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**Lobachevsky State University of Nizhni Novgorod  
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**ECONOMICS OF THE PUBLIC SECTOR**

**Tutorial Manual**

Recommended by the Methodical Commission of the Faculty of Foreign students for  
international students,  
studying in the B.Sc. programme “Economics”

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**МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ  
ФЕДЕРАЦИИ**  
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# **ЭКОНОМИКА ОБЩЕСТВЕННОГО СЕКТОРА**

**УЧЕБНО – МЕТОДИЧЕСКОЕ ПОСОБИЕ**

Рекомендовано методической комиссией факультета иностранных  
студентов  
для иностранных студентов,  
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Учебно– методическое пособие представлено в виде сжатого содержания курса лекций, списка литературы по предмету «Экономика общественного сектора» для иностранных студентов, обучающихся в ННГУ по направлению «Экономика» (бакалавриат).

В рамках пособия рассматриваются вопросы связанные с общественным выбором, общественными благами, общественными финансами, налогообложением, благосостоянием и пр., что помогает студентам разобраться в особенностях функционирования и развития общественного сектора.

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## INTRODUCTION

The discipline is devoted to the economic aspect of public policy making, tax burden adjustments techniques, market and government failures discussion.

The goal of discipline is to familiarize students with the basic functioning of the public sector, considering its role in the economic system, showing its functions, capabilities, and management methods, attraction of resources, evaluation of the effectiveness of state policy, and the study of mechanisms, on the basis of which the specific tasks of the state policy are formed and interests that the policy reflects.

The main tasks of discipline are:

- to study the reasons of existence, the place and role of public sector in the modern economy;
- to understand the function and necessity of development of the public sector in economy;
- to study methods and spheres of governing;
- to show the role of federal and local authorities and non-profit organization in production of public goods;
- to familiarize in detail with the basic directions of development of the public sector in economic and social spheres;
- to review in detail the public choice theory and the theory of welfare;
- to inspect of the public incomes and expenditures system;
- to examine the work of the budget and tax systems, the role of the public sector in financing public expenditures, various institutional forms of public sector organizations;
- to understand the role of fiscal federalism;
- to get to know the possibilities of development of health care, education and defense systems.

The following questions are examined: public choice, public goods production, public incomes and expenditures, development of health care, education system, defense, fiscal federalism etc. The discipline shows the role of federal and local authorities and non-profit organization in production of public goods.

This subject requires preliminary study of following subjects: Economic History, Macroeconomics, Microeconomics, Finance, Statistics, World Economy, Economic Policy.

## **TOPIC 1. THE INTRODUCTION TO ECONOMICS OF THE PUBLIC SECTOR**

*Questions for the lectures and the seminars:*

*Public sector: definition, objects and aims. Historical development of public sector. Government role in economy. Governmental bodies and their functions in economy. Functions and structure of public sector in market economy. Theories of the Public Sector. Efficiency and Equity. Public Sector Growth.*

From birth until his death, human's life is connected with the influence of the government. A baby is born in the institution that is either owned or financed by the government. Training in universities is mostly financed by the state. At his birth there are doctors who have received education in public Universities. Most people attend schools that again publicly-funded. Training programs of these schools are created and controlled by the state authorities. The government finances the army, pays unemployment benefits and pensions, etc. Everyone pays taxes to the budget. The government controls the prices of different commodities and provides utilities. State companies produce electricity. The state finances transport (metro, bus) and controls of rail transportation.

Economics of the public sector is a part of economic science, studying laws and practical problems that are associated with the production of public goods; it's an economic mechanism that allows achieving social goals and non-market interests.

The aim of the discipline is to reflect the specific situation of a state among the other economic entities, to show their interference, to reflect the specific functions and features that are inherent in the state, and also to study the mechanisms on the basis of which specific public policy is formed, to show objectives and the interests of this policy.

The object of discipline is the public sector as a special system of institutions, with which the coordinated actions of participants of economic relations are provided.

The discipline shows the formation and use of resources of the government, its impact on the economic situation. Economics of the public sector examines the economic behaviour of the state as one of market economy participants and reflects the economic role of other market sharers.

As shown in Figure 1, public sector includes either state and municipal enterprises and institutions or non-commercial organisations.



Figure 1. Public sector in economy

The scale of the public sector can be defined by the following indicators:

1. The size of the state property, to be more precise, the share of state ownership in the national economy of the country.
2. The share of public revenue and expenditure in GDP.

### ***Trends in public sector development***

The trends in public sector development seen in the XX century are:

1. Throughout the century, there was an increase in the share of public expenditure in GDP.
2. Along with the general increase in the share of government spending in GDP, cyclical fluctuations of this share took place, there was growth during economic downturns and reduction was observed during economic booms.
3. For most countries the tendency of growth of public expenditure was maintained until the late 80-ies.
4. In the last two decades, the ratio of government spending to GDP is more or less stabilized, the upward trend is weak.
5. There are significant differences in the level of public expenditure among developed countries, but these differences do not disappear.
6. Government consumption increased in the twentieth century, but to a lesser extent than government spending.
7. Currently the social security costs constitute the largest share of public expenditure, and their growth significantly outpaces growth in all other areas of spending. This tendency is seen in countries where public social spending traditionally makes up a small share of GDP such as the USA and Japan.

The first of these trends has received the name of the Wagner's law (on behalf of the famous German economist of the late XIX century).

Wagner analyzed data on public sector expenditure for several European countries, Japan, and the US and found out that public sector expenditure had been rising. The Wagner's law is a trend of a more rapid increase in public expenditure compared to GDP growth.

The Baumol's Law is a trend towards a more rapid growth of the prices for services in comparison with growth of prices on manufactured goods.

### ***Role of the Public sector***

Two basic lines of argument can be advanced to justify the role of the public sector. These can be grouped under the headings of efficiency and equity. Efficiency relates to arguments concerning the aggregate level of economic activity whereas equity refers to the distribution of economic benefits.

The most basic motivation for the existence of a public sector follows from the observation that some economic activities could not operate without government intervention. The economy may have widespread inequality of income, opportunity or wealth; in this case the government can solve the problem. It provides education, social security programs and compulsory pension schemes.

When market failure is present, the argument for considering whether intervention would be beneficial is compelling. For example, if economic activity generated externalities (effects that one economic agent imposes on another without their consent), so it may be necessary for the state to intervene to limit the inefficiency that results.

## **TOPIC 2. THE ROLE OF THE STATE IN THE MODERN ECONOMY**

### *Questions for the lectures and the seminars:*

*The essence, functions and economic role of the state. Market failures. Externalities: definition and examples: river pollution, traffic jams etc. Pigouvian taxation. Licenses. Internalization. The Coase Theorem. Asymmetric information: Public provision of Health care and education. Imperfect competition. Monopoly power and monopoly regulation.*

The state is the major institute of the political system of society, organizing, directing and controlling joint activities and relations of people, social groups, classes and associations.

The state is strong public institute, which holds a monopoly on many activities, such as the drafting and adoption of laws, national security etc. Coercion is a vital feature of the state, providing,



in particular, public choice, and the production of public goods.

The state has a monopoly on political power, but this monopoly is not absolute, it is significantly limited. These restrictions are connected first of all with the Constitution and existing laws. All branches of state power (legislative, executive and judicial) are limited in their actions. Accountability of state power is also evident. Many state bodies and government representatives attend periodic test and inspection by members of the society through the mechanism of elections.

The main mechanism of allocation and use of scarce resources in a market economy is a market mechanism, where the main forces are competition and prices. However, in all countries with a market economy a significant role in the economy is played by the state. The state redistributes resources, provides the legal base for decision making by economic agents, carries out economic policies, and in some cases organizes production in state-owned enterprises. All above-listed means that the modern market economy is a mixed economy, where there are two main players: market and state.

### ***Market failures***

The removal and compensation of market failures is the most important function of the state in a market economy.

The main disadvantages of market economic mechanism are:

- emergence and development of monopolies and restriction of competition;
- availability of externalities;
- problem of asymmetric information;
- incomplete markets;
- problem of public goods production;
- macroeconomic instability, such as fluctuations in economic activity, unemployment, insufficient production capacity, inflation, budget deficit, the trade deficit;
- unequal distribution of resources and income.

Let us consider some of these failures in more detail.

***1. Development of monopolies.*** Competition is the most important condition for the existence of a market economy. Free competition is the most efficient at allocating resources, because it takes into consideration the needs of society. In market economy competition determines what to produce and for whom to produce. But in the course of competitive struggle weak and inefficient producers go out of the market, at the same time strong and the most productive ones remain and expand their production. Gradually, they begin to affect the market gaining market power, and they create monopolies. The appearance and development of monopolies is accompanied by the fact that

monopolists affect prices, limit production, in some cases, and prevent the introduction of more advanced technology. Consumers pay higher prices for the produce, their real incomes decline.

The state supports competition; in this case it conducts antimonopoly policy. Many countries adopted the antitrust legislation; there are state bodies for its implementation. In accordance with this law, the government restricts mergers of large manufacturers, and monitors the market share controlled by a large firm. In addition, the government affects prices.

**2. Externalities** are the costs or benefits that accrue to a third party, that is not involved in the market transaction. So, external effects have an impact on the producers or consumers, who are not involved in the process of sale and purchase.

There are the following types of external effects:

- negative externalities;
- positive externalities;
- complementary external effects;
- exhaustible external effects;
- inexhaustible external effects.

#### ***Negative, positive and complementary external effects***

In case of negative external effects a part of the costs shifted on others.

Air pollution by emissions from traffic, pollution of the water by textile factory are examples of negative external effects. In above –mentioned situations:

- human well-being gets worse,
- part of costs passed on to other persons or organizations;
- social costs are not included in the production cost;
- prices for the produced goods become lower;
- volume of production exceeds the optimal level;
- resources are used in an inefficient way (attracted resources are redundant).

Positive externalities occur when outsiders get some profit free of charge.

For example, the water discharged from the plant raises the temperature in the river and thereby contributes to a more rapid growth of fish in it. One more example, if someone makes a preventive vaccination against infectious diseases, the probability of getting disease decreases for him and for the people around him.

In case of positive externalities:

- part of the total usefulness assigns to other persons or organizations free of charge;

- public benefits are not included in the production cost;
- prices for the produced goods become lower;
- volume of production is below the optimal level;
- necessary resources are not drawn;
- resources are used in an inefficient way (there is a lack of resources).

