginal benefits of consumable goods in relation to their prices.

The consumer therefore compares what benefit it will bring money spent on buying individual goods.

The law of diminishing marginal utility





$MU_n = TU_n - TU_{(n-1)}$

MU function 1. derivation TU

MU_n = marginal utility

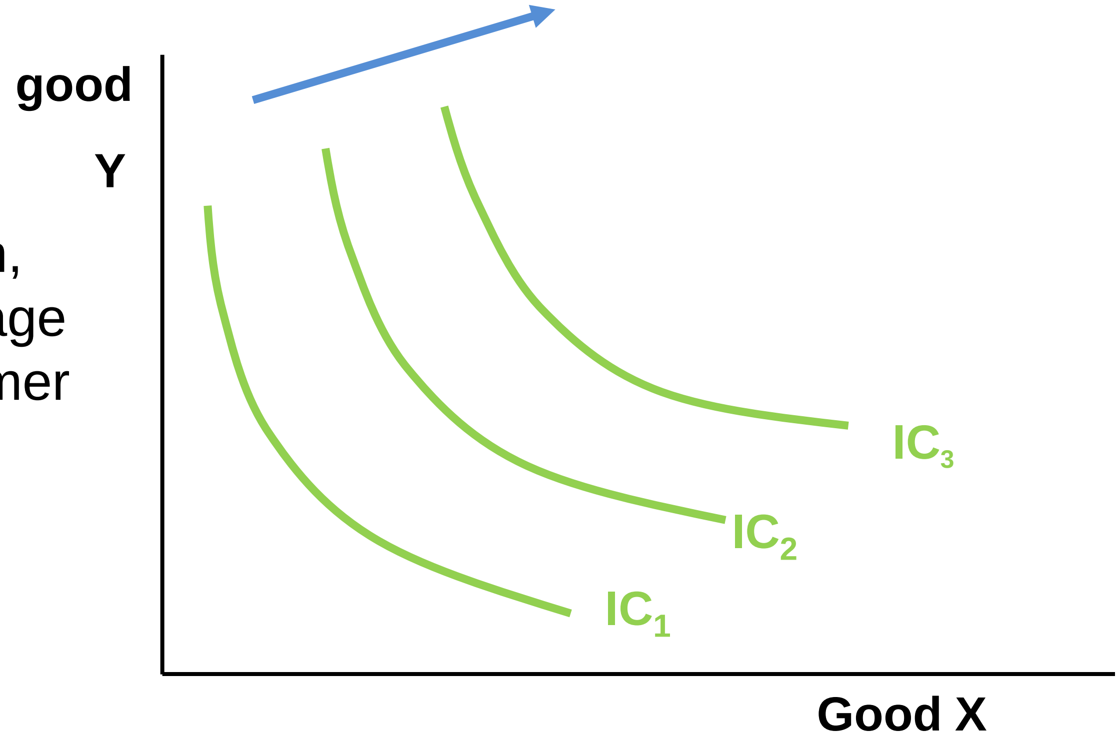
ORDINAL VERSION OF THE UTILITY MEASUREMENT

Is based on the assumption of the consumer's ability to compare the benefits of different combinations of goods.

They assume that the level of utility can not be measured, but only sirted on the ordinal scale.

