**MICROECONOMICS III**

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Introduction

The Teaching of microeconomics is organized in three stages at the faculties of economics. In bachelor's study is the basic degree of microeconomics, where the student is acquainted with the basic concepts of microeconomics. The study of microeconomics at Master's level further develops the knowledge gained at the basic level of study. The third degree of microeconomics is usually in the doctoral study program. The aim of this study is to apply the acquired knowledge of the previous study to normal economic reality.

The study text is divided into seven chapters which, on the one hand, are based on standard microeconomic problems; on the other hand, they develop solutions to microeconomic problems that were not included in the previous study.

The first chapter focuses on the methodology of microeconomics. The second chapter deals with mathematical tools that are commonly used in microeconomic analyses. The third chapter focuses on consumer theory and the formation of the demand side in the goods and services markets. The fourth chapter deals with the supply side of the goods and services markets. The fifth chapter concentrates on alternative theories of the company. The sixth chapter describes on the concept of efficiency in economics and the economy of well-being. The seventh chapter focuses on selected issues of information economics.

# 1 METHODOLOGY OF ECONOMIC THEORY

**Chapter goal**

* to introduce the student to the concept of economics as a social science
* to clarify methodological tools used in economics as a science discipline
* to explain methods of thinking and explore economic reality
* to highlight possible mistakes in evaluating and explaining economic reality text

## Economics

*Economics is Social Science*

**Economics** is social science, like any other science discipline, trying to approach the exploration and explanation of economic phenomena objectively. It uses scientific methods that economists have developed together with scientists in other disciplines. The process of shaping economics as a self-sufficient science was the starting point for defining its subject. It also makes it possible to understand the importance of economics for humans and leads to an understanding of the main economic problems of society text.

**Adam Smith** (1776) is considered the founder of economics as a science. In the 20th century, economic theory became a tool of the state's economic policy. The initiator of state interventionism was **J.M. Keynes** (1936). In economic thinking, since then, there has been a fundamental problem whose solution is sought in a political way. It is the relationship between "market and state". Smith and Keynes formed economy and created vital science.

*“Economics is the study of how societies use scarce resources to produce valuable goods and services and distribute them among different individuals”*. (Samuelson &Nordhaus, 2010) Economists try to find out how the economy is organized, analyze the behavior of economic subjects and the level of satisfaction of human needs. The complexity of economic reality requires respect for the logic of economics, otherwise there is a danger of false judgments and ineffective measures. (Samuelson &Nordhaus, 2010)

*The Economics Function*

## Methods of thinking and exploring economic reality

*Creation of*

*Economics theory*

The process of creating an economic science theory involves several successive phases.

* **The observation** process which should result in a simple description of the phenomenon.
* **The analysis and formation of hypotheses**. The abstraction method makes it possible to separate from its economic reality its essential aspects, and then it is possible to formulate the probable interpretation of phenomena - the hypothesis, which is an unverified statement based on verifiable assumptions.
* **Testing of hypotheses and their interpretation**. Methods of mathematical-statistical, controlled experiments, analogy methods, economic models, etc. are used.
* **Creating theory** based on the synthesis of the acquired knowledge. (Březinová & Varadzin, 2003)

### Positive economics versus normative economics

*Positive and normative economics*

Economists try to uncover the laws of economic life, and economic theory provides them with the tools through which these laws can be understood, understood and explained. According to the way of economic thinking in explaining economic phenomena, we distinguish positive and normative economics.

* **Positive Economics** - explanation of economic phenomena and their causes is based on the knowledge of reality, using and describing facts, without value judgments and setting goals.
* **Normative economics** - involves ethical precepts and norms of fairness. On the basis of the study of economic reality to show how economic phenomena should look, do value judgments and set goals, is a normative economy. Economists who use the language of normative economics go beyond the boundaries of objective analysis and, in fact, offer advice. (Samuelson &Nordhaus, 2010)

The statements of positive and normative economics are interconnected. A positive view of the illumination of economic phenomena, i.e. what economic life, affects the normative view of what the economic life should be.

### The Scientific approach

*Methods of Knowledge in Economics*

Methods of the cognition process form the basis of the technology of scientific activity. Methods are a tool of knowledge and they are the rules that must be followed in the process of knowledge in order to obtain the necessary knowledge. In the economy, the methods of knowledge based on the intelligent, i.e. mediated image of reality are of great importance. (Březinová & Varadzin, 2003)

The economics are usually applied to general scientific method, as in other disciplines:

* **Analytical method** - distribution of the whole on the part, their description. It allows to understand the functioning of complex economic processes and then to predict the way of economic behavior (economic models, e.g. economic cycle, limits of production possibilities).
* **Synthesis** - a combination of partial knowledge in a logically connected whole. The composition of individual components is integrated into the whole, and at the same time, the main organizational principles that govern it depend on its parts. Due to the increasing complexity of the economic phenomena studied, the use of statistical tools to understand their quantitative aspects is becoming increasingly important.
* **Inductive method** - solves the relationship between the observed data and the theory by compiling empirical knowledge and generating general and concrete conclusions about the state and development of the given reality. From the regularity of the events investigated, we conclude that these regularities will apply to other events elsewhere or at different times.
* **Deductive method** - derives new knowledge from the original premise (argumentation) on the grounds that if the original premise is true, the ideas derived from it will be true, and vice versa.
* **Historical method** - monitors the development of the economic phenomenon over time. It's about trying to reconstruct past processes and explain them.
* **Abstraction** - separates the insignificant, random properties of the phenomenon or object from the general and essential properties. in economic knowledge the abstraction of the temporal development of objects of reality takes place and the object of the research becomes the state of the economy in a certain time point. The static view allows to approach the internal logic of the phenomenon under investigation and to display its functional dependencies.
* **Comparison** - compares stationary states and seeks optimum status. It defines the consistency and differences of the studied economic phenomena or objects. It explains the reasons for perspectives the optimal state of economy.
* **Dynamization** - the time dimension is crucial to revealing the nature of the economic phenomena associated with these processes. It does not just come from happenings as they happen in real time but also contemplates expectations of future events for individual elements of the observed economic phenomenon.
* **Statistical methods** - be exact expression of phenomena and relationships between them. The static view allows you to approach the internal logic of the phenomenon under investigation and display its functional dependencies. (Březinová & Varadzin, 2003)

Economic science as a social science is not an exact science. This means that experiments can not be carried out in the economy to verify hypotheses, just as in exact sciences. Economics works with abstractions, its statements express certain model situations that we can hardly recognize in real economic life. Their significance for explaining specific economic phenomena is considerable, because through them we can recognize their nature and realize their place in the functioning of the economic mechanism and the consequences of their operation. (Březinová & Varadzin, 2003)

*Economics is Not Exact*

*Science*

### The Fallacies in economic reasoning

Because economic relationships are often complex, involving many different variables, it is easy to become confused about the exact reason behind events or the impact of policies on the economy. The following are some of the common fallacies encountered in economic reasoning:

*Some of the Fallacies in Economic*

* **Ceteris paribus.** It means the study of the effect of a single factor on the economic phenomenon and presupposes abstraction from the influence of other factors.
* **The post hoc fallacy.** The first fallacy involves the inference of causality. The post hoc fallacy occurs when we assume that, because one event occurred before another event, the first event caused the second event. It may not be true: "if one event precedes the other, the second event is the consequence of the first".
* **The fallacy of composition.** Sometimes we assume that what holds true for part of a system also holds true for the whole.In economics, however, we often find that the whole is different from the sum of the parts. When you assume that what is true for the part is also true for the whole, you are committing the fallacy of composition.
* **Subjectivity.** Every economist brings his subjective view into the exploration and explanation of economic phenomena. It may happen that the view of several economists on objective reality can be quite different. . (Samuelson &Nordhaus, 2010)
* **Ignoring secondary effects.** It is a tendency to perceive only the immediate impact of a given decision on a particular group of people and does not pay attention to the secondary consequences of this measure. Secondary symptoms usually develop more slowly and are not always clear. Economic analysis must also include secondary effects that sometimes have a greater significance than the primary effects of the measure. (Soukup, 2012)

**Summary**

* Economics is social science, like any other science discipline, trying to approach the exploration and explanation of economic phenomena objectively. It uses scientific methods that economists have developed together with scientists in other disciplines.
* The process of creating an economic science theory involves several successive phases: observing, analyzing and forming hypotheses, abstracting, and hypothesis testing and interpreting them, creating a theory based on the synthesis of the acquired knowledge.
* Depending on the way of economic thinking in explaining economic phenomena, we distinguish positive and normative economics.
* In general, general scientific methods are applied in economics, as in other scientific disciplines: analysis, synthesis, induction, deduction, historical method, comparisons, dynamics, and statistical methods.
* Economic science as a social science is not an exact science.
* There are errors in formulating conclusions about phenomena in the real economic world, ceteris paribus, the post hoc fallacy, the fallacy of composition, the subjectivity, ignoring secondary effects.

# ANALYTICAL APPARATUS OF MICROECONOMics

**Chapter goal**

* to clarify the basic mathematical apparatus used in microeconomics
* to clarify the function of graphs in microeconomics
* to clarify the linear and nonlinear relationship between the variables
* to clarify the directive and the slope of the line and curve
* to explain the relation between the mean and the boundary variables

## The basic problems of microeconomics

Microeconomics focuses mainly on examining two major problems, namely to:

*Optimal States and*

*Balance*

* **identification of optimal conditions of individual market entities,**
* **finding a balance in the interaction between market subjects.**

Determining optimal conditions is the decision-making problem of market subjects. For example, an individual decides to consume the goods in order to maximize their benefits. The company decides to combine inputs into production to minimize costs. Mathematically, it is a search for a local extreme. (Hořejší et al., 2012)

The problems of equilibrium are a solution to analyzing the interaction of supply and demand in markets. For example, in the labor market. We monitor the development of the dependent variable (Q, i.e. the quantity) on the independent variables (P, i.e., the price) in the monitored market. (Hořejší et al., 2012)

## Mathematical tools of microeconomics

The economic analysis is not able to address at the same time the complexity of relations between many elements of the economic system as it actually exists. In describing real economic life, he uses considerable simplification, so-called abstraction. The result is **economic models** that capture the essence of the economic phenomenon being studied.

*Economic*

*Models*

*in Microeconomics*

Economic models illustrate the relationships between the selected variables, allowing for better understanding of the decision-making processes of firms, individuals and their interconnection. They can be worded verbally, graphically or algebraically. (Varian, 1995, 2014)

## Graphs

When studying microeconomics, we often encounter graphical interpretations of the studied economic phenomena. The aim is to facilitate understanding of different economic patterns.

*Graphs*

*In Microeconomics*

What is a graph? It is a diagram showing how two or more sets of data or variables are related to one another. Graphs are essential in economics because, among other reasons, they allow us to analyze economic concepts and examine historical trends. In general, the graph is an illustration showing the relationship between two or more sets of data. (Samuelson &Nordhaus, 2010) We always start constructing the chart by showing the horizontal and vertical boundaries. These boundaries are called the graph axes. Normally, the vertical axis is referred to as the y-axis and the horizontal axis as the x-axis. We measure one of the variables monitored on each of them. (Varian, 2014) The variable is such an object of our interest that can be defined and measured.