Complementary externalities occur when external effects complementing each other appear during the process of production or consumption of goods.

Example of positive complementary external effects is a beehive and an orchard. Honey production externalities are represented in the form of pollination of flowers, fruit trees and crop improvement of garden. Fruits production externalities are represented in the form of nectar, necessary for bees, and increase the production of honey.

### ***Exhaustible and inexhaustible external effects***

An important approach to external effects is their division on exhaustible and inexhaustible.

External effect is exhaustible, if the consumption by some third party means that it is not available for consumption by others. For example, if a bee producing honey pollinates a flower or some tree in the garden, it can't pollinate another flower or tree.

External effect is inexhaustible, if the consumption by some third party means that it is also available for consumption by others. For example, environment pollutions is an inexhaustible external effect.

Inexhaustible negative externalities can be called public harmful goods or public bads.

### ***Solutions to the problem of externalities***

There are several solutions to the problem of externalities. The most important of them are the following:

- distribution of property rights;
- special taxation;
- internalisation of external effects;
- direct state control.

Let us consider some of these solutions in more detail.

- **Distribution of property rights.** In this case the problem of external effects bases on approach, known as the Coase theorem. The Coase theorem can be formulated in the following form: in a competitive economy with complete information and zero transaction costs,

the allocation of resources will be efficient and invariant with respect to legal rules of entitlement. So, external effects will lead to a Pareto-efficiency, if property rights are clearly defined.

- Special taxation. In the framework of government intervention, there is a mechanism by which you can solve the problem of externalities, such a mechanism is the special taxation, so-called Pigouvian taxation. It is a tax inflicted on the manufacturer in the situation when he creates a negative externality. It enables to include public costs in the private production costs.

- The internalisation of external effects is one of the solutions to the problem of negative externalities. The internalisation of external effects means that the company takes into account a negative external effect produced by this company and takes into consideration social costs while determining the optimal production volumes. It's the situation when the firm generates negative externalities, and corrects it by its further actions, so it is the process of internalisation.

- Direct state control is an administrative method used by federal and regional authorities. They have a possibility to prohibit or restrict any actions undertaken by different legal entities at all levels. For example, in the big cities, local authorities prohibit or restrict entry of vehicles to the city centre.

**3. Asymmetric information** is incomplete, unevenly distributed or defective information.

In economy asymmetric information arises when two sides of the market have different information about the goods and services being traded. In particular, sellers typically know more about what they are selling than buyers do. This can lead to adverse selection where bad-quality goods drive out good-quality goods, at least if other actions are not taken.

Asymmetric information occurs when the individual or organization knows something we or other individuals and organizations don't know. We can say that some market participants know more than others.

In general, there are several forms of asymmetric information. So, asymmetric information can be viewed as insufficient information from the position of the buyer or seller. There are two cases:

- lack of information about the sellers;
- lack of information about the customers.

In addition, asymmetric information is either in the form of hidden action, either in the form of hidden knowledge.

A classic example of asymmetric information is given by the health sector. The patient is not able to choose the best method of treatment or to choose the right medication, as he does not own professional information.

We can highlight the following directions of state regulation in the framework of the asymmetric information problem:

- legislation on protection of consumer rights;
- law on advertising;
- legislation on labour protection;
- legislation on insurance;
- legislation about sanitation and hygiene in food production;
- the law on insurance of bank deposits;
- regulation of public health system;
- regulation of public education system;
- the laws on fraud;
- legislation on joint stock companies;
- technical norms and standards.

### **TOPIC 3. PUBLIC GOODS**

*Questions for the lectures and the seminars:*

*Public goods: definitions, properties and types. Pure and mixed public good. Provision, Clarke tax. Club goods and local public goods, Demand and supply of public goods. The optimal volume of public goods' production. Pricing in the market of public goods. Lindahl equilibrium. The failure of the market in the case of public goods. The problem of free riders.*

Public goods are goods consumption of which is available to many people at the same time.

Public goods are characterized by two properties: non-excludability and non-rivalry in consumption.

Non-excludability means that the increase in the number of consumers of the good does not reduce the usefulness delivered to each of them and if the public good is supplied, no consumer can be excluded from consuming it;

Non-rivalry means that the restriction of access of consumers to such benefit is practically impossible. At the same time consumption of the public good by one consumer does not reduce the quantity available for consumption by any other.

As for a private good it is excludable and perfectly rivalries. If it is consumed by one person then none of it remains for any other.

#### ***International, national and local public goods***

The most important characteristic of public goods is the territorial boundary of their consumption.

From this point of view public goods can be divided into international, national and local ones.

International public goods are available to all inhabitants of the planet (pollution of air abatement, control over expansion of the ozone hole, and others); they are provided to the citizens of a particular region of the Earth, or to several countries. Among public goods, that can be included into international, there are standards that reduce transaction costs, such as measures of length and weight, language, monetary system, the results of fundamental scientific research, international and regional stability.

National defense, legislation, the activities of the federal executive, legislative and judicial authorities and other refer to the national public goods.

Local public goods are public goods and services, access to which is possible at a certain territory, so it could be provided only for the population of bounded geographical part of a country (several regions, city, district, etc). A range of local public goods is as follows: regional environmental programs, street lighting, the city park and so on.

### ***Pure and mixed public goods***

There are pure public goods and mixed public goods.

*Pure public goods* are goods and services with a high degree of before-mentioned properties of non-excludability and non-rivalry.

If one of these properties is limited, then this good is called a mixed public good. Pure public goods are rare; a lot of them have the properties of non-excludability and not rivalry only in a certain extent. National defense is an example of a pure public good. Concert is a mixed public good. Most public goods are mixed public goods.

Consumption of pure public goods by one person does not influence the amount of the good available for consumption by others, the marginal cost of providing additional public good to the consumer is zero ( $MC = 0$ ) (Figure 2).

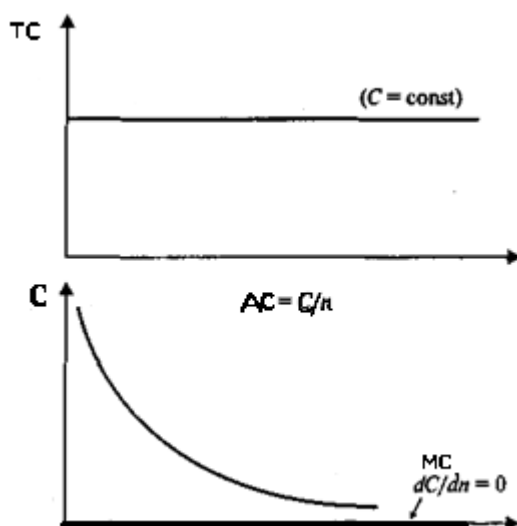


Figure 2. Costs of *pure public goods*

Until the marginal cost is zero, pure public good shall be delivered at zero prices. It does not mean that the aggregate cost of this benefit is not recovered. But in that case, a private company will not be able to produce a pure public good because it's limited by the need to comply with the budget balance. In any case, even if it tried to set the price, it would be unable to do it because the exception in this case is not valid.

In comparison with a pure public good a *mixed good* is excludable public good, it's a good with the property of excludability and its consumption is selective and decreasing. Mixed public good can be the object of sale, so people must pay for their consumption.

In fact for the most mixed public goods there is a characteristic of overflow. It occurs when many people begin simultaneously consume the same good. For example, in the case of road usually anyone can use it without disturbing others. But in some sections of the road it might be a cluster of machines, interfering with each other, this situation leads to lower speed and limiting access of other cars on the road.

Thus, the overflow means the following if a number of consumers of public goods increases it leads to the disappearance of not-rivalry in consumption.

In this case the marginal cost of providing additional benefits to the consumer is not equal to zero but higher than zero ( $MC > 0$ ) (Figure 3).

Competition for the consumption of the public good between individuals can be sharp.

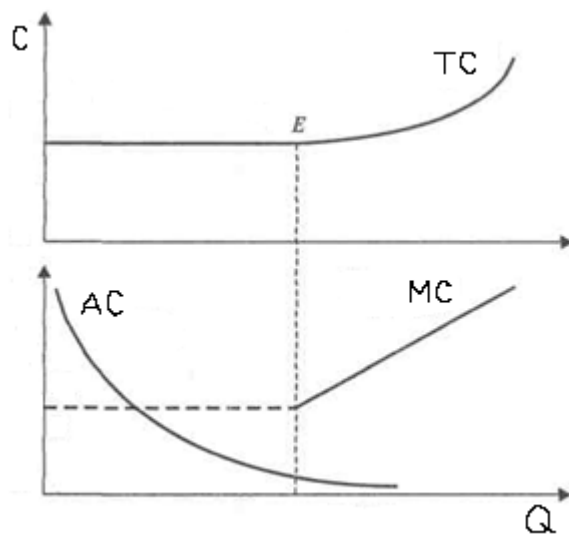


Figure 3. The cost of public goods (the situation of overload)

Another type of mixed good is the good of joint consumption with limited access, which is called a *club good*. A club good is a mixed public good, the number of users is limited, benefits and costs are divided between consumers.

In this situation not only individuals but groups of people are excluded from consumption. Access to the consumption of this kind of mixed goods is limited by statutory requirements and fees. Typical examples of mixed goods with restricted access are different clubs (for example, a tennis club), a voluntary associations of homeowners and other self-governing public organisations.

The number of consumers of public goods club may be increased up until overflow, caused by the last "club member", will not lead to reduced benefits for other members. Before this point, costs become lower due to the participation of the new member of the club in financing costs. In the case when the number of users is specified, the amount offered for consumption goods should increase until the situation when the marginal cost of an individual who receives this benefit would balance its marginal utility.

Consider the situation shown in Figure 4. If the number of users reaches  $N_a$  or exceeds  $N_b$  it is unprofitable consumption of the good. The number of users between the  $N_a$  and  $N_c$  is the most favourable. Such number of consumers gives higher level of usefulness to the individual because the benefit from obtaining good overlaps the cost. At the interval  $N_d N_c$  benefits are estimated maximum without regard to costs.