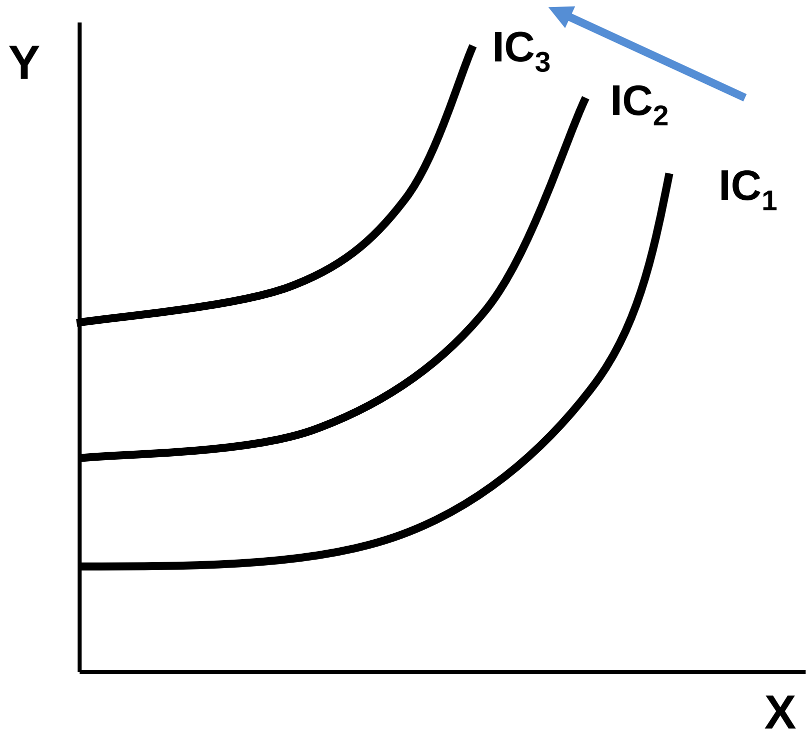
3.1 Indifference analysis

Properities:
- are declining,
- have a negative slope,
- do not cross,
- are convex to the origin,
- at each point of the image representing the consumer behavior is IC