In mathematics, the x variable x is often represented on the x- axis and the y-dependent y-axis. In microeconomics, Q is represented on the x-axis as a dependent variable, and the y-axis represents the price as an independent variable. (Hořejší et al., 2012, Varian, 2014)

## Functions

**A function** is a rule that describes a relationship between numbers. For each number x, a function assigns a unique number y according to some rule. Thus a function can be indicated by describing the rule, as “take a number and square it,” or “take a number and multiply it by 2,” and so on. We write these particular functions as y = x2, y = 2x. Functions are sometimes referred to as transformations. Often we want to indicate that some variable y depends on some other variable x, but we don’t know the specific algebraic relationship between the two variables. In this case we write y = f(x), which should be interpreted as saying that the variable y depends on x according to the rule f. Given a function y = f(x), the number x is often called the independent variable, and the number y is often called the dependent variable.is a rule that captures the relationship between two variables. For each value x, the function assigns a single y value depending on a rule. (Varian, 2014)

*Linear*

*and Nonlinear*

*Relationship*

*Between Variables*

We distinguish **linear** and **nonlinear** functions.

A linear function is a function of the form

y = ax + b,

where a and b are constants. Examples of linear function is y = 3 + x.

Strictly speaking, a function of the form y = ax + b should be called an affine function, and only functions of the form y = ax should be called linear functions. However, we will not insist on this distinction.

***y***

***x***

**3**

**y = 3 + x**

*Figure 2.1 Linear relationship between variables. Source: according Varian, 2014*

**Nonlinear functions** can be written in the form of, for example, Y = x2. Their graphical representation is a **curve**. See Figure 2.2.

***X***

***Y***

***Y = x2***

*Figure 2.2 Non-linear relationship between variables. Source: according Varian,1995, 2014*

### Changes and Rates of Change of Function

The rate of change of a function can be interpreted graphically as the **slope of the function**. The slope of a line represents the change in one variable that occurs when another variable changes. More precisely, it is the change in the variable Y on the vertical axis per unit change in the variable X on the horizontal axis.

*Slopes*

*and*

*Line*

*Slope is an exact numerical measure of the relationship between the change in Y and the change in X.* (Samuelson &Nordhaus, 2010)

Calculation of slope for straight lines. The numerical value of the slope on straight line may be positive (direct) or negative (inverse). See Figure 2.3 a) and b).

**Positive (direct) relationships** occur when variables move in the same direction (that is, they increase or decrease together).

**Negative (inverse) relationships** occur when the variables move in opposite directions (that is, one increases as the other decreases). (Samuelson &Nordhaus, 2010)

***Direct Relation***

***Inverse Relation***

***x***

***x***

***a)y***

***b)***

***y***

*Figure 2.3 Calculation of slope for straight lines. Source: according Samuelson &Nordhaus, 2010*

## Economic variables

Microeconomic theory works with total, marginal and average economic variables. Definitions of these economics variables we clarify by using cost of the firm in the short run.

*Total, Marginal and Average economic variables*

**Total economic cost** of production, consisting of fixed and variable costs in the short run. Fixed cost that does not vary with the level of output and that can be eliminated only by shutting down. Variable cost that varies as output varies. (Pyndik & Rubinfeld, 2013)

**Average total cost.** Firm’s total cost divided by its level of output. A**verage fixed cost.** Fixed cost divided by the level of output. A**verage variable cost.** Variable cost divided by the level of output. (Pyndik & Rubinfeld, 2013)

**Marginal cost**. Increase in cost resulting from the production of one extra unit of output. Because fixed cost does not change as the firm’s level of output changes, marginal cost is equal to the increase in variable cost or the increase in total cost that results from an extra unit of output. (Pyndik & Rubinfeld, 2013)

We can find the specific value of a given marginal variables in two ways:

* the simple algebra method, where the magnitude is calculated by the difference.
* a method based on the differential count, which leads to the determination of the exact value of the limit value. In this case, the limit value is expressed by calculating the first derivative of the corresponding function y, i.e. y'= dy / dx. (Hořejší et al., 2012)

**Relationships between marginal and average variables**. For the graphical representation of the relation between the mean and the limit value, the following applies:

* if the boundary curve lies below the average magnitude curve, the average magnitude curve decreases;
* if the boundary curve lies above the average magnitude curve, the average magnitude curve increases;
* at the point where the boundary curve intersects the average value curve, the values of the two variables are equal. The function of an average quantity neither grows nor decreases. The average quantity is at its minimum. (Hořejší et al., 2012)

Relationships between marginal and average variables shows Figure 2.4.

***MC***

*C*

***AC***

***Q***

***AVC***

***Minimum AC***

***Minimum AVC***

*Figure 2.4 Relationships between marginal and mean variables. Source: according to Hořejší et al., 2012*

**Summary**

* Microeconomics focuses on the study of two main issues, namely: the identification of optimal conditions of individual market entities and the search for balance in the interaction of market players.
* Economic analysis in describing real economic life uses considerable simplification, so-called abstraction.
* When studying microeconomics, we often encounter graphical interpretations of the studied economic phenomena.
* In mathematics, the x variable x and the y-dependent y-axis are often shown on the x-axis. In microeconomics, the Q-axis is represented as the dependent variable on the x-axis, and the y-axis represents the price as an independent variable.
* A function is a rule that describes a relationship between numbers. For each number x, a function assigns a unique number y according to some rule.
* Given a function y = f(x), the number x is often called the independent variable, and the number y is often called the dependent variable.is a rule that captures the relationship between two variables.
* We distinguish linear and nonlinear functions.
* The Line Directive is the number that indicates the change that occurs with one variable if the second variable is changed.
* If the directive is positive, it is a direct relationship between the variables.
* The negative directive of the straight line expresses the indirect relationship between the variables. The quantities move in opposite directions.
* The rate of change of a function can be interpreted graphically as the slope of the function. The slope of a line represents the change in one variable that occurs when another variable changes.
* Positive (direct) relationships occur when variables move in the same direction (that is, they increase or decrease together).
* Negative (inverse) relationships occur when the variables move in opposite directions (that is, one increases as the other decreases).
* Microeconomic theory works with total, marginal and average economic variables.

# SYSTEMATIC ANALYSIS OF BEHAVIOR OF THE MARKET MECHANISM DEMAND

**Chapter goal**

* to introduce the student with the theory of rational consumer decision
* to explain consumer preferences and benefit theory
* to clarify consumer decisions in the event of budget constraints
* to clarify the optimal consumer choice
* to clarify the impact of price and retirement changes on consumer choice

## Consumer behavior

*Consumer*

*Behavior*

*Analysis*

The theory of consumer behavior is basic for the analysis of demand in the markets of goods and services. The basic problem in analyzing consumer behavior is finding answers to the questions why the consumer buys just a certain amount of goods and not others? What determines the optimal amount of purchased farm? (Hořejší et al., 2012)

Part of the theory of consumer behavior are the assumptions of rational consumer behavior. An individual decides on the basis of the utility that the product or service will bring to him, on the basis of the expenses he / she has to spend on the product or service. Every consumer deals with the question of how to earn a pension and how to spend it. (Hořejší et al., 2012, Varian, 2014)

*Consumer*

*Maximizes*

*Utility*

The aim of a rational consumer is to maximize the utility. The consumer chooses from different sets of goods and creates a so-called” consumer basket”. However, his decision to purchase is limited by the amount of the income. (Hořejší et al., 2012, Varian, 2014)

### Axioms

**Consumer preferences** are analyzed in the classical consumer theory under the assumptions of certain simplifications called axioms.

*Assumptions*

*About*

*Preferences*

**Axiom of completeness**. It assumes that the consumer is able to compare any two consumer baskets. For Baskets A and B the following situations may occur:

1. *Baskets A is preferred before baskets B: A> B*
2. *Baskets B is preferred before baskets A: B> A;*
3. *Baskets A and baskets B are indifferent: A = B.*

**Axiom of transitivity**. It is assumed that for each of the three consumer baskets A, B and C, if the consumer basket A is preferred in front of the consumer basket B and B is preferred in front of the consumer basket C, the consumer basket A is preferred before C. (Soukup, 2012)

***A> B torether B> C then A> C***

**Axiom more is better than less.** Goods are assumed to be desirable — i.e., to be good. Consequently, consumers always prefer more of any good to less. In addition, consumers are never satisfied or satiated; more is always better, even if just a little better. This assumption is made for pedagogic reasons; namely, it simplifies the graphical analysis. Of course, some goods, such as air pollution, may be undesirable, and consumers will always prefer less. We ignore these “bads” in the context of our immediate discussion. (Pyndik & Rubinfeld, 2013)

**Axiom of transitivity**. Preferences are transitive. Transitivity means that if a consumer prefers basket A to basket B and basket B to basket C, then the consumer also prefers A to C. Transitivity is normally regarded as necessary for consumer consistency. (Pyndik & Rubinfeld, 2013)

**Axiom reflexivity**. Any combination of farms is as good as the same. Suppose there is only a consumer basket A, and the consumer himself determines the amount of benefit he brings for the set. It is a banal condition for the existence of a utility function. (Soukup, 2012)

**Axiom preference averaging before extremes**. The consumer prefers in his consumption combinations of more types of property before consumption, when one farm is represented much more than others. For example, the consumer prefers daily consumption of two cups of tea and two teaspoons of honey before consuming only four teaspoons of honey. (Soukup, 2012)

## Utility

Measuring consumer satisfaction is one of the more complex economic issues. To express it, an economic variable, called **utility (U)**, has been created. Its purpose is in any way to express the consumer's satisfaction from the consumption of a farm or group of goods. The benefit is, under otherwise unchanged conditions, the function of the amount of consumed goods

*Utility*

***U = f (X1, X2...Xn)***

where *X1, X2…Xn* are the quantities of individual goods. (Hořejší et al., 2012, Varian 2014)

In economic theory of utility, there are two approaches to the possibility of measuring utility, which are represented by the cardinalist and ordinalist versions of the theory of utility. Both versions differ from one another to a way of measuring utility:

1. **The Cardinal version** of the theory of utility states that the benefit is directly measurable. This means that the specific values of utility are known to consume a given amount of farm. According to it, it is possible to construct a curve of the development of total and marginal utility.

2. **The Ordinalist version** of the theory of utility does not consider utility to be directly measurable. It is based on the assumption that only a certain level of consumer satisfaction resulting from its consumption of a particular combination of goods can be determined. (Hořejší et al., 2012, Varian, 2014)

### The cardinal version of the theory of utility

**Total utility (TU)** is defined as the amount of satisfaction or utility that one derives from a given quantity of a good. Total utility reflects the overall level of satisfaction of a consumer's needs. It is dependent on the amount of farm consumed. It is true that the growth of the volume of consumed farm is growing at a declining pace, up to its maximum. The development and size of the overall benefit is influenced by the subjective view of each consumer on a given farm. (Hořejší et al., 2012, Varian, 1995, 2014)

*Total*

*And*

*Marginal*

*Utility*

**Marginal utility (MU)** is defined as the change in total utility that can be attributed to a change in the quantity consumed**.** Marginal utility indicates how much the total benefit will change if another farm unit is consumed. It can be derived from the function of total utility.