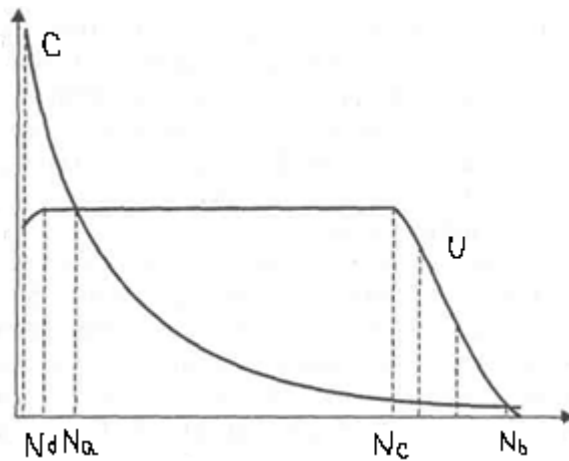


Figure 4. Costs and utility of a club good

### ***Merit goods and merit bads***

A public good is one of market imperfections, when the state intervention is needed.

Merit goods and merit bads are the goods, usefulness or maleficence of which individuals are not aware at all or not aware of the full extent. Merit goods satisfy the requirements, which the society believes necessary to support. These needs are not formed properly that's why individuals select lower consumption of these goods. The main examples are primary and secondary education, school meals, a safety belt in the car, education, vaccination against different diseases, concert halls, subsidized housing for low-income families. The opposite case is merit bads. There are goods or services that society considers necessary to restrict. These include alcohol, tobacco, drugs, excessive speed etc.

### ***The optimal volume of public goods production***

As a public good has the property of non-rivalry, each unit of produced goods in our example will be consumed by both consumers A and B. The total marginal benefit of each consumer is represented by curves  $MB_a$  and  $MB_b$  (Figure 5). In this case, the marginal benefit of the first unit of the public good is equal to 5 for the consumer A, and for the consumer B it is equal to 10. In the case of a public good, the aggregate value of the public good is defined by vertical summation of the individual curves of marginal benefit  $MB_a$  and  $MB_b$ . The total value of public goods is represented by the broken line  $MB = MB_a + MB_b$  in Figure 5. (Figure 5). Thus, the total benefit of the first unit of the public good, in other words, the general willingness to pay, is equal to 15. If 7,5 units of the public good are made, only the consumer B is willing to pay. In this case, the total marginal utility and the general willingness to pay, will be represented by marginal benefit estimated by the consumer B ( $MB_b$ ).

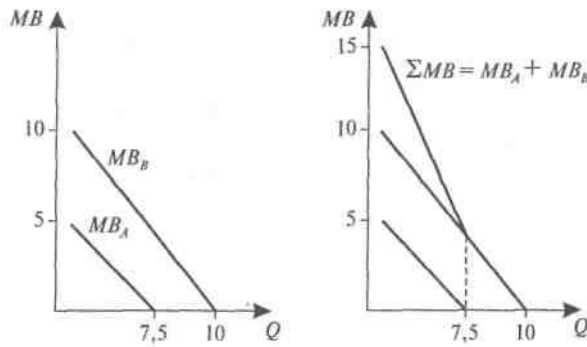


Figure 5. The total value of the public good

The optimal volume of production of public goods  $Q_E$  occurs when the marginal benefit of all consumers is equal to the marginal production costs of public goods:  $MB = MS$ . (Figure 6)

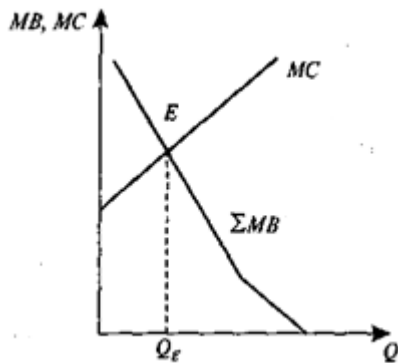


Figure 6. The optimal volume of public goods production

### ***The market failure in the case of public goods***

As it was said above, the market mechanism does not work in the case of public goods. As a rule, a public good is available for consumption by many people and it requires large expenses for their production. If each of consumers appreciates insufficiently the benefits of consumption of some goods, therefore he is not ready to pay all the costs of its production. If a private company was a producer this good would not be manufactured. So the market does not work, there is a market failure.

In Figure 7 it is shown that both the consumer A and the consumer B appreciate the benefits of the public good as low, they are not ready to pay for it. If there is no effective demand for a public good, it is not possible to produce it. So, the market is not effective.

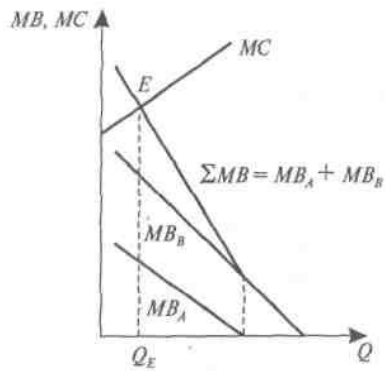


Figure 7. A market failure in the production of public goods

***Financing of public goods production, the free-rider problem and the optimal volume of public goods***

Many people are involved in the consumption of the public good. But many people wouldn't like to pay for the granted good. The free-rider problem is the problem of consumption of public goods without a corresponding payment for it.

The government is facing the same problem as a private company producing private goods. It's the problem of financing the production of public goods. Private company appoints price for the good to cover its costs and the government imposes taxes to cover the cost.

Besides the problem of financing, it's necessary to determine the optimal volume of public goods, that can be Pareto efficient one. A collective action is required to determine the volume of public goods production. The government needs to identify public preferences and to solve the free-rider problem.

Identification of preferences is the provision of information to the public goods producer. The state should know how consumers appraise benefit from the consumption of these goods. Revealing of these preferences can help to define the scope of manufacture of certain public goods. But people prefer to keep back their preferences with the purpose of decreasing their taxes.

One of the existing solutions to the problem of providing false information is the introduction of special tax; Clark tax is used to identify preferences.

Clark Tax is designed to be beneficial to provide accurate information in identifying preferences.

***Lindale equilibrium***

Prices of public goods for different individuals, reflecting the differentiation of substitution norms, could serve as the basis for distribution of the tax burden. This situation is called the balance of Lindale and the prices achieved are the prices of Lindale.

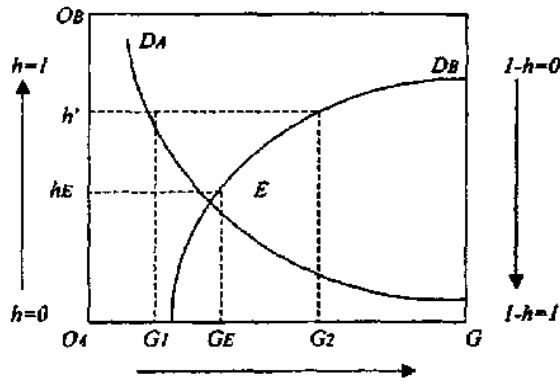


Figure 8. Lindale Model

In the model of Lindale public good is consumed by two homogeneous groups A and B (Figure 8). The total public spending is on X axis (G), the share of the amount which is paid by the group A and B is represented on other axes. At the point of Ob group A does not bear any costs ( $h=0$ ), the 100% of the amount is paid by the group B ( $1-p=1$ ). As the movement to the point of Ob is realised the share of the group A grows up ( $h=1$ ), and the group B uses the public good free of charge ( $1-h=0$ ).

Marginal utility of public goods is diminishing; the lines of demand with negative slope (Da for group A and Db for group B) are formed up. Point, located at the intersection of two lines of demand, is the point of Lindale equilibrium. At this point the value of consumption of the last unit of the public good is equal to the tax price of two groups. This equilibrium is called fiscal optimum.

#### TOPIC 4. PUBLIC CHOICE

*Questions for the lectures and the seminars:*

*Public mechanisms for allocating resources. Voting. Majority voting. Majority Rule: May's Theorem, the Median voter theory, multi-dimensional voting, agenda manipulation. Alternatives to Majority Rule. The Paradox of Voting. Rent-Seeking behavior: Lobbying, Rent Creation. Logrolling. Excessive Government: Theory of Bureaucracy. "Principal - agent" problem. Corruption. Government failure.*

Public choice theory is a mechanism of non-market decision making carried out through the system of political institutions.

The mechanism of public choice has a number of distinctive features in comparison with the market mechanism.

First, the market mechanism allows socio-economic inequality for members of society, the concentration of economic power in a small group of people is characterized by significant

differences between people according to their economic role. The political process of a democratic society has the principle "one voter - one vote". The mechanism of public choice ensures equal opportunities for all citizens to participate in politics, government and policy making.

Second, the mechanism of the public selection was based on collective decision making, through direct or representative democracy.

Third, the mechanism of direct democracy (referendum), and also representative democracy (through electing their representatives to the relevant authorities) focuses on the voting on alternative socio-economic programs, and not on particular issues of current policy.

Fourth, the mechanism of public choice includes compulsory order of financial relations between the state and the society members (for example, in implementing taxes).

Fifth, the mechanism of public choice includes governance structures that are built in accordance with the principle of the hierarchy and subordination, the precondition for the functioning of administrative structures is the use of the bureaucracy.

### ***Voting and the paradox of voting***

A market economy characterized by a democratic political system uses democratic choice. However, the conditions of democratic choice may be different. Public choice is carried out in conditions of direct or representative democracy.

Direct democracy is a political mechanism of public choice, which people should express their personal opinion about the extent of specific public expenditure.

Representative democracy implies that people vote for parties acting with its programs. Decisions about spending programs are delegated to elected representatives of these parties.

The voting is a universal model of collective decision-making. But the weight of each vote, the order of their submission and the way of summing up can affect the outcome of the vote. The meaning of the procedure is that, on the one hand, to identify its preferences, and on the other, taking into account the existing opportunities to reconcile them.

The assumption employed in analyzing voting is as follows: all voters choose to cast their votes. It is natural to question whether this assumption is reasonable. Although in some countries voting is a legal obligation, in others it is not. The observation that many of the countries frequently experience low voter turnouts in elections suggests that the assumption is unjustified.

The paradox of voting says that voting is irrational process, but despite of the irrationality of voting, many people vote. People vote, although the expected utility of the vote is negative.

The paradox of voting raises serious questions about why so many people do actually vote. Potential explanations for voting could include mistaken beliefs about the chance of affecting the outcome or feelings of social obligation. After all, every democratic society

encourages its citizens to take civic responsibilities seriously and to participate actively in public decisions. Even if the act of voting is unlikely to promote self-interest, citizens feel they have a duty to vote. And this is exactly the important point made by the cost-benefit model of voting.