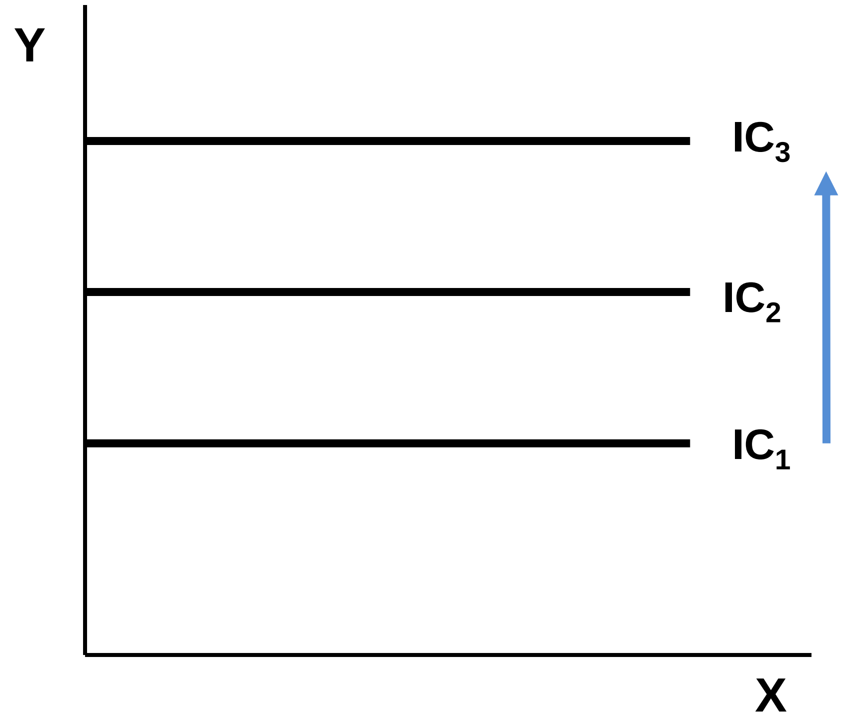


TU grows with the direction of the arrow

Special shapes of indifference curves

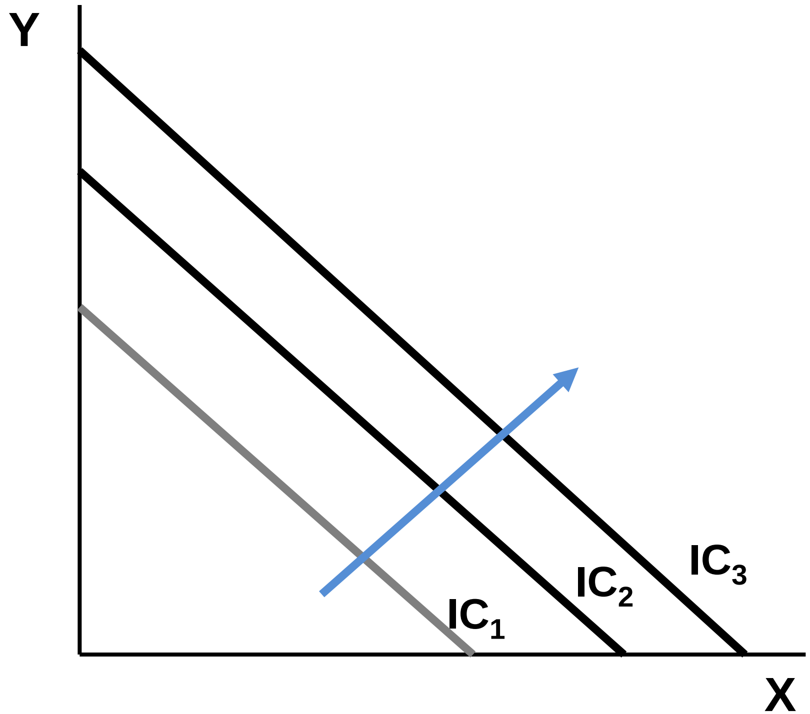


Good X is undesirable

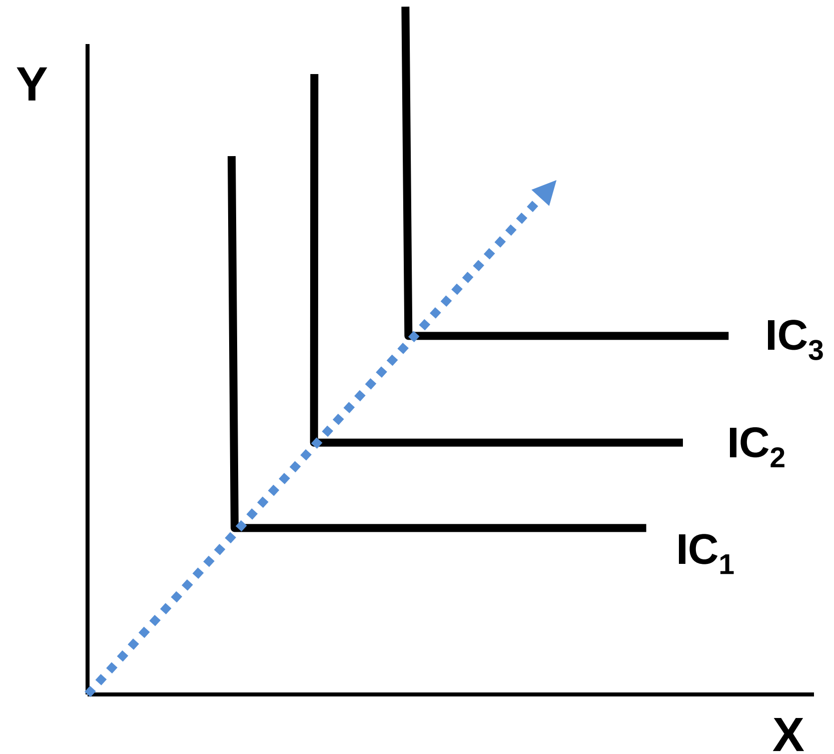


Good X is indifferent

Special shapes of indifference curves



Goods X a Y are perfect substitutes



Goods X a Y are perfect komplements

The law of substitution

The law of substitution - is based on the shape of indifference curves. Goods which are becoming rarer, have a higher relative value of substitution. The marginal utility is increasing in relation to the marginal utility of goods, which are becoming more plentiful.

Marginal rate of substitution (MRS) – is the ratio in which they is possible to mutually replaceable X good and Y good, without changing the utility.

$$MRS = \frac{\text{increase } Y \qquad MU_x}{\text{Increase } X \qquad MU_y}$$

3.2 budget line

Budget line (BL) - shows the maximum available combinations of the distribution of consumers income to purchase two goods.

revenue line can be calculated:

$$I = Px + Py * X * Y$$

3.3 Optimum (equilibrium) consumer

The balance of the consumer - connection indifference maps and revenue line.

The balance of the consumer is at the point where the line touches the indifference curve of income.

MU x / P x = MU y / P y

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- Utility is maximized according to consumer preferences and market opportunities.
- Market opportunities are influenced by disposable income and the prices of consumable goods.
- The rate at which the consumer is willing to substitute one good to others, without changing his utility is equal to the ratio in which consumers can exchange goods X and Y in the market (due to market prices and income).

