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ЭКОНОМИЧЕСКАЯ ТЕОРИЯ

Учебно-методический комплекс
для студентов неэкономических специальностей

ECONOMICS

Educational and methodical complex
for students of non-economic specialities

Под общей редакцией И.В. Зеньковой

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PREFACE

"You may like it or not, but the main problems of modern politics are purely economic. They can not be understood without knowledge of economics. Only the man who knows general questions of economics can form an independent opinion about concerned problems."
Ludwig von Mises

The strategy of economic development of the Republic of Belarus and changes in social and economic development of the country which has occurred during the last years cause the necessity to concretize and attach great importance to human sciences when improving education. The new generation of educational standards, curricula, structural subjects of the sample programs and widely implemented innovative educational technologies focus on it.

Taking into account goals and objectives of active participation in pedagogical process, lecturers of the department of economics have prepared the educational and methodical complex (EMC) "Economics" for students of non-economic specialties. During the preparation of the complex special attention was given to its thematic structure, development and deepening of social and personal competence of students based on the knowledge of human sciences which develop social and creative beginning in understanding and accomplishment of civil, professional and personal functions.

In modern fast-changing world economic education isn't aimed at mastering abstract theoretical truth, construction of models, diagrams, but acquiring of economic knowledge. This knowledge is necessary for understanding the basic laws of economic organization and activity of firm, the company, and economic system of the country, for mastering the objective economic laws, concepts and categories which reflect real economic processes and form analytical thinking, professional skills to choose effective management.

Economic education as the main element of social and humanitarian education and the component of general world view is called to analyze the condition and tendencies of social and economic development of economic agents, industries, national economy, to be able to reveal the specificity of economic relations in Belarus, accepted social and economic programs and economic policy realization.

During the preparation of the educational and methodical complex the authors used the principle of the modular approach which assumed teaching material division into rather independent educational modules (sections):

1. Introduction to the course.
2. Fundamentals of microeconomics.
3. Fundamentals of macroeconomic.
4. Fundamentals of international economy.

The authors of EMC are:

Bichanin V.V., Bogdanova E.V., Rudik V.P. (preface, chapters 12, 13, 15);

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Sholoh O.V., Ziankova I.V. (chapter 4).

EMC "Economics" is meant for a wide range of students of full-time and correspondence modes of study of non-economic specialties. The EMC will be also useful to those who are engaged in practical activities in modern conditions – from politics to business – as success of this activity in many respects depends on mastering economic style of thinking.

The team of authors of the department "Economics" will be grateful to readers for wishes and constructive remarks.

Chapter 1. ECONOMICS: SUBJECT AND METHODS

1.1. Subject of economics as a science.
1.2. Branches (levels) of economics. Theoretical and applied economics. Economic policy.
1.3. Methods of economics. Economic categories and laws.
1.4. Main stages of economic theory.

MAIN CATEGORIES

Economic science, economics, economic policy, business practices, tangible and intangible production, positive and normative economics, political economy, economics, the theory of the national economy, microeconomics, macroeconomics, methodology, techniques, methods, economic laws and categories, main stages of development of economic thought.

1.1. Subject of economics as a science

Economic science has a long and rich history. Its origins lie on the one hand, in philosophy, and on the other hand – in debates on pressing issues of human activity. The first stream of economics appeared in ancient Greece in the IV century BC. Even the term "economy" comes from the Greek word, which consists of two words: "oikos" – the house, the farm and "nomos" – the law, so that in the literal sense economy should be interpreted as "the art of household management" or "home economics". This understanding of the term is not accidental, since the economy of that time remained largely natural, isolated and in need of a certain set of rules and regulations.

The views of ancient Greek philosophers Xenophon, Plato, Aristotle, can be described as theoretical starting points of modern economics. Aristotle divided the science of wealth into two parts – the economy (the aggregate consumer price) and chrematistics (the art of making money).

During more than two thousand years the meaning of the term "economy" has expanded significantly and changed. In 1615, French economist Antoine de Montchrétien published "Traite d'économie politique" ("A Treatise on Political Economy"). Montchrétien's work put into scientific use the term "political economy" and then gave the name to the rising science, which has survived to this day. The term "political" in the name of science also has Greek roots. It

comes from the term "polis" (city, state) and encompasses a broader meaning than the savings. "Political economy" is literally translated as "the laws of the state in the economy," i.e. "the art of managing the public sector." In the late XIX – early XX century qualitative analysis in economic theory is increasingly being replaced quantitative. Scientists increasingly seek to optimize the use of limited resources applying for this purpose the theory of marginal values, differential and integral calculus, algebraic equations and graphs that simulate specific market situation. After this the content and the name of the science changed. The concept of "political economy" is displaced by a new name – "economics". Its new name in economics was published in 1890 in the book of Alfred Marshall "Principles of Political Economy".

The evolution of terms "economy", "political economy", "economics" and "economic theory" is caused by historical reasons, but essentially they are entitled to the same constantly evolving science that studies economic phenomena and processes of management at different levels of interconnection and interdependence. Emphases and approaches change but the science remains the same – the science of economic life of individuals, groups and society as a whole. Development of any branch of knowledge, including knowledge of economy, is a successive change of scientific fields, in which a revision of basic theoretical concepts takes place.

The term "economy" in the current conditions is used in different meanings:

1) economy of a country or part of it, including separate branches (economy of industry, agriculture, etc.), farm area, country or group of countries around the world (regional economy, the world economy, economy of Belarus, Russian economy, etc.);

2) historically determined set of economic relations between people developing in the course of economic activity corresponding to a given stage of development of productive forces and forming a specific economic system (slave-owning, capitalist economy, etc.);

3) scientific discipline concerned with the study of human activity, its laws and regularities (theoretical economy, political economy), some conditions and elements of production (economy of population, labor, management, etc.), individual industries and economic activities (livestock economy, education, etc.).

If we try to give a definition of economy in one sentence, then economy – is a business system that meets the needs of people and society through the creation and use of necessary life benefits.

Different aspects of economic life are studied by various specific economic sciences, but they are based on science, which is known as economic theory in the national literature, or just economy, in the majority countries of the world – economics.

With the development of economics as a science views on the subject and its practical function also change.

Thus, mercantilists reflecting interests of traders of the epoch of primitive accumulation of capital considered that the subject of research was national treasure. The only source of wealth was trade. The wealth itself was often equated with money. The main function of this science was to enhance the commodity-money relations, attracting gold and silver into the country due to increasing demand for money. The main practical conclusion from this science is the need of impact on economic policy which plays a crucial role in economic life.

Physiocrats transferred subject of political economy – the national wealth from the sphere of circulation in the sphere of production. This was the greatest achievement of economists, although they mistakenly believed the source of wealth was only in agriculture. Hence the practical function of this science was to stimulate development of agricultural production, and the main practical conclusion was approval of the need to limit government intervention in the natural course of economic development.

Representatives of the English school of classical economics expanded the subject to investigation of conditions of production and accumulation (Adam Smith), and distribution (D. Ricardo) of the national wealth generated by all sectors of material production which included industry, agriculture, construction, forestry and etc.

The same view of the subject of political economy is shared by some modern economists, considering political economy as a science of production, distribution and consumption of wealth. But understanding of the latter in the course of history of economic thought has changed. Initially, national wealth was in the form of money, then – a result of production and today national wealth includes and the man himself, his intellect, information as sources for the subsequent development of society.

Practical function of classical economics was to increase factors of national wealth growth (deepening of social division of labor, increase in production, increase in employment and productivity, minimizing the share of public spending in national income of society, etc.). In this doctrine both positive (as is) and normative (what should be) functions of economics occur. The bottom line is a warning against any form of government intervention in the natural course of market processes.

The subject of Marxist political economy, in accordance with the class approach to the analysis of social life is relations of production, which are based on property relations. This is significant because laws, conflicts, class conflicts, the need for the dictatorship of the proletariat and the domination of the command system of management derive from the production relations system economic.

Relations of production are objectively folding relations, relationship between people during the process of production, distribution, exchange and consumption of vital goods.

Practical function of Marxism was the need to open organically inherent weaknesses and contradictions of capitalism, to justify the objectivity of economic struggle of the proletariat to achieve its goals. The practical conclusion from this science is replacement of capitalism by socialism, inevitability of proletarian revolution.

Marginalists announced behavior of individuals and social institutions (companies, groups, etc.), ways and means of achieving their goals as the subject of political economy. Practical function was limited to scrutiny of the motives of the subject in a particular economic situation, justification of economic policy of a firm. With this stream appearance of microeconomics is connected.

Marshall, who tried to synthesize basic assumptions of classical economics and marginalism, defined the subject of economic theory or political economy as a study of normal functioning of human society – study of wealth and partly a man, or rather, incentives and motives for action to counter. In this definition the role of people in economy is emphasized.

The subject of economics as a science, according to the Keynesian school, is functioning of national economy as a whole. Practical function is seen in the formulation of economic policy. The main practical conclusion is the need to stimulate aggregate demand and partial business.

Paul Samuelson, who carried out the synthesis of micro-and macroeconomics, in his textbook "Economics", known throughout the world, among many definitions of the subject of economic theory (political economy) indicates that economics is a science of everyday business life and human activities.

In modern economic literature understanding of the subject of political economy as a study of "rarity" of limited resources is very common. So, J. Robinson wrote that political economy was a science that studied behavior of people as a link between objectives and limited funds available for alternative

ways of use and P. Samuelson considers it as a science about ways of use of limited productive resources that allow alternative methods to achieve purposes. In the Russian economic literature there are definitions of economics as a science of endless effort to meet the needs of people, efficiently allocating resources to produce goods and services, exchanging them in order to fully develop capacities and empowering people.

All definitions of economics (political economy) as a science reveal its subject from different perspectives because of taking into account various aspects of human life. The subject of this science is extremely complex and diverse, because complex and diverse human activity is, including the economic, which does not allow him to give a brief, yet comprehensive definition.

While studying the subject of economics in order to better understanding it is appropriate to distinguish the following aspects: scope of study (economic life or environment in which economic activities are carried out), object of research (economic phenomena and processes); subject (person, group of people, government), unit of research (livelihoods of an "economic man", a group of people and government, economic behavior in connection with economic environment in which they are located). It is important to emphasize that the main objective of economics is not just a description of economic phenomena but to show their interrelationship and interdependence, i.e. to open a system of economic processes and laws. In this it differs from the applied economics.

So, the object of economics is relations of production (relations between people during manufacturing process about production, exchange, distribution and consumption of goods and services) with limited or scarce resources in order to conduct business effectively.
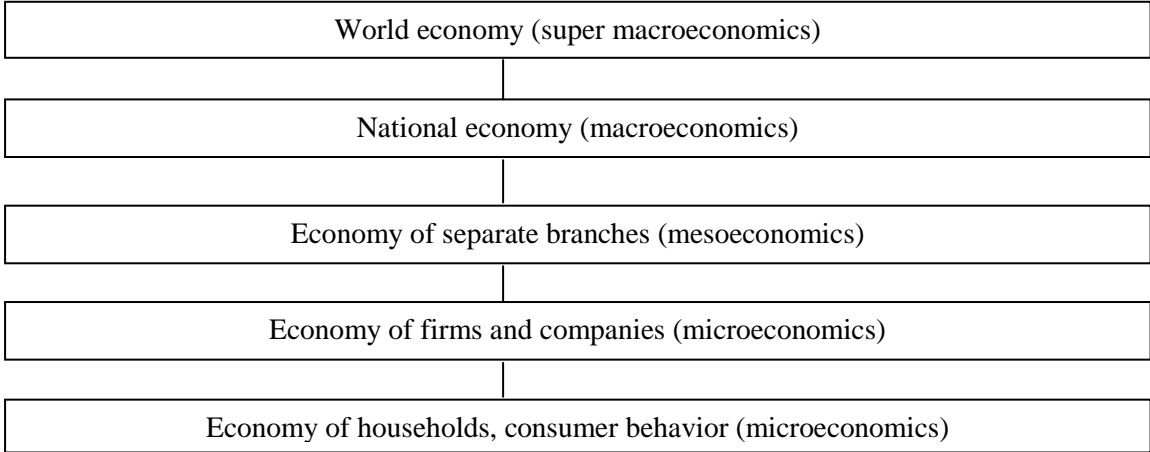
1.2. Branches (levels) of economics.
Theoretical and applied economics. Economic policy

There are different levels of economic research. Depending on the size economy is divided into microeconomics and macroeconomics. Microeconomics is linked with activities of individual economic agents (companies, firms, consumers, traders, etc), it helps to understand why at the level of such entities these and not other solutions are made. Macroeconomics is associated with the functioning of the national economy as a whole; it examines general economic processes at the level of society (production of national

income, unemployment, inflation, etc.) and shows what government should do to make the society flourish.

You can also mark out mesoeconomics, behavior of sectors of economy, and super macroeconomics explaining behavior of the world economy as a whole. To get a clear idea of the construction of a multi-tiered structure of economy, we select the most characteristic of its levels, which are presented in the pic. 1.1.

World economy (super macroeconomics)
National economy (macroeconomics)
Economy of separate branches (mesoeconomics)
Economy of firms and companies (microeconomics)
Economy of households, consumer behavior (microeconomics)

Pic. 1.1. The structure of economics

A representative of the historical school, Carl Menger stressed that economic knowledge does not come from one economic science but a network of independent concrete economic disciplines with special tasks, objects and logical devices. Specific economic disciplines produce a system of rules necessary for implementation and therefore do not apply to theory, but the art of business practices. Hence it is legitimate divide economics into its theoretical and applied parts. Although this division is to some extent arbitrary, it reflects real differences in the object of study, in the way of knowledge and methods of description of economic phenomena and objects used by theorists and practitioners.

Theoretical economy includes economics as science (economic theory) which was born as a theoretical course in economics, associated with the necessity to mark out general regularities of economic processes.

Applied economy interacts with a concrete economy; it relies to a greater extent than the theory on experience, practice management, specific indicators of economic activity. It has set itself practical tasks of the objective analysis of business activity while avoiding excessive abstraction away from the realities of life.

Economics as a science is a methodological foundation for a whole range of sciences: sectoral (economy of trading business, industry, transport, construction, etc.), functional (finance, credit, marketing, management, forecasting, etc.), cross-sectoral (economic geography, demography, statistics, etc.).

Economics takes into account knowledge achieved by specific economic sciences, as well as sociology, psychology, history, without which conclusions derived from economics may be wrong.

The interconnection of economics with other economic sciences in its most general form can be represented in the pic. 1.2.

	Specific economic sciences	
	Branch economics. Business economics. Nation's economics	
Economy of special economic forms and organizations	Economics	Information-analytical sciences
Finance. Credit. Marketing. Economics of nature use		Economic and mathematical methods. Statistics. Analysis of economic activity
	Historical and economic sciences	
	History of economic thought. Economic history	

Pic. 1.2. The interconnection of economics with other sciences

In economics, there are two directions, depending on the area of application of its results.

Positive (descriptive) economics focuses primarily on the objective interpretation of processes and events, building scientific hypotheses, concepts, and laws of functioning of economic systems on their basis.

Normative economics answers questions, how should it be, how to act in order to achieve desired results.

Forecasting as a special part of economic science is a scientific prediction of what may happen in economy in the future. In essence, it is a science of economic expectations.

The practical importance of economics as a science (well-known formula of Auguste Comte) is that knowledge leads to foresight and foresight – to action. Economics should be the basis of economic policy, and permeate the area everyday practice through it. Action (practice) leads to knowledge, knowledge – foresight, anticipation – the right action.

We should distinguish economics and economic policy.

Economic policy is a purposeful system of actions of government and a company in the field of production, distribution of wealth. Government economic policy should reflect interests of society, of all social groups and it is aimed at strengthening of national economy.

Economic policy is engaged in finding solutions to economic problems and putting into practice their policy mechanisms. Politicians taking advantage of economics should also take into account cultural, social, legal and ethical aspects of the problem to be solved, if they want their decisions to be successful. The goals of economic policy may change the economic system and its improvement or degradation.

Economic theory is a scientific guide to the knowledge of economic reality without claims to a monopoly on the truth.

1.3. Methods of economics. Economic categories and laws

Economic science possesses not only a specific subject, but also its own methodology of research.

The methodology of economics is a doctrine about principles of construction and ways of scientific knowledge of the subject of economics. Modern methodology is a powerful tool of knowledge. It is destined to give a true guideline, a direction of scientific search. Its role in solution of new fundamental problems is especially important.

The main approaches to the economic research:

1) **Subjective**. The starting point of research is the economic agent with sovereign "Me". The object of the research is "homo economicus" (economic man) with self-serving interest, i.e. behaviour of this person is rooted by egoism, and "the invisible hand" directs market forces; society is a set of different agents;

2) **Neopositive-empirical**. In the foreground there is a technical method of enquiry. The result is empirical models. Society is analysed on micro- and macrolevel;

3) **Rationalistic**. The behavior of a person accounts for his aspiration to benefit, and the economy purpose is to reveal the laws regulating economic relations, and to explain "how it occurs" (D. Ricardo). Society is divided into classes.