Participation in voting almost always involves costs. The costs of voting are the following; first and foremost you spend time and energy on the deliberations of the possible voting options analysis and on the voting process itself.

There is the direct cost of travelling to the point at which voting takes place and there is also the cost of the time employed. If the individuals involved in voting are rational utility-maximizers, then they will only choose to vote if the expected benefits of voting exceed the costs.

### ***Collective decision-making***

Sometimes within the bounds of the collective choice procedure of *unanimous decision-making* is used.

Let considered two alternatives: the X and Y. If all participants individually prefer the first alternative to the second, then, obviously, when making collective decisions alternative X will receive the unanimous support. Decision adopted unanimously, can be implemented without the use of coercion, but it's more expensive, because it's necessary to co-ordinate a lot of individual preferences.

In practice, the most common procedure of collective decision-making involves the application of the *simple majority rule*. According to this rule the alternative supported by more than half of voting participants gets the better. Usually the rule requires the approval of  $N / 2 + 1$  votes.

When there are only two options, majority rule is a simple and compelling method for social choice. When there are more than two options to be considered at a time, we can still apply the principle of majority voting by using binary agendas which allow us to reduce the problem of choosing among many options to a sequence of votes each of which is binary.

For example, one simple binary agenda for choosing among the three options (A, B, C) in the Condorcet Paradox is as follows. First, there is a vote on A against B. Then, the winner of this first vote is opposed to C. The winner of this second vote is the chosen option.

### ***Arrow's Impossibility Theorem and May's theorem***

The central result of the theory of social choice, Arrow's Impossibility Theorem, says that there is no way to devise a collective decision-making process that satisfies a few commonsense requirements and works in all circumstances.

Condition 1 (I) Independence of Irrelevant Alternatives. Adding new options should not affect the initial ranking of the old options; so the collective ranking over the old options should be unchanged.

Condition 2 (N) Non dictatorship. The collective preference should not be determined by the preferences of one individual.

Condition 3 (P) Pareto criterion: If everybody agrees on the ranking of all the possible options, so should the group; the collective ranking should coincide with the common individual ranking.

Condition 4 (U) Unrestricted domain: The collective choice method should accommodate any possible individual ranking of options.

Condition 5 (T) Transitivity: If the group prefers A to B and B to C; then this group cannot prefer C to A.

There are two theorems. Theorem 1 is called Arrow's Impossibility Theorem. When choosing among more than two options, there exists no collective decision-making process that satisfies the conditions I.N.P.U.T. The implication of Arrow's Impossibility Theorem is that any search for a "perfect" method of collective decision-making is doomed to failure.

Theorem 2 is called May's theorem. When choosing among only two options, there is only one collective decision-making process that satisfies the requirements of Anonymity, Neutrality, Decisiveness and Positive Responsiveness. This process is majority rule.

### ***The Condorcet paradox***

The most famous pair-wise voting method is the Condorcet method. It consists of a complete round-robin of majority votes, opposing each option against all of the others. The option which defeats all others in pair-wise majority voting is called A Condorcet winner. The problem is that the existence of A Condorcet winner requires very special configurations of individual preferences. For instance, with the preferences given in the Condorcet paradox, there is no Condorcet winner. So a natural question to ask is under what conditions a Condorcet winner does exist.

The Condorcet paradox or the paradox of circular vote illustrates that the above criteria are incompatible. In this case the transitivity of public choice, i.e. its coherence and consistency, is not respected while the principle of simple majority voting is used. Thus, consistent social choice is impossible. The Paradox Condorcet is also called the paradox of circular vote. The Condorcet paradox illustrates Arrow's Impossibility Theorem.

Three voting groups (A,B,C) with their preferences regarding options x, y, z are provided in the table 1.

Table 1

Voting groups	Preferences		
<i>A</i>	<b>X</b>	<b>Y</b>	<b>Z</b>
<i>B</i>	<b>Y</b>	<b>Z</b>	<b>X</b>
<i>C</i>	<b>Z</b>	<b>X</b>	<b>Y</b>

If we use successive voting taking up pairs, the results of voting when the majority principle is in force, will be as follows:

1. If two alternatives (X and Y) are voted, X is selected, because it is supported by A and C.
2. If Y and Z are voted, Y is selected, because it is supported by A and B.
3. If Z and X are voted, Z option is selected because it is supported by C and B.

Voting results (results collective choice) are inconsistent and contradictory.

However, voting on the principle of simple majority does not always lead to the Condorcet paradox. In particular, coherent and consistent outcome of the vote could happen in two cases. First, the voting procedure is changed. Second, preferences of the voting group C will be different. Here are two options of the voters' preferences P1 and P2 (table 2).

Table 2

Preferences of voters (selection by a majority vote)

Voters	Options of the voters' preferences					
	P1			P2		
<i>A</i>	<b>X</b>	<b>Y</b>	<b>Z</b>	<b>X</b>	<b>Y</b>	<b>Z</b>
<i>B</i>	<b>Y</b>	<b>Z</b>	<b>X</b>	<b>Y</b>	<b>Z</b>	<b>X</b>
<i>C</i>	<b>Z</b>	<b>X</b>	<b>Y</b>	<b>Z</b>	<b>Y</b>	<b>X</b>
	x is more preferable than y (a majority vote, <i>A u C</i> )			y is more preferable than z (a majority vote, <i>A u B</i> )		
	y is more preferable than z (a majority vote, <i>A u B</i> )			z is more preferable than x (a majority vote, <i>B u C</i> )		
	z is more preferable than x (a majority vote, <i>B u C</i> )			y is more preferable than x (a majority vote, <i>B u C</i> )		

If the variant P1 is selected, transition (i.e. the coherence and consistency) is absent (if it is transitive, then x is preferable to z).

In the case of option preferences P2 vote on the majority principle is transitive. Differences between two preferences P1 and P2 are graphically depicted in figure 9. The difference between these two options is the following, in the first case (P1), the curve of preferences has two peaks, the second (P2) – one peak (Figure 9).



Axis Y presents preferences of three voters (x, y, z) by ranking these preferences (1 is the most preferred choice, 3 is the least preferred).

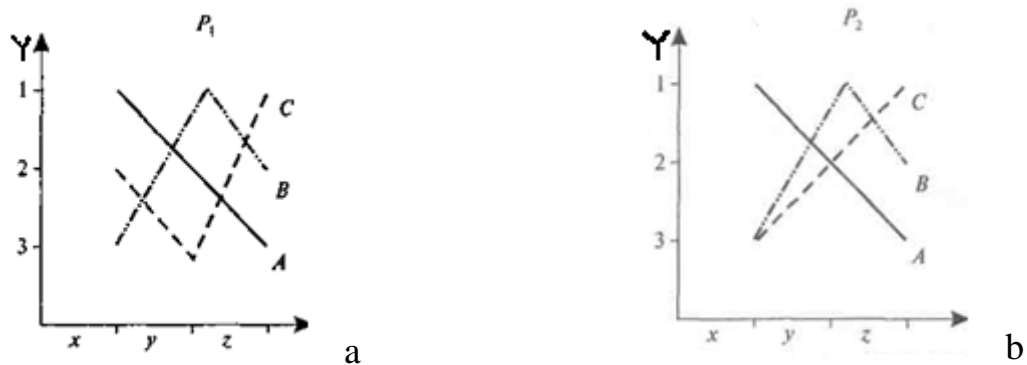


Figure 9. Voters' preferences: with two peaks (a) and with one peak (b)

Thus, when the preferences of voters have one point of maximum and uniformly distributed on a scale of preferences, voting by majority rule is transitive, i.e. it's coherent and consistent.

If there are multiple options for voting (two variants) and preferences with two peaks the results of the vote will depend on the voting procedure.

### *Agenda Manipulation*

To see how agenda-setting can be effective, suppose there are three options:

- X option is the creation of a city park;
- Y option is construction of municipal housing;
- Z option is sale of land for private construction.

Representatives of various parties participate in the voting. They have the following preferences as in the Condorcet paradox (described in table 1).

1. the Democratic Party preferences are X, Y, Z
2. the Republican Party preferences are Y, Z, X;
3. the Communists Party preferences are Z, X, Y.

If the first voted options are the city park and the municipal housing and then municipal and private housing are voting, then the choice is made in favor of the city park.

At the first stage of the voting park is a better alternative in comparison with the municipal housing (there are 2 votes against 1). Then the option of private building is recognized as the worst in comparison with a variant of municipal housing (there is 1 vote against 2). In the end, the best option is the city park; it is more preferable than municipal housing and then private construction. But if we put to the vote the city park and municipal housing first, and then the city

Park and private construction, and stopped the voting, then the result would be the opposite.

These observations show how the choice of agenda can affect the outcome. Such outcomes are called sophisticated outcomes of binary agendas, because voters anticipate what the ultimate result will be, for a given agenda, and vote optimally in earlier stages. So people who make the agenda can achieve the anticipated results by agenda –manipulation.

### ***Median Voter***

The median voter is, from one side, the voters who prefer the middle option and does not like the extreme options of one or another community project, from the other side, voters who are situated in the middle of the election spectrum.

The median voter theorem says that if we use the majority vote the option that the median voter prefers wins.

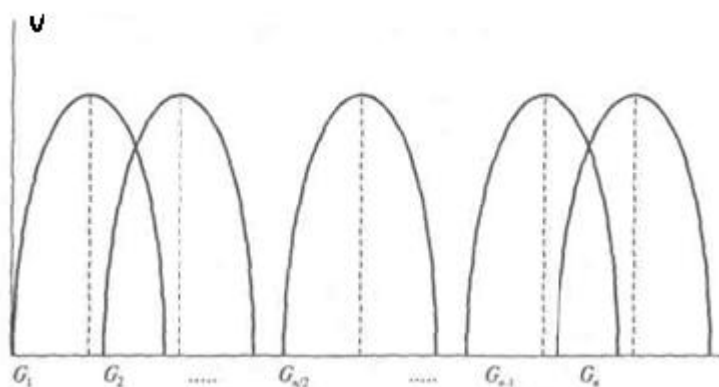


Figure 10. The voters' preferences

If we take some options of government expenditure we can view at least two variants (figure 10).

1. If options  $G_{n-2}$  and  $G_1$  are voting, there are a lot of voters who prefer a higher level of government spending, so the median voter wins.
2. If options  $G_{n-1}$  and  $G_n$  are voting the median voter position is also preferable, as there are those who prefer a lower level of government spending.