3.4 Derivation of demand curve

We consider a price change of only one good.

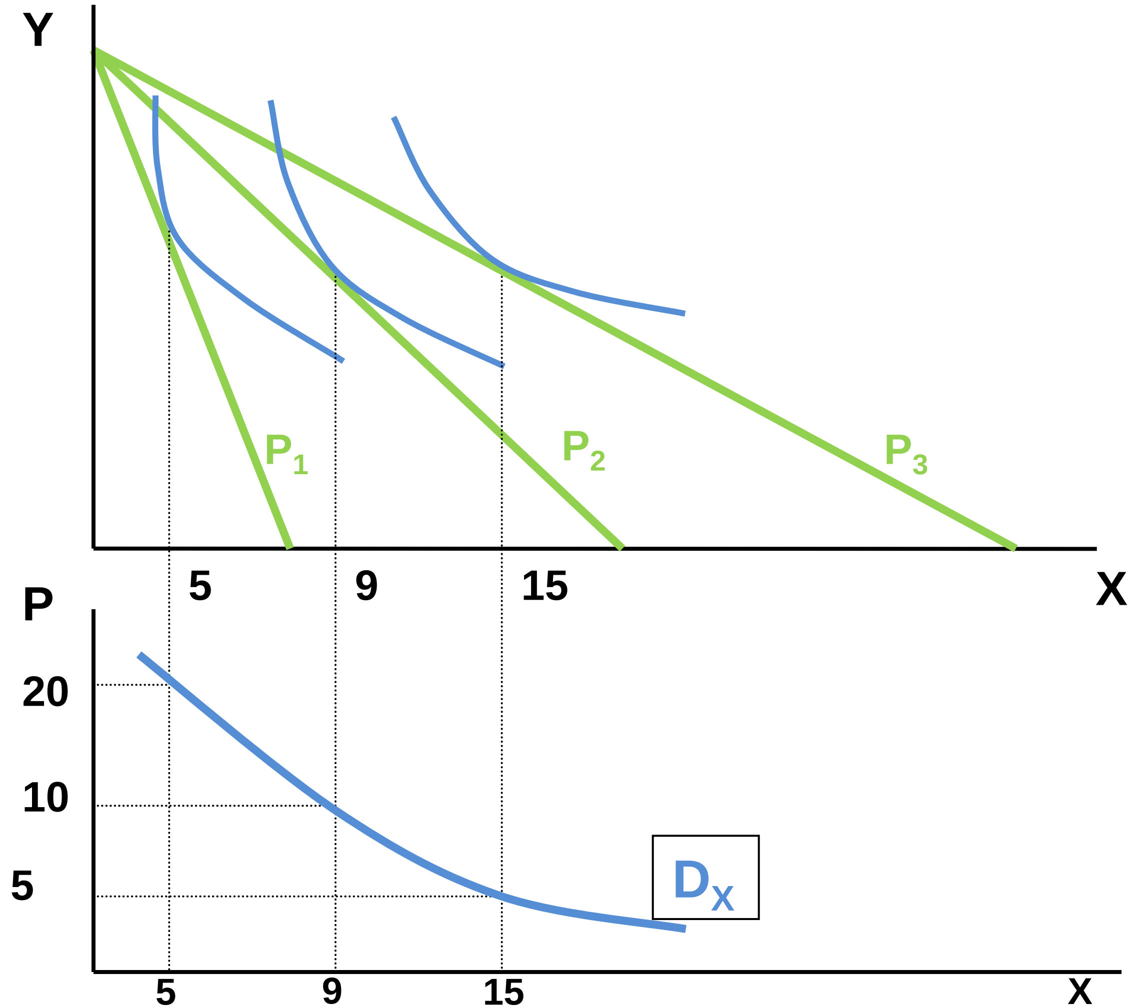
Changing the price of the good X and unchanged price of the good Y and the same consumers disposable income will affect the budget line slope.

Each prices level of the good X corresponds to other budget line that touches another indifference curve.

Each price of the good X corresponds another point of optimal decisions and thus different amount of required quantity of goods X.

On the x axis we find quantity of goods X corresponding to individual points of optimum. We know the demanded amount is corresponding to each level of prices and therefore we can construct the demand curve.

Derivation of demand curve



4.