An interesting feature of the development of marginal utility is that the increase in the volume of consumed state is decreasing. The first unit of consumed farm will bring the greatest increase in satisfaction. Every other unit, under unchanging conditions, brings less satisfaction to the consumer. This feature of marginal utility is formulated in the law of diminishing marginal utility. It is believed that as an individual consumes more and more of a given commodity during a given period of time, eventually each additional unit consumed will increase TU by a smaller increment, MU decreases. (Hořejší et al., 2012, Pyndik & Rubinfeld, 2013)

The difference between the total and the marginal utility when measured in cash is that the total utility in the consumption of the given good is given by the maximum amount of money that the consumer is willing to spend on the purchase. The marginal utility is determined by the amount of money the consumer is willing to spend on purchasing additional units of the good. (Hořejší et al., 2012)

### Ordinalist version of the theory of utility

The current economic theories are mostly inclined to release ordinal utility theory. According to which the utility is not directly measurable. The consumer is able to tell which consumer situation he or she prefers, but not how big it is to utility. Furthermore, it is possible to determine whether the total utility increases with the growth of the amount of consumed farm and the marginal utility is therefore positive, whether the total utility decreases and the marginal utility is negative. (Hořejší et al., 2012)

*Utility*

*Measurement*

It follows that the consumer is able to sort the combinations of goods according to their utility, but is unable to determine the size of the utility of these combinations. Curves showing rather combinations goods X and Y with the same utility are called **indifference curves**. In other words, the indifferent curve is a set of combinations of X and Y with the same total utility. The set of indifferent curves is called **a map of indifference curves**. See Figure 3.1.

**Good Y**

***U1***

XA  XB **Good X**

YA

YB

A

B **U**2

*Figure 3.1 Map of indifference curves. Source: according Frank, 1995*

Two ways for definition of indifference curves:

1. on the basis of utility (indifference curve represents a certain level of utility);
2. on the basis of preferences (indifference curves show preferences). (Hořejší et al., 2012)

Good Y

I1

X1  X2 Good X

Y1

Y2

A (X1,Y1)

B (X2,Y2)

Good Y

I1

X1  X2 Good X

Y1

Y2

A (X1,Y1)

B (X2,Y2)

Good Y

I1

X1  X2 Good X

Y1

Y2

A (X1,Y1)

B (X2,Y2)

Indicative curves are linked to the so-called marginal substitution rate in consumption (MRSC). It is the ratio in which Y is replaced by farm X without changing the level of satisfaction or total benefit.

*Positive*

*And*

*Negative*

*Preferences*

**Special shapes of indifferent curves**. Until now, we have assumed that both goods are desirable for the consumer, and that they utility from their consumption. Such goods are called goods with **positive preferences.** However, there are also farms with a different direction of preference. There may be a situation that a desirable farm necessarily brings a negative effect. In the whole of society, such a case is the choice of a certain combination of the volume of industrial production and environmental pollution. Even in consumer behavior, we can find cases where we prefer smaller quantities of farms than larger ones. An example is the choice of the portfolio structure (ie the choice between different types of securities). In this case, the unwanted goods or goods with a negative preference. (Hořejší et al., 2012)

Besides goods desirable and undesirable, there are also goods that **do not affect the utility of the consumer**, their consumed quantity is indifferent to the consumer. Such goods are called indifferent goods or goods neutral. Indifferent curves are as a straight line.

In reality, there may also be a situation where the direction of preferences changes with the change in consumption of the estate. Assume good which is desirable in a certain volume, but a certain quantity becomes undesirable. (Hořejší et al., 2012, Pyndik &Rubinfeld, 2013)

## Budget constraints

*Consumer*

*Income*

When deciding to purchase a farm, however, is limited by the amount of its consumer income and prices of goods. If a consumer in a given time available income (I) and the entire spending for the purchase of two goods X and Y, then the following applies equation, which is called the budget line or also the consumer's budget limitation, applies:

***PX. X + PY. Y = I***

 Where I is income, PX is price of the good X, and PY is price of the good Y.

Graphic representation of this equation is a line that shows the different combinations of two goods that the consumer may be at a given income and given prices of both goods to buy. (Hořejší et al., 2012, Varian, 1995, 2014) See Figure 3.2.

The budget line directive is given by the ratio of the prices of both purchased goods X and Y and has a negative value. In fact, it is the ratio in which the consumer can trade the X and Y holdings on the market with the full retirement. The slope of the budget line is given by the absolute value of the directive of this line. In the case of a breakdown line, **we call it a marginal shift exchange rate** (MRSE). It is determined by the ratio of prices of both consumed PX / PY goods. (Hořejší et al., 2012, Varian, 2014)

XA **I/Py** Good X

Good Y

**I/Py**

YA

Budget Line (BL)

***A***

*Figure 3.2 Budget Line. Source: according to Frank, 1995*

## Consumer choose

*Maximizing*

*Consumer*

*Utility*

A typical case is illustrated in Figure 3.3. Here we have drawn the budget set and several of the consumer’s indifference curves on the same diagram. We want to find the bundle in the budget set that is on the highest indifference curve. Since preferences are well-behaved, so that more is preferred to less, we can restrict our attention to bundles of goods that lie on the budget line and not worry about those beneath the budget line. Now simply start at the right-hand corner of the budget line and move to the left. As we move along the budget line we note that we are moving to higher and higher indifference curves. We stop when we get to the highest indifference curve that just touches the budget line. In the diagram, the bundle of goods that is associated with the highest indifference curve that just touches the budget line is labeled yA and xA. This choice is an optimal choice for the consumer. (Varian, 1995,2014)

The cardinal approach allows two ways to determine the optimum:

1. The optimum quantity of one good X is one for which the marginal utility is equal to the price good X

***MUX = PX***

2. The optimal combination of two goods X and Y is given by the formula

***MUX / PX = MUY / PY***

*xA*

Good X

Good Y

***A***

I1

I2

I3

*yA*

*Optimal choose*

*Figure 3.3 Consumer choose. Source: according Varian,1995, 2014*

This method of optimizing the consumer's solution is called an **internal solution**. If the consumer consumes only one of the two goods, we will use the so-called **corner consumer**-**optimized solution.** (Hořejší et al., 2012, Pyndik & Rubinfeld, 2013)

The optimal choice of goods X and Y at some set of prices and income is called the consumer’s demanded bundle. In general, when prices and income change, the consumer’s optimal choice will change. The demand function is the function that relates the optimal choice the quantities demanded to the different values of prices and incomes. (Varian, 2014)

The market demand curve is obtained by summing consumers’ demand curves. (Pyndik & Rubinfeld, 2013)

## Application of indifference analysis

Consumer theory can be applied in other decision making patterns of consumer choices, for example:

* intertemporal choice - combination of current and future consumption;
* decision-making in conditions of risk and uncertainty;
* consumer decision in the labor market.

### Intertemporal choice

*Consumption*

*Over*

*Time*

Choices of consumption over time are known as **intertemporal choices.**

Let us imagine a consumer who chooses how much of some good to consume in each of two time periods. We will usually want to think of this good as being a composite good, but you can think of it as being a specific commodity if you wish. We denote the amount of consumption in each period by (c1, c2) and suppose that the prices of consumption in each period are constant at 1. The amount of money the consumer will have in each period is denoted by (m1, m2). (Varian, 1995, 2014)

Given a consumer’s budget constraint and his preferences for consumption in each of the two periods, we can examine the optimal choice of consumption c1 = m1 and c2 = m2. If the consumer chooses a point where c1 < m1, we will say that she is **a lender**, and if c1 > m1, we say that she is a **borrower**. (Varian, 1995, 2014)

**The optimal consumer decision on the amount of current and future consumption is given by:**

* the limit of his time preferences (which determine the shape of indifferent curves),
* the magnitude of the real interest rate (which determines the market opportunity directive);
* the size of current and future consumer income and the price of farmhouse C in both successive seasons. (Hořejší et al., 2012)

### Decision making in risk and uncertainty

*Decision Making Under*

*Risk And*

*Uncertainty*

In the traditional model of consumer decision-making, the information barrier is not taken into account. People maximize their utility under conditions of certainty and perfect knowledge of the economic environment. They know perfectly all the circumstances of each market shuffle and make their choice from different alternatives without any risk. It is assumed that all the necessary information is available without additional costs. Under these assumptions, each decision has only one consequence, and it is known in advance. In reality, however, most decisions are made under conditions of uncertainty where decisions are more likely to have consequences, which of these consequences is not known in advance.

Certain uncertainty arises because we do not know the processes that make certain events conditional. However, even perfect knowledge does not provide a perfect prediction, because some economic events are determined by chance. They can, for example, be controlled by the nature of nature, such as weather developments, or by political decisions that are often unpredictable.

The case of the known results of a decision and its likelihood in economic **theory is referred** **to as risk-taking.**

**The risk** is when the decision maker knows all the possible consequences of his decision and is able to determine the probability of each of them. The consequences must be independent of each other, and the sum of their probabilities is equal to one. The likelihood expresses the possibility that there will be a result, but in the theory of risk decision, not only an objective but above all a subjective probability is used. (Hořejší et al., 2012)

**Objective probability** is based on the knowledge of the frequency at which certain events tend to occur. **Subjective probability** is a certain impression that the expected outcome occurs. (Hořejší et al., 2012)

**Optimal risk decision**. The simplified risk decision model assumes only two possible situations that determine the outcome of a certain alternative to the decision: S1 and S2. Under these assumptions, risk modeling can be used in modeling essentially the same framework as the conventional theory of consumer decision-making in terms of certainty, ie indifference curves and budget lines, but their interpretation is different. (Hořejší et al., 2012)

### Consumer decision in the labor market

When deciding an individual about the amount of hours worked, we use an analogy with consumer judgment. Before what choice is the owner of the labor factor? The consumer decides whether to work or not to work, or what combination of work and leisure to choose **to maximize his utility.**

*Choice Between Consumption And Leisure Time*

What is the individual involved in making decisions? Hours of one day. More specifically, the individual chooses between two "goods": between consumption (C) and free time (H). (Hořejší et al., 2012, Pyndik & Rubinfeld, 2013)

We assume that consumption can be realized only as a result of self-employment (L). Total hours of work and leisure during one day cannot be longer than 24 hours: L + H = 24. Optimal time-to-work breakdown means that an individual in a combination of work and leisure maximizes his benefit, given by consumption property and leisure

***U = (C, H)***

To maximize your benefit, an individual hinders two limitations

1. Day 1 has 24 hours (L + H = 24, L = 24 - H);

2. Consumption may be realized only on the basis of its own work. If the rate of this individual w, then the second constraint can be written as

***C = w · L.***

If we put 24 for H for L, we get it

***C = w (24-H)***

***C = 24 · w - w · H***

***0 = 24 · w - C - w · H***

The optimal combination of free time and work is graphically illustrated in Figure 3.4, similar to that of the optimum consumer. (Hořejší et al., 2012)

HA  H

C

W. 24

(24-HA)w

A

Budget Constraint BL

I

*Figure 3.4 Consumers choose on labor market. Source: according Hořejší et al., 2012*

**Summary**

* Consumer behavior theory provides the basis for analyzing demand in goods and services markets.
* he aim of a rational consumer is to maximize the benefits. The consumer chooses from different sets of goods and creates a so-called consumer basket.
* Consumer preferences are analyzed in the classical theory of the consumer under the assumptions of simple simplifications called axioms.
* Axiom of completeness of comparison. It assumes that the consumer is able to compare any two consumer baskets.
* Axiom transitivity. It is assumed that for each of the three consumer baskets A, B and C, if the consumer basket A is preferred in front of the consumer basket B and B is preferred in front of the consumer basket C, the consumer basket A is preferred prior to C.
* Axiom of unsaturation. If the consumer basket A contains more than one consumer basket B and at least the same amount of other goods as B, the consumer basket A will be pre-marked in front of the B basket.
* Axiom of continuity. This axiom assumes that the consumer is clinging to increasing the amount of statue A at any small decrease in the consumption of farm B.
* Axiom reflexivity. Any combination of farms is as good as the same.
* Axiom of the preference of the average before extremes. The consumer prefers in his consumption combinations of more types of property before consumption, when one farm is represented much more than others.
* Benefit is an economic quantity that expresses the amount of consumer uplift resulting from the consumption of a farm or group of goods.
* In economic theory of utility there are two approaches to the possibility of measuring utility, which are represented by the cardinalist and ordinalist version of the theory of utility.
* The cardinal version of the theory of utility states that the benefit is directly measurable. This means that the specific values ​​of utility are known to consume a given amount of farm.
* Contemporary economic theory tends to tend to the ordinal version of the theory of utility. According to which the benefit is not directly measurable.
* When deciding to buy a farm, however, the consumer is limited by the amount of his pension and his fortune.
* The consumer chooses the optimal combination of goods according to their preferences and depending on their market opportunities in an effort to maximize their benefits.