So there is always a majority of voters who agree with the median voter, and the option preferred by the median voter is a Condorcet winner.

### ***Logrolling, lobbyism and rent-seeking***

One of the mechanisms to support the majority of the proposals of the group is logrolling. Logrolling is a voting procedure, when some political groups voting for the package of solutions to several independent questions are exchanging votes.

For example, two programs are debated in the Parliament, there are three parties. The

parties I and II own 30% of the seats each and each of them was speaking on behalf of 30 million voters, while the party III has 40% of the seats and it is supported by 40 million voters. Preferences of the voters are still considered homogeneous, Positive or negative values of individual net winnings of each party in case of adopting programs are given in table 3.

Table 3

Voters' net win (in monetary units)

	<i>option A</i>	<i>option B</i>
I	100	-50
II	-60	80
III	-50	-50

In the situation when logrolling isn't used, the program A and the program B receive only 30% of votes and would be rejected. However, the agreement between the parties I and II provides the adoption of both programs by 60% of the vote. But the party III and its electorate have losses. This means that constituents of the party III will have to pay additional taxes to fund programs that do not bring them tangible benefits.

The United States National Lobbyist Directory records more than 40,000 state registered lobbyists and 4,000 federal government lobbyists are registered in Washington.

These lobbyists are not engaged directly in production. The behavior that the lobbyists are engaged in has been given the name of rent-seeking in the economic literature.

Rent-seeking, or the desire to receive annuity is an investment with the aim of acquiring special privileges or deriving profit.

Rent-seeking is the expenditure of resources to create a profitable opportunity that is ultimately damaging to society. Rent-seeking hinders the economy and limits competition.

Costs engage in rent-seeking include several elements.

First, there are the tangible and intangible costs, in particular the costs of the campaign in the media, lobbying and direct bribery etc.

Second, the losses of society are provided by companies or groups who receive different restrictions and privileges (the case of monopolies).

The case of rent-seeking is primarily the inefficiency of the state.

### ***Bureaucracy and government failures***

Bureaucracy is the part of the public sector of the economy, which is directly responsible for the implementation of economic projects and for the implementation of the economic policy.

Traditionally bureaucrats are viewed as people who are motivated solely by the desire to serve the common good. They achieve this by conducting the business of government in the most efficient manner possible without political or personal bias. This is the idealistic image of the bureaucrat as a selfless public servant.

The problem of asymmetric information and bureaucratic monopoly is reflected in the model of budget maximizing (Niskanen model).

The model of budget maximizing (Niskanen model) is the concept proving the possibility of a substantial and excessive funding of some firms or governmental bodies caused by asymmetric information between them and those who distributes budgetary funds.

Government can award subsidies to firms, but this may protect inefficient firms from competition and create barriers to entry for new firms because prices are kept at the low level. The government does not have enough information that enables it to make effective decisions about the best way to allocate scarce resources. It's also called an information failure.

Government failure occurs when government intervention in the economy causes an inefficient allocation of resources and a decline in economic welfare. It includes a principal-agent problem, asymmetric information, excessive bureaucracy and rent-seeking.

## **TOPIC 5. PRODUCTION IN PUBLIC SECTOR**

*Questions for the lectures and the seminars:*

*Managing the Public Sector's Assets and Liabilities. State-owned enterprises. State enterprises efficiency. Privatization: forms, efficiency and equity arguments about state intervention. Nationalization: Public versus private ownership. Competition and quasimarkets. Managing public sector liabilities: issues in domestic and external debt management.*

The public sector is a complex of economic entities, financial, international, financial, natural and other resources that are managed by the Federal state authorities and the regional authorities.

The scale of production in the public sector is limited by the extent of government ownership. The state property is represented by:

- the capital of state enterprises;
- the shares in joint ventures;

- the state budgetary funds;
- the market infrastructure of the economy;
- the industrial infrastructure of the economy;
- the social infrastructure of the economy;
- strategic stocks of raw materials and foodstuffs;
- lands, forests, water resources owned by state;
- mineral reserves.

State property exists in all developed countries, but its scale varies in different countries. Western European countries as Austria, France, and Germany have the greatest degree of state ownership. The state property in the US and the UK is moderate in comparison with other countries. The state's share in the material wealth of the USA is about 15% of the national wealth. On the other hand, in France, the share is about 40% of national wealth. Important indicators characterizing the extent of government production are:

- the share of GDP produced by the state-owned enterprises;
- the share of the employed in the public sector;
- the share of public investment in the total volume of investments etc.

In Austria there are several industries where the share of public production is more than 75%. These are postal services, telecommunications, energy, gas, rail and air transport, metallurgy. In the US there is only one industry, where the state's share in production of more than 75%, it's the postal service. In other sectors the share is insignificant.

Usually the industries with a high degree of public production are the following:

1. The industrial infrastructure of the economy, which includes:

- post office;
- telecommunications;
- electric power industry;
- oil and gas industry;
- railway transport;
- air transport.

2. Social infrastructure of the economy, which covers:

- education;
- health;
- utility services;
- ensuring of public order;
- ensuring national security.

3. The market infrastructure of the economy, which includes:

- financial sector (public finance, public lending);
- monetary circulation (the Central Bank and money emission);
- the labour market (organizations supporting labor supply);
- land market (organizations supporting the land market).

Thus, the necessity of the state production in the above sectors of the national economy arises from:

- the absence or inability of competition in these sectors (for example in the case of natural monopoly);
- public interest associated with the production, social and market infrastructure of the national economy.

### *Efficiency of state enterprises*

There are many factors that can negatively influence the efficiency of state enterprises. These include the following:

1. Problems of control and organization of production process, including:

- there is no threat of bankruptcy, because the government subsidizes all activities;
- there is no purpose of profit maximization;
- there are no incentives to improve efficiency;
- there are difficulties in long-term investment programming;
- bureaucratic goals (maximizing the size of the organization);
- restrictions on the type and quality of material costs;
- , political aspects of economic decisions; strong impact of politics;
- low propensity to risk (emphasis on formal procedures).

2. Peculiarities of incentive system for administrative servants, including:

- weak threat of dismissal;
- low salaries in comparison with the similar work in the private sector;
- absence of wage system that can stimulate productivity;
- difficulties in determining the results of the work;
- corruption.

3. Features of competition, including:

- lack of competition (e.g. postal service);
- development of natural monopoly (bureaucratic monopoly).

There are also studies showing that state enterprises are not less efficient than private enterprises.

### ***Privatization and nationalization***

Privatization is the transfer of state property to private ownership. The government can sell assets to make them more efficient or to receive money (in case of budget deficit). Nationalization is the process of taking a private industry or private assets into public ownership by a national government or state. Nationalization usually refers to private assets, but it may also mean assets owned by lower levels of government, such as municipalities, being transferred to be the state.

The goal of nationalization can be different:

- national security of the country or society's needs. The government controls strategic enterprises and other units in production and social spheres;
- the economic security of the country;
- protection of consumers from abuse, if it isn't possible to overcome the negative effects of natural monopoly by market methods;
- implementation of structural changes in national economy;
- interdiction of the illicit transfer of profits abroad;
- implementation of the main socio-economic targets set in government programs.

## **TOPIC 6. PUBLIC FINANCE**

*Questions for the lectures and the seminars:*

*The concept and structure of the public finances. The emergence and development of the theories of public finance. The nature and components of the budgetary system. The budget as historical and socio-economic category. Budget theory. The problem of balancing the state budget. Ways of covering the deficit of the state budget.*

The term *Finance* originates from the Latin "finis", i.e. the end. In Medieval Latin it was used to designate the date of payment, and then to refer to documents that prove the debt at the end of the transaction.

Since the end of the XVII century in France and in other countries under the term *Finance* people began to indicate the totality of the state economy, revenues, expenses and debts of the state.

As shown above, public sector in market economy includes the government with all the diversity of its economic categories and tools (budget, taxes, government spending, state property, state enterprise), the sector of local self-government (local finances, local property, etc.), and the non-profit sector.

The public finance is the part of the state financial system. These include:

- 1) public finance (the Federal budget, budgets of regions, the state loan, state extra-budgetary funds);
- 2) municipal finance (the local budget, local budgetary funds of the government bodies);
- 3) finance of the non-profit sector that implements the production of mixed public goods, including various extra-budgetary funds.

Budget system of the Russian Federation includes the following levels:

- the Federal budget and the budgets of state extra-budgetary funds;
- the budgets of Russian regions and the budgets of the territorial state non-budgetary funds;
- local budgets, including:
  - a) the budgets of municipal districts, the budgets of city districts and municipalities;
  - b) the budgets of urban and rural settlements.

### ***Budget***

Since the end of the XVII century, the budget became the name of the document that was approved by the Parliament and represented the plan of revenues and expenditures of the state.

In the Middle ages, the resources of the state and of the monarch were not distinguished. But the history of the English Parliament originates from the desire of nobles to limit the costs of the king and his right to introduce new fees at its whim.

England was the first country where after the revolution of 1648 the follows principle was proclaimed: all taxes should be imposed with the consent of the Parliament. In 1689 the Parliament received the right of approval of all revenues and expenditures.

Specific features of the budget:

- 1) a budget is a special form of redistribution based on seizure a part of GDP in favor of the state, it helps to meet the demand of the administrative units and population for public goods;
- 2) a budget is an important mechanism of implementation of the needs at each historical stage of development;
- 3) a budget is a system of centralized funds in the framework of public and municipal finance, which has a specific set of quantitative and qualitative characteristics, such as- the concentration of a substantial amount of resources (from one third to two thirds of GDP in developed countries), the scale of inter-territorial redistribution of resources; redistribution and equalization of households' incomes;
- 4) the budget and fiscal policy facilitate the implementation of the tasks of the state economic policy.

The budget is revealed through its functions:



- regulatory;
- fiscal;
- control.

The most important feature of the budget is its balance. A balanced budget means that all planned expenditure is covered by revenues.

The budget deficit reflects the excess of expenditure over income. If the budget is in deficit for several years, the government has to attract external or internal resources to cover it. The government can take credits and loans from foreign countries and international organizations, at the same time it can borrow money from its own population and business entities. The government can reduce budget expenditures to overcome the deficit. This path is the easiest, but for the population and economy is very painful. Another way to overcome the deficit is the issue additional money. Finally, the government may try to find additional sources of budget revenues. It can sell state assets or increase taxes, but this way is extremely unpopular and painful for the population and business structures.