DEMAND AND ITS FUNCTIONS

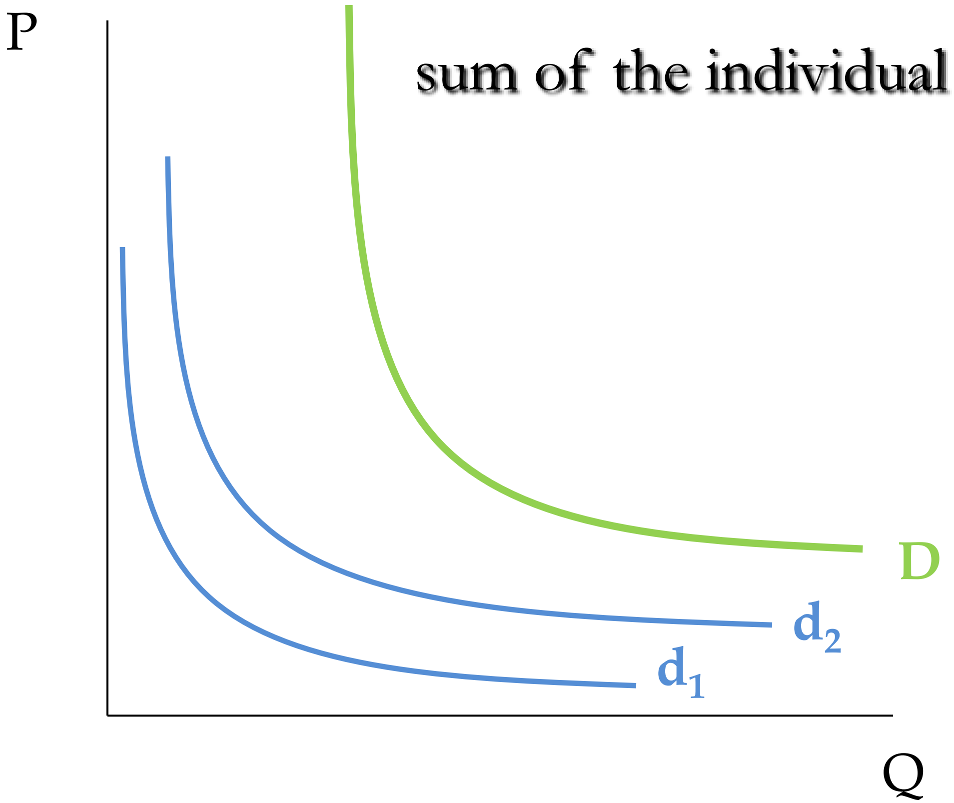
Income effect

increase of P x → decline in real income → decline Q x

Substitution effect

increase of P x → rise in the relative prices of goods X → decrease Q x and growth in demand for other goods

Market demand (D)



$$D = d_1 + d_2$$

Individual demand (d)

- Demand oft the one consumer

5.

DEMAND ELASTICITY

Elasticity of demand measures the sensitivity of the consumer response.

Price elasticity of demand – is expressed as the ratio of percentage changes in volume of demanded goods to percentage changes in prices.

$$\text{Price elasticity} = \frac{\text{\% Change in demanded quantity}}{\text{\% change in price}}$$

Depending on the size of the coefficient of price elasticity of demand distinguish elastic, inelastic or unit elastic demand:

- **Inelastic demand** - EDP <1, the change in price causes a smaller percentage change in the volume of required goods,
- **Elastic demand** - EDP> 1, the change in price causes a larger percentage change in the volume of required goods,
- **unit-elastic** - EDP = 1, the change in price causes the same percentage change in volume demands.

Factors affecting demand elasticity :

- Character of needs.
- Expenditures share .
- Existence and availability of substitutes.
- Elasticity of demand changes in time.

Income and cross elasticity of demand

- **Income elasticity** - expresses the variation in demanded quantity to changes in consumers income.

$$\textbf{income elasticity} = \frac{\%\ \text{Change in demanded quantity}}{\%\ \text{Change in income}}$$

- **Cross elasticity** - shows how is changing the demanded quantity of a product, when we change the price of other goods.

$$\textbf{cross elasticity} = \frac{\%\ \text{Change in demanded quantity}}{\%\ \text{Change in price of of other goods}}$$

Questions?

Thank you for your attention