# SYSTEMATIC ANALYSIS OF BEHAVIOR OF THE MARKET MECHANISM OFFER

**Chapter goal**

* to introduce the student with the classical concept of company theory
* to explain the problem of maximizing the company's profit
* to explain the company's efforts to minimize company costs
* to clarify the optimal decision making of the company

## Profit

Profit

Maximization

**The Company** is in the conception of a classical economic theory characterized as an economic entity specializing in the transformation of inputs into goods outputs. The target behavior of a company according to classical economic theory is to **maximize profit**.

The profit maximizing company chooses a combination of inputs and outputs to achieve **maximum economic profit**. In addition to the economic profit, we can still distinguish the **profits of the accountant.**

Company's economic profit (π) is the difference between its total revenue (TR) and total cost (TC).

***π = TR - TC***

**The Total revenue (TR**) of the company represents the amount of money the company has from the realization of its production on the market. (Pyndik & Rubinfeld, 2013)

**The Company's total cost (TC)** can be understood as the amount the company pays for purchasing inputs needed to produce production. There are two types of cost concepts that cannot be omitted from the point of view of company theory, namely **accounting and economics**. (Hořejší et al., 2012)

Explicit

And

Implicit

costs

**The Accounting (explicit) costs** are costs actually incurred for the purchase or lease of inputs. These costs are recorded in the financial statements. It is therefore the monetary consumption of production factors spent on the business activity. Production factors are represented by the land, the price of which is the land rent, the work whose price is the wage rate and the capital, the price being the interest rate in this case. These costs can also be described as explicit. (Hořejší et al., 2012)

Economic gain

includes both explicit and implicit costsThe accounting profit is

kept in the books

**The Accounting profit** is defined as total revenue minus explicit (accounting) costs. (Frank, 1995)

***Accounting Profit = Total Income - Expense Expenses***

**The Economic costs include**, in addition to accounting costs, **implicit costs**. These are costs based on the principle of alternative costs. The opportunity cost of a decision is the value of the good or service forgone. (Samuelson &Nordhaus, 2010) Economic costs are in most cases higher than the cost of the accountant. (Frank, 1995)

***Economic costs = explicit costs + implicit costs***

**The economic profit** is then the difference between total revenue and explicit (accounting) costs and implicit costs, i.e. the cost of the opportunity offered. (Frank, 1995)

## Transaction costs

The reason for the existence of the company's institutional arrangement is the existence of **transaction costs and the company's efforts to minimize them**. (Holman 2002, Hořejší et al., 2013)

**The Transaction costs** were first described by economist Ronald Coase, who is the winner of the Nobel Prize for Economics. Transaction costs are defined as the cost of market recovery where the existence is based on the inefficient functioning of the market or the inadequate **awareness of market participants.** So, if the market worked efficiently, there would be no transaction costs. (Coase, 1937) Holman defines transaction costs as the cost of executing exchange transactions. (Holman, 2002)

Cost

Exchange

Transactions of The Firm

According to Coase, the existence of a company is just a legal division, it has no physical substance. It is therefore based only on the existence of relationships between owners, managers, employees, suppliers and customers. The effectiveness of the company is then dependent on the ability of the individual participants to find a division that aims to minimize the transaction costs of their cooperation. (Coase, 1937) Transaction costs are:

* **Cost of information** - otherwise, it can also be called search costs, and for example, the cost of finding the type and quality of goods and services required by customers can be noted. It also includes the costs of securing material, reaching out and getting the right workforce, developing a brand that attracts customers.
* **Costs of decision-making** - these costs are related to the conclusion of contracts. An example may be the conclusion of a contract between the company, its management and a newly recruited employee, including, among other things, the wage of this employee. In addition to newly concluded contracts, it is also important to mention contracts already concluded when the bargaining between the employee and the management actually occurs, but not in the field of wages, which is already fixed in this case, but in the field of paid work, when - management for paid wage awaits certain performance that the employee does not always perform.
* **Recovery costs** - This transaction cost group includes, for example, supervisory costs that arise when the parties to the contract need to testify that the counterparty is doing the way the contract imposes it. It also includes insurance or legal fees (Hirschey, 2006).

## Production

The relationship between the firm's production process and the cost of the firm examines **the production analysis**. The amount of the firm's costs is influenced by the quantity and cost of purchased manufacturing factors needed for production. The result of using a combination of different production factors in the production process is a specific output, i.e. a firm's production, which the firms tracks in certain units of measurement. When monitoring the output of a firm, production analysis uses a time perspective. Creation of the firm's output follows in the short and long term.

Production Process And

Production Costs

### Production analysis of the firm in the short run

Analyzing the development of a **firm's production in the short run is based on the assumption** that the firm has limited opportunities to buy all factories. If we assume that the firm in production uses two factors of production, labor and capital, in the short run, capital is considered fixed factor and work variable. (Hořejší et al., 2012) The set of all combinations of inputs and outputs that comprise a technologically feasible way to produce is called **a production set**. (Varian, 1995, 2014)

The Production Function

in a Short Run

The relationship between the amount of variable input used and the production volume generated in the short term expresses so-called the **production function**.

In general, the production function shows the volume of production produced by a given combination of factors of production at a given level of technology, and can be expressed by

***Q = f (F1, F2 ... Fn)***

Where Q is the volume of production and F1, F2, Fn is the quantity of the given production factor. (Hořejší et al., 2012)

**In the short run**, the total product curve is a production function which shows the amount of output for different amounts of variable input, labor. The marginal product of a variable input is defined as the change in the total product that occurs in response to a unit change in the variable input (labor). The average product of variable input, labor, is defined as the total product divided by the quantity of that input.

Relationship between the average and marginal product:

* When the marginal product of labor is greater than the average product (MP > AP), the average product of labor increases.
* The average and marginal products of labor are equal (MP = AP).
* When the marginal product is lower the average product (MP < AP), the average product of labor decreases. (Pyndik & Rubinfeld, 2013)

### Production analysis of the firm in the long run

Analysis of the **development of a company's production over a long period** is based on the assumption that all inputs used in the production process are variable. If a company uses work and capital in production, then it can change over a long period depending on the volume of production. (Frank, 1991, Hořejší et al., 2012).

Isoquant

Analysis

The development of the company's production in the long term deals with the so-called **isocnant analysis**. The production company examines the two variable inputs, which are labor (L) and capital (K). The output of the company is so-called **isoquant.** (Frank, 1995; Hořejší et al., 2012; Pyndik & Rubinfeld, 2013)

**Isoquant** is a curve that represents a combination of labor factor (L) and capital (K), which make it possible to produce the same volume of production. (Frank, 1995; Hořejší et al., 2012; Pyndik & Rubinfeld, 2013)

## The Optimal Input Combination

The company has to reconcile its **technical possibilities with financial ones**. The maximizing profit firm will try to produce the maximum possible production volume at the given total cost. (Hořejší et al., 2012)

Technical and financial capabilities of the company for maximum production volume

### The Isocost line

The financial capabilities of a firm are represented in economic theory by a straight line called **the isocost line**. It shows all possible combinations of labor and capital that can be purchased for a given total cost. The total cost C of producing any particular output is given by the sum of the firm’s labor cost w. L and its capital cost r. K: (Pyndik & Rubinfeld, 2013)

Isokosta - a combination of labor and capital

***C = w. L + r. K***

### Choosing inputs

At the point of contact with isocratic and isoquant, the firm chooses a level of output that is produced at minimal cost. This point is referred to as **the cost optimum** of the firm. It can be defined by:

Optimal

Input

Combination

***MPL / w = MPK / r*** *or* ***MPL / MPK = w / r***

Where MPL is the marginal product of labor, MPK is the marginal product of capital, w is wage, r is capital cost. (Frank, 1991, Hořejší et al., 2012)

This relationship is **also referred to as the lowest cost rule**. The rule says the company will minimize costs in a situation where the marginal product of one crown spent on purchasing each of the inputs used will be the same. (Hořejší et al, 2012, Pyndik & Rubinfeld, 2013)

## Revenue of the firm

**Revenue of the firm** represent finances of firm from the realization of its production on the market. The development of finances of firm is dependent on the market environment in which the firm moves. In the firm we distinguish total, average and marginal revenue. (Frank, 1991, Hořejší et al., 2012)

Total

Average

Marginal

Revenue

**The Total revenue (TR)** is revenue of firm from selling its products.

***TR = P. Q***

Where P is the price per unit of production, Q is the quantity of production produced.

In the perfect competition the price of products of firms is constant. In the conditions of imperfect competition, the price is not constant as in perfect competition. The company operating in imperfect competition has a declining indivual demand curve. When the firm wants to sell another unit of production, have to reduce the price of its production. If the output of firm is greater than zero then it will always apply, the marginal revenue is less than the price of production **(**MR < P).

**The Marginal revenue** is the additional revenue that will be generated by increasing product sales by one unit.

**The Average revenue (AR)** is revenue flowing from one unit sold. Calculate it when the firm's total revenue (TR) is divided by the number of units sold. Formally written:

***AR = TR / Q = P. Q / Q = P***

***AR = P***

Is the fact, that the average income is equal to the production cost to all types of market. The average income curve is always the same as the demand curve for the company's production. (Frank, 1995; Hořejší et al., 2012; Pyndik & Rubinfeld, 2013)

## Choosing output by the firm

The basis for the firm's decision-making is its effort to maximize profits. Critical to this situation is the comparison of marginal revenue (MR) and marginal cost (MC). We know that the marginal revenue is the revenue for the last unit of production and the marginal costs are the costs to the last produced unit of production. When comparing the marginal revenue with the marginal cost, we have three different situations:

Maximizing

Profits

MC = MR

1. **MR < MC**

In this situation, the firm sells a smaller amount of money than it puts into its production. A further increase in unit output would result in higher total cost growth than total revenue. Profit would further decrease production, so the firm will reduce the amount of production produced.