Federal Budget of the Russian Federation is shown in table 4.

Table 4

Federal Budget of the Russian Federation (billion roubles)

	2012	2013
Revenues	12855.5	13019.9
of which:		
profit (income) tax of organizations	375.8	352.2
value added tax:		
for goods (works, services) sold on territory of the Russian Federation	1886.1	1868.2
for goods, imported on territory of the Russian Federation	1659.7	1670.8
excise on goods (products):		
produced on territory of the Russian Federation	341.9	461.0
imported on territory of the Russian Federation	53.4	63.4
tax, dues and regular payment for natural re-sources usage	2442.8	2554.8
revenue from external economic activities	4962.7	5011.0
revenue from use of state and municipal property	543.3	348.0
payments for natural resources usage	101.3	245.1
uncompensated revenue	64.6	51.1
Expenditures	12895.0	13342.9
of which on:		
objectives affecting the state as a whole	809.9	850.7
state and municipal debt service	320.0	360.3
national defence	1812.4	2103.6
law enforcement and state security	1843.0	2061.6
national economy	1968.5	1849.3
of which on:		
fuel and energy complex	107.8	19.5

agriculture and fishery	148.8	219.7
transport	339.7	258.4
public road system (road funds)	442.4	504.5
communications and informatics	41.3	41.9
scientific research for national economy	229.1	265.3
other fields of national economy	526.6	399.4
housing – communal utilities	228.8	177.5
social-cultural arrangements	5290.5	5247.5
general inter-budget transfers between budgets of constituent entities of the Russian Federation and municipal entities	599.4	668.1
Profit, deficit (-)	-39.4	-323.0

## TOPIC 7. INTRODUCTION TO TAXATION

*Questions for the lectures and the seminars:*

Government revenue. The sources of budget revenues Types of taxes. The main characteristics of a tax system. Commodity Taxation, Income Taxation. The Limits to Redistribution, Tax Evasion. The distribution of the tax burden. Excessive tax burden and its evaluation. Tax optimization

A tax is an obligatory payment made by a private person or a legal entity in favour of a state budget.

Taxes are divided into two categories:

- direct ,
- indirect .

### ***Direct taxes***

Direct taxes are levied on property or income of the taxpayer. Direct taxes are taken from the current (wages, profit) or capital income (land, property, natural resources).

This tax is paid by the manufacturer of the goods, by the recipient of the income or by property owner. So direct taxes are sometimes referred to taxes on production. Direct taxes are charged on income received from the use of land, labour, capital, and serve as an important tool in government social policy. Examples of a direct tax are income tax, profit tax, property tax and other taxes.

The *taxation of income* is a major source of government revenue. So, income tax is the subject of political discussion. The arguments that are aired in such debate reflect the two main perspectives upon income taxation. The first views the tax as a disincentive for enterprise. On

these grounds, it follows that the rate of tax should be kept as low as possible in order to avoid such discouragement. This is essentially the expression of an efficiency argument.

The competing perspective is that income taxation is well-suited for the task of redistributing income. Hence notions of equity require that high earners should pay proportionately more tax on their incomes than low earners. The determination of the optimal structure of income taxation involves the resolution of these contrasting views.

These arguments introduce the two major issues in the analysis of income taxation. The first is the effect of taxation upon the supply of labor. Taxation alters the choices that consumers make by affecting the trade-off between labor and leisure. In this respect, a particularly important question is whether an increase in the rate of tax necessarily reduces the supply of labor. If this is the case, support would be provided for the argument that taxes should be kept low to meet the needs of efficiency. Both theoretical and empirical results on this issue will be discussed. The second issue that has been studied is the determination of the optimal level of income taxation. For reasons which will become clear, this is a complex question since it involves constructing a model with a meaningful trade-off between efficiency and equity.

Income tax or tax on personal income is paid by private person. Payments are made during the year, but the final payment is made at the end of it. Tax systems of different countries, being mostly similar, have their own sets tax rates and exemptions from taxation, tax credits and the timing of payments. Usually, income tax is levied at progressive rates, rising along with the growth of income of the taxpayer. The highest income tax ranges from 30 to 70% in the developed countries. The highest level of income tax is in Sweden. Russia has the minimum rate of this tax. Nowadays income tax in Russia is 13%.

### ***Indirect taxes***

Indirect taxes are based on indirect taxation of commodities (goods and services). Taxes on expenditure (alcohol, tobacco, jewelry and so on) are usually included in the price.

Each tax can be fully assigned the level of the budget as its revenues, or it is divided between different levels in a certain proportion.

Commodity taxes are levied on transactions involving the purchase of goods.

The necessity for keeping accounts ensures that such transactions are generally public information. This makes them a good target for taxation.

Usually the government of every country creating the tax system attaches importance to direct taxes; however, these trends are not seen in Europe, where countries prefer to use indirect taxes, such as value added tax.

### ***Deadweight Loss***

The taxes drive a wedge between the price producers receive and the price consumers pay.

This leads to inefficiency and reduces the attainable level of welfare.

The effects of commodity taxes are quite easily understood. The imposition of a tax raises the price of a good. On the consumer side of the market, the standard analysis of income and substitution effects predicts what will happen to demand. For producers, the tax is a cost increase and they respond accordingly.

It is always possible to change a consumption plan if commodity taxation is introduced. Demand can shift from goods subject to high taxes to goods with low taxes and total consumption reduced by earning less or saving more. It is these changes at the margin, which we call substitution effects.

The introduction of a commodity tax causes raises tax revenue but causes consumer welfare to be reduced. The deadweight loss of the tax is the extent to which the reduction in welfare exceeds the revenue raised. This concept is illustrated in Figure 5.

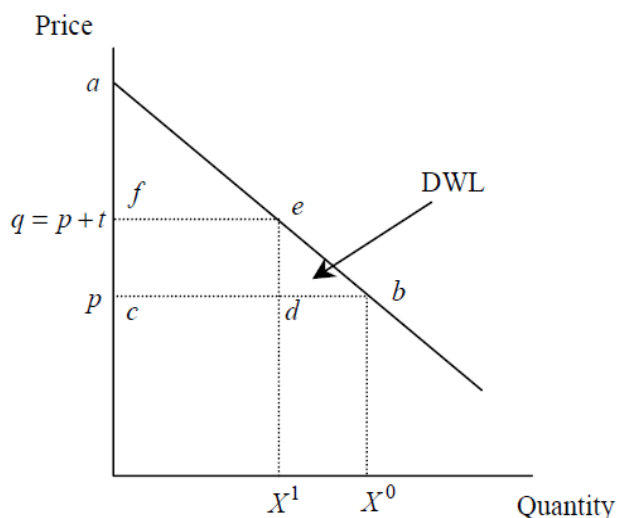


Figure 5. Deadweight Loss (DWL)

### ***Progressive, regressive and proportional taxes***

Another important approach to taxation is based on the following question how changing the share of tax payments in the income. From this point of view there are progressive, regressive and proportional taxes. Progressive tax is increasing faster than income, regressive is growing slower than income, and the percentage of the proportional tax income remains the same regardless of income volume.

### ***The optimal tax system***

The optimal tax system has four properties:

- economic efficiency,
- administrative simplicity
- flexibility
- justice.

Economic efficiency implies that the tax system should not interfere with the efficient allocation of resources.

Administrative simplicity means that the costs associated with the functioning of the tax system, should be minimal.

The flexibility of the tax system is its ability to respond quickly to changing economic conditions.

Justice means horizontal and vertical equity. Horizontal equality means that people, who have the same level of income, are taxed equally. Vertical equality means that some people who get higher level of income should pay higher taxes.

### ***Types of tax system***

In the world there are two types of tax system:

- the first one relies on direct taxes, which are concentrated on the federal government level (the USA tax system). In such a system, every tax appropriates to one budget;
- the second system focuses on the indirect taxes (e.g. European countries). Thus, one tax is divided among all budgets. Indirect taxes are easier to collect than direct, so there is an increase in the share of indirect taxes in the structure of budget revenues.

Developing countries seek to find a balance between these two systems. Tax revenue of developed countries are shown in table 11.

Table 11

Tax revenue of developed countries (percentage of total taxation), 2011

Country	Income & profits	Social security	Payroll	Property	Goods and services	Others	EU Custom Duties
Australia	59,1	0,0	5,2	8,6	27,1	0,0	..
Austria (1)	28,9	34,4	6,9	1,2	27,8	0,5	0,3
Belgium	34,9	32,2	0,0	7,3	24,7	0,0	0,8
Canada	47,1	15,3	2,1	10,9	24,5	0,1	..
Chile	40,1	6,3	0,0	4,0	49,3	0,3	..
Czech Republic	20,4	44,1	0,0	1,5	33,4	0,0	0,5
Denmark (1)	60,9	2,1	0,5	4,1	32,0	0,0	0,4
Estonia	20,0	37,0	0,0	1,0	41,5	0,0	0,6

Finland	35,6	28,9	0,0	2,6	32,6	0,1	0,2
France (1)	22,7	37,9	3,1	8,5	24,8	2,8	0,2
Germany (2)	29,5	38,5	0,0	2,4	29,1	0,0	0,5
Greece (1)	21,7	33,0	0,0	5,5	39,4	0,0	0,3
Hungary	16,5	34,9	1,8	3,1	42,9	0,5	0,3
Iceland	45,5	11,4	0,5	6,7	34,7	1,1	..
Ireland	41,0	16,6	0,7	6,8	34,3	0,0	0,5
Israel	30,0	17,2	3,8	9,5	39,6	0,0	..
Italy	32,2	31,2	0,0	5,2	26,1	4,9	0,3
Japan	30,2	41,4	0,0	9,7	18,4	0,3	..
Korea	30,3	23,5	0,3	11,4	31,4	3,1	..
Luxembourg	36,1	29,6	0,0	7,1	27,0	0,1	0,1
Mexico	27,3	14,5	1,5	1,5	54,1	1,1	..
Netherlands	26,8	38,4	0,0	3,3	30,0	0,5	0,9
New Zealand	53,6	0,0	0,0	6,6	39,8	0,0	..
Norway	48,3	22,3	0,0	2,9	26,5	0,0	..
Poland	20,2	35,4	0,8	3,7	39,2	0,5	0,3
Portugal	28,4	28,2	0,0	3,2	39,2	0,7	0,3
Slovak Republic	17,9	42,7	0,0	1,4	37,2	0,0	0,8
Slovenia	19,9	40,4	0,2	1,6	37,4	0,0	0,5
Spain (1)	29,0	37,5	0,0	6,0	26,2	0,8	0,5
Sweden	35,0	22,9	10,0	2,4	29,3	0,1	0,3
Switzerland	46,1	24,5	0,0	7,1	22,3	0,0	..
Turkey	21,0	27,9	0,0	4,1	45,2	1,8	..
United Kingdom	36,8	18,7	0,0	11,6	32,3	0,0	0,5
United States	46,5	22,8	0,0	12,4	18,3	0,0	..
<i>Unweighted average</i>							
<b>OECD-Total</b>	<b>33,5</b>	<b>26,2</b>	<b>1,1</b>	<b>5,4</b>	<b>32,9</b>	<b>0,6</b>	<b>0,4</b>

*Source:* OECD. Revenue Statistics 1965—1995. <http://www.oecd.org/ctp/tax-policy/revenue-statistics-tax-structures.htm>

### ***Tax evasion and tax avoidance***

Tax evasion should be distinguished from tax avoidance, which is the reorganization of economic activity, possibly at some cost, to lower tax payment. Tax avoidance is legal, tax evasion is not.