4) **Dialectical-materialistic**. The research is carried out on the basis of the objective analysis of internal relations of economic processes and phenomena in their reality and development. Economic processes and phenomena arise, develop and destroy. Determinism in a public life.

The methodology isn't identical to methods, but precisely it defines the set of methods of research, the choice of various methods of execution, carrying out of researches. It is possible to say that methods are a practical application of theory, theory in operation.

Method is a set of ways, principles with the help of which ways of achievement of the purpose are defined. Method is a way of achievement of the purpose; it is an important tool of scientific knowledge, means of development and enrichment of a science by new results.

The system of methods used in modern economic scientific knowledge is as diverse as economics. It is accepted to distinguish world outlook methods (materialism, idealism), general scientific (scientific abstraction, analysis and synthesis, deduction and induction, logical and historical), particular (economic modeling, experiment, mathematical, statistical, etc.).

One of the basic methods while studying of the economic phenomena is the method of scientific abstraction (from an armor. abstractio – derivation). The researcher distracts from the minor parties of the phenomena to reveal what in them is essential and constantly repeats. Thus basic definitions appear: manufacture in general, needs, distribution, exchange, etc.

Analysis is a mental partition of the studied phenomenon on components and the study of each of these parts separately. Using synthesis economics recreates a uniform complete picture.

Induction and deduction are widespread. By means of induction (prompting) transition from studying of isolated facts to general provisions and conclusions is provided. Deduction (deducing) makes possible transition from general conclusions to rather private. Analysis and synthesis, induction and deduction are applied by economic theory in unity. Their combination provides the system (complex) approach to difficult (multielement) phenomena of economic life.

The important place in research of economic events and processes is occupied by historical and logical methods. They do not oppose each other, and they are applied in unity as the starting point of historical research coincides, in general, with starting point of logical research. The historical method shows that development goes from simple to the difficult in the nature and in a society. Qualitative and quantitative definiteness is inherent in economic processes and the phenomena. Therefore economics (political economy) widely uses both mathematical and statistical techniques and means of research which allow to reveal the quantitative side of processes and phenomena of economic life, their transition in new quality. Thus the computer facilities are widely applied. The special role is played here by the method of economic-mathematical modeling.

The given method, being one of system methods of research, allows to define in the formalized form the reasons of changes, their consequences, forecasting of economic processes. By means of this method economic models are created.

Economic model is the formalized description of economic process or phenomenon. Its structure is caused by its objective properties and a subjective special-purpose character of research.

In connection with construction of models it is important to note the role of the functional analysis in economics. Functions are variables quantities that depend on other variables.
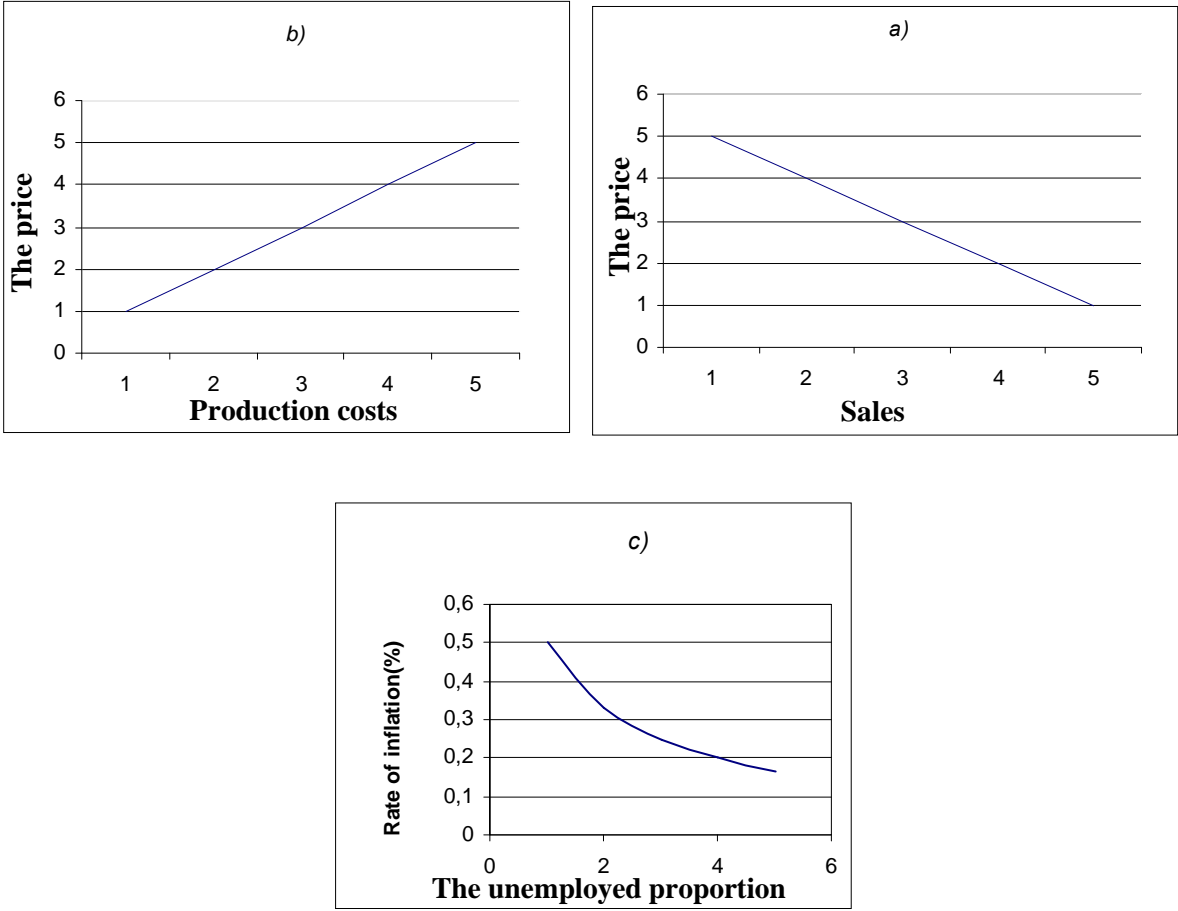
Pic. 1.3. Examples of the graphic dependences applied in economics

Functions are found in our everyday life, and we don't realize it most often. They take place in the technics, physics, geometry, chemistry, economy, etc. With reference to economics, for example, we may note functional relation between the price and demand. Demand depends on the price. If the price of the good raises, the quantity demanded decreases with other things being equal. Thus the price is an independent variable, or argument, and demand is a

dependent variable, or function. But demand and price can interchange. The higher demand, the lower the price with other things being equal. Hence, the price can be demand function.

But demand and the price can be interchanged the position. The above demand, the lower with other things being equal the price. Hence, the price can be demand function.

The majority of models, principles of economic theory can be expressed graphically, in the form of the mathematical equations, therefore it is important to know mathematics and to be able to make and read diagrams to study economics. If the graph line goes from left to right on descending between two variables there is a feedback (see pic. 1.3(a)), if the schedule line goes on ascending, it shows direct relationship (see pic. 1.3(b)), dependence can be nonlinear (i.e. changing) then graph gets the curve form.(see pic. 1.3(c)).

Under the graphic approach diagrams are commonly applied – the drawings showing a correlation between indicators. They can be circular, stylar (columellar), etc. (see pic. 1.4).
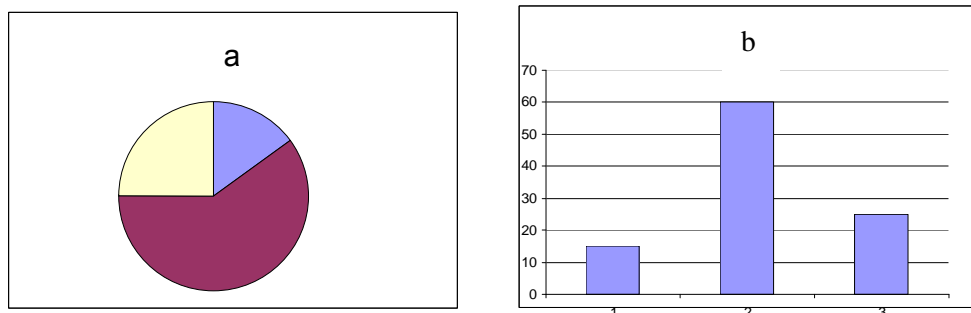
1.4. Examples of charts (a – circular chart, b – rectangular graph)

Schemes visually show indicators of models and their interrelation. Drawings 1.1 and 1.2 can be an example.

Positive and normative analysis is often used to analyze economic problems. Positive analysis gives a chance to us to see economic events and processes such as they are actually: that was or that can be. Positive statements not necessarily should be true, but any dispute concerning a positive statement should solved by checking the facts. Normative analysis is based on the research of what should be. A normative statement is deduced from the positive most often, but objective facts can't prove its validity or falsity. In normative analysis assessments are stated – fairly or unfairly, badly or well, admissible or inadmissible.

Economic theories are formulated in the form of positive statements. The majority of divergences between economists arise when consideration of questions of the normative analysis.

Economic experiments are possible, reasonable and necessary at studying of economic life of people, their groups and all society though not always it is possible to expect all probable results of these experiments.

Economic experiment is an artificial reproduction of economic event or process for the purpose of its studying in optimum conditions and the further practical application.

Conscious mass economic experimenting at microlevel is connected with R. Owen, P. J. Proudhon, F. Taylor, G. Ford and E. Mayo's activity, and at macrolevel – J. M. Keynes and M. Friedman. Wide experiments at macrolevel were also spent in the USSR.

Economics carries out three interconnected functions: cognitive, methodological and practical.

Cognitive function of economics consists of studying economic life, analysis, classification and ordering of numerous empirical facts.

Methodological function of economics consists of working out methods, means, scientific toolkit necessary for researches by all economic sciences.

Practical function of economics is a direct maintenance of economic policy, production control at various hierarchical levels of economic system. Theory helps to predict future succession of events, and this is the most important thing.

Economics as a science is a systematic description of reality on the basis of reflection and abstract generalization of its basic characteristics by means of definitions, concepts, categories presented as the law, a rule or model of economic life.

By means of abstract thinking the essence of economic events is disclosing step by step. It requires formation of certain logic concepts, more or less completely reflecting economic reality in its development.

Economic categories are logic concepts reflecting the most general and essential sides of economic life of a society.

The categories are, for example, demand, supply, credit, ownership, market, wages, profit and many other.

In economics, as well as in any other area of public life and in the nature, through outwardly seeming chaos and a heap of accidents necessity, law of development lays itself a way. Laws of public actions of people, or economic laws operate economic processes in a society. In the book "Philosophy of Law" Hegel wrote about political economy as about a science which does "honor of

thought" because it, having before itself a lot of accidents, finds their laws. Any law expresses the essence of this or that phenomenon, the law and essence are homogeneous (one-serial) concepts and represent the depth of man's knowledge of the world. The phenomenon is wider, richer than the law; however the law catches internal essence of the phenomenon.

Economic law represents the most essential, steady, constantly repeating objective relationships of cause and effect and interdependencies in economic events and processes.

1) Economic laws shouldn't be mixed up with the nature laws, with the laws of natural sciences as there is a number of essential and basic distinctions:

2) Natural laws are laws of the nature, economic – laws of development of public life, economic activities of people;

3) Natural laws are eternal, economic laws have historical character;

4) The discovery and application of natural laws occurs more or less smoothly, and economic laws meet strong counteraction from dying off forces of a society.

Economic laws unlike nature laws don't work in itself, economic process isn't carried out automatically. People's conduct which live and work in certain economic system are necessary for this purpose.

1.4. Main stages of economic theory

Economic science is one of the oldest sciences. It has always attracted attention of scholars and educated people. The reason is that study of economic theory is the realization of the objective necessity to find out motives of people in economic activity, economic laws at all times – from antiquity to the present day. It is interesting to recall that the A.S. Pushkin whom king Nicholas I commissioned to consider the principles of education of young people, above all was against home education but included political economy in sciences compulsory to study. At the end of the XIX century N. Bunge in his book "Foundations of Political Economy" noted that political economy did not exist in nations that were at a low level of human development.

Today interest of educated people to economics (political economy) has not only lessened but it is actively growing. And this is explained by global changes that are taking place around the world and in Belarus in particular. The prominent American scientist Paul Samuelson called economics the queen of sciences. Nobel laureate Milton Friedman wrote that the economics is an enchanting science, it is surprising that its fundamental principles are very

simple and can be written on a single sheet of paper, yet few understand them. While studying, this science reflecting the complex world economy requires from the reader, according to the world-renowned German specialist on history of economic thought A. Heilbronner, "camel endurance and patience of a saint".

In the national and foreign literature there are the following periods (stages) of economic theory:

- Mercantilism (search for the sources of wealth in circulation);
- School of Physiocrats (search for the sources of wealth in production);
- Classical economics (denial of market regulation by government);
- Marxism (theory of labor value, market research from perspective of a manufacturer);
- Keynesian theory (government regulation of market, creation of macroeconomics).

University graduates should be able to understand a wide range of economic issues, evaluate conservative and positive trends of social development, determine independently their position in transformations, be ready to practice and have a certain view of the world. This task is solveв with the help of a number of o social sciences, including economics.

Modern schools and streams (approaches) of economics

Modern economic theory known as "Economics" is based on the marginal economic theory. It is an attempt to synthesize classical political economy and marginalism.

"Economics" was first implemented at Cambridge University by A. Marshall in 1902; it substituted political economy of classical school of J.S. Mill. In 1890, Alfred Marshall (1842 – 1924) published his book "Principles of Economics", which we was translated into Russian as "Principles of Political Economy", and there are no errors, as according to Alfred Marshall the term "economics" meant political economy. J.M. Keynes, Alfred Marshall's student, called his teacher the greatest economist of the XIX century.

The economic crisis in the late XIX century, and almost two decades of depression showed the failure of government intervention in economy, and A. Marshall extolling the idea of free competition and market could not deny limiting the role of government in a market economy, what was reflected in the new term, where the first part of the former name of science disappeared.

Today numerous books on economic theory are published under the same name.

Closer examination of the course "Economics" shows that this is a multi-valued concept describing:

1) special science of principles of market economy functioning at micro, meso and macro levels;

2) science of a more applied nature than political economy which is more abstract;

3) a series of training courses in universities of the US and Western Europe, which also includes economic history, history of economic thought, and a number of special courses on economic issues.

Nowadays there are four major areas of economic theory:
− Neo-Classical;
− Keynesian;
− Marxist;
− Institutional and sociological.

Neoclassical school

Neoclassical school formulates subjective theory of value (in contrast to the labor theory of value in classical political economy) and theory of equilibrium. Economic activities are considered by representatives of this school as a set of micro agents wanting to get maximum utility for minimum cost. The starting point of this analysis is demand and supply, demand and consumption. The main representatives of this approach are A. Marshall, C. Cobb, P. Douglas.

Neoclassical theory includes modern monetarism and neoliberalism.

Monetarism is a theory of economic stabilization gives monetary factors the leading role. Monetarists reduce economic management primarily to government control over money supply, issue of money, amount of money in circulation and reserves, achievement of a balanced state budget, setting a high bank loan.

American scientist and economist Milton Friedman (born in 1912) is one of the major authorities in modern economics, a renowned leader of the "new monetarist school," Nobel Prize laureate in Economics in 1976. In Russia monetarist theory is associated with Yegor Gaidar.

Neoliberalism is a school according to which government intervention in economy should be reduced (minimized) (the principle of classical political economy of Adam Smith), because private enterprise is able to pull the economy out of crisis and ensure its recovery and increase prosperity. Hence it is important to provide entrepreneurs and traders with maximum freedom in economic activity.

Major theorists of economic liberalism in the XX century are Austrian-born American economist Ludwig von Mises (1881 – 1973) and his brilliant pupil August von Hayek (1899 – 1992).

Based on the theory of neo-liberalism, the German theorist, statesman and political leader of Germany, Ludwig Erhard (1897 – 1977) created a theory of socially-oriented market economy, embodied in practice. The main aspects of this theory are necessity of free prices, free competition, equilibrium of supply and demand, equilibrium of economy. Government is a guarantee of these conditions in a market economy and of social orientation of its development. This theory is presented in the book "Prosperity for everyone" published in 1956.

Keynesianism

Keynesian economics, founded by Lord John Maynard Keynes (1883 – 1946), is an important theoretical basis for government regulation of market economy by increasing or reducing demand through changes in cash and non-monetary. This regulation may affect inflation, employment, eliminate uneven demand and supply of goods and suppress economic crises. Keynes's influence on public opinion was the strongest since Adam Smith and Karl Marx. In his main work, "The General Theory of Employment, Interest and Money" (1936) he sets out theory and program of government regulation of the economy. This theory is widely used in the Right-wing literature and has many supporters (W. Beveridge, S. Harrs, A. Hansen, R. Harrod, J. Robinson, A. Lerner and others) and also influenced economic policies of some Western countries. J. Keynes was declared a "savior of capitalism" and his theory was proclaimed "Keynesian revolution in economics". However, Keynes borrowed a number of theoretical positions from the arsenal of the classical political economy of Adam Smith and David Ricardo, and from Marxist economic theory (in particular, from the Marxist theory of reproduction), which has led to approval of possibility of a "bridge" between Keynesianism and Marxism. The key problem, according to Keynes, is the size of market, principle of effective demand, part of which is the concept of multiplier, general theory of employment, marginal efficiency of capital and rate of interest.