1. **MR > MC**

In this situation, the firm sells more of its production unit than it put into production. A further increase in production volume per unit will cause a larger increase in total revenue than total cost. Profit would increase by further increases in production, so the firm will increase the amount of production produced.

1. **MC = MR**

Now the firm sells the last unit of production for the same amount as it put into its production. By changing the volume of production, profit cannot be increased. The difference between the total revenue and the total costs is the largest. The firm maximizes profit we.

Choosing a firm's output on the basis of marginal cost margins and marginal earnings is referred to as the golden rule of maximizing the company's profit. (Frank, 1995; Hořejší et al., 2012)

**Summary**

* The firm is in the conception of classical economic theory characterized as an economic entity specializing in the transformation of inputs into goods outputs.
* The reason for the existence of the firm's institutional arrangement is the existence of transaction costs and the effort to minimize them.
* The profit maximization firm chooses a combination of inputs and outputs to achieve maximum economic gain.
* The total revenue (TR) of the firm represents the amount of money the firm from the realization of its production on the market.
* The firm's total cost (TC) can be understood as the amount the firm pays for purchasing inputs needed to produce production.
* Accounting (explicit) costs are the costs actually incurred for the purchase or lease of inputs to production.
* The accounting profit is then the difference between total revenue and explicit (accounting) costs.
* Economic costs include, in addition to the cost of accounting, implicit costs.
* The economic profit is then the difference between the total revenue and the explicit (accounting) costs and the cost of the sacrificial opportunity.
* Transaction costs are defined as market recovery costs.
* Transaction costs can be classified as costs: objective; subjective benign; subjective malignant; occasional.
* The relationship between the production process of the firm and the cost development of the company examines the production analyzation.
* The analysis of the development of the firm's production in the short term is based on the assumption that the company uses two factors of production, labor and capital, so in the short term the capital is considered fixed and variable.
* Long-run analysis is based on the assumption that all inputs used in the production process are variable.
* The development of the firm's production in the long term deals with the so-called isoquant analysis.
* Isoquant is a curve that represents a combination of labor factors (L) and capital (K), with which the same volume of production can be produced.

# ALTERNATIVE THEORY OF THE COMPANY

**Chapter goal**

* to introduce the student with alternative approaches to company theory
* to clarify the managerial concept of company theory in different models
* to clarify behavioral approaches to company theory
* to get acquainted with the stakeholders' concept of the company

## Alternative theories of the firm

*Behavior of The Firm in*

*Various*

*Competitive*

*Conditions*

Economists have been interested in the objectives of firms, and individuals who control firms, for centuries. The original theory developed was a profit maximization theory which is attributed to Marshall (1897, 1890). In profit maximization theory marginal differentiation is used as the method for measuring the point where this maximum level of profits is attained. The assumption was made that firms, or owners of firms, would set the marginal cost (MC) of production, i.e. the cost of the last unit of production, to equal the marginal revenue (MR), i.e. the revenue received from selling that last unit of production. The focus of this analysis was not on the characteristics of individual firms, instead Marshall focused on general characteristics of the average firm thus developing the idea of the “representative firm”. The central focus of classical theory of firm is profit maximization as a results of behavior of the firm. (Hořejší et al., 2012)

The capability of classical company theory is currently considered to be limited. The main reason is the complex ownership structure of the companies. There are complex links between ownership and management of the firm. In addition, the organizational problem, the lack of information, the constantly changing surroundings of the company, the uncertainty associated with many aspects of the company's decision-making, etc., within the company, etc. (Hořejší et al., 2012)

*Goal of the Firm in the Classic*

*Theory of*

*The Firm*

New insights into the company began to appear in the 1950s as a reaction to the development of the company. Lack of financial resources companies led to a change in the ownership structure of firms, and also to separate management from its control. Firm´s decisions are influenced by the interests of various entities that are somehow affected by its existence. ( Hořejší et al., 2012)

The approaches of the classical theory of the firm and the reflection of the new facts gave space for the emergence of so-called alternative theories of the firm, which in various ways respond to the realities connected with the functioning of the firm. Even alternative theories have seen some development over time. As first emerged managerial theories of the firm and a little later behaviorist theory of the firm. (Hořejší et al., 2012)

*Managerial*

*And*

*Behavioral*

*Theory of The firm*

### Managerial theories of the firm

**The Managerial theories of the firm** are based on the general assumption to separate ownership and management of the firm. According to these theories, the firm can be focus to different aims than profit maximization, in depend on the goals of managers. Stiglitz, with other authors, has been dealing with the relationship between the managers and the owners of the firm in the 1960s. (Dohnalová, 2008, Stiglitz, 1999) According to Stiglitz:

*Separate*

*Ownership*

*and*

*Management of*

*Firm*

* Owners have imperfect information about the possibilities of decision making managers. The imperfection of information made it necessary to delegate responsibility to managers.
* Managers are aware of the existence of imperfect information and can take actions to increase the asymmetry of information, thereby strengthening their decision-making authority.

The above problems can occur in the situation of one or many of the company's owners. (Stiglitz, 1999)

The Managerial theories of a company are based on the assumption that the owners and managers operating within the company are pursuing their own maximization goals. These goals can be conflicting.

The most well-known models of managerial theories of the company are **William Jacob Baumol model** from 1959, model **of Oliver Eaton Wiliamson** from 1964, **model Tibor Scitovsky**, a simple management model. Their starting point is the *separation of the ownership of the firm from its management*. The target behavior of the company is analyzed through the owner's maximization goals or, owners and managers. Other members of the company are not involved.

The Managerial theories of the firm have a common basis in the idea of **maximizing the utility of managers,** even at the expense of the owners' interest. Differences between models are:

*Maximize*

*The Utility of*

*Managers*

* in the parameters that affect the managerial function of utility;
* in the tools that management uses to achieve its goals;
* in the consequences that cause changes in different parameters. (Dohnalová, 2008)

**Baumol's model.** This management model is based on the assumption that the goal of managers is to maximize revenue (TR). We assume the imperfect competition and the existence of barriers to entry into the market. The most important feature of imperfect competition is the fact that demand is not fully elastic, and therefore the price is not an independent parameter. Revenue therefore does not always have to grow with the volume of production. For simplicity let's assume a linear demand function. In this case, first, the total revenue increases with the increase production quantity but to a certain point, where is the maximum revenue. The maximum function is at the point where MR = 0. Thus, the maximum revenue is achieved if the marginal revenue equals zero and the elasticity of demand is -1. Managers want to maximize revenue, at the same time, the profit have to be on level the minimum required profit. The minimum required profit is for owners of the firm. If the return of the company's owners falls below a certain threshold, the company and the managers are at risk. Profit can be one of the sources of further firm development. (Hořejší et al., 2012)

*Revenue*

*Maximization*

**Scitov's simple management model** is based on the assumption that the behavior of managers in the firm is analogous to consumer behavior. The goal of consumer behavior in classical economic theory is to maximize utility, and therefore the goal of the company's managed managers is to maximize the utility of managers. In the case of managers, however, it is not about optimizing consumption due to budget constraints. Utility of managers is given by his position in the company, its next benefits and profits. The existence of next revenues and benefits for managers, however, means an increase in the total cost of the company and therefore reduce. (Hořejší et al., 2012)

*Three categories of*

*Managerial*

*Interests*

The main difference between a simple management model and maximizing profits is the greater choice to combine the reported profit and the next benefits for managers, for example in relation to different taxation. (Hořejší et al., 2012)

**Williamson's model** is based on the hypothesis that a modern firm is actually driven by managers who pursue their interests and try to incorporate them into corporate decision-making processes. It is aimed at maximizing the benefits. However, to maintain the satisfaction of the owners, they must also achieve a certain minimum level of profit. Firm decision-making is influenced by many factors that are based on goals, interests of the supervised managers. (Soukup, 2012)

*Three categories of*

*Managerial*

*Interests*

Williamson formulates **three basic categories of managerial interests**, as part of a "preference spending theory" that increases the salary and position of managers in the firm. These categories are:

1. The number and level of subordinates.
2. The salaries and benefits of managers.
3. The means by which they can dispose of themselves. (Hořejší et al., 2012)

By creating parameters that characterize individual categories, we can monitor their relative importance within the firm. The way to find the optimum firm that maximizes the benefit of managers is by looking for a maximum of features that depend on all three categories.

### Behaviorist Theory of firm

**Behaviorist theories of the firm** consider the structure of a company to be much more complicated in a much more complex than management theory. They analyze the firm as a "**coalition**" of various entities competing with each other. The target behavior of the firm is understood as the result of negotiating processes and compromises that take place in the firm. Therefore, the firm can track even more than one goal. (Hořejší et al., 2012)

*Company*

*Structure*

Behaviorist models are constructed in principle on two basic assumptions, namely that the firm is a coalition of groups and individuals with different interests. Different interests of groups and individuals can affect the target behavior of the company to varying degrees, depending on the relative power of these groups within the firm. The most widespread behavioral models include the 1959 **Simon model**, the 1963 model **by R. M. Cyert** and the 1963 model by **J. G. Marche**. The most recent models include the **Doyle model** from 1994. (Hořejší et al., 2012)

**In Simon's model**, the primary goal of the firm is surviving on the market. This goal is being transformed into a solution that is acceptable to all interest groups within the firm. The model focuses rather on the processes through which the firm adopts its decisions rather than the results of these decision-making processes. According to Simona, management first sets out initial goals, and after a certain period of time they are evaluated. If goals are met, management can increase the firm's aspirations and determine new higher goals. If the original goals are not achieved, management may choose a lower level of aspirations and set lower goals. This allows lower and easily achievable goals to become the first step of ever-increasing tasks. Increasing the difficulty of tasks can thus lead to the gradual fulfillment of goals identical to maximization goals. (Soukup. 2012)

*Surviving on*

*Market*

**The Doyle model**, like Simon's, assumes that an internally more complex structured business should track several goals at a time. In his model, the firm tracks eight main goals. Participating entities in the firm identify with different goals in different dimensions. The problem may be the uneven fulfillment of the goals set. There may be a few goals to be met. This may ultimately cause the firm to destabilize or even endanger the existence of the firm. (Soukup. 2012)

*Company´s Goals:*

*The Results of*

*Groups within Firm*

*Several Goals*

**The models of R. M. Cyert and J. G. Marche** explore modern big business as an organization and deal with variables that affect corporate goals. The goals of the firm are understood as the results of the coalition's negotiation. (Hořejší et al., 2012)

The main difference between management and behavioral theories of a firm is that if ma-zeric monitors the maximum level of a target function, the behaviorist only follows its satisfactory level. Both types of alternative approaches to company theories reflect real-world processes in economies. They are one of the ways in which economic theory approaches reality. It explains the phenomena and processes that do not explain the classical model of firm theory.