In practice, the distinction is not clear because tax avoidance schemes frequently need to be tested in court to clarify their legality. The terms black, shadow or hidden economy refer to all economic activities for which payment is made but are not officially declared. Under these headings different illegal activities are included, such as the drug trade, and legal but unmeasured activities such as agricultural output by smallholders. They would also incorporate the legal, but undeclared income which constitutes tax evasion.

This discussion reveals that there are several issues concerning how economic activity should be divided between the regular economy and the shadow economy.

For instance, most systems of national accounts do not include criminal activity (although Italy, for example, does make some adjustment for smuggling).

In principle, the UN System of National Accounts includes both legal and illegal activities and it has been suggested that criminal activity should be made explicit when the system is revised.

Table 12 shows a number of estimates of the size of the hidden economy on a range of countries.

Table 12

Hidden Economy as % of GDP, Average Over 1990-93

Developing	Transition	OECD
Egypt 68-76%	Georgia 28-43%	Italy 24-30%
Thailand 70%	Ukraine 28-43%	Spain 24-30%
Mexico 40-60%	Hungary 20-28%	Denmark 13-23%
Malaysia 38-50%	Russia 20-27%	France 13-23%
Tunisia 39-45%	Latvia 20-27%	Japan 8-10%
Singapore 13%	Slovakia 9-16%	Austria 8-10%

Source: Schneider F., and Enste D.H., 2000, "Shadow economies: Size, causes, and consequences", *Journal of Economic Literature*, 38, 77-114.

## TOPIC 8. THE ANALYSIS OF EXPENDITURE POLICY

*Questions for the lectures and the seminars:*

*Budget of a Federal state: main expenditures of the state. Forms of public spending: Public purchases and transfers. The problem of balancing the state budget. Public debt: types, structure, funding sources. Fiscal Federalism. The division of responsibilities. Principles of fiscal federalism.*

**Budget** is a form of generation and withdrawal of monetary funds intended for financial support of the federal government and local authorities.

Main expenses of any country can be divided into five groups:

- 1) costs of public administration (defence, law enforcement, etc.);
- 2) social expenditures (healthcare, education, culture, social security);
- 3) financing of economy (transport, information infrastructure, science, agriculture);
- 4) inter-budgetary equalization, i.e. redistribution of budget resources to smoothing territorial differences;
- 5) debt service.

The ratio between these groups is determined by many factors: the level of socio-economic development of the country, its relations with other countries, historical traditions and a commitment to a particular model of economic regulation.

The share of public expenditure in GDP in the leading industrial countries is shown in table 13.

Table 13

The share of public expenditure in GDP in the leading industrial countries 1950-2015., %

Country	Year	Total	government	defence	law enforcement	Social expenses				others
						total	education	Public health	pensions, grants	
USA	1880	8,0								
	1913	8,0								
	1938	19,8								
	1950	24,9	0,8	13,1	0,5	7,0	3,2	0,5	3,2	3,5
	1980	33,5	1,5	8,5	1,3	18,2	6,6	1,5	10,1	4,0
	1990	35,0	1,6	6,9	1,5	19,0	6,9	1,6	10,5	6,0
	2000	35,7	1,7	4,7	1,6	20,8	7,2	1,9	10,7	6,9
	2015*	36,5	1,0	2,6	1,4	24,6	7,7	2,3	14,6	6,9
Germany	1880	10,0								
	1913	17,7								
	1938	42,4								
	1950	28,4	1,9	4,3	1,4	18,4	2,7	3,5	12,2	2,4
	1980	42,4	3,2	4,4	2,4	25,6	4,8	6,8	14,0	6,8
	1990	42,9	3,2	4,2	2,6	26,5	5,1	7,1	14,1	6,7
	2000	42,9	3,5	4,0	2,7	27,1	5,4	7,2	14,5	5,6
	2015*	42,8	2,6	2,5	2,5	27,7	5,7	7,5	14,5	7,5
France	1880	15,0								
	1913	8,9								
	1938	23,2								
	1950	31,4	2,0	7,8	0,8	19,6	4,7	2,4	12,5	1,2
	1980	45,3	2,8	5,0	1,7	32,6	8,3	4,4	19,9	3,3
	1990	47,2	3,5	5,7	1,3	33,5	8,7	4,8	20,0	3,3
	2000	47,5	3,3	4,7	1,4	34,3	8,7	5,1	20,5	3,8
	2015*	45,5	2,5	3,0	1,3	34,8	8,8	5,6	20,5	3,8
UK	1880	10,0								
	1913	13,3								
	1938	28,8								
	1950	32,1	1,5	4,6	1,5	17,9	5,1	5,1	7,7	6,4
	1980	40,6	1,9	6,9	2,5	22,5	6,9	6,9	8,8	6,9
	1990	42,9	1,9	6,7	2,4	25,6	6,9	6,9	11,9	6,3
	2000	43,1	2,0	5,7	2,4	26,8	7,0	7,3	12,5	6,1
	2015*	43,4	1,7	3,5	2,3	29,8	7,2	8,1	14,5	6,1
Italy	1950	22,5	1,5	3,0	1,5	14,5	3,5	3,0	8,0	2,0
	1980	38,1	2,8	3,2	2,8	24,7	6,3	5,1	13,3	4,5
	1990	47,9	3,7	3,7	3,2	31,8	7,4	6,5	18,0	5,5
	2000	49,0	3,6	3,2	3,2	34,3	7,2	6,5	20,6	4,8
	2015*	45,5	2,8	2,0	2,8	33,1	6,7	6,5	19,8	4,8
Japan	1880	11,0								
	1913	14,2								
	1938	30,3								
	1950	13,2	1,6	1,1	1,6	6,8	3,2	0,5	3,2	2,1
	1980	25,0	1,9	1,0	1,9	16,2	5,4	0,6	10,3	3,9



	1990	26,9	2,1	1,0	2,1	18,4	5,6	0,7	12,0	3,4
	2000	27,2	2,0	1,0	2,0	18,8	5,6	0,8	12,4	3,3
	2015*	29,7	1,4	0,9	2,0	21,8	5,7	1,2	14,9	3,7
USSA/ Russia	1950	54,4	3,4	13,6	2,7	25,9	12,9	4,8	8,2	8,8
	1980	47,7	2,2	19,8	1,7	17,2	8,6	3,3	5,3	6,8
	1990	52,2	2,3	21,7	2,0	18,8	9,9	2,9	6,1	7,2
	2000	42,4	2,8	9,2	2,3	20,3	10,6	3,2	6,5	7,8
	2015*	43,3	3,1	7,8	2,7	22,4	11,8	4,0	6,7	7,3

\*2015 forecast

Source: World Development Report 1991/ Washington. 1991. P. 139; OECD. Economic Outlook. 1998. Jun <http://www.oecd.org/eco/public-finance/> and [http://vasilieva.narod.ru/ptpu/1\\_3\\_02.htm](http://vasilieva.narod.ru/ptpu/1_3_02.htm)

According to the table, the share of public expenditure in most developed countries is increasing steadily.

Increase of public spending in social sphere has the following reasons:

- Increasing role of human capital in a modern economy.
- Total population growth, caused by the increase of the life level and increase in life expectancy.
- Smoothing of income inequality of different social groups .

### ***Fiscal federalism***

Fiscal federalism is the division of revenue collection and expenditure responsibilities between different levels of government. Most countries have a central (or federal) government, state, county or regional governments, town councils and, at the lowest level, parish councils. Each level has restrictions on the tax instruments it can employ and the expenditures that it can make. Together they constitute the multi-levelled and overlapping administration that governs a typical developed country.

The central government can usually choose whatever tax instruments it pleases and, although it has freedom in its expenditure, it usually focuses upon national defence, law enforcement, infrastructure and transfer payments. The taxation powers of state governments are more restricted. In the UK they can levy only property taxes; in the US both commodity and local income taxes are allowed. Their responsibilities include education, local infrastructure and the provision of health care. Local governments provide services such as rubbish collection and parks. The responsibility for the police and fire service can be at either the state or local level. These levels of government are connected by overlapping responsibilities and transfers payments between levels.

The issue of fiscal federalism is not restricted to the design of government within countries. Indeed, the recent impetus for the advancement of this theory has been issues

involving the design of institutional structures for the European Union. The progress made towards economic and monetary integration has begun to raise questions about subsidiarity, which is the degree of independence that individual countries will maintain in the setting of taxes. Such arguments just involve the application of fiscal federalism. Vertical distribution of split taxes between levels of budget system in Germany is shown in table 14.

Table 14

Vertical distribution of split taxes between levels of budget system in Germany

Type of tax	Share, %		
	Federal	lands	municipalities
Income tax	42,5	42,5	15,0
Profit tax	50,0	50,0	0
VAT	56,0	44,0	0

## TOPIC 9. WELFARE THEORY

*Questions for the lectures and the seminars:*

*Equity and Efficiency. Aspects of Pareto Efficiency, The compensation criteria of the Kaldor-Hicks. Social Welfare Functions, Inequality and Poverty, Income redistribution in society, Poverty Measures. Models of public welfare. Consumer basket.*

Welfare is a state of well-being and prosperity associated with wealth and income.

Economic theory of well-being or welfare economics is the part of modern economic theory, which examines the content of individual and public welfare, determines the factors that influence the well-being of society.

