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MINISTRY OF EDUCATION,
YOUTH AND SPORTS



OP Education
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UNIVERSITY
OF DEFENCE

INVESTMENTS IN EDUCATION DEVELOPMENT

Lesson plan

Course Name: Economics II

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Topic: Consumer behavior and demand shaping

Course Objectives:

The aim of the first lecture is the analysis of consumer behavior. There will be explained assumptions of the rational consumer behavior, ways of benefits measuring and will be explained indifference analysis and consumer optimum.

The aim of the second lecture is to clear the issue of individual and market demand. To explain the influence of changes in income on demand, price change on the demanded quantity and the changes in prices of other goods.

The next goal is to clear the consumer decision making under the risk.

1. UTILITY, PREFERENCES, CONSUMER OPTIMUM

1.1 Utility Measurement Assumptions

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 transitivity**
- **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).**

1.2 Utility Measurement

CARDINAL VERSION

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.

Rationally acting consumer can increase his total utility by moving of funds for the purchase of this product. This means that increased consumption of our products will reduce consumption of other goods. By increasing the amount of consumed goods leads to a decrease of marginal utility, lowering contrary to the growth of marginal utility. This means that there is a compensation ratio of marginal utility to the price for each consumable goods and the consumer is in equilibrium.

Rationally acting consumer thus increases the volume of purchases of certain goods to the point where the marginal utility of the last unit of money spent on its purchase equal to marginal utility of the last unit of money spent to purchase all other goods.

Total utility and marginal utility

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.

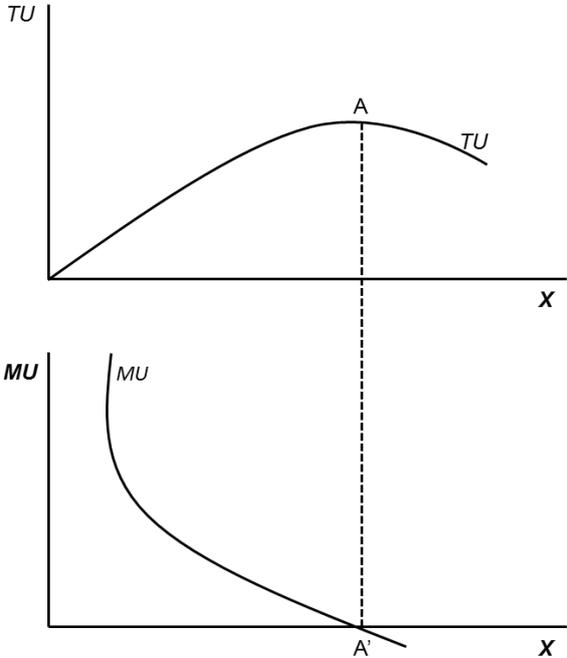
Marginal utility depends on:

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

The difference between total and marginal utility we can best imagine if it is measured in monetary units:

- The total benefit is determined by the maximum amount of money that is for the consumer is willing to pay them,
- marginal utility is determined by the amount the consumer is willing to spend to purchase additional units of goods.

The current interpretation may be illustrated by the relationship between the amount and the total benefit and the amount and 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 sorted on the ordinal scale.

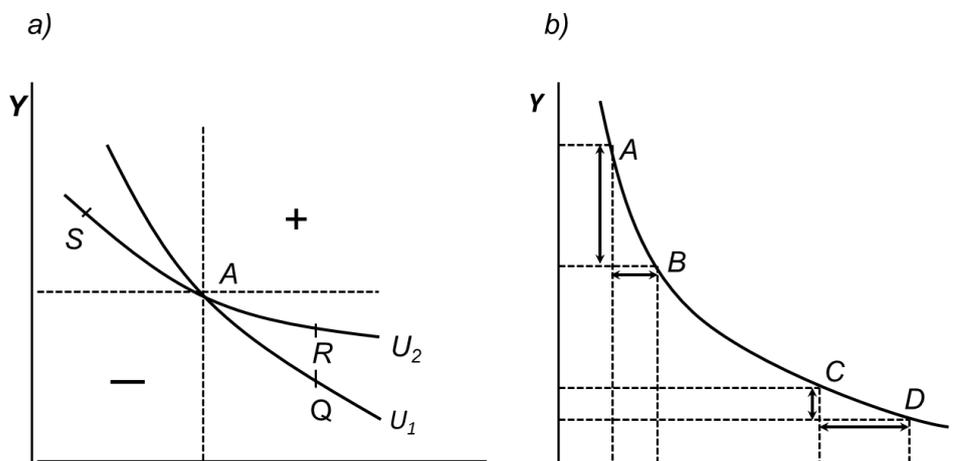
1.3 Indifference Analysis

The starting point of the indifference analysis is indifference curve (IC).