## Stakeholder concept of the firm

**The Stakeholder concept of the firm** involvement in business practice began to develop in the second half of the last century as a consequence of the dynamic development of the whole of society. However, the fundamentals of the concept began to form much earlier. At the end of the nineteenth century, Alfred Marshall summed up successes and problems for the coming centuries in a lecture in 1897. He opened the relationship between owner and manager in corporate governance. (Stiglitz, 1999)

*Reflection of Real*

*Development of Firm*

### Who is a stakeholder?

**The Stakeholder Concept** of an Enterprise began to be fully developed in the second half of the last century. The first to deal with the issue of stakeholders in the context of the organization's existence was the Stanford Research Institute in 1963. In addition, Freeman developed a significant Stakeholder Approach to Business in his work: "Strategic Management: A Stakeholder Approach" in 1984 (Friedman & Miles, 2006; Freeman & Harison, 2007). In it, he formulated the now well-recognized as classic definition of Business Stakeholders, in the sense that these are "a group or individual who can affect, or be affected by, the fulfillment of the objectives of the organization." (Friedman & Miles, 2006). Freeman is considered to be the founder of a concept that acknowledges the existence of stakeholders in relation to business practice. These have been, and continue to be further elaborated and developed by many authors. In principle, stakeholder access to companies (and organizations in general) has been developed into a Strategic, Prescriptive or Descriptive Approach. (Dohnalová & Zimola, 2014)

*Definition*

*stakeholders*

**The Strategic Dimension** of understanding business stakeholders in its narrowest sense stresses that the company's stakeholders are strong entities of strategic importance, with the ability to influence the organization's existence. The strategic dimension of understanding enterprise´s stakeholders focuses its attention on the analysis of the relationship between stakeholders and management and the economic results of the company. Freeman and his concept of business stakeholders is representative of this approach.

**The Normative Dimension** defines stakeholders by using social norms. It is rather, more focused on the ideals of Social Responsibility and Social Organizations. In a narrower sense, groups that have legitimate claims against the organization and an important responsibility are considered as stakeholders. In a broader sense, all existing entities around the company are considered as stakeholders. Petrson & Donaldson (1995) are prominent representatives of the Normative Approach, where the significance of managers and their roles in the company builds on moral and philosophical principles. For them, the legitimacy of stakeholders and alignment of organizational values with behavior in accordance with the company standards is essential. Normative Approaches, rather than concentrating on the management of stakeholders´ relationships, tend to engage in a dialogue with them (Friedman & Miles, 2006).

**The Descriptive Dimension** is oriented on the description of individual stakeholder´s cooperative and competitive interests. (Dohnalová & Zimola, 2014)

Differing approaches to stakeholder concepts have led to the emergence of a variety of Enterprise Stakeholder Models. The models mainly differ from each other by the sum of stakeholder types, or the view upon their arrangements with respect to the company. Among the most well-known are variously modified models of the Primary and Secondary Stakeholders of the enterprise. Traditionally, employees, shareholders, customers, suppliers, communities are considered to be the enterprise´s Primary Stakeholders (Freeman & Harison, 2007). These are those stakeholders who have an interest in the creation of an enterprise´s value. Actors in the wider business environment including the competition, the government, the media and other specialized organizations are considered to be Secondary Stakeholders. (Dohnalová & Zimola, 2014)

### Models of the stakeholders' concept

Various approaches to stakeholder concepts have led to the emergence of different models of stakeholder of the firm. The models differ from each other in particular by listing the types of stakeholders or by looking at their layout with respect to the business. The most well-known models include the various models of the primary and secondary stakeholders of the company, the model of the coalition theory of the company or the model according to the hierarchical structure of the stakeholders.

*Different Models of*

*Stakeholder of Firm*

**Primary and secondary stakeholders**. Primary stakeholders are traditionally considered employees, shareholders, customers, suppliers, communities. These are those stakeholders who have a certain interest in creating the value of the business. Secondary stakeholders include entities operating in the broader business environment, namely competition, government, media and various specialized organizations. (Freeman et al., 2007)

**Model hierarchical organization of stakeholders**. The principle of the construction of this model stems from the authority of the interested stakeholders and thus also from the hierarchy of fulfillment of their interests. (Dohnalová, 2008, Freeman, 1984)

**Coalition model**. In coalition theory, an enterprise is understood to be an abstract entity in which it meets and needs and expectations of different individuals and institutions have to be met. Cooperative theories view the business as a means by which three target coalition partners coordinate targeted activities: capital, employees and the environment. A prerequisite for enterprise stability is the equitable achievement of goals in all areas, with all three target sites being equally critical. Exceeding the achievement of goals in one area means for the company a situation of so-called unstable balance. Within the coalition model of the enterprise, the active and passive dependencies of the major stakeholders of the company are distinguished. (Eschenbach, 2000) See Table 5.1.

*Three Coalition Partners*

|  |  |  |
| --- | --- | --- |
| **Stakeholder** | **Active addiction** | **Passive addiction** |
| investors | * above-average return on the capital * the only source of income for the investor * excellent creditworthiness | * higher need for external financing * exhausted credit lines |
| employees | * low number of bidders * low possibility of substitution * attractive offer of performance * profiling the brand * concentration on problem solving * strong chain linking of the power generation process | * strong business expansion * few know-how owners in the business * lack of personnel development and planning of future managers * representation is not modified * tight labor market |
| customers | * low number of bidders * low substitution options * Attractive offer of performance * Profiling the brand * concentration on solving tailor-made prob lems * strong chain linking of the power generation process | * few major customers (extreme case one) there is no direct contact with final customers * customers have a particularly supportive image * "lead-user" (technologically leading customers) |
| suppliers | * supplier's main customer * image-supporting customer * "lead-user" from the point of view of the suppliers | * high concentration of suppliers * know-how suppliers * strong chain linking of the power generation process |

*Table 5.1 Active and passive dependencies of major stakeholders. Source: (Eschenbach, 2000)*

**Summary**

* The classical economic theory of the firm is understood as a subject that pursues a single goal in the markets of final production or in factor markets, and thus maximizes profit.
* New insights into the firm began to appear in the 1950s as a reaction to firm development, due to new socio-economic changes in the markets.
* Challenging the approach of the classical theory of the company and the reflection of new facts gave room for the emergence of so-called alternative theories of the company, which in various ways respond to the realities connected with the functioning of the firm.
* Managerial theories of the firm are based on the general assumption of separate ownership and management of the firm. Managerial theories of a firm reflect the fact that both entities within the firm, owners and managers, pursue their own maximization goals of interest, which can often be conflicting.
* The most well-known models of managerial theories of the firm are William Jacob Baumol model of 1959, model of Oliver Eaton Wiliamson from 1964, model Tibor Scitovsky, a simple management model. Their starting point is the separation of ownership from the company's management.
* Baumol's model is supposed to maximize revenue.
* The Scitov model is based on the hypothesis that the management behavior of the firm is analogous to that of consumers. Compares two profit variables and manager's free time. In his concept, the company's profits depend on the time and effort of the manager.
* Williamson's model is based on the hypothesis that a modern firm is actually driven by managers who pursue their interests and try to incorporate them into corporate decision-making processes. It is aimed at maximizing the benefits.
* Ward's Employee Model examines those forms of business that cannot be distinguished from employees. The goal of the employment company is to maximize income for employees.
* Behaviorist theories of the firm consider the structure of firm to be much more complicated in a much more complex than management theory. They analyze the company as a "coalition" of various entities, competing with each other.
* The most well-known behavioral models include the 1959 Simon model, the 1963 model by R. M. Cyert and the 1963 model by J. G. Marche. For example, the Doyle model of 1994 is the most modern model.
* The stakeholder concept of the firm in the context of corporate practice began to develop in the 1960s.
* The term "stakeholder" was first used at the Stanford Reseach Institute in 1963.
* Classical definition of enterprise stakeholders: "groups or individuals who can influence or be influenced by the organization's goals".

# ECONOMIC EFFICIENCY AND welfare

**Chapter goal**

* to introduce students to the concept of market equilibrium in economic theory
* to clarify the concept of efficiency in economics
* to clarify the conflict between efficiency and fairness
* to familiarize yourself with the theory of social welfare economics
* to get acquainted with the assessment of the growth of social welfare

## General equilibrium and efficiency in economics

Partial

Equilibrium

Analysis vs.

General

Equilibrium

**Partial equilibrium analysis** in microeconomics examines sub-market models as mutually independent. Prices and quantities on the markets of final production or factors of production depend on supply and demand for each of them. Prices of other markets are considered unchangeable.

**The General equilibrium analysis** examines how demand and supply conditions interact in several markets to determine the prices of many goods. This is a complex problem, and we will have to adopt several simpliﬁcations in order to deal with it.(Varian, 1995, 2014)

For determination a general equilibrium we use a simple economy model, also called a 2 x 2 x 2 model. This model is based on the assumptions that in economy exist only 2 consumers (A and B); economy produced only two goods (X and Y); these goods are produced by 2 production factors (L and K).

Model 2 x 2 x 2

The other assumptions are that the model operates within a closed economy without the existence of a foreign trade. All markets within it are perfectly competitive and market subjects have complete information. All market subjects in all markets are **pursuing maximization goals**. Maximizing utility from a consumer perspective and **maximizing profit** from the firm´s point of view.

The General equilibrium in the model of a simple economy means bringing about equilibrium in production, consumption and production - consumption at the same time. The laws examined in the model of a simple economy and the formulated conclusions are applicable to any number of economic subjects, products and factors of production. (Frank, 1995, Hořejší et al., 2012, Pyndik & Rubinfeld, 2013)

### Efficiency in economics

In economic theory, one useful criterion for comparing the outcomes of diﬀerent economic institutions is a concept known as Pareto eﬃciency or economic eﬃciency. We start with the following deﬁnition: if we can ﬁnd a way to make some people better oﬀ without making anybody else worse oﬀ, we have a Pareto improvement. If an allocation allows for a Pareto improvement, it is called **Pareto ineﬃcient**. If an allocation is such that no Pareto improvements are possible, it is called **Pareto eﬃcient**. These definitions are according to economist Vilfred Paret (1842-1923). In the 19th century, he was one of the first to deal with the application of the idea of efficiency in the field of economics. (Pyndik & Rubinfeld, 2013, Varian, 1995, 2014)

### Pareto efﬁcient in exchange

### Pareto efﬁcient in exchange when a fixed amount of goods is distributed among consumers so that further redistribution is not possible to make somebody better oﬀ without hurting anyone else.