One of the major problems of welfare economics is the following question: who can provide the best combination of individual interests and the public good.

### ***Pareto-efficiency and the compensation criterion***

Pareto optimum means such distribution of resources and finished products, in which there is no option of redistributing that can improve, at least, the position of one individual and does not worsen the position of others.

The concept of Pareto-improving is also used to determine the Pareto-efficiency.

Pareto-improvement occurs when the change in the economic situation leads to the advancement of at least one individual without deterioration of the situation of some other individual (figure 6).

Consider a move from economic state  $U_1'U_2'$  to state  $U_1''U_2''$ . This is defined as a Pareto-improvement if it makes some consumers strictly better-off and none worse-off.

If we are in point A at the curve  $U_1'U_2'$ , a Pareto improvement is considered to be in the shaded area (ABC).

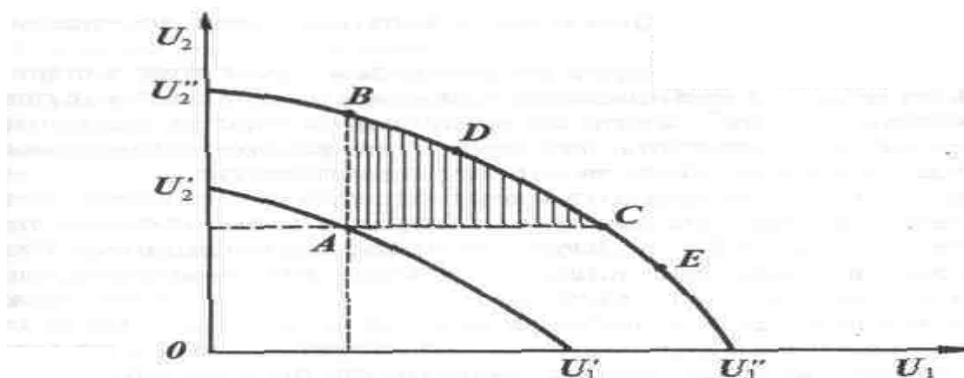


Figure 6. Pareto-improvement

The Pareto criterion was introduced into economics by the Italian economist Vilfredo Pareto at the beginning of the 20th century. This was during a period of reassessment in economics during which the concept of utility as a measurable quantity was rejected. Alongside this rejection of measurability, the ability to compare utility levels between consumers also had to be rejected. Pareto efficiency was therefore constructed explicitly to allow comparisons of allocations without the need to make any interpersonal comparisons of utility. As will be seen, this avoidance of interpersonal comparisons is both its strength and its main weakness.

To assess Pareto efficiency, it is helpful to develop the concept in three stages. The first stage defines the idea of making a Pareto improvement when moving from one allocation to another. From this can be constructed the Pareto preference order which judges whether one allocation is preferred to another. The final stage is to use Pareto preference to find the most preferred states which are then defined as Pareto efficient.

Hence, the welfare increases with increasing utility received by an individual, if the utility of all other members of the society does not reduced. However, this approach to the assessment of effectiveness turns to an incomplete criterion of Pareto.

The attempt to overcome the incompleteness of the criterion was undertaken by Kaldor (1939) and Hicks (1940). They promoted the idea of compensation in cases of deviation from the Pareto optimum. The Kaldor-Hicks criterion or the compensation criterion says that an increase of economic efficiency takes place in those cases when the individual who has received additional benefits compensates losses and gains benefit as compared to the initial situation. This criterion does not include the performance compensation in reality. It is generally enough to have

the potential of full compensation. Therefore, the criterion of the Kaldor-Hicks is often called the criterion of potential Pareto improvement.

### ***Income and poverty***

Income is the additional resources a consumer receives over a given period of time. The reference to a time period is important here since income is a flow, so the period over which measurement takes place must be specified. Inequality of income means that some households have higher incomes than others. Inequality of income is a basic source for an inequity in welfare. The market mechanism leads to an uneven distribution of income. There are groups of people who don't have any means of subsistence.

Before measuring poverty, it is first necessary to define it. It is obvious that poverty refers to a situation involving a lack of income and a consequent low level of consumption and welfare.

Poverty exists when some households are too poor to achieve an acceptable standard of living. The essential feature of poverty is the possession of fewer resources than are required to achieve an acceptable standard of living. There is the concept of minimum needs. A bundle of goods and services that is seen as representing the minimum needs for the household is identified. The exact bundle will differ between households of varying size but typically involves only very basic commodities.

The concept of absolute poverty assumes that there is some fixed minimum level of consumption that constitutes poverty and is independent of time or place. Such a minimum level of consumption can be a diet that is just sufficient to maintain health and limited housing and clothing.

Under the concept of absolute poverty, if the incomes of all households rise, there will eventually be no poverty.

Relative poverty has also been defined in terms of the ability to "participate" in society. Poverty then arises whenever a household possesses insufficient resources to allow it to participate in the customary activities of its society.

The poverty level can decrease if there is a transfer of income from a richer household to a poorer household.

To solve the problem of poverty the government creates public social security system, which provides benefits to the unemployed, the disabled, and pensioners. This is done through the mechanism of public income redistribution.

### ***Functions of public welfare***

Function of public welfare (W) represents the dependence of the welfare of society from welfare (total utility) of individuals. A social welfare function permits the evaluation of economic policies that cause redistribution between consumers.

Although the concept of a social welfare function is a simple one, there are numerous difficulties on the path between individual utility and aggregate social welfare.

The function determining the aggregate level of welfare is denoted by W.

U is the utility of different individuals.

$$W=f(U_1, U_2, \dots, U_n),$$

This is termed a Bergson-Samuelson social welfare function. Basically, given individual levels of happiness it imputes a social level of happiness.

An alternative interpretation of the social welfare function is that it captures some ethical objective that society should be pursuing. Here the social welfare function is determined by what is viewed as the just objective of society. There are two major examples of this.

The utilitarian philosophy aiming to achieve the greatest good for society as a whole translates into a social welfare function that is the sum of individual utilities. In this formulation, only the total sum of utilities counts (1), so it does not matter how utility is distributed between consumers in the society (figure 7).

$$W= U_1 + U_2 + \dots + U_n. (1)$$

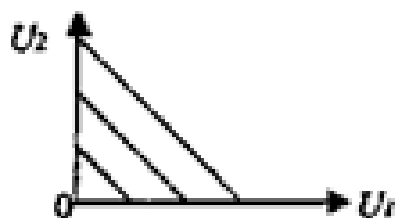


Figure 7. The utilitarian welfare function

Although this approach to the social welfare function is internally consistent it is still not entirely satisfactory.

Alternatively, the Rawlsian philosophy caring only for the worst-off member of society leads to a level of social welfare determined entirely by the minimum of that in society (2). With this objective, the distribution of utility is of paramount importance. Gains in utility achieved by anyone other than the worst-off consumer do not improve social welfare (figure 8.)

$$W=\min (U_1, U_2, \dots, U_n) (2)$$



Figure 8. The rawlsian welfare function

The utilitarian approach requires that the utilities of the consumers are added in order to arrive at the total sum of social welfare. The rawlsian approach necessitates the utility levels being compared in order to find the lowest.

## TOPIC 10. NON-PROFIT ORGANIZATIONS

*Questions for the lectures and the seminars:*

World non-profit organizations. The ONU. Its structure, functions. The other non-profit organizations in the world. The structure of non-profit organizations in Russian Federation. Non-profit organization's activity.

### ***Non-profit organization***

A non-profit organization (NPO) or not-for-profit organization is an organization that uses surplus revenues to achieve non-commercial goals.

The main sources of income of non-profit organizations include:

- contributions of members of the organization;
- receipts from the founders;
- voluntary contributions and donations;
- funds from the state budget;
- revenue from the sale of goods and services;
- dividends (income, interest);
- income derived from the property of the nonprofit organization;
- other services not prohibited by law.

Functioning of non-profit organization associated with the implementation of certain expenses. They can be divided into the following types:

- cost of implementing primary statutory activities (administrative costs and costs for implementation of programs and activities);

- expenses related to business activity;
- loss and write-off.

### ***International non-profit organizations***

International non-profit organizations are intergovernmental and non-governmental associations, created on the basis of an international agreement (the Charter, Statute or other document) in order to promote the solution of international problems and develop international cooperation.

There are international intergovernmental organizations and international non-governmental organizations, as well as global and regional international organizations.

International non-profit organizations are created for different purposes such as cooperation, assistance, cultural exchange, protection of interests, research, charity, socio-political, socio-economic, health, education, ecology and consulting. As a rule, the goals of the international organizations cannot be solved within the same country.

There are several aims of international non-profit organizations:

- organizations contributing to cooperation;
- organizations with the aim of development;
- international organizations contributing to peacekeeping and cultural ties between countries.

The main types of international non-profit organizations are:

- international political organizations;
- international economic organizations;
- international charitable organization;
- humanitarian organizations;
- international organizations in the sphere of health care; education and social protection;
- international environmental organizations, etc.

In addition, we should not forget about international non-governmental organizations, the number of non-governmental organizations exceeds the number of international governmental organizations.

### ***The United Nations***

The United Nations (UN) is an intergovernmental organization established in 1945 to promote international co-operation. Nowadays, there are 193 United Nations member states.

The UN has six principal organs: the General Assembly (the main deliberative assembly);

the Security Council (for deciding certain resolutions for peace and security); the Economic and Social Council (ECOSOC) (for promoting international economic and social co-operation and development); the Secretariat (for providing studies, information, and facilities needed by the UN); the International Court of Justice (the primary judicial organ); and the United Nations Trusteeship Council (inactive since 1994). UN System agencies include the World Bank Group, the World Health Organization, the World Food Program, UNESCO, UNCTAD, UNIFEM, UNICEF, etc.

Independent specialized organizations in the UN are based on intergovernmental agreements and linked to the UN by cooperation agreement. These specialized institutions include: the World Meteorological Organization, the World Health Organization, the World Intellectual Property Organization, the Universal Postal Union, the International Labour Organization, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Industrial Development Organization (UNIDO). Among the specialized independent organizations of the UN special position is occupied by the World Bank and the International Monetary Fund (IMF).

There are international non-profit organizations, which are not included in the UN system. Among them, there are the WTO, the EBRD, the Union of red cross and red Crescent societies, the Interpol, the international Olympic Committee, the Council of Europe and other.



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