Indifference curve shows all combinations of goods X and Y, which are bringing the same utility. A set of indifference curves is creating so-called **indifference map**.

Properties of indifference curves:

- are declining - they have a negative slope,
- do not cross - this is connected with the axiom of transitivity,
- are convex to the origin,
- at each point of the image representing the consumer behavior is IC - This relates to the completeness axiom comparison.

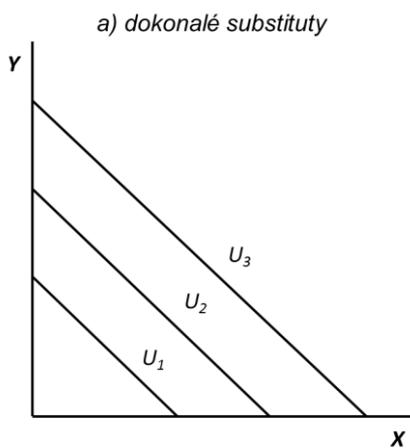


Marginal rate of substitution in consumption

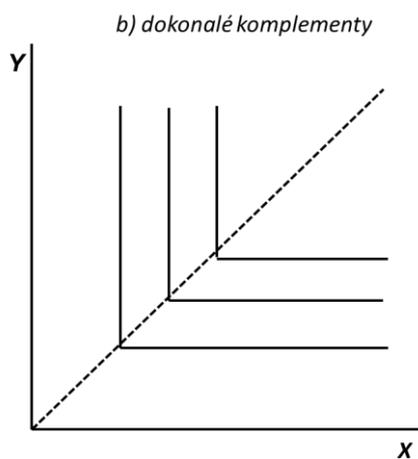
$$MRS_C = \frac{dX}{dY} \quad | \quad U = konst.$$

WARNING - not always indifference curves are convex toward the origin. Such cases include, for example. Indifference curves for:

- perfect substitutes,

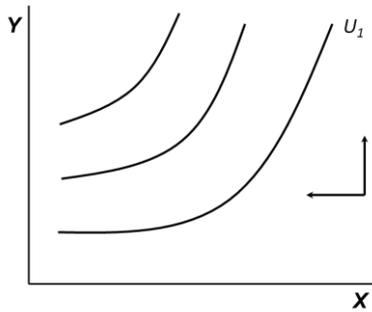


- perfect complements,



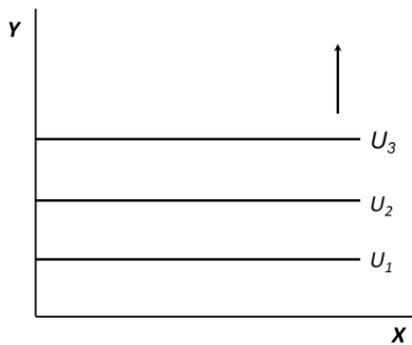
- unpopular goods

a) Statek X je nežádoucí



- neutral goods.

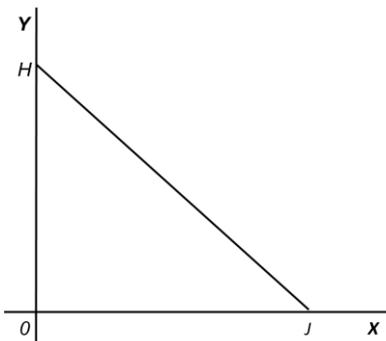
b) Statek X je lhostejný



1.4 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 $I = P_x \cdot X + P_y \cdot Y$



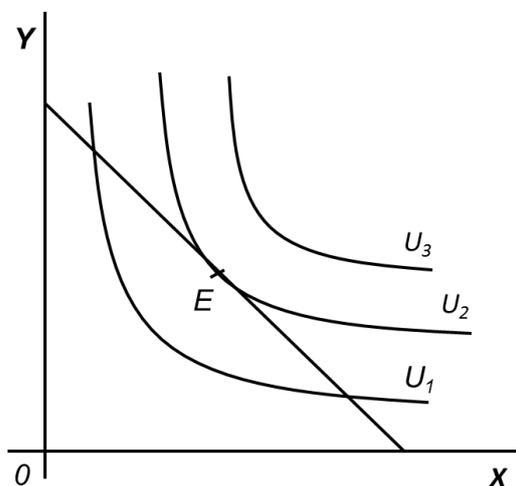
1.5 Consumer Optimum (equilibrium)

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.