In the modern Keynesian theory there are two trends: the U.S. is associated with names of a number of the U.S. economists, and the European is associated primarily with the study of French economists. Among the American the most frequently mentioned are E. Hansen, S. Harris, J.M Clark and others.

Marxism

The third pillar of modern economic thought, which is extremely popular in many countries of the world. Marxism updated and redesigned by some Soviet economists and economists of the former world socialist system until the 80's. of the XX century.

Basic theoretical elements of Marxist theory are the theory of labor value, the theory of surplus value, the theory of reproduction, the theory of capital, interest, and money, formational concept of civilization, etc. The main work is "Capital" in 4 volumes (three volumes of "Capital" and the fourth entitled "Theories of Surplus Value"). Today we blame Marxism for being dogmatic. It must be admitted that Marxism is a significant step in the development of economic theory. Paul Samuelson highlights in the history of economic thought only three prominent philosophers who had a decisive influence on the development of economic theory: Adam Smith, Karl Marx, and John Keynes. Another prominent American scientist, Galbraith, believed that Karl Marx's ideas are too valuable to give it whole away to Marxists. Joseph Schumpeter also considered Karl Marx as a great scientist but this did not prevent him from criticizing Marxism. At the beginning of the XX century the ideas of Marx were criticized in works of Russian economists (eg, Tugan-Baranovsky, Rubin, Zheleznov etc.).

It must be noted that the accumulation of a dogma are inevitable in any science. Dogma is a useless truth. What was true at one stage of the development of thought in the process of learning, at the other stage it is an axiom with a frozen content and is already useless. But life does change and our understanding of life cannot be unchangeable, then there is a need for new concepts, new approaches, and new paradigm requiring a change of the course of public opinion.

Institutionalism

The fourth and increasingly attracting the attention of scientists in the late XX century approach is institutional-sociological. Its representatives are T. Veblen, W. Mitchell, J. Galbraith. The name of the concept derives from the Latin institutum – establishment, a device establishment. All of its supporters consider economy as a system where relationship between business entities is formed under the influence of economic and external factors, including the crucial role played by technical and economic factors. The concept of "institution" is defined very broadly as government, corporation, trade union, as well as competition, monopoly, taxes, and as a sustainable way of thinking, and as a legal norm. In this stream of economics they analyze some disadvantages of capitalism (free market forces) – dominance of monopolies, growing militarization of economy, some flaws of "consumer society" (such as lack of spirituality, etc.).

CHECKLIST

1. What is included in the term "economy"?
2. What does economics study?
3. What unites political economy, economics and economic theory?
4. Determine logic interconnection between concepts "economic science", "economics", "economic policy", "business behavior."
5. Define the term "economic law" and give the classification of economic laws.
6. Methodology concepts, methods and examples of their correct use.
7. Give a brief description of the main stages of economics as a science.
8. Briefly describe current directions of economic theory.

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Chapter 2. NEEDS AND RESOURCES.
THE PROBLEM OF CHOICE IN THE ECONOMY

2.1. The concept and classification of needs.
2.2. Production and economics. Simple elements of labour process.
2.3. Resources and factors of production.
2.4. The problem of choice in the economy.
2.5. Economic growth: the essence, meaning and types.
2.6. The idea of economic and social effectiveness. Activities, ways and factors to increase effectiveness.

MAIN CATEGORIES

The concept and classification of needs, resources (factors) of production, the problem of choice in the economy, the production possibility curve, imputed costs, economic growth, economic and social efficiency.

2.1. The concept and classification of needs

Needs are objective people's requirements in something necessary for supporting of vital activity, maturation of an organism, person. Needs require satisfaction.

Person's needs are different. The American scientist A. Maslow has disposed all needs by a hierarchy principle in a following ascending order: from "the lowest" – material to "the highest" – spiritual:

1) physiological needs (in meal, drink, heat, genus reproduction);

2) needs for safety and self-preservation (security from external enemies, criminals, diseases);

3) needs for social relationships (love, friendship, communication with people, belonging to some group etc.);

4) needs for respect (a recognition of a man as a personality, self-esteem, acquisition of the certain status, authority);

5) needs for self-development (improvement of all person's abilities and possibilities).

It is accepted to represent these needs in the form of a pyramid, based on biological people's needs, above which spiritual needs raise a person as a social individual.

Until a person doesn't satisfy the lowest needs the highest needs don't work.

But this classification can be added by other needs: material and spiritual, rational and irrational, conscious and unconscious etc.

It needs that make people do some activity. A motivation to the activity occurs only when needs are awared. In this case needs acquire the concrete form of interest.

Economic interest is a manifestation of economic needs. Interests express economic benefit, advantage. Realization the interests, economic agents provide themselves independence, self-development.

The variety of economic agents causes variety of economic interests. Depending on the one who is the bearer of interests there are different types of interests. They are social interests, collective and personal; national and international; group and family; class-circled etc. All of them exist in unity, but between them can be contradictions. Thus, personal interest in reception of the greatest welfare can contradict collective interest.

Satisfaction of needs is a process of partial or absolute realization of person's desires (needs). The satisfaction of existing needs and the emergence of new ones is an infinite process. Therefore the main goal of economic production is to satisfy person's needs in those goods which are necessary for him through his life. Not any need but only financially reliable is satisfied in a market economy because it is provided with money and measured by economic efficiency, benefit.

It is necessary to notice that fact that people's needs for material benefits and services practically aren't limited: people constantly aspire to increase their living standard; when they satisfy their main vital needs they want more. And in the process of progress there is an increase in needs. Two centuries ago very few people could dream of a personal computer, but today it is necessary for each student. This is explained by the fact that people's needs in different welfare almost don't have saturation.

2.2. Production and economics. Simple elements of labour process

Economy "grows" from production which forms a material basic of economy. Constantly repeating, production has historical development – from the simplest forms (food extraction with primitive means by primitive person) to modern automated production.

At all unlikeness it is possible to allocate common features inherent in any production. *Production* is the process of person's influence on natural resources for the purpose to adapt them for satisfying different needs.

The material basis of production process is *a labour process*. Basic elements of the labour process are work, subjects of labour and facilities.

Work is a realized, reasonable person's spending of his workforce for transformation the nature's forms to satisfy the variety of needs inherent in society. Work and ability to work are different concepts, which cannot be mixed.

Each person has workforce – the totality of physical and spiritual abilities, but if he doesn't use it, the working process won't occur.

Workforce is the totality of physical and spiritual person's abilities, which are used to produce material welfare.

Subject of labour is at what is aimed a work, what makes up a material basis of future finished product. Subjects of labour are given by the nature (minerals), or are the product of previous work (raw material and materials). As a result of a scientific and technical progress the person has learned to create subjects of labour with in advance set properties, which don't subsist in the nature.

Facilities are a thing or a complex of things which the person places between himself and the subject of labour; that is an instrument, with which a person influences subjects of labour, creates a finished product.

Material facilities are divided into:
 – natural – land, a stick, a stone, domestic animals, organic fertilizers;
 – technical – artificially created by the person (instruments, machines, cars).

Means of production are a set of subjects of labour and facilities which are interrelated and corresponded to each other. For example, baking bread requires not only flour (subject of labor), but also buildings (bakeries), ovens, vehicles for transportation of bread (facilities).

The interaction between workforce and means of production is reflected by technology of production, i.e. ways of a person's influence on the subject of labour.

In economics the complex of all forces, which are used in the process of production (including physical and spiritual efforts of the person) is designated by concept *"productive forces"*, introduced by the Marxist theory. Two tendencies are inherent in their development: they become less material and labour-consuming. The first tendency marks rescue of the nature, and the second – rescue of the person. Otherwise, increasing volumes of output would absorb not only the nature, but also the person.

Productive forces form the leading side of the process of production. To each step of the development of productive forces there correspond certain *industrial (economic) relations* in which people enter in the process of economical activity.

There are two levels of production: individual and public.

Individual production is an activity in the scales of the basic production unit (enterprise).

Public production is all system of industrial relations between enterprises, which become covered by infrastructure of production, that is branches and enterprises, which don't make products, but provide it with a technologic movement (for example transport, communication, warehouse rooms).

2.3. Resources and factors of production

Resources of production are a complex of different natural, social and spiritual forces, which can be used in the process of creation goods, services and other values.

In economics resources are divided into:

1) *natural resources* – natural forces and substances which are possibly suitable for use in production. They are distinguished between inexhaustible resources (solar energy, wind power) and exhaustible resources (they can be renewable – (wood, water) and non-renewable – (oil, gas, field of ore, etc.)). Many natural resources are rare, and their reserves decrease every day;

2) *material* – means of production created by the person and subjects of labour, which are the result of production;

3) *manpower* – able-bodied population;

4) *financial* – cash assets, which society is able to lay out to organize production.

5) *informational* – data necessary for functioning of automated production and for controlling it with computer technologies.

Equally with the concept "resources of production" economics operates the concept "factors of production". When we speak about resources, we mean those natural and social forces, which possibly can be involved in production, and *factors of production* are resources which are really involved in production process.

There are basic and additional factors of production in economics. The basic factors of production are labour, land and capital. According to leading economists the additional factors of production are entrepreneurship, science as productive force, informational technologies.

1) *labour is* person's abilities and skills which can be used for goods and services production. To be precise, here we speak about *workforce* as a complex of person's physical and spiritual forces, his ability to work. Workforce in different countries (regions) is limited by the number of adult able-bodied population. Decreasing of fertility and related to this ageing of population raise the problem of effective usage of workforce.

2) *capital* is resources of production which are created by people – buildings, constructions, equipment, instruments, transport, half-finished products, which are used in production. Their amount in economy is limited, besides they wear out during the process of functioning, so from time to time they require equivalent.

3) *land* is represented by natural goods which is used for creating goods and services (minerals, wood, water, air, areas of territory);

4) *entrepreneurial abilities (entrepreneurship)* is a special type of human activity, consisting in ability to use more effectively other factors of production.

5) *science* as a factor of production represents the sphere of human activity, which function is the development and ordering objective knowledge about the reality. Characteristics of this factor of production are:

− science as an element of productive forces becomes the participant of production;

− science influences the level of production efficiency;

− science influences the process of preparation of highly skilled workforce;

− science determines the level of technology and organization of production;

− science turns into immediate workforce.

Information as a factor of production provides ordering of knowledge, which is materialized in system of mechanisms, machines, equipment, management and marketing models.

Ecological factor assumes ever greater importance in modern production, which plays the role of an impulse of economic increase or as a limiter his abilities in connection with adverse effect on the environment.

Some economists mark out *time* as a special economic resource. People in their industrial-economical activity have the limited amount of this non-renewable recourse.

The great importance on effective utilization of resources is rendered by technology of production, which is represented by concrete methods of processing of objects of the labour, a certain order of production processes, and also the organization of production, which secures coherence of functioning of all its resources. The organization of production, work and direction are called management, which in the economic literature of the XX century was considered as a factor of production.

A specific role in modern economy has the factor which is called infrastructure – complex of branches and spheres of activity, which create general conditions for functioning of production.

All factors of production, firstly, are inseparably linked and are interchangeable. Secondly, welfare requires a certain set of factors for its production. Thirdly, every good can be created by the use of different factors in various combinations and proportions. Fourthly, business entity, organizing production, joins all its factors in the way to get more products by lesser costs. Fifthly, all

economic factors of production are available in the limited quantity. This raise the problem of their effective utilization. Sixthly, the organization of production provides agreed functioning of all factors of production, their proportional quantitative parity, interchangeability.

The main aim and the factor of production, its development and improvement is the man. As the participant of production it acts as 3 persons. On the one hand the man is a producer, directly participating in creation of goods and services. On the other hand, he is a consumer using everything that is received in the process of production. Besides the man coordinates, harmonizes actions of the producer and the customer, performs the function of manager.

It is necessary to notice that money is not a production factor. There is nothing that can be done from money, but it is a condition of acquisition of resources. Cash resources are involved in buying factors of production from their owners, and so it is a real possibility to join resources in one process of production.

Material and non-material goods and services

Goods are means for satisfaction of people's needs. There are a lot of criteria, upon which there are various types of welfare. Goods can be:

1) *material*, which includes natural gifts of nature (ground, air, water, climate); products (foodstuff, buildings, structures, machines, instruments);

2) *non-material,* which has the form of useful activity for people and which influences development of people's abilities. They are created in non-manufacturing sphere: public health, education, culture and etc. Also they include internal blessings, which are given to a person by the nature – abilities to a science, voice, an ear for music and etc, and also the external blessings – which are given by external world for satisfaction of needs (reputation, business contacts, patronage and etc.).

Essential characteristic of human life and activity is the dependence on a material world. The part of material benefits is available in abundance and consequently they are always accessible to people (air, sun rays, and wind power). Such blessings in economics are called *free* or *noneconomic*. While the given conditions remain, these blessings and needs for them aren't person's cares and calculations, so they aren't learned in economics.

Other material benefits are available in the limited quantity (any "rarity"). To satisfy needs and to have them in accessible quantity, the person's efforts directed on their mining, the adaptation to needs are necessary. These benefits are called *economic*. Well-being of people depends on possession these goods, therefore with them people address carefully, economically, prudently.

The specific form of the economic benefits are goods, i.e. products of work created for an exchange (sale).

2.4. The problem of choice in the economy

The above-mentioned allows to confirm, that the society faces *a fundamental economic problem* – the contradiction between growing human needs in the various benefits and limited resources for satisfaction of these needs. From this universal contradiction the subject of economics which, as we have already marked, consists in the research of a problem of an effective utilization of the limited resources for the purpose of the maximum satisfaction of material people's needs.

Production possibilities of economic system are limited by a rarity of applied resources (factors of production). This problem in the process of development of a society not only remains, but at times and increases. It is explained by an exhaustion of non-renewable natural resources and growth of society's needs in consumer goods and investments.

There is absolute and relative scarcity of resources in the economic theory. *The absolute scarcity* is understood as insufficiency of industrial resources for simultaneous satisfaction of all needs of every member of society. But it is enough of resources for satisfaction selected certain needs. Thus, if we narrow a circle of needs the absolute scarcity becomes *relative*. The absolute scarcity of resources turns into relative thanks to a choice of the needs which are subject to satisfaction.

The economic choice is the way of distribution of the limited resources which allows achieving a maximum of the benefits.

Any society should solve in one way or another three radical interconnected economic problems (three main questions).

WHAT? (What of the possible goods and services should be produced in the given economic system during the certain period of time?).

HOW? (By what combination of industrial resources, with using of what technology should be made the goods and services, which are chosen from possible variants?).

FOR WHOM? (Who will buy the chosen goods and services? Who will pay for them, and thus will derive benefit? How should be the gross revenue of a society from production of the given goods and services distributed?).

These three questions are basic and general for all economic systems, but the ways of their solution in each economic system are different. The market economy in its pure form supposes presence of responsible and independent manufacturers and consumers. Manufacturers produce those goods from the sale of which they expect to make a profit. So, before the beginning of industrial activity they should know, for whom they produce, which consumer attributes it should posses, when it needs to be made and how many. Thus manufacturers use those means of production which allow saving as much as possible expenses be-

cause they defray them from their own pocket. It is clear that consumption level will depend on the received incomes. In other words, the manufacturer will produce for the one who will pay.

Thus, market economy is the form of the organization of the enterprise at where individual manufacturers and consumers cooperate by means of the market, answering questions: what, how, for whom to produce? – by means of the system of prices, profits and losses, supply and demand.

The production capabilities are possibilities of economic benefits production at full and an effective utilization of all available resources and at the present level of development of scientific and technical progress.

As resources are limited, and needs of people, as we already marked earlier, are boundless, so society should make a choice: what it is compelled to refuse, what to renounce, i.e. what victim to bring for receiving desirable result. Here we face the problem of the *alternativeness of use of resources.* For example, if economic resources (land, materials, and labour) are used for buildings construction, society refuses building of hospitals, offices, schools which can be constructed with the same resources. Thus, society is compelled to refuse something, to donate something for receiving desirable result.