Pareto Efﬁcient

in Exchange

And

Contract

Curve

**The Edgeworth diagram**. The Edgeworth box illustrates the possibilities for both consumers to increase their satisfaction by trading goods. The Edgeworth box illustrates for each consumer A and B a map of indifferent curves showing their different preferences. Figure 6.1. Each point in the Edgeworth box simultaneously represents consumer´s A and consumer’s B market baskets of goods X and Y. The contract curve contains all allocations for which consumers’ indifference curves are tangent. Contract curve showing all efficient allocations of goods between two consumers. Every point on the contract curve is efficient because one person cannot be made better off without making the other person worse off. (Pyndik & Rubinfeld, 2013, Varian,1995, 2014)

**0A**

M

***Good X***

***Good Y***

***Good Y***

**0B**

***Good X***

***Contract curve***

*Price Line*

*Person B's*

*indiffere*nce c*urve*

*A Pareto*

*efficient allocation*

*Person A's*

*indifference curve*

*Figure 6.1 Pareto eﬃcient allocation. Source: according Frank, 1995, Pyndik & Rubinfeld, 2013, Varian, 1995, 2014*

### In the simply model, a necessary condition for an efficient divide of the fixed quantity of the X and Y goods between consumers A and B is that the marginal substitution rate of consumption (MRSCA) of consumer A is the same as the marginal substitution rate of consumption (MRSCB) of consumer B, because the indifference curves are tangent. Because each indifference curve is tangent to the price line, each person’s MRS of clothing for food is equal to the ratio of the prices of the two goods. Formally written by:

***MRSCA = MRSCB = PX / PY***

Points lying within the box diagram outside the contract curve represent inefficient allocation combinations of two goods X and Y between two consumers A and B. (Pyndik & Rubinfeld, 2013, Varian, 1995, 2014)

### Pareto efficient in production

### Pareto efficient in production it means condition under which firms combine inputs to produce a given output as inexpensively as possible. If producers of good X and good Y minimize production costs, they will use combinations of labor and capital so that the ratio of the marginal products of the two inputs is equal to the ratio of the input prices:

Pareto

Effective Allocation of Inputs

*Production*

*Possibilities Frontier*

***MPL / MPK = w / r***

But we also showed that the ratio of the marginal products of the two inputs is equal to the marginal rate of technical substitution of labor for capital MRTSLK. As a result

***MRTSLK = w / r***

**The Production Possibilities Frontier (PPF)** provides the same information as a box production scheme. It shows all efficient combinations of outputs. The production possibilities frontier is concave because its slope (the marginal rate of transformation) increases as the level of production of food increases. It informs us of three production situations: First, the points on the curve illustrate such combinations of the production of goods X and Y, in which a fixed amount of resources is distributed in an efficient manner; secondly, the points below the boundary line represent an achievable production combination, but a fixed amount of resources is not distributed efficiently; thirdly, the points above the boundary line represent an unattainable production combination. See Figure 6.2. (Pyndik & Rubinfeld, 2013, Varian, 1995, 2014)

Efficient

Combinations of Outputs

*Good Y*

*Good X*

*slope = marginal rate of transformation*

Y\*

X\*

*The Production Possibilities Frontier*

*Figure 6.2 Production possibilities frontier. Source: according Varian, 1995, 2014*

The slope of this production possibilities set measures **the marginal rate of transformation**. The Marginal rate of transformation (MRT) is amount of one good that must be given up to produce one additional unit of a second good. At every point along the frontier, the following condition holds

***MRT = MCX / MCY***

Efficiency in the use of inputs in production is when every producer’s marginal rate of technical substitution of labor for capital is equal in the production of both goods

***MRTS(LK)X = MRTS(LK)Y***

A competitive market achieves this efficient outcome because each producer maximizes profit by choosing labor and capital inputs so that the ratio of the input prices is equal to the marginal rate of technical substitution (Pyndik & Rubinfeld, 2013)

***MRTS(LK)X = w / r = MRTS(LK)Y***

### General equilibrium

### The General equilibrium in the economy occurs when all goods are produced efficiently and effectively divide among consumers. In the simply model, the general equilibrium occurs when the marginal cost of substitution in consumption (MRSC) of both goods X and Y for both consumers A and B is equal to the marginal transformation rate (MRT) for X and Y goods

General

Equilibrium

MRS Equal MRT

***MRSCA = MRSCB = MRT***

A competitive market achieves this efficient outcome because profit-maximizing producers increase their output to the point at which marginal cost equals price

***MRT = MCX / MCY = PX/PY***

Consumers maximize their satisfaction in competitive markets only if

***MRSC = PX/PY***

**The efficient combination of outputs** is produced and divide efficiently when the marginal rate of transformation between the two goods (which measures the cost of producing one good relative to the other) is equal to the consumer’s marginal rate of substitution (which measures the marginal benefit of consuming one good relative to the other). (Pyndik & Rubinfeld, 2013)

***MRSC = MRT = PX/PY***

Figure 6.4 illustrates a Pareto eﬃcient allocation. The MRSs of each consumer are the same, since their indiﬀerence curves are tangent in the Edgeworth box. And each consumer’s MRS is equal to the MRT the slope of the production possibilities The points at the production possibilities frontier are represented the efficient combination of the production of the goods X and Y. The Edgeworth box shows the indifferent maps of two consumers A and B for a given consumption of the X and Y goods. The contract curve inside the box is a set of points where consumers´ indifferent curves touch and where MRSC of both consumers is the same. Point Z, in Figure 6.4, represents the efficient production of goods X and Y in the economy. The slope of the tangent (g) on the production possibilities frontier (PPF) guided by the Z-point expresses the marginal transformation rate for goods X and Y.

*XA*

*Good X*

*XZ*

*Good Y*

**Z**

*g: slope = MRT*

*PPF*

*YA*

H

*h: slope =*

*MRS*

MRS

*YZ*

*YB*

*XB*

XB

*Figure 6.4 General equilibrium. Source: according Varian, 1995, 2014*

An effective combination of consumption is in the point H. it is point where MRS of both consumers is equal with MRS. This point was found by a parallel (h) with a tangent (g). At this point, the condition of efficiency production and consumption is fulfilled.

For each combination produced, we can derive in a similar way the amount that should be shared between the two consumers. (Varian, 1995, 2014)

Conclusions of behavior of economic subjects in the simple model economy can be generalized to the situation of the overall balance of many consumers and many factors of production:

1. The marginal rate of substitution in of all commodities should be the same for all consumers.
2. The marginal rate of technical substitution should be the same for all goods.
3. The marginal rate of substitution in consumption should be equal to the marginal transformation rate for all goods.

### Efficiency vs. equality

The problem of achieving efficiency in the model of a perfectly competitive price system is that effective situation may not be socially desirable. The allocation can be identified as effective, if it is not possible reallocation to someone will be better without harming anyone; and allocation can be identified as equitable when connected with a fair distribution of income and wealth.

Effective

And

Equitable

Allocation

To determine which allocation is better for society requires a comparison among consumers. Uniform criteria for such a comparison does not exist. Searching for allocations that are both efficient and equitable theory is concerned with **social welfare**. It is aimed at finding those allocations that are both efficient and equitable. Social welfare is understood as a synonym for the level of satisfaction or utility of members of society. Social welfare function is a list of factors that determine social welfare. For example, the total amount of products and services; the way in which goods and services are distributed among consumers; the health of society; free time; the degree of environmental pollution; political stability and others. (Hořejší et al., 2012)

## Welfare Economics

**The Welfare economy** is a part of the economic theory that deals with the effects of the whole economic process on the welfare of an individual or group of people. The subject of her research is to define well-being and to find the criteria for its measurement. Welfare economics is often defined by many authors as a normative part of economics. In the concept of well-being, there is an inconsistency among economists.

Welfare of

Individual or

Group

**Social welfare theory** is geared to finding allocations that are both effective and equitable.

Finding Allocations Effective

and

Equitable

**Social welfare (SW)** is understood to be synonymous with the level of satisfaction of members of society. Social welfare assesses the state of the economy, which is based on a certain level of societal well-being. It seeks ways to achieve a higher level of society's welfare*.*

*W* ***<***  *W\**

Where W \* = optimal, higher level of well-being, W a certain level of social welfare.

**The function of social welfare** is an enumeration of the factors that social welfare determines. Includes:

Utility of

All Members of

Society

***SW = f (Q, D, H, L, P, S, R, Z)***

Where Q is the total number of products and services; D is the way they are distributed; H is the health of society; L is the amount of free time; P is the degree of environmental pollution; With political stability; R is the amount of water precipitation; Other relevant factors. (Hořejší et al., 2012)

Alternatively, the welfare of society as a whole depends on welfare, respectively. benefit of all the individual consumers that make up the company. If the n-th consumer is beneficial then, then

***SW = f (U1, U2 .... Un)***

The concept of social welfare function was compiled by A. Bergson, who formulated this feature in two possible ways:

1. as a function of the well-being of each member of society;
2. as a quantity of consumed products and services by each member of the company

Bergsson combines social efficiency with a certain distribution of usefulness among subjects and defines a social indifference curve that is not smooth and smooth but has a different course.

**Welfare maximization**. We are thinking of a two-consumer society. The societal welfare curve (W) in this diagram are called isowelfare curves then recognizes all the of both consumers, which represent the same level of social welfare. (Varian, 2014) It is also **possible to construct an UPF** achievable benefit curve illustrating the different combinations of benefits of two consumers achievable with a fixed amount of goods produced by an efficient combination of resources. At each point of the UPF, all three Pareto efficiency conditions are met. The **social optimum** is located at the point of contact of the UPF curve and the curve W, the so-called **bliss point (B)**. At this point, the company is not the highest achievable indifference curve. See Figure 6.5.

*UA*

*UA*

*UFF*

B

W\*

*Figure 6.5 Social optimum. Source: according Hořejší et al., 2012*

To achieve a certain level of social well-being, it makes sense to accept some inefficiency. If the optimal allocation is unattainable, it may be in the public interest to select an inefficient allocation of inputs. In that case, what is sacrificed from the point of view of efficiency is offset by an increase in justice. (Hořejší et al., 2012; Varian, 1995, 2014)

**Summary**

* Analysis of the partial balance in microeconomics examines the models of sub-markets as independent of each other.
* An analysis of the overall balance examines the interconnection between markets. Each market is understood here as part of a linked system.
* Abstraction from many facts of the real world illustrates the model of 2 x 2 x 2 functioning of a one-tier economy.
* The achievement of a general equilibrium situation in the model of a simple economy means a steady state of production, consumption and production and consumption at the same time. This requires the fulfillment of three efficiency conditions.
* An effective one is considered as a situation in which the resources available to us are divided so that in the presence of more beneficial activities, one of these activities cannot be increased without simultaneously reducing the activity of another.
* Efficiency in the exchange occurs when a fixed amount of goods is distributed among consumers so that further redistribution cannot be improved for any consumer without simultaneously harming another consumer.
* Efficiency in production occurs when a fixed amount of resources is allocated to the production of goods in the economy so that it is not possible to increase the production of one of the goods without, at the same time, limiting the production of the other farm.
* In the 2 x 2 x 2 model, the general equilibrium occurs when the marginal cost of substitution in MRSC consumption of both goods X and Y for both consumers A and B equals the marginal MRPT transformation rate.
* The problem of achieving efficiency in the model of a perfectly competitive price system is that an effective situation may not be socially desirable.
* By searching for allocations that are both effective and equitable, it deals with the theory of social welfare.
* Welfare Economics represents the part of economic theory that deals with the effects of the whole economic process and its parts on the welfare of individuals or groups of people.
* Social welfare of the SW is understood as a synonym of the level of satisfaction of the members of the society.
* The function of social well-being is an enumeration of the factors determining social welfare. Includes: Q is the total number of products and services; D is the way they are distributed; H is the health of society; L is the amount of free time; P is the degree of pollution of the environment; With political stability; R is the amount of water precipitation; Other Relevant Factors.