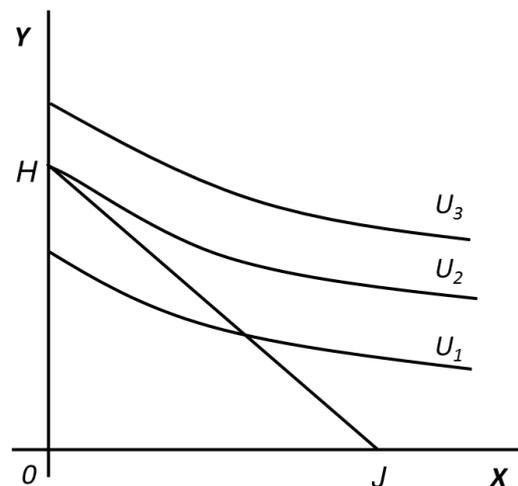
$$MU_x / P_x = MU_y / P_y$$

- 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).

a) vnitřní řešení

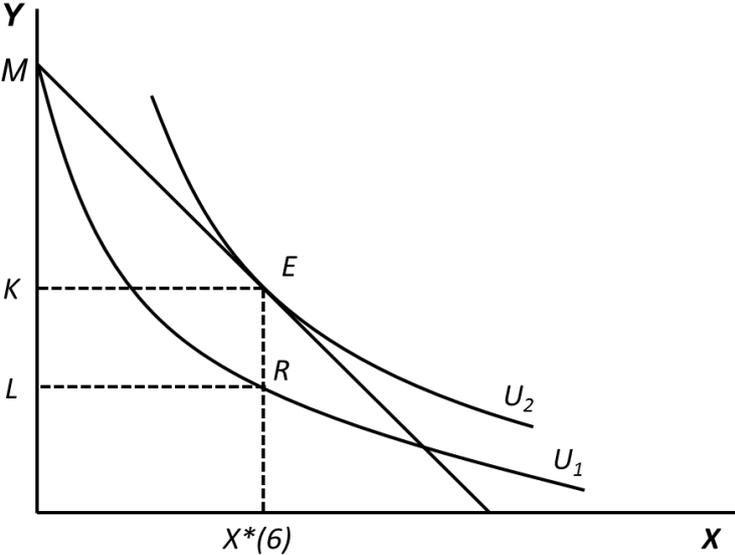
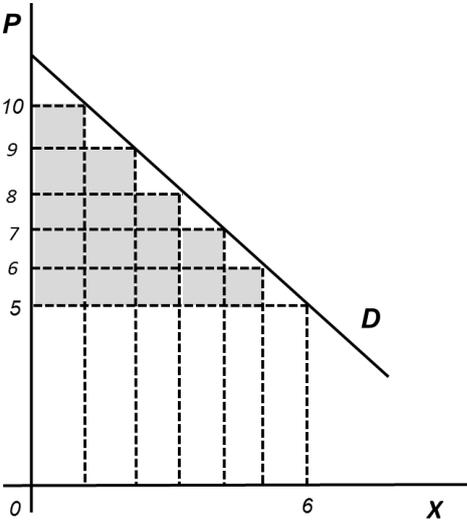


b) rohové řešení



1.6 Consumer Surplus

Is the difference between total utility and costs spend on the purchase of goods.



List of tasks for students:

1. What is meant by transitivity of preferences? Can you give an example of when preferences are transitive?
2. What are the characteristics of indifference curves and how it relates to the axioms of rational consumer behavior?
3. Assume that indifference curves are negatively sloped. What can you say about the preferences of consumers?
4. Draw the indifference curves, so that the marginal rate of substitution in consumption (MRSc) is constant. Draw some budget lines corresponding to different ratios of prices and determine the optimal combination of individual cases.
5. Explain the condition of consumer optimum.
6. Price of good X is 120 CZK. Price of good Y is 80 CZK. Consumer income is 5000 CZK.
 - a) Determine MRSE.
 - b) What happens to budget line and how it changes MRSE if income rises to 8,000 CZK?
 - c) What happens to the budget line and how it changes MRSE if the price of good X drops to 100 CZK?
 - d) What happens to the budget line and how it changes MRSE, if the price of good Y rises to 20 CZK?
 - e) What happens to the budget line and how it changes MRSE if P_X increases by 18 CZ and P_Y grows by 12CZK?
7. The consumer spends on the purchase of goods X and Y 100 CZK per week. Utility function is $U = XY$, P_X is 4 CZK and P_Y is 10 CZK.
How many goods X and Y will consumers buy?