The quantity of one goods which should be donated for the increase of manufacture of other goods is called *alternative costs*.
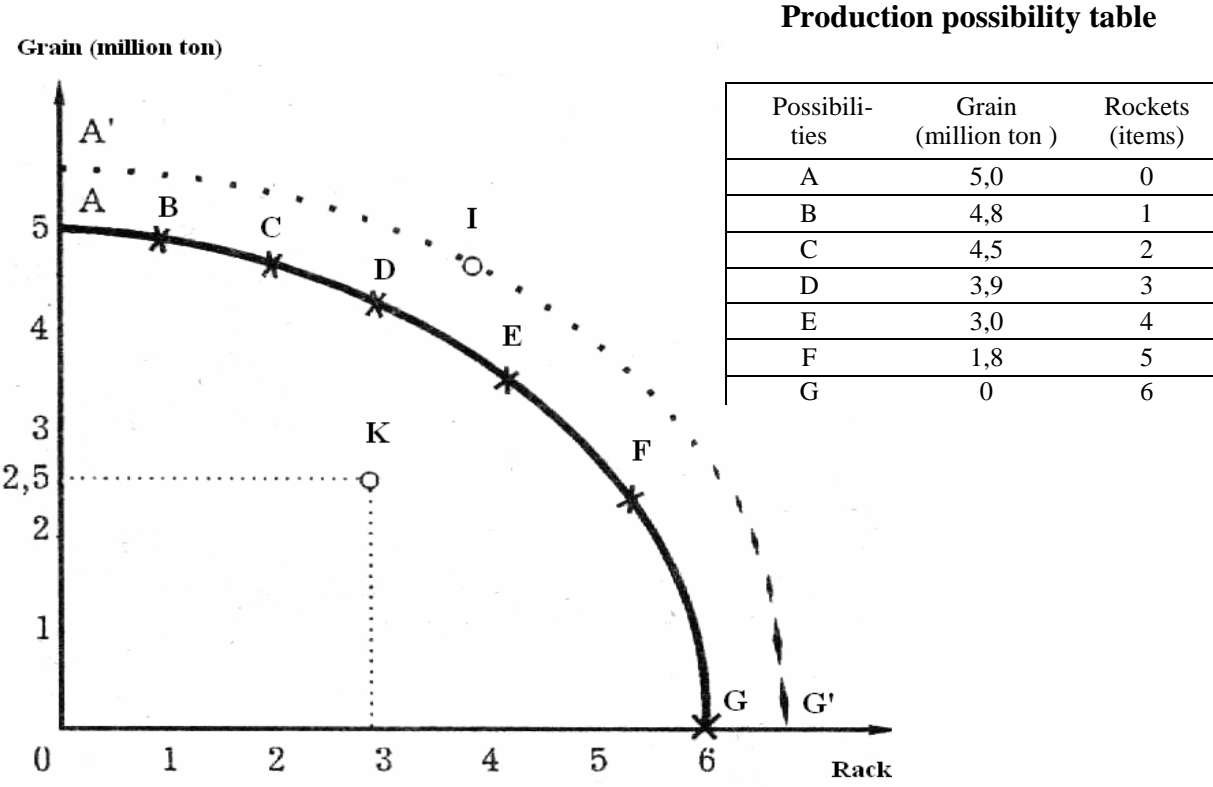
For their designation other term is also used – *the imputed (latent) costs* of achievement of the result which is chosen by society. In our example hospitals, offices, schools will be the imputed costs. The society can direct all resources on building construction, and can distribute resources to construct smaller quantity of houses, but some quantity of other objects.

The essence of the problem of choice is if every factor, which is used for satisfaction of diverse needs, is limited there is a problem of alternativeness of its use and search for better combination of production factors.

By consideration of the majority of economic problems economists widely use models which though simplify the reality, but allow better understanding its essence.

In order to solve the main economic problem – what, how and for whom to produce – the model of *the production possibility curve (PPC)* is used. *Production capacity is possibilities of society to manufacture economic blessings at full and effective utilization of all available resources at the present level of development of technology.* Possible output is characterized by the production possibility curve. We will explain it on a tentative example. We will accept that in a society only two goods are produced: grain and rockets. If the society uses all

the resources to manufacture only grains it produces 5 million ton; if to manufacture only rockets, then 6 items are made. With simultaneous manufacture of both goods following combinations are possible (see pic. 2.1). The figure shows that any increase in production of rockets (from 0 to 6 items) grain production reduces (from 5 million to 0 ton), and vice versa. Line A B C D E F G, which is called *the production possibility curve*, *shows alternative options at full use of resources.* All points located inside the figure 0AG, mean an incomplete use of resources, for example, point K (means simultaneous production of 2,5 million ton of grain and three rockets). And vice versa, any production program which is characterized by points outside the figure 0AG, won't be provided by cash resources (for example, point I). The production possibility curve usually has the convex form (it is concaved to the beginning of coordinates).

Production possibility table

| Possibili- ties	Grain (million ton)	Rockets (items)
A	5,0	0
B	4,8	1
C	4,5	2
D	3,9	3
E	3,0	4
F	1,8	5
G	0	6

Pic. 2.1. The curve of production potentialities

It means that if we change production structure, for example, in favor of rockets, we will use more ineffective for this purpose resources. Therefore each additional rocket demands an increasing reduction in production of grain (and on the contrary). Production of the first rocket has caused the reduction of grain production by 0,2 million tons, the second by 0,3 million, the third by 0,6 million tons etc. This example illustrates **the law of diminishing productivity.** The

production possibility curve is historical; it reflects the reached level of development of technology and degree of use of available resources. If resources increase or the technology becomes better, the figure area 0 A G grows, the curve A B C D E F G move upwards and to the right.

If the process is going on uniformly the curve AG is symmetrically displaced to the position A'G' (pic. 2.1). If there is a unilateral increase of efficiency of production methods of one of the goods, than the shift has an asymmetric character (pic. 2.2). At unilateral expansion of grain production the curve AG is already displaced to the position A_1G, if we increase rockets production – the curve displaces to the position AG_1. The production possibility curve can be used to characterize structural shifts between industry and agriculture, public and private goods, present and future consumption (consumer and investment goods and services) and etc.

In the conditions of limited resources the problem of economic choice is non-correctable, however in various economic systems it is solved differently. **The law of increasing alternative costs** provides the growth of alternative production costs of each new unit of production with the increase in production.
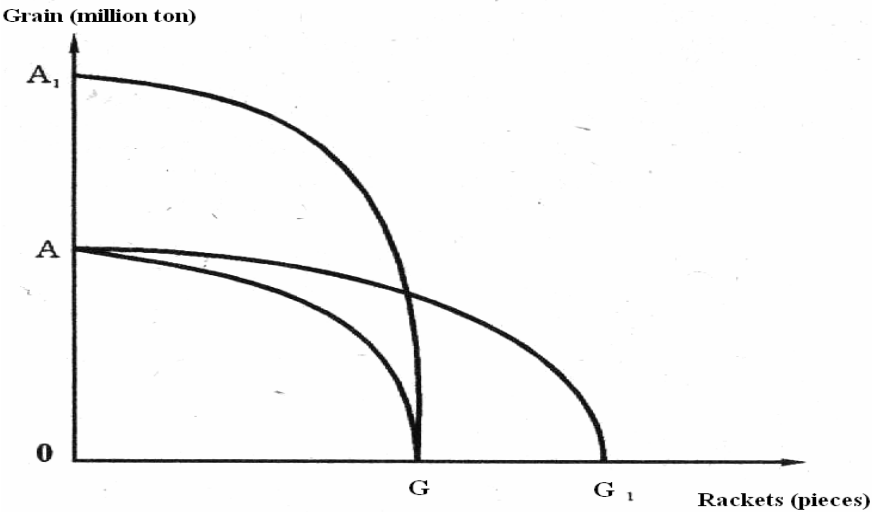
Pic. 2.2. Shift of the production possibility curve
at unilateral expansion of one of the production

This law determines the form of the PPC. It has a concave appearance, the curve "bents" along the edges. *Concavity* is an important property of the production possibility curve. It is explained by the fact that at transition from one good, in our case – rockets, to another it is necessary to use better adapted for grain production resources and unsuitable for the production of rockets. And if we want to

manufacture more rockets, than we should use less suitable for this purpose resources. Some resources adapt easily enough, others – more difficult (for example, the specialized equipment, materials, raw materials etc.). It is shown in increasing of alternative costs at transition from one combination of the goods to another.

2.5. Economic growth: the essence, meaning and types

The major characteristic of a public production in any economic system is the category of economic growth.

Economic growth is the ability to make greater volume of production as a result of increase in supply of resources and technical progress.

Economic growth means that at each given interval of time the solution of the problem of limited resources is facilitated and it is possible to satisfy a wider range of a person's needs. That means that economic growth is a process of expansion of production possibilities of society.

Graphically economic growth is expressed by the production possibility curve shift to the right (pic. 2.3).

If we consider that all the points of the PPC mean that a full employment of available resources is already reached, economic growth is possible in two ways:

a) increase of *quantity* of applied production factors, with the aid of natural growth at invariable quality (for example, able-bodied population growth, involving in economical turn-round of the earlier not involved natural resources, production growth by increase of production spaces at an old technical basis, etc.);

Pic. 2.3. Economic growth

b) account of improvement of *quality* of production factors without additional gain of their quantity (for example, application of more qualified workforce, replacement of technically and morally out-of-fashion equipment by new machines, application of new production and business technologies).

The economic growth which is realized by the first way, is called *extensive*, and by the second – *intensive*. In real life both these types of economic growth closely intertwine each other. For example, introduction of new technologies can be interfaced with the increase of production spaces.
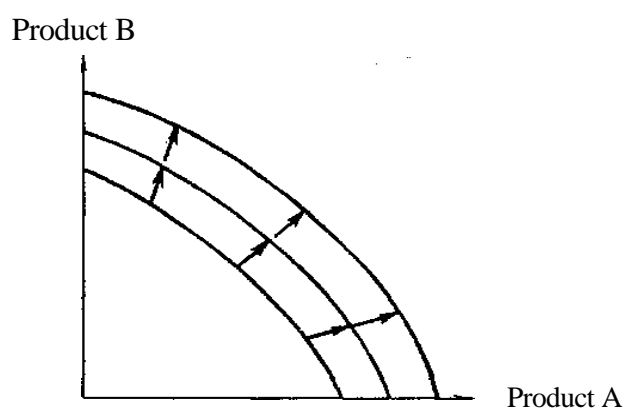
In intensive type of growth, the main thing is efficiency increase, growth of return of all production factors though the quantity of the invested capital, expended work and used land can remain invariable.

The major factor of intensive economic growth is the increase of labour productivity which is defined by the following formula:
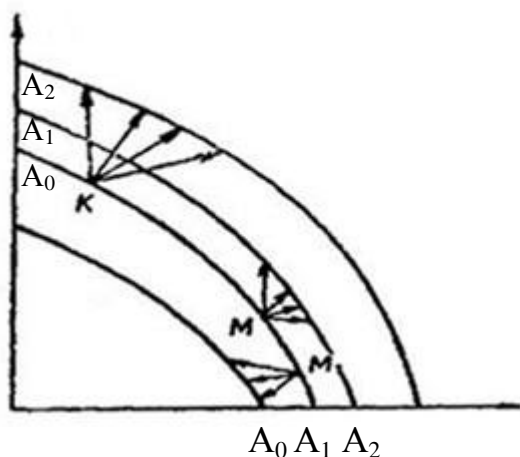
$$LP = P/L, \qquad\qquad (2.1)$$

where LP – labour productivity; P – the created product in natural or monetary form; L – expenses of a unit of labour (for example, person-hour).

Speaking about speed of economic growth, economists apply the term "rate of economic growth".

Let's consider industrial alternatives and their influence on rate of economic growth. It is possible to assume that there are only two goods in economy: means of production (cars, equipment, stock) and consumer goods (clothes, footwear, and foodstuff). Let us assume that the PPC at this moment is presented by the curve $A_0 A_0$ (pic. 2.4). There is an alternative before a society: to increase manufacture of means of production by the reduction of items of consumption goods (point K) or to direct available resources on growth of consumer goods, reduce the output of means of production (point M).

If the society chooses the alternative M more resources will be spent for current consumption, leave an industrial turn and consequently, it will be excluded from participation in expansion of production potentialities of the society. Accordingly through some years the PPC will deviate only to the position $A_1 A_1$.

If the society chooses the alternative K more resources will be excluded from current consumption and will be directed to manufacture means of production with the aid of which in the future we can make more consumer goods. In this case the PPC will deviate to the position $A_2 A_2$.

Pic. 2.4. Alternatives of economic growth

Thus, it is possible to draw the following conclusions:

1) if we direct more resources on current consumption, we reduce rates of economic growth and, consequently, we will limit possibilities of the future consumption;

2) if we direct more resources on investment (capital expenditures), we will accelerate rates of economic growth and, consequently, we will expand possibilities of future consumption.

Besides specifying the problem of scarcity and choice it is important to remind once again about rational behavior of the person in the course of economic activities. The essence of rational behavior is the *minimization of expenses and benefit maximization.*

2.6. The idea of economic and social effectiveness. Activities, ways and factors to increase effectiveness

At all stages of historical development society always interests the question: by what expenses the final industrial result is reached. We find the answer for this question in concepts of production efficiency.

In modern conditions the efficiency of foreign economic relations and the world economy is becoming increasingly important. That transforms efficiency into an international category. Consequently, with respect to the structure of the international relations, it is necessary to distinguish **national and international** efficiency.

Economists also mark out **economic and social** efficiency of production. ***Economic efficiency*** is an achievement of greater results at the least expenses for a unit of production. It occupies an important place in economic systems, is criterion of expediency of new branches and enterprises creation, reconstruction of the operating companies, workings out and application of new techniques, actions for perfection of production organization, work and management. In general ***production efficiency*** is a parity of results and expenses which were bore for achievement of these results. If this parity is defined on macroeconomic level it will characterize the efficiency of a social production, if definition is carried out on microeconomic level we speak about production efficiency. Thus it is necessary to distinguish ***general and particular indicators***. To characterize production efficiency a number of particular indicators are used. With their help productivity of application of certain kinds of resources is measured, among which it is necessary to single out the following:

$$labor\ productivity = \frac{result}{costs\ of\ living\ labor\ (direct\ index)}.$$

The reciprocal variable is labour intensity of production:

$$labor\ intensity = \frac{outlay\ of\ time}{result},$$

$$material\ returns = \frac{result}{outlay\ of\ materials}.$$

The reciprocal to this quantity is a material capacity:

$$material\ capacity = \frac{outlay\ of\ material}{result},$$

$$capital\ productivity = \frac{result}{used\ funds\ (capital)}.$$

The reciprocal is the capital intensity:

$$capital\ coefficient = \frac{Cost\ of\ used\ fixed\ capital}{result}.$$

Both at micro level, and at macro level indicators of capital productivity (capital intensity) have special value because it is important not only to have industrial potential, but also effectively use it. Last years in connection with inflation the problem of material capacity and energy intensity has been of the major importance.

Profit rate and the level of profitability are general cumulative indicators of production efficiency. The profit in market conditions is the main objective of business and criterion of production efficiency. Among many indicators of profitability it is necessary to mark out: 1) *output profitability* which is defined as the ratio of net return to the cost price of the output; 2) *profitability of production* which is defined as the ratio of net profit to mid-annual cost of fixed capital stock or to cost of the enterprise capital.

Labour productivity, quality of production, its material capacity and capital intensity are the main summands of production efficiency. In the conditions of a rigid business struggle in value of production efficiency the meaning of competitive power increases which is defined by a number of indicators. A special place is occupied by the price and quality of production among them. In this regard and on micro level, and on macro level an important indicator of production efficiency is the improvement of *quality of production*.

Social efficiency is the correspondence of economical activity results to the social purposes of society. It expresses the degree of satisfaction of all set of needs. To characterize social and economic efficiency on society level it is necessary to pay attention to the "*Pareto-efficiency*" concept widely used in the western economic literature. Italian economist and sociologist Vilfredo Pareto has defined efficiency as a condition at which it is impossible to increase the degree of satisfaction of needs at least of one person, without worsening position of other member of society. The optimum of Pareto-efficiency is reached when changes in manufacture don't cause position deterioration at least of one person, but improve position of all other members of society.

Social efficiency is connected to a population standard of living, services and working conditions, a condition of habitat of the person, free time scales. It assumes strengthening of social orientation of economic growth. It is inadmissible to increase scales of production at the expense of deterioration of working conditions, cause damage to environment, and decrease other indicators of life-sustaining activity of the person.

Economic and social efficiency are inseparably linked. Economic efficiency growth forms a basis for achievement of high social results. In turn without social achievements solution of economic problems is impossible. The degree of resolution social problems (the relation to work, moral atmosphere, etc.) quite often has defining influence on dynamics of economic production efficiency.

Production efficiency also finds the reflection in achievement of compliance of its results with public needs. It is a question of the main macroeconomic proportion – equality of aggregate demand and aggregate supply.

In the conditions of transition to market economy the link between economic indicators of efficiency and social ones is increased. If economic results become higher, than social results should be higher, and on the contrary. Social results are expressed by the following indicators:

– increase of living standards – growth of remuneration, real incomes, maintenance with accommodation, health services level, general educational and professional level of workers;

– scales of free time and its rationality use;

– working conditions – injury rate, turnover of labour reduction, population employment;

– condition of ecology and production influence on ecological conditions in the country (region).

Following *ways to increase efficiency of social production* are possible:

– adoption of scientific and technical revolution and perfection on this basis of means of production, increase their returns;

– realization of forms and methods of scientific organization of work in the enterprises (improvement of professional skill of workers, perfection of division and labour cooperation, rationalization of labour processes, work rationing);

– introduction of rational system of specialization and production cooperation;

– development of the initiative and independence of labour collectives;

– realization of structural and organizational reorganization of national economy;

– perfection of an economic mechanism, system and methods of management;

– perfection of stimulation of work, strengthening of work motivation, consolidation of labour and technological discipline;

– use of advantages of the international division of labour.

There are *factors that increase production efficiency*:

– scientific and technical (STP acceleration, automation, robotics, application of resource-saving technologies);

– organizational-economic (specialization and cooperation of production, rational placing of productive forces, economic methods of management of economic activities);

– socially-psychological (humanization of production, educational and professional level of labour, formation of certain style of economic thinking);

– external economic (the international division of labour, the mutual help and cooperation of the countries).

CHEKLIST

1. Give the definition of needs and their standard classification.
2. Explain the interrelation of categories "productive forces" and "production relations".
3. Explain the interrelation of categories "production resources" and "factors of production".
4. What is the essence of the fundamental economic problem – the problem of choice?
5. Name three general and basic questions of all economic systems.
6. Give the theoretical and graphic analysis of the production possibility curve.
7. Give the definition and explain the economic meaning of the category "imputed or alternative costs".
8. Formulate the law of increasing alternative costs.
9. Give examples of economic and social efficiency of public production.

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Chapter 3. THE ECONOMIC SYSTEM.
THE MARKET SYSTEM OF THE MANAGEMENT

3.1. The idea, structure and levels of economic system. The criteria of separation of economic systems and their types. Models of market economy.

3.2. Property: the idea, evolution, types and forms. The reform of property in the Republic of Belarus.

3.3. Market: the idea, functions, classification. Market elements. Competition: the idea and types.

3.4. Market infrastructure. Circulation of recourses, products and money in market economy.

3.5. Government functions in modern market economy, methods of regulation.

MAIN CATEGORIES

This theme is recommended for self-study for students of noneconomic specialties in higher educational establishments. The main aim of self-study is to master basic economic concepts and categories, to find out structure, functions, tendencies and features of development, functioning of different types of economic systems, Belarusian economy model.

In this chapter you can find basic concepts, definitions of categories, structurally - logic schemes, tables of comparative characteristics of economic systems, schemes of the patterns of ownership, classification and models of the market, market infrastructure and control questions.

3.1. The idea, structure and levels of economic system.
The criteria of separation of economic systems and their types.
Models of market economy

Economic system is historically occurred or established operating set of principles, rules, legislatively fixed norms defining the form and the content of the basic economic relations, arising in the course of production, distribution and consumption of an economic product.

Approaches to studying economic systems:
– Technological;
– Basic;
– The system of production relations;
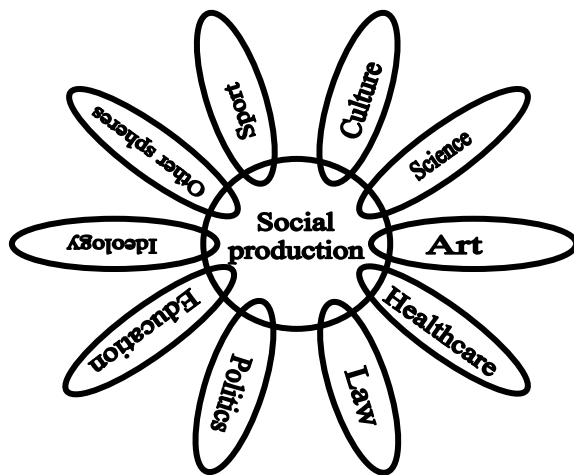– The set of institutes;
– Complex.

Scientific approaches to the consideration of an economic system:
- formational;
- phasic;
- civilizational.

To characterize any system it is necessary to pick out its elements, organization levels, structure and functions. Economic system of the society consists of smaller systems, sectors:
- state;
- cooperative;
- home – economy;
- entrepreneurial.

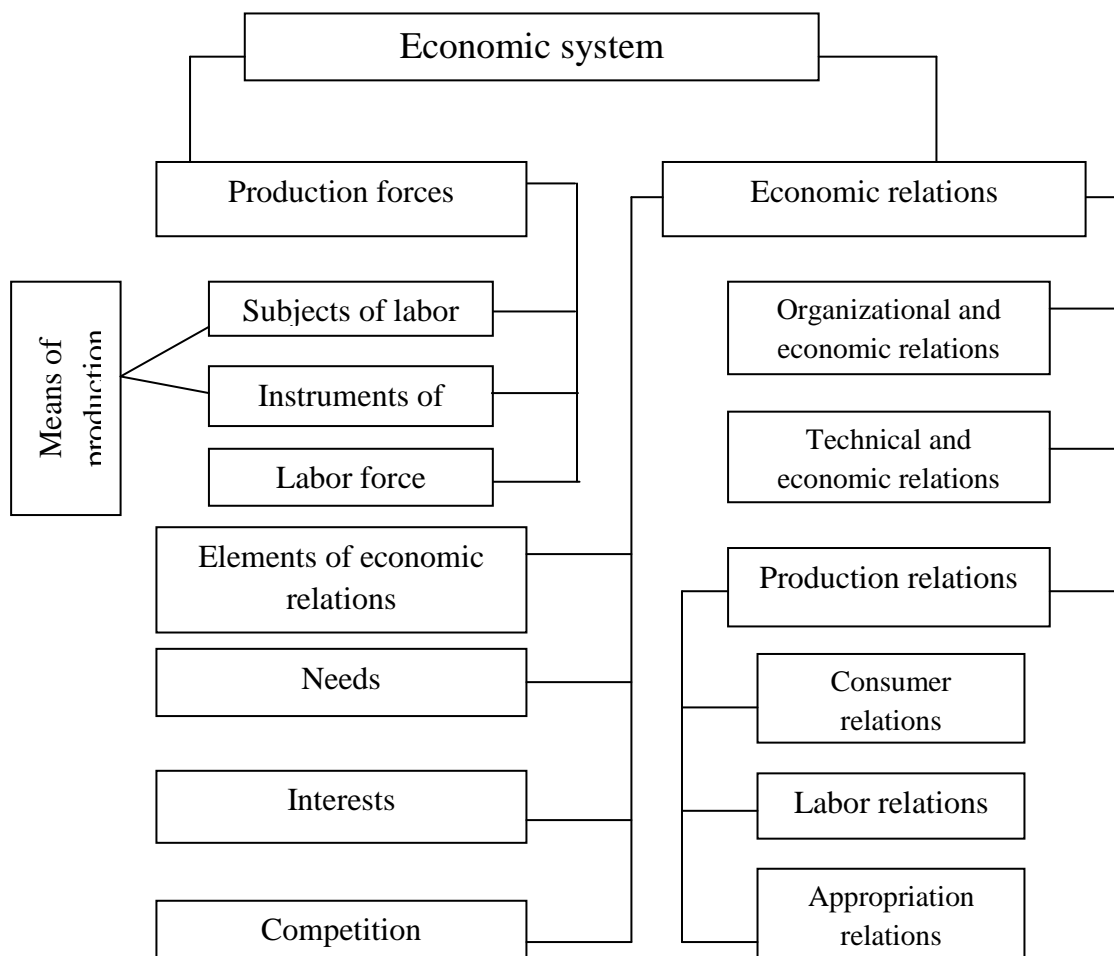Multilevel character of the economic system of a society means that any system is a part of a larger system. The enterprise is connected to a branch, the branch – to intersectoral economic systems, the last – to economic system of the country, and that, in turn, by means of international economic relations – with economic systems of other countries. Therefore to mark out borders of the economic system of a society is difficult enough. There is a set of intermediate links which separate, for example, economic activities from the non-economic. Sometimes economic system is represented as a chamomile, the petals of which nominate activity fields (pic. 3.1).

Pic. 3.1. Economic system of a society and other spheres of life of a society

Organizational structure of the economic system is organizations' structure, types of relations between them, division of functions, methods and procedures of their performance. Organizational structure of production and organizational structure of management are distinguished. The first assumes a set of branches, economic complexes, organizational and technological relations between them. The second is a set of controls and mutual relation between them [13].

The criteria of economic systems classification are:
- openness or closedness of a system;
- the form of regulation, coordination mechanism;
- patterns of ownership.

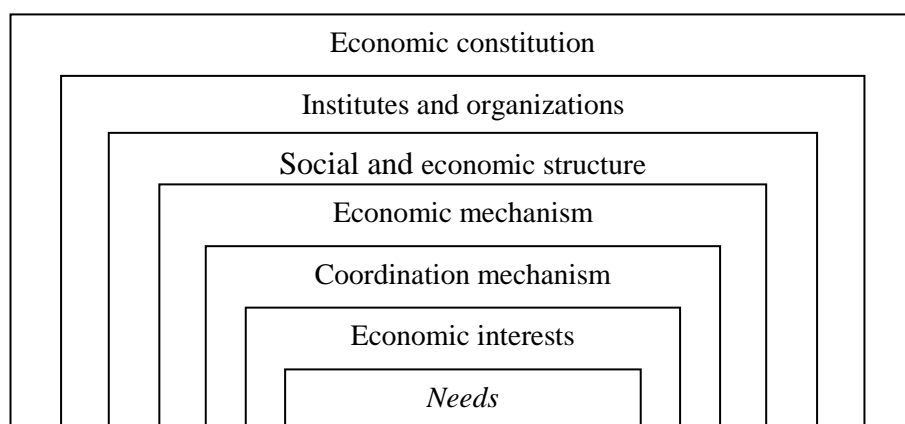**The structure of an economic system** (pic. 3.2, made up on basis of [5] and [17]).


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                        ┌─────────────────────────────┐
                        │      Economic system        │
                        └─────────────────────────────┘

        ┌─────────────────────┐            ┌─────────────────────┐
        │  Production forces  │            │  Economic relations │
        └─────────────────────┘            └─────────────────────┘

                 ┌──────────────────┐       ┌──────────────────────┐
                 │ Subjects of labor│       │ Organizational and   │
 ┌──────────┐    └──────────────────┘       │ economic relations   │
 │ Means of │    ┌──────────────────┐       └──────────────────────┘
 │production│    │  Instruments of  │       ┌──────────────────────┐
 └──────────┘    └──────────────────┘       │ Technical and        │
                 ┌──────────────────┐       │ economic relations   │
                 │   Labor force    │       └──────────────────────┘
                 └──────────────────┘
          ┌───────────────────────┐         ┌──────────────────────┐
          │ Elements of economic  │         │ Production relations │
          │      relations        │         └──────────────────────┘
          └───────────────────────┘         ┌──────────────────────┐
          ┌───────────────────────┐         │ Consumer             │
          │        Needs          │         │ relations            │
          └───────────────────────┘         └──────────────────────┘
          ┌───────────────────────┐         ┌──────────────────────┐
          │      Interests        │         │ Labor relations      │
          └───────────────────────┘         └──────────────────────┘
          ┌───────────────────────┐         ┌──────────────────────┐
          │     Competition       │         │ Appropriation        │
          └───────────────────────┘         │ relations            │
                                            └──────────────────────┘
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Pic. 3.2. The structure of an economic system

The criterion is an indicator, a sign formed on the base of the estimation of quality of an economic object or process.

The criteria of economic systems classifications are:
 − the prevailing form of management (natural or commodity);
 − the degree of maturity of the economic system;
 − basic patterns of ownership;
 − the degree of openness of the economy;
 − cooperation within the limits of the world community;
 − the degree of government influence on the economic development;
 − the structure of Gross Domestic Product;
 − development of the prevailing branches of a national economy;
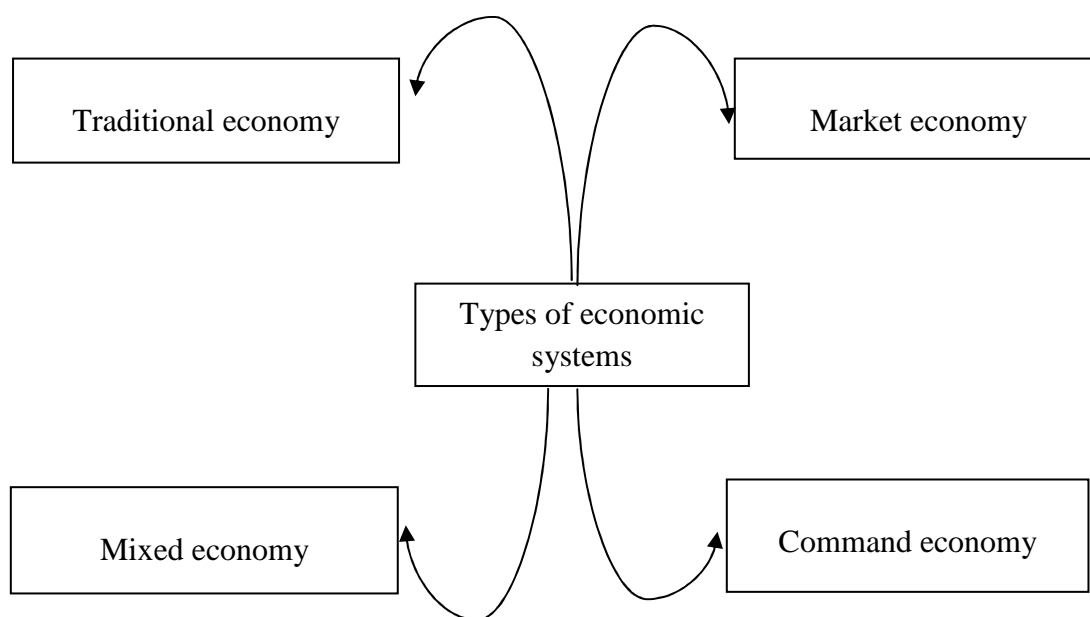 − the level of technical and economical and technological development.

The structure of an economic system (pic. 3.3 made up on basis of Lemeshevsky I.M., 2002).

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┌─────────────────────────────────────────────────┐
│                Economic constitution             │
│  ┌─────────────────────────────────────────────┐ │
│  │          Institutes and organizations        │ │
│  │  ┌─────────────────────────────────────────┐ │ │
│  │  │       Social and economic structure      │ │ │
│  │  │  ┌─────────────────────────────────────┐ │ │ │
│  │  │  │         Economic mechanism          │ │ │ │
│  │  │  │  ┌───────────────────────────────┐  │ │ │ │
│  │  │  │  │     Coordination mechanism    │  │ │ │ │
│  │  │  │  │  ┌─────────────────────────┐  │  │ │ │ │
│  │  │  │  │  │    Economic interests   │  │  │ │ │ │
│  │  │  │  │  │  ┌───────────────────┐  │  │  │ │ │ │
│  │  │  │  │  │  │       Needs       │  │  │  │ │ │ │
│  │  │  │  │  │  └───────────────────┘  │  │  │ │ │ │
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Pic. 3.3. Basic components of a modern economic system

Types of economic systems (pic. 3.4, made up on basis of [17]).

The classification in a science acts as a tool of systematization of the phenomena and processes based on the selection of criteria.

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┌────────────────────┐                    ┌────────────────────┐
│ Traditional economy│                    │   Market economy   │
└────────────────────┘                    └────────────────────┘

                  ┌────────────────────┐
                  │ Types of economic  │
                  │      systems       │
                  └────────────────────┘

┌────────────────────┐                    ┌────────────────────┐
│   Mixed economy    │                    │  Command economy   │
└────────────────────┘                    └────────────────────┘
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Pic. 3.4. Types of economic systems

Levels of economic system.
− Microlevel (enterprise, company and organization);
− Macrolevel (national economy, economic complexes);
− World economy.

The table 3.1 represents the comparative characteristic of modern economic systems (made up on basis of [5]).

Table 3.1

The comparative characteristic of modern economic systems

Main feature	Market economy	Command economy	Mixed economy
1	2	3	4
Scales of the economy socialization	Socialization of production on microlevel	Expropriation of private ownership	Socialization of production on microlevel and national level
Prevailing form of ownership	Private	Domination of government property	Private and government property
Productive work incentives	Production factor returns	Rigid wages	Incomes from production factors and business activity
Regulation of the economic development	Self – regulation on basis of the market mechanism when state intervention is weak	Planning, the rigid centralized control by the state institutes	Active state regulation of the national economy for the purpose of stimulation of aggregate demand and aggregate supply
Presence of competition	Is present	Emulation, contest	Is present
Pricing	Prices are established by the balance of aggregate demand and aggregate supply	Prices are set centrally	Flexible prices
Remuneration of labour	Is determined in a labor market	Administrative establishment of wages	It is established in a labor market at a supply and demand parity. The minimum salary is established by the state.
Social guarantees	Social vulnerability of citizens	There are social guarantees	Social insurance and support funds are created

There are national models of organization of the industrial, economic activities in each system. Each country has passed the way of economic and social development. So, all countries differ by their history, geographical, natural, climatic, geopolitical conditions of the national economies formation. For example, American economy model is constructed up on the system of all-round encouragement of business, enrichment of the major part of the population. Grants are paid to the groups of population, who need it and partial privileges are given for them.

The Japanese model of economy differs by the developed system of indicative planning, coordination of a private sector activity by government performance of government programs focusing and mobilizing separate links of the economy on performance of the national problems. This economy is characterized by the preservation of national traditions, which was loaned from other states and all necessary for the country's development.

The Swedish model of economy differs by the strong social policy, which is aimed at reduction of a property inequality at the expense of redistribution of the national income in the least advantage of well-to-do population. In the state property is about 5% of fixed capital, but the share of the state expenditure makes about 70 % of the GDP, more than half of them goes on social needs.

The list of distinctive features of the countries with developed economy can be continued. It testifies that there is no unequivocal standard decision of economic and social problems in each of certain-taken country.

CHECKLIST

1. Name the basic features, approximate criteria of formation of each type of economic system on the basis of the pic. 3.2 and the table 3.1.
2. Types of economic systems.
3. Sectors of economic systems.
4. On the basis of the studied material reveal other peculiarities of each type of economic system.
5. What are the advantages and lacks of the mixed economy?
6. Characterize the features of the natural and market economy.
7. Tell about basic features of Belorussian economy.
8. Illustrate in essays the features of the American liberal market model, the German model of a social market economy; the Swedish model of «the Scandinavian socialism», the Japanese model of adjustable corporate capitalism, the Chinese market model of socialist type and other countries.

3.2. Property: the idea, evolution, types and forms.
The reform of property in the Republic of Belarus

Property is the belonging of things, material and cultural wealth to certain people, the legal right to such belonging and economic human relations concerning the belonging, division, alienation of objects of the property.

Property in economical sense is human relations concerning appropriation of means of production and economic blessings created with their help. The property is considered as a legal and economic category.

Structurally – logic schemes

In the pic. 3.5 there is the scheme that shows property as an economic category [13], [17, 18], in the pic. 3.6 – classification of forms and types of property [18].

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                        ┌─────────────────────────┐
                        │        Property         │
                        └─────────────────────────┘
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The legal category of property relations is expressed by means of legislative instruments the rules of law are established that regulate the relations between people, connected to ownership, use and right to dispose the property, owned by subjects belonging different are established

Economic category defines forms of managing, norms of distribution of incomes, degree and character of satisfaction of economic and social inquires legal and natural persons

Defines financial position of a certain person, collective

Defines the character of economic system, a standard of well-being

Pic. 3.5. Property as an economic category

Patterns of the property

State

The property of the Republic of Belarus (the republican)

The property of administrative-territorial entities (municipal)

Cooperative

Collective

Lease enterprises

Cooperative societies

Economic societies

Associations

Public associations and the religious organizations

Private

Share

General

The property of other states, foreign natural and legal persons, international organizations, joint ventures

Pic. 3.6. The classification of forms and types of property

Functions of the property:
– property as a basis of economic system;
– property is a result of the historical development;
– property as a basis of formation of class composition of a society and its position in economic system.

Economic realization of the property

The essence of the property as an economic category consists in appropriation of goods and services. Having appropriated them, the proprietor treats them as his own.

The property carries out the system-forming function if it is realized economically. One of the forms of economic realization of the property is an increment of sources (incomes) providing augmentation of the property. Augmentation can be reached in the course of economic and legal fastening of resources, property, means of production, material benefits, services, incomes etc. that is appropriation. **Appropriation** is the alienation of an object of property, property holdings and cultural wealth from the proprietor, carried out by the person wishing to become the proprietor, the owner as a result of such alienation.

Alienation is the second part of appropriation. Alienation is the assignment of property that belongs to one person in the ownership of another person. Alienation is performed at will of the first proprietor on the basis of the contract, or a judgment under compulsion. Alienation may be paid as well as gratuitous in the form of donation.

To disclose the substantial part of the property as a public phenomenon there is a triad of rights of the proprietor, including its right under own discretion to own, use, and dispose. The rights of the proprietor to own, use and dispose the property are called as possessory right in subjective sense. These rights of appropriation compose a certain group of human relations. These economic relations of the property are regulated by rules of law. The set of rules of law fixing the belonging of certain property to corresponding natural or legal person, defining the content of the rights and providing protection of legitimate interests of the proprietor, is called the property right in objective sense [22, p. 603].

Property reforminng in the Republic of Belarus

In the countries where the state ownership was dominating during transition to market system of managing there was a necessity to differentiate production process and, consequently, patterns of ownership. This process is defined today as destatization and privatization process.

THE APPROPRIATION		
THE RIGHT OF USE	**THE OWNERSHIP RIGHT**	**THE DISPOSAL RIGHT**
The right of use is the right to carry out property operation, to derive from it useful natural properties, to receive goods, incomes providing satisfaction of people's needs. The ways of using property are defined by its appointment. The proprietor has the right of use	The ownership right is a legally provided possibility of economic domination over the property. The proprietor can influence property at any time; move it, transfer on a lawful basis to other people, sell, give, inherit. The legislation, the administrative certificate, the contract can be a legitimate right title	The disposal right (belongs to the proprietor, a legal subject of economic conducting) or the operational administration right. One of the types of the property disposal is its consumption by the proprietor or destruction. The disposal right assumes monopoly on object appropriation, including the order an overall cost

Pic. 3.7. The property right meaning

DESTATIZATION	
Economy	Property
Transfer by the state of functions of direct management of industrial-commercial activity to business entities	Liquidation of monopoly of state ownership through creation of new enterprises of non-state patterns of ownership and reforming of the state rent enterprises
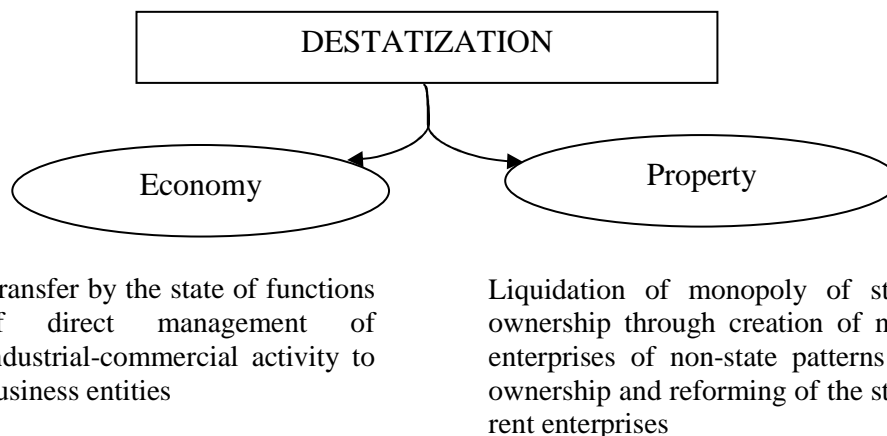
Pic. 3.8. Destatization kinds

Economy destatization is a reduction of the state functions, decrease in a role of the state in management of economic objects, clearing of the state of functions of a direct economic board, transfer of some powers of state structures to the enterprises, transition from command-administrative to economic methods of management. There is destatization of economy and of property (pic. 3.8, [17]).

Privatization is the process of transfer of on enterprises, property complexes and other property that belonged to the state to the employees, citizens or private individuals on the principles of non-state patterns of ownership (pic. 3.9).

PRIVATIZATION

PRINCIPLES	FORMS
Combination of refundable and a gratuitous ways of privatization	The direct buyout of the state enterprise
The right of each citizen of RB to receive a part of gratuitously transferred property	Transformation of state enterprise into a joint-stock company
Differentiation of methods, forms and procedures of privatisation	Sale of the state enterprise by auction
Differentiation of competencies to carry out privatization between government and local authorities	The buyout of the rent enterprise
The principle of pledging of certain social guarantees to members of labor collectives of privatized objects	Gratuitous transfer of the state property
The principle of control over privatization realization	
The principle of providing wide publicity of the privatization process	
Gradualness and step-by-step realization of privatization	
Observance of legality of privatization carrying out	

Pic. 3.9. Forms and privatization principles

SELF – CHECK QUESTIONS
FOR A SEMINAR FORM OF THE COLLOQUIUM

1.   The concept and essence of property.

2.   How did patterns of ownership change in the course of historical development?

3.   Who are subjects of the property?

4.   The legal and economic meaning of the property.

5. What does "ownership right" mean?
6. What are the signs of private, collective, state ownership?
7. Explain the concepts "use", "ownership", "disposal" of the property.
8. What does collective using of the property mean?
9. What forms and property kinds are established by the law «About the property» in the Republic of Belarus?
10. Are legal aspects of the property connected to morals of relations of the property?
11. In your opinion, is economic backwardness of a society the reason of dishonest economic behavior of proprietors?
12. What property structure is in the Republic of Belarus both its leading branches and spheres?
13. What is the difference between the concepts "destatization" and "privatization"?
14. What are the essence and the content of principles of privatization?
15. What is the distinction between different types of privatization?

3.3. Market: the idea, functions, classification. Market elements. Competition: the idea and types

Market is the system of economic relations connected to an exchange of the goods and services resulting in demand, supply and price formation.

Conditions of market relations emergence:
– social division of labor;
– economic isolation of manufacturers;
– exchange regularity.

Exchange is the form of economic relations between manufacturers.

Subjects of market relations:
– Sellers and customers;
– Natural persons (household, any person);
– Legal bodies (companies, enterprises, state, foreign state).

The reasons of the market occurrence:
– economic and legal freedom of business entities;
– natural scarcity;
– international division of labor;
– international specialization of manufacture;
– competition.

Market functions (its appointment and a role):
– controlling;
– price forming;
– information function;
– stimulating;
– distribution function;
– forming competition;
– sanifying;
– intermediary;
– educational.

The market structure. In the market economy there are essential changes of the market structure. Movement to the market has led to formation of three large systems of market relations: the commodity market, the labor market, the currency and equity market. At the same time modern economic science considers a wider classification of markets. All of them differ from each other by certain characteristics. They are classified by a territorial characteristic, economic purpose, mechanics of economy, market exchange organization, the degree of observation of laws, etc.

In the pic. 3.10 there is the structural logic diagram of commodity market classification (worked out on the basis of [5, 13, 19]), in the pic. 3.11 – the diagram of financial market structure [5, 19].

According to the type of sold goods there are markets of raw product, materials, jewelry, means of production, real estate, consumer goods and services, information and intellectual product, innovations, the capital, currency, securities. According to the scales of coverage of territory world, zonal, regional, and state markets are distinguished. Concerning each country there are domestic and foreign markets. According to the level of competition markets are divided into free, monopolistic competition, oligopolistic, closed. There are also legal and illegal markets. Equity markets are divided into primary and secondary [20, p. 298].

By the organization of a market exchange the markets are divided into:
– wholesale;
– retail;
– export – import.
By the geographical attribute the markets may be:
– local;
– regional in the country;
– national (domestic);
– regional (group of countries);
– world (external).

THE COMMODITY MARKET

The consumer market
- Food commodities
- Nonfood goods
- Housing
- Services
- Products of intellectual work,

The market of resources
- Raw
- Materials
- Fuel
- The electric power
- Land
- Minerals

The market of means of production
- Constructions
- Buildings
- Equipment
- Machine tools
- Instruments
- Vehicles etc.

The information market
- Information product
  - Inquiries
  - Advertising
  - Consultations
- Technical innovations
- Rational offers, inventions
- Patents

The market of research and development
- Manufacture processes
- Technologies
- Programms
- Innovative projects

Pic. 3.10. The classification of commodity market

THE FINANCIAL MARKET

Equity market
- Shares
- Bonds
- Certificates
- Treasury notes

Currency-monetary market
- Foreign currency
- Payment documents
- The international monetary calculations

Borrowed capital market
- In production facilities
- Non-productive sphere

The market of investments
- Investment resources
- Short-term and long-term loans
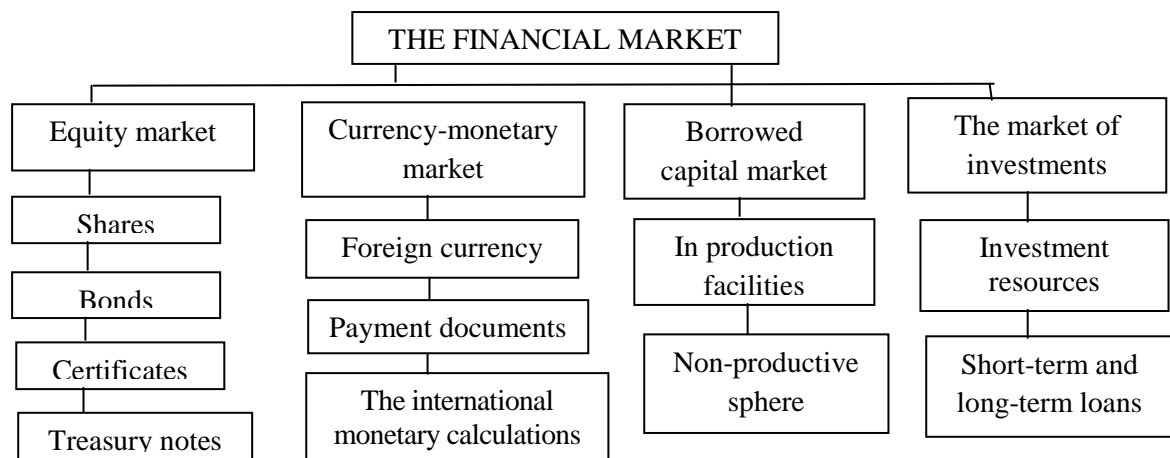
Pic. 3.11. The financial market structure

3.4. Market infrastructure. Circulation of recourses, products and money in market economy

Competition is a contest between any economic, market subjects; struggle for products' outlets to receive higher revenues, profits, benefits. Competition kinds are characterized in the pic. 3.12 [19, p. 156].

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   Price                    COMPETITION                 Non - price

        Perfect                                              Monopolistic

              Imperfect (monopoly)        Oligopoly
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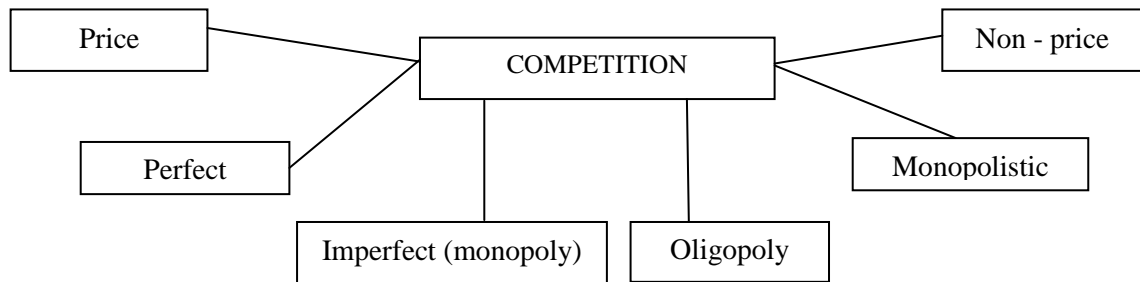
Pic. 3.12. Kinds of competition

In the pic. 3.13 there is a structurally-logic diagram representing elements of market infrastructure [17, 13, 20].

```
                    MARKET INFRASTRUCTURE

   Bank system        Exchanges      Other institutes    Normative legal
                                                            documents

     National bank      Employment         Auditing companies

     Commercial         Stock              Insurance companies
     bank
                                           Advertisingand news
     Mortgage banks     Currency           agencies

     Investment                            Consulting agencies
     banks              Commodity
                                           Auctions

                                           Fairs
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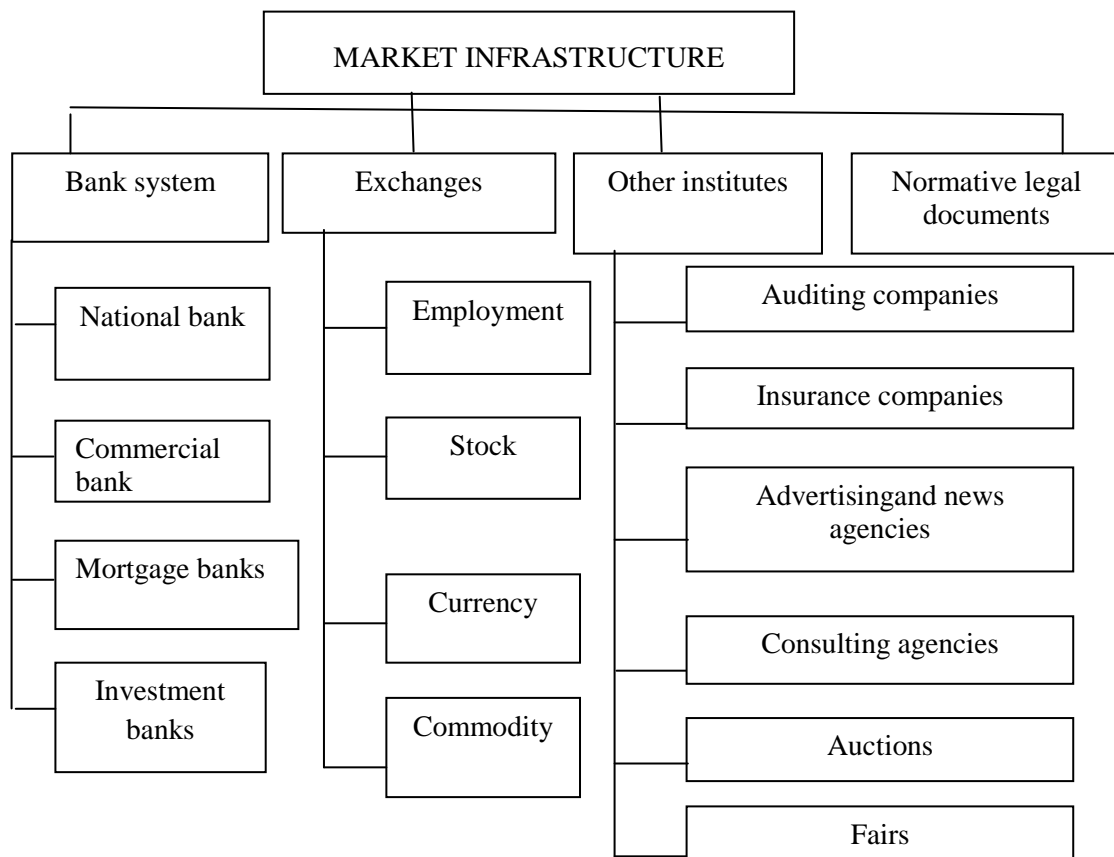
Pic. 3.13. The elements of market infrastructure

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Infrastructure is a set of branches, enterprises and organizations entering into these branches, kinds of their activity called to provide, create a condition for normal functioning of manufacture and commodity circulation, living conditions of people. The infrastructure includes roads, warehouses, communication, transport, water supply, and enterprises of consumer services, etc.

Exchange is a regularly functioning, with a certain organization wholesale market of homogeneous goods where buying and selling bargains of goods' parcels, stocks of materials and capital equipment are settled. Stock and currency exchanges carry out trading operations with securities and currency.

3.5. Government functions in modern market economy, methods of regulation

In transitive economy government provides initiation of institutional and legal basis of market relations development. That is transition to market economy begins with creation of the regulatory legal acts granting the right to private owners to realize foreign economic activities. Then the process of self-origin of market institutes starts.

Private proprietors lobby passing of regulatory legal acts necessary for development of business, creation of such institutes as commercial banks, stock exchanges, societies, firms, insurance and auditing organizations, the unions etc.

The second function of government is indemnity of negative consequences, the effects caused by market imperfection.

On the one hand, steps to minimize costs of the market are taken by making administrative arrangements in relation to subjects of the market.

On the other hand, government favors creation of market mechanisms of competition protection, struggle against monopolies, expansion of possibilities and comprehensible conditions for an investment of the financial capital by private business entities in development of social sphere and simultaneously – formation of paid services in education, public health services, and transport infrastructure.

An important function of government is realization of a macroeconomic policy and maintenance of steady economic growth. Many social and economic programs defining long-term strategy development of national economy, economic complexes, branches, territories are adopted for this purpose.

CHECKLIST

1. What is market?
2. What are the conditions of the market emergence?
3. What functions are carried out by the market?
4. Classification of the markets according to certain characteristics.
5. The characteristic of the socially-focused market economy.
6. What caused destatization of economy, state ownership and its privatization?
7. Characterize the market infrastructure.
8. What are the features of economy, in which functions of regulation are divided between the state and the market?

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PART 2.
FUNDAMENTALS OF MICROECONOMICS
Chapter 4. DEMAND, SUPPLY AND EQUILIBRIUM.
ELASTICITY OF DEMAND AND SUPPLY

4.1. Demand as an economic category. The law of demand. Nonprice factors of demand.

4.2. Supply as an economic category. The law of supply. Nonprice factors of supply.

4.3. Market equilibrium.

4.4. Elasticity of demand and supply.

MAIN CATEGORIES

Demand, demand volume, demand function, demand curve, the demand law, Geffen's paradox, Veblen's effect, the effect of expected dynamics of the prices, price and nonprice factors of demand, supply, supply volume, supply function, supply curve, the law of supply, price and nonprice factors of supply, market equilibrium, equilibrium price, equilibrium quantity, price elasticity of demand, coefficient of price elasticity of demand, arc elasticity, elastic and inelastic demand, absolutely elastic and absolutely inelastic demand, factors of price elasticity of demand, income elasticity of demand, cross elasticity, coefficient of cross elasticity, elasticity of supply, coefficient of elasticity of supply, factors of elasticity of supply.

4.1. Demand as an economic category. The law of demand.
Nonprice factors of demand

It is necessary to begin consideration of functioning and efficiency of market system with studying of the mechanism of formation individual and market prices. The basic price forming factors are supply and demand.

Demand is the need for goods presented in the market, provided with money.

The demand volume is a quantity of goods which customers can get in the market during the given period of time at the set price.

The demand price is a maximum price which customers are ready to pay.

Each price of goods corresponds to a certain value of demand volume. Such dependence carries the name of ***demand function from the price:***

$$Q_D = f(P). \qquad (4.1)$$

Inverse dependence between the price of the goods and its quantity which customers want and can get, has received the name of ***the law of demand***.

The curve of demand D graphically shows quantity of demand for the goods at each price (all other factors being equal) (pic. 4.1).
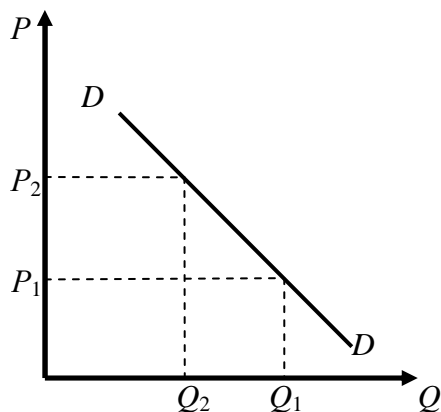
Pic. 4.1. The curve of demand

To price P_1 corresponds volume of demand Q_1, to price $P_2 > P_1$ corresponds volume of demand $Q_2 < Q_1$, i.e., the more the price, the less demand volume.

As between the price for the goods and demand volume there is an inverse dependence, **the curve of demand has a negative inclination**.

There is an exception and some deviations from the demand law. The essence of the first –Geffen's paradox – consists in the fact that the increase of the price for the certain goods, first of all foodstuff, doesn't lead to reduction of demand volume of the poorest part of population.

Veblen's effect also doesn't keep in scope of the demand law and, which means that increase of the price for a number of goods (usually luxury goods) leads to growth of demand volume at the expense of increase in volume of so-called prestigious demand. Prestigious demand appears for those goods which, according to customers, underline their high social status.

The situation involving a deviation from the demand law is possible by influence of effect of expected dynamics of the prices. If customers expect further reduction of prices on goods, price fall at present time can be accompanied by demand reduction. If customers expect price increase in future, demand can increase at the present time.

Price is not the unique factor which forms demand. There are also other, ***nonprice factors***.

There is a shift of demand line: to the right, if demand increases, to the left – if decreases under the influence of nonprice factors (pic. 4.2).

The nonprice factors of demand are:

– *change of incomes*. With the increase of income demand for a majority of goods grows, but demand for so-called "gray" (low-qualitative) goods decreases. With the decrease in real incomes – situation is on the contrary. The increase in incomes leads to the shift of the curve of demand to the right, and reduction – to the left;

Pic. 4.2. The Shift of a Line of Demand

– *the prices for the interfaced goods*. If two goods are interchangeable (are the goods-substitutes) there is a direct connection between the price of one and demand for another. If two goods complementary there is a feedback between the price of one good and demand for another;

– *consumer preferences*. Favorable preferences in tastes of consumers for the given goods will provide demand increase, and on the contrary.

– *expectations of customers*. Change of their incomes or the commodity prices essentially influences their consumer behavior;

– *number of customers*. In real market economy, when we speak about the number of customers, it is extremely important to consider their sexual and age-related structure, the average size of families, a share of persons of pension age etc. Population increase (at preservation of the invariable income per capita) shifts a market demand line to the right for all goods because it conducts to increase in quantity of customers in the market.

As the market assumes presence of set of customers, it is necessary to distinguish *individual* and *market* demand.

Market demand is represented by the sum of individual demand volumes at each price.

4.2. Supply as an economic category. The law of supply. Nonprice factors of supply

To describe behavior of sellers in the market the term "supply" is used.

Supply is readiness of the seller to sell certain quantity of these or those goods during certain period of time.

Supply volume is quantity of any goods which the separate seller or group of sellers wish to sell in the market in unit of time under certain conditions.

The supply price is minimal price at which the seller agrees to sell certain quantity of the given goods.

Each price of the goods corresponds to certain value of volume of supply (all other factors being equal). Such dependence is called function ***of supply*** from the price:

$$Q_S = f(P). \qquad (4.2)$$

Direct connection between the price of the goods and supply volume with all other factors being equal is called **the law of supply**. Its graphic expression represents the curve of supply having a positive inclination.
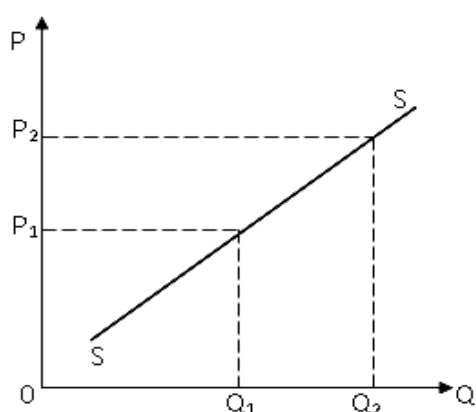
Pic. 4.3. The Curve of Offer

The line of supply *SS* of some goods is represented in the pic. 4.3. When moving along this line to the right upwards increase in the supply volume corresponds to rise in prices. Price $P_2 > P_1$ corresponds to supply volume $Q_2 > Q_1$. The more the price, the more profitable manufacture of the good, and the more quantity its manufacturers are ready to make and sell in the market.

The basic ***nonprice factors*** which influence on supply are:

– *prices for resources*. The rise in prices for resources increases costs of production. Manufacturers begin to reduce expensive production. And on the contrary, falling in the prices for resources stimulates aspiration to increase supply;

– *technological level* (i.e. a way of production of the goods). As a rule, technological progress leads to decrease in expenses for production and the subsequent increase in volume of supply;

– *dynamics of other goods prices*. Change of the prices of those goods, in production of which the same resources are used as in production of the given goods, can cause change of supply of the given goods. If we speak about the goods-substitutes, with other things being equal, the rise in prices for one of them will cause growth of its supply and accordingly reduction of supply of another. If the price for one of the complementary goods, then growth of its supply will be accompanied by supply growth of other goods;

– *government activity*. Government carries out legislative activity, establishing rules of behavior of economic agents; collects taxes from manufacturers, and the tax policy is developed not only proceeding from interests of formation of the state budget, but also with purpose to make this or that impact on produc-

tion of goods (and in certain cases pays grants). Government is engaged in price control and standardization of goods. Sometimes government carries out direct intervention in production and exchange processes;

– *number of manufacturers and market structure*.

Under the influence of nonprice fac-

Pic. 4.4. The shift of the curve of offer

tors there is a shift of supply line S_0 (pic. 4.4): to the right, if supply increases (S_1), to the left – if decreases (S_2).

Individual and market supply are distinguished. Market supply represents the sum of individual supply volumes at each price.

4.3. Market equilibrium

Now, having some idea about supply and demand, we can pass to the analysis of their interaction. We will combine supply and demand lines on one diagram (pic. 4.5).

In the pic. 4.5 point of intersection of the line of supply and demand (E) is called *equilibrium point*. Price $P*$ is equilibrium price, i.e. price at which supply and demand are in balance as a result of market competitive forces action.

On the other hand, volume $Q*$ is called *equilibrium quantity*, i.e. size of commodity weight at which supply and demand are in balance as a result of market competitive forces action.

Demand is equal in to supply

Pic. 4.5. Market equilibrium

an equilibrium position. The market is balanced. Neither sellers, nor customers don't have internal promptings to its infringement. Interests of sellers and customers coincide. On the contrary, at any other price which is different from the equilibrium price, the market isn't balanced. Customers or sellers have desire to change the situation in the market.

Any movement from the equilibrium point puts in action forces which aspire to return the system to balance. Thus, we can define the equilibrium price as if it is reached once, it will be supported and further. It is fair for the equilibrium price, and for equilibrium quantity.

If the price exceeds equilibrium (for example, level P_1) there is a situation of surplus of a commodity output (pic. 4.5). Really, at such price demand of consumers will be Q^A, the size of supply – Q^B. Thus, surplus of a commodity output will be AB. However, in conditions of market competition such situation can't proceed for a long time: sellers will start to reduce volume of output – supply of goods and (or) to reduce the price of production. On the other hand, customers will start to increase purchases of goods at decreasing demand. Eventually, the economy will return to a balance situation (at price $P*$ and volume of goods $Q *$).

On the contrary, if the price for goods falls below equilibrium there will be a situation of deficiency equal to size CF which, however, also won't be long-term in conditions of a market competition.

4.4. Elasticity of demand and supply

Elasticity of demand

Price elasticity of demand, or **direct elasticity,** shows degree of influence of price change to change of quantity of goods for which demand is presented. The degree of price elasticity of demand is measured by coefficient of price elasticity which is calculated by the formula:

$$E_P^D = \frac{\% \Delta Q_D}{\% \Delta P}, \qquad (4.3)$$

where % ΔQ_D is a percentage change of demand volume; % ΔP is a percentage change of price.

The coefficient of price elasticity of demand shows how the demand volume would change if the price changes on 1 %.

Coefficient of arc price elasticity of demand:

$$E_P^D = \frac{(Q_2 - Q_1)}{(P_2 - P_1)} \cdot \frac{(P_2 + P_1)}{(Q_2 + Q_1)}. \qquad (4.4)$$

Defined thus, elasticity of demand characterizes some average reaction of demand to price change.

Sign of coefficient of price elasticity of demand, as rule, is negative, because dependence between the price and demand volume is reverse. Defining type of price elasticity of demand, we analyze absolute value of coefficient (by modulo).

Demand is named elastic when $\left|E_P^D\right| > 1$ (it means that the demand quantity grows or falls faster than prices), and inelastic (rigid) when $\left|E_P^D\right| < 1$, that is the demand size grows (falls) more slowly than the prices change. If $\left|E_P^D\right| = 1$ (the demand size changes as well as the price) it is demand of unitary elasticity.

If change of the price doesn't cause any change of demand volume, $E_p^D = 0$, demand is absolutely inelastic. If infinitesimal change of the price causes infinite expansion of demand quantity, $E_P^D = \infty$, demand is absolutely elastic (pic. 4.6).

Pic. 4.6. Absolutely elastic and absolutely inelastic demand

The more elastic demand is, the more flattened demand curve will be. For inelastic demand the curve is, as a rule, more abrupt.

Though the inclination for linear function is invariable, value of elasticity E_P^D will be various in different points of the curve and accepts any values. Elasticity of linear function of demand changes from 0 (in point D_1) to ∞ (in point D_2) (pic. 4.7).

Price elasticity of demand is influenced by following **factors:**

1. *Presence of substitutes*: the more the goods-substitutes exist, the more elastic demand for the given goods is. However it is necessary to consider, how narrowly borders of the given economic goods are defined. If we take salt, as an example, it is difficult to find an adequate replacement. However salt "Extra" has salt of a rough grinding as a substitute which doesn't decorate a festive table, but has more iodine and it with success can be used for salting products. Thus, in the first case practically there are no goods-substitutes, it is possible to find
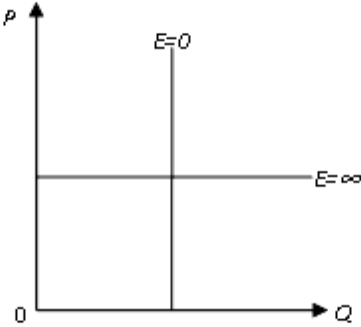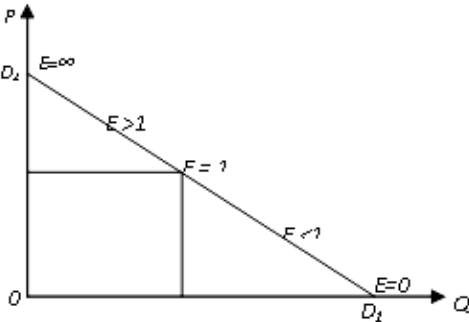
Pic. 4.7. Elasticity of linear function of demand

much more substitutes (separate mark of salt) in the second case (especially if to consider various of salt which are made in the different countries).

2. *A share of expenses for the goods in the consumer budget*: the more a share of expenses for the given goods in the consumer budget, the higher elasticity is. If consumer spends an insignificant part of his budget for the given goods, he doesn't need to change the habits and predilections when prices change.

3. *Degree of saturation of needs:* the higher saturation degree is, the lower elasticity is. If almost all families already have at least one refrigerator, small decrease in market price hardly will essentially affect volume of demand and sales. On the contrary, at the stage of initial saturation of demand, for example for computers, rather small reduction of price can cause considerable growth of demand and sales.

4. *A variety of possibilities (directions) of use of the given goods.* The more variously these possibilities, the higher elasticity (for example, demand for the universal equipment is more elastic, than for specialized).

5. *Quality of goods:* if the given goods are luxury goods (demand for such goods, as a rule, it is elastic) or a necessity subject (demand for the majority is inelastic).

6. *Time factor.* Demand is more elastic in the long period than in short as for the adaptation to the changed parity of the prices time is necessary. Price increase stimulates manufacture of substitutes of the goods that leads to the increase in their number in the long-term plan. In immediate prospects habits and conservatism of consumers will become a brake in reaction of volume of demand to price change.

Income elasticity of demand characterizes relative change of demand for any goods as a result of change of income of the consumer:

$$E_I^D = \frac{\% \Delta Q_D}{\% \Delta I}. \qquad (4.5)$$

If $E_1^D < 0$ income increase leads to falling of demand for the given good, and it is possible to tell that it is of low quality. The consumer, who becomes richer, considers possible and necessary to replace it with other, better goods. For example, if we low margarine consumption, and replace it with oil, refuse consumption of a part of a potato, replace it with other vegetables (cucumbers, tomatoes and etc.).

If $E_1^D > 0$, the good is normal.

If $0 < E_1^D < 1$ demand for the blessing grows more slowly than the income. That is typical for the goods of the first necessity (bread, salt, matches).

At $E_1^D > 1$ demand for the goods advances growth of incomes and has no saturation (luxury goods).

Cross price elasticity of demand characterizes relative change of volume of demand for one good at change of the price of another:

$$E_{XY}^D = \frac{\% \Delta Q_Y}{\% \Delta P_X}. \tag{4.6}$$

If $E_{XY}^D > 0$, the goods are interchangeable (substitutes)

If $E_{XY}^D < 0$ – they are complementary.

The more elasticity of demand for the good X is, the higher degree of interchangeability of the blessings (as a last resort when $E_{XY}^D = +\infty$, there are perfect substitutes) is and, on the contrary, the less elasticity is, there is more complementarity (if $E_{XY}^D = -\infty$ we have an example of rigid complementarity).

If $E_{XY}^D = 0$ then the goods are independent.

Elasticity of supply.

Price elasticity of supply characterizes degree of manufacturers sensitivity to change of the price and shows relative change of supply volume under the influence of price change for one percent.

$$E_P^S = \frac{\% \Delta Q_S}{\% \Delta P}. \tag{4.7}$$

Positive value which the given factor has is explained by unidirectional change of the price and supply volume.

If $E_P^S > 1$, supply is elastic, if $E_P^S < 1$, supply is inelastic, if $E_P^S = 1$ – unitary elasticity, if $E_P^S = 0$ – it is absolute inelastic, if $E_P^S = \infty$ – supply is absolutely elastic.

The coefficient of *arc elasticity of supply* is counted:

$$E_P^S = \frac{(Q_2 - Q_1)(P_2 + P_1)}{(P_2 - P_1)(Q_2 + Q_1)}. \tag{4.8}$$

The main **factor of elasticity of supply** is time. To explain given dependence three periods are considered: instant, short – and the long-term.

1. In **the instant period** the manufacturer is not able to react on price change. In the instant period supply is accepted as quantity of the goods which can be made on the given capacities at an invariance of volume of material and labour resources. In this case *all factors of production are considered as constants*. During this period the enterprise has a minimum of freedom in choosing and can't change output in this or that direction. If supply S_1 is parallel to the axis of prices the supply is absolutely inelastic (pic. 4.8).

Pict. 4.8. The curve of offer in three periods

2. In **the short period** supply means volume of the goods which can be made with existing capacities, but at change (increase or reduction) volume of involved material and labour resources. For example, it is possible to employ additional workers, to increase purchases of raw materials and organize work in the third change on the same equipment. In this case *first factors (equipment) are considered as constant, others (labour, raw materials, and materials) – as variable.* The curve of supply S_2 for the given period has a positive inclination. The supply is inelastic (pic. 4.8).

3. In **the long period** supply is the volume of production which can be made with all capacities, including additionally created. *In this case all factors of production are considered as variable.* Duration of the long period is that the enterprise has possibility to reconsider all parties of the policy, execute operating to the beginning of the period contracts, replace the out-of-date equipment. Besides, it is possible to mark out so-called "landmark" movements generated by growth of knowledge and the capital, changes of conditions of supply and demand from generation to generation. The supply curve (S_3) in the long-term period is the typical, it is more elastic (pic. 4.8).

Among the other factors defining elasticity of supply, it is possible to mark out: dynamics of the prices for other goods, the reached level of use of production factors, technological specificity of branch.

CHECKLIST

1. What dependence exists between the price of goods and demand volume for them, what is the difference between concepts "demand change" and "demand size"?

2. What nonprice factors change demand and how does this change affect on position of the demand curve?

3. In what cases doesn't the demand law operate?

4. How will demand for coffee makers change if the price for coffee increases?

5. The concept of supply and the factors causing its change.

6. How will the price increase of tape-recorder affect supply of cartridges?

7. What happens with the curve of supply of wheat when prices for mineral fertilizers rise, construct the diagram?

8. What defines the equilibrium price when market balance is reached?

9. At what conditions is there a situation of surplus or deficiency of a commodity output in the market?

10. The concept of elasticity; the factors influencing price elasticity of demand, coefficient of elasticity.

11. Name the goods with elastic and inelastic demand.

Chapter 5. CONSUMER BEHAVIOR THEORY

5.1 Utility and rational consumer. Total and marginal utility. The principle of declining marginal utility. The principle of utility maximization.

5.2 Consumer's preferences and indifference curves. Marginal rate of substitution and its economic meaning.

5.3 Consumer's budget limit.

5.4 Consumer equilibrium.

MAIN CATEGORIES

Consumer sovereignty, rational consumer, utility, total utility, marginal utility, the principle of declining marginal utility, quantitative approach and ordinalism, indifference curve, marginal rate of substitution, budget limit line, the principle of utility maximization, consumer equilibrium, income effect and substitution effect, "income-consumption" curve, "price-consumption" curve, Engel curves, normal product and downscale product.

5.1. Utility and rational consumer. Total and marginal utility. The principle of declining marginal utility. The principle of utility maximization.

Consumer behavior theory examines the sum total of interrelated principles and objective laws. Following them the individual generates and implements his plan of consuming different goods while focusing on complete satisfaction of the needs.

The appearance of the consumer behavior theory is connected with the examination of value and price problems in the economic science. Philosophers and economists have always been interested in the question: "What is the basis of value and price?"

Ex fade it may seem that manufacturers are the main subject in the business system, because it is manufacturers that determine volume and pattern of production, they have the possibility to influence goods and services price-level and the result of their effective actions is the possibility to realize a profit. Under such conditions it is possible to produce only the good that can be sold at the market at a price exceeding production costs. This principle leads to the shift of the emphasis from production sphere to consumption. If consumer pays for a good more than its production costs, consequently manufacturer will realize a profit and will be able to continue his business. Otherwise, manufacturer will not

sell all his output, will suffer losses and eventually will come to ruin. Just that very case indicates consumer sovereignty, i.e. possibility to influence volume and pattern of production by making demand on actual goods and services.

The requirement of consumer sovereignty is the freedom of consumer choice. In fact, limitations of such kind of freedom are commonly encountered, and they may differ in scales and forms – from strict rationing of certain goods (implementation of rationing system) to legislative prohibition to manufacture and consume some kind of goods. These prohibitions may be underlied for quite various reasons – force-majeure (famine, war), desire to keep nation from harmful goods (alcohol, drugs, cigarettes) or desire to secure equality of consumption. The result of such kind of actions is the renunciation of consumer sovereignty principle. People will not be able to give signal to manufacturers of their attitude towards actual goods and services and will not be able to pay the appropriate to their mind sum of money. Manufacturer will not be able to expand production of the goods that are indispensable for consumer. All the production decisions will be taken by administrative authorities in terms of their own preferences.

Each consumer is considered to have his subjective preference scale, i.e. he knows what he likes more and what he likes less. Of all goods he chooses the most preferable one or a whole set and defines the volume of his choice. This principle is called rationality hypothesis. The term "rationality" shouldn't be interpreted in the sense that an individual who spent all his income on flowers to his beloved is not rational, but an individual who made a purse to buy a car is rational. From the economist's point of view they both behave rationally if only they really have chosen these options. Scientists don't estimate consumer's preference scale, the only fact of its existence and of individual's attempt to obtain maximum satisfaction according to with his income is really important for them. If we designate this satisfaction, according to marginal utility principle, as "utility", then we can formulate the principle of rational consumer: when having fixed prices and income consumer aimes to distribute money so, that he obtains maximum satisfaction.

Utility and its evaluation

Value paradox was formulated by Adam Smith: water is more valuable than diamonds, but it is cheaper than diamonds. Heinrich Gossen's solution of this paradox is connected to introduction of limiting values to economic analysis, i.e. values that describe increase of a given variable after production or consumption scope change.

Quantitative theory of utility proceeds from the hypothesis about the possibility to measure utility of different goods directly. Authors of the quantitative approach are William Jevons, Carl Menger and Léon Walras.

Quantitative (cardinal) approach to utility analysis is based on the possibility to measure utility of goods in hypothetical units – utiles.

Utility is the ability of an economic good to satisfy one or more needs.

Economists distinguish *total and marginal utility*. Utility that consumer gains from every supplemental unit of a good is called *marginal utility*. The sum of marginal utilities gives *total utility* of some quantity of the good.

Marginal utility can be described by formula of discrete increment and by partial derivative of total utility:

$$MU = \frac{\Delta TU}{\Delta Q} \text{ or } MU = \frac{\partial TU}{\partial Q}. \qquad (5.1)$$

Total utility:

$$TU_n = MU_1 + MU_2 + MU_3 + \ldots + MU_n. \qquad (5.2)$$

As the result of researches carried out in the XIX century the following regularity was revealed: sequentially consumed parts of some good possess decreasing utility for consumer. Besides, it's supposed that consumer's tastes are constant and consumption function is continuous (and therefore it is differentiated in each point).
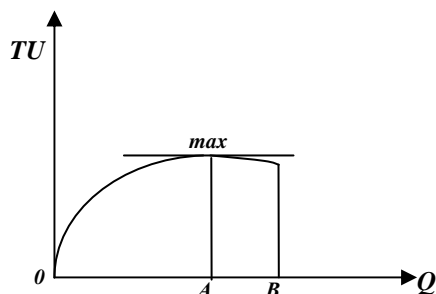
It means that total utility increment *TU* corresponds to any infinitesimal increase of good quantity *Q* (pic. 5.1, *a*). Though with the growth of the quantity of goods total utility gradually increases, marginal utility (*MU*) of each supplementary unit of the good steadily goes down (pic. 5.1, *b*). Total utility satisfaction reaches maximum in point A, when marginal utility is equal to zero. It signifies that the good completely satisfies the need.
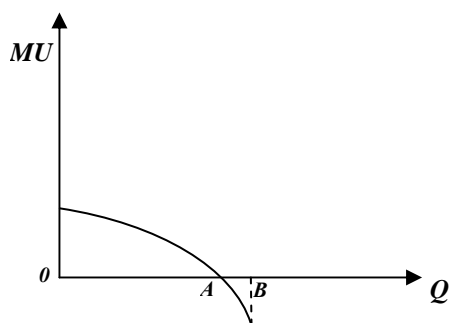
Pic. 5.1. Total and marginal utility

If further consumption blights (marginal utility is negative), then total utility declines (see line segment AB on both diagrams). The more quantity of good we have, the less value every supplementary unit of this good has for us. Thereby, the price of the good is determined not by its total, but marginal utility for consumer. Since marginal utility of the good declines, manufacturer can sell additional quantity of his output only if he cuts the price. The principle of declining marginal utility underlies demand estimation.

Subjective utility theory is based upon laws disclosed by H. Gossen.

The principle of declining marginal utility (Gossen's first law):

1. Utility of following unit of consumed good decreases in one uninterrupted consumption act.

2. When the act of consumption is repeated, utility of every unit of the good decreases in comparison with its utility at the moment of first consumption.

Italian economist V. Pareto drew a conclusion that it is impossible to measure utility quantitatively. This led to looking for new way of explaining consumer conduct. Thus, new mathematical model was invented. It is based on determination of comparative utility of different commodity bundles and revelation of those that posses maximum utility. New approach to utility analysis is called *ordinal*.

Ordinal utility function is based on following assumptions:

1. When developing his own consumption strategy, consumer estimates value not of some good but consumption sets. He can't define if a cupboard is more utile for him than a fridge. It's more realistic to expect that consumer is able to determine that two long loaves and one liter of juice are more utile than one long loaf and two liters of juice. The member of Cambridge School, F. Edgeworth was the first to draw attention on it. His research made the basis of indifference curves concept.

2. Comparability assumption. Consumer is able to compare two different sets of goods and to draw one of the conclusions: set *X* is more preferable than set *Y*; set *X* is less preferable than set *Y*; none of the sets is preferable.

3. Transitivity of preference and indifference relations assumption. If consumer prefers set *X* to set *Y*, and set *Y* to set *Z*, then he prefers set *X* to set *Z*. Similarly, if he prefers set *X* to set *Y* and sets *Y* and *Z* are indifferent to him, then he prefers set *X* to set *Z*. If consumer is indifferent both to sets *X* and *Y*, as well as to sets *Y* and *Z*, then it it makes no difference for him whether to consume *X* or *Z*.

4. Incapacity of saturation assumption. If set *X* contains not less units of each commodity than set *Y*, consumer is indifferent when he makes choice between sets. If set *X* contains more units at least of one good than set *Y* does, then set *X* is more preferable. This assumption corresponds to our intuitive understanding "more is better than less" and it embraces almost all cases in real life, while situations "more than enough" occur very seldom.

5. Consumer doesn't need to know absolute value of each set utility or utility of each good in the set.

Ordinal theory of utility was worked out by English economists R. Allen and J. Hicks. The main instruments of this theory are indifference curves and budget limits.

5.2. Consumer's preferences and indifference curves. Marginal rate of substitution and its economic meaning

Let consumer face only to two goods – *X* and *Y*. Then any of possible goods combination can be represented as a plotted point (pic. 5.2), where *X*-axis is a quantity of goods *X*, and *Y*-axis – a quantity of goods *Y*.

Indifference curve shows different combinations of two economic goods that have the same utility for consumer.

Infinite set of indifference curves forms indifference curves chart, and it reflects consumer preferences.

Indifference curves characteristics:

1. Indifference curves have negative slope. It can be proved thus: when consumption of the first good diminishes, consumer has to recompense it by increasing consumption of the second good to save constant utility level of the set.
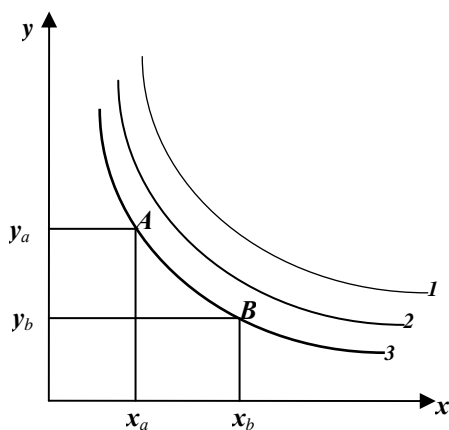
2. The further from the origin of coordinates indifference curve is, the more utility level it characterizes.

3. Two indifference curves can't cross because the same set of goods can't be described by two different utility levels.

4. Indifference curves are convex towards the origin of coordinates, which can be explained by lessening of marginal rate of substitution when moving along indifference curve.

Pic. 5.2. Indifference curves

Marginal rate of substitution of good Y by good X (MRS_{XY}) is the quantity of good Y that should be reduced "instead of" one unit increase of good X in order for consumer's satisfaction level to stay steady:

$$MRS_{XY} = \frac{-\Delta Y}{\Delta X} \text{ or for continuous case}: MRS_{XY} = \frac{\partial Y}{\partial X}. \qquad (5.3)$$

Since ratio $\Delta Y/\Delta X$ is negative by definition, minus, placed before the right side of the equation, makes marginal rate of substitution positive.

Let consumer be indifferent when choosing between set A and set B (pic. 5.3, a). Then the rate, at which he agrees to substitute good Y by good X, being on the same indifference curve, will be:

$$\frac{0Y_2 - 0Y_1}{0X_2 - 0X_1} = -\frac{\Delta Y}{\Delta X}. \qquad (5.4)$$

As point A approaches point B the ratio $\Delta Y/\Delta X$ will approach the incidence on the tangent in point B.

Within the limit around point B the slope ratio (or tangent) in this point is marginal rate of substitution.