# ECONOMY OF INFORMATION

**Chapter goal**

* to introduce the student with the theory of information economics
* to learn about the functioning of markets with asymmetric information
* to clarify unfavorable selection issues
* to clarify the essence of moral hazard theory
* to clarify the issue of signaling on the labor market

## Markets with asymmetric information

**Asymmetric information**, it means situation in which a buyer and a seller possess different information about a transaction. Used cars sell for much less than new cars because there is asymmetric information about their quality: The seller of a used car knows much more about the car than the prospective buyer does. As a result, the prospective buyer will always be suspicious of its quality and with good reason. The implications of asymmetric information about product quality were first analyzed by George Akerlof and go far beyond the market for used cars. The markets for insurance, financial credit, and even employment are also characterized by asymmetric information about product quality. (Pyndik & Rubinfeld, 2013)

Irregular information between market participants

With such a situation we can meet very often in the markets and accompany us with many life situations outside of the economy. In this position, we often find ourselves as customers in a car service, patients at a doctor when we need to buy or repair any more complex electronic device, etc. A similar position is taken by a staff member to receive a new employee or a manager seeking to his employees used the best possible working time and worked well. Asymmetric information, in addition to externalities, imperfect competition and public goods, is one of the causes of market failure. (Sojka, 2002)

Asymmetry of information is part of a wider issue of uncertainty that has been a concomitant feature of human life since time immemorial. In economics, he began to play the appropriate role of starting with F.H. Knight's *Risk, uncertainty and profit* from 1921, and J.M. Keynes's *General Theory of Employment, Interest and Mone*y of 1936. The notion of uncertainty in economics was usually associated with an uncertain future. The problem of ignorance and uncertainty with regard to information on the current state of the market has brought to the economy of F. Von Hayek his criticism of central planning, and in particular his famous article "*The Use of Knowledge in Society*" (The American Economic Review, 35, September 1945*) Individualism and Economic* Order of 1948. Von Hayek in his approach emphasizes that information is time and place conditional. Economic actors can interpret information differently depending on their experience, knowledge and motivation. Although von Hayek has never used the concept of asymmetric information, his concept of the market as a process for asymmetric information creates a very appropriate theoretical basis. (Sojka, 2002)

The modern concept of asymmetry of information emphasizes the fact that our information on the current state of the markets is imperfect and, in particular, that the various market players differ significantly in the quality of their information, which has serious consequences for the behavior of these markets.

Seclusion and confidential information

For reasons of asymmetric information can be seen there:

First secret activities that entail unduly onerous or impossibility of their observation by others. For example, we are not witnesses to the process of producing the goods we buy.

Second secret information, which means one side of the market participants have more expertise than the other.

The consequence of asymmetric information in markets can be called moral hazard and adverse selection. (Hořejší et al., 2012, Pyndik & Rubinfeld, 2013)

**Moral hazard** refers to situations where one informed market participant reduces the utility of other uninformed market participants in maximizing their benefits. Where subordinate or representative behavior cannot be well monitored, conditions for abusive advantage are created. If this is true, it also depends on the morale of these subjects. The concept of moral hazard is now widely used by the new institutional economy, especially in the context of the so-called principal-agent problem. Problem arising when agents (e.g., a firm’s managers) pursue their own goals rather than the goals of principals (e.g., the firm’s owners). An agency relationship exists whenever there is an arrangement in which one person’s welfare depends on what another person does. Agent, individual employed by a principal to achieve the principal’s objective.

The problem of representation

These are the numerous situations of the relationship between shareholders and managers, masters and workers, politicians and voters, etc. In these relationships, it is very often possible that a better informed representative, who today and daily engages in relevant activities, can abuse his position to his advantage at the expense of the representative. (Hořejší et al., 2012, Pyndik & Rubinfeld, 2013)

**Adverse selection.** Form of market failure resulting when products of different qualities are sold at a single price because of asymmetric information, so that too much of the low-quality product and too little of the high-quality product are sold. (Pyndik & Rubinfeld, 2013)

Disposing of desirable market players unwanted

This is a process leading to a deterioration of the quality of the product sold on the market with significant asymmetry of information. For example, in the insurance market, the structure of insured persons deteriorates, for example, non-smokers pay for smokers for life insurance policies, premiums appear too high and lose interest in insurance. In the market where asymmetry of information leads to negative selection, only products of dubious quality are sold, and skilled and skilled workers are gradually leaving a negative selection company. (Hořejší et al., 2012, Pyndik & Rubinfeld, 2013)

**Market Signaling**. Process by which sellers send signals to buyers conveying information about product quality. What characteristics can a firm examine to obtain information about people’s productivity before it hires them? Can potential employees convey information about their productivity? Dressing well for the job interview might convey some information, but even unproductive people can dress well. Dressing well is thus a weak signal it doesn’t do much to distinguish high-productivity from low productivity people. To be strong, a signal must be easier for high-productivity people to give than for low-productivity people to give, so that high-productivity people are more likely to give it. For example, education is a strong signal in labor markets. More productive people are more likely to attain high levels of education in order to signal their productivity to firms and thereby obtain better-paying jobs. Thus, firms are correct in considering education a signal of productivity. (Pyndik & Rubinfeld, 2013, Sojka, 2002)

### Examples of market with asymmetry information

The consequences of the asymmetry of information have been dealt with by G. Akerlof in his famous and frequently quoted "Market of Lemons" (Quarterly Journal of Economics, 1970). The "Citron" is a slang designation in US English, which has serious problems that are not apparent during a quick search and which, as a rule, is very well known to the proctor. The problem with the used car market is that it is not possible to distinguish good and relatively cheap cars from cars with serious defects. As a result of this asymmetry of information, buyers are distrustful of the use of cars and the prices of used cars are considerably lower than their age and physical wear. Akerlof points out that even a brand new car purchased on Wednesday for $ 15,000 may already be marketed for a much lower price on Thursday in the used car market, although its technical condition is the same as on Wednesday. The consequence of this situation is the negative selection associated with the fact that the owners of good cars, for which such low prices are unacceptable, prefer to operate their cars. The market for used cars is dominated by cars with hidden defects. (Sojka, 2002)

The market of lemons

The theory of efficiency wages can serve as a suitable case of asymmetry of information related to moral hazard and negative selection. This is one of the theoretical concepts of the new Keynesian economy. It is based on an effort to explain why wages in modern technology companies are relatively high and do not change even if the unemployed workers of similar qualifications can be found on the labor market. According to the original neoclassical economy, under these circumstances, a profit-maximizing firm should strive to reduce wage rates (either by hiring the current employees by releasing them if they do not accept the reduction or by letting them go, and hiring unemployed people at lower wage rates). According to the theory of efficiency wages, the relatively high inflexible wages and salaries cause again asymmetry of information, coupled with the difficult control of skilled workers in the development of work activities using state-of-the-art technologies. (Sojka, 2002)

The consequences of the asymmetry of information in the form of moral hazard and negative selection can also be very well explained in the problem of agency, which we can cut through in various concepts and model cases in the new institutional economy. Relationship representation arises when one entity (the owner) delegates its rights to another entity representing it and is bound by a formal or informal agreement to secure or promote its interests in a certain area. As a compensation, the represented entity provides it with agreed payments or benefits. There is a great deal of representation in economic life. It may be the relationship of shareholders and managers in a joint stock company, the relationship of the landowner and the tenants of his land, the relationship of workers and managers in the company, etc. This relationship arises at all levels of the hierarchical organizations, because the division of ownership rights takes place in all relations of superiority subordination. These situations are usually characterized by asymmetric information, because the agent is much better acquainted with the actual state of affairs in the area in which the representative represents. That is why he can often abuse his / her information predominance and harm to his / hers. Since we often have to deal with the prohibitive costs that a representative has to make to ensure that the activity of the representative is adequately informed, there is considerable room for moral hazard. (Sojka, 2002)

## Asymmetric information and state interventions in the economy

The concept of asymmetric information does not in itself imply the justification of state interventions into the economy. In and of itself, including the associated concepts of moral hazard and negative selection, besides regulation and state intervention in the economy, there is also a market solution and can be associated with liberalism. (Sojka, 2002)

With significant asymmetry of information, we can see, for example, in education or healthcare. In both cases, we are dealing with activities that do not have the nature of pure private goods, but they are neither pure public goods. Improving the quality of formal education in society is associated with strong positive externalities. In terms of the transition from industrial to post-industrial, the importance of the quality of education is considerably increasing, on which basis it is possible to cultivate new comparative advantages and to increase the potential output of the economy. It is therefore a concern of society to care about the quality of educational institutions and to seek tools to improve the quality of higher education institutions. The actual quality of the education provided at a particular university is not sufficient for the tenderers to convincing at the time they enter the award procedure. They can appreciate it better with a sufficient distance after graduation. (Sojka, 2002)

**Summary**

* Asymmetric information is a market situation where economic operators on the one hand have more information than entities on the other.
* Asymmetry of information is part of a wider issue of uncertainty. In economics, he began to play an equivalent role, beginning with F.H. Knight's Risk, uncertainty and profit from 1921, and J.M. Keynes's General Theory of Employment, Interest and Money of 1936.
* The modern concept of asymmetry of information emphasizes the fact that our information on the current state of the markets is imperfect and, in particular, that the various entities in the market with the quality of their information differ significantly.
* Asymmetric information may be considered to be the existence of confidential activities which imply the impossibility or excessive cost of their observation by other entities, and classified information that they represent, one party of market participants has more specialized expertise than the other party.
* The existence of asymmetric information in markets may be so-called moral hazard and unfavorable choice.
* Moral hazard refers to a situation where one informed market participant reduces the benefit of other uninformed market participants in maximizing their benefits.
* An unfavorable selection is a situation whereby desirable subjects are less desirable from the market.
* The economic theory of information, for example, came along with the theoretical concept of signaling (AM Spence), based on ethology and showing that a better-informed market side is interested in improving the functioning of the market and is therefore willing to share it with the less well-informed market part of your information.

Summary

Studying and understanding textbook intended for doctoral students have mastered the basic tools of microeconomics apparatus, and in connection with their use in real economic life of individuals or groups of individuals.

The first and second chapters focused on the methodological apparatus of microeconomics. The third chapter was focused on the theory of rational consumer behavior and the formation of the demand side in the goods and services markets. The fourth chapter dealt with the supply side in the markets for goods and services. The fifth chapter was focused on alternative theories of the company their origin and development and the stakeholders' concept of the company. The sixth chapter is devoted to the concept of efficiency in economics and welfare economics. The seventh chapter was focused on selected issues of information economics.

The task of the study text was to acquaint with the use of microeconomics in solving socio - economic problems.

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List of Abbreviations

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| |  |  |  | | --- | --- | --- | | Q |  | Quantum | | P |  | Price | | TC |  | Total cost | | TR |  | Total revenue | | AR |  | Average revenue | | U |  | Utility | | TU |  | Total utility | | MU |  | Marginal utility | | MRSC |  | Marginal rate of substitution in consume | | MRSE |  | Marginal rate of substitution in exchange | | C |  | Consume | | H |  | Holiday | | L |  | Labor | | K |  | Capital | | MPL |  | Marginal product of labor | | MPK |  | Marginal product of capital | | MC |  | Marginal costs | | MR |  | Marginal revenue | | MRT |  | Marginal rate of transformation | | MRTS |  | Marginal rate of technical substitution | | PPF |  | Production Possibilities Frontier | |  |  |  | | SW |  | Social welfare | | UPF |  | Utility Possibilities Frontier | |  |  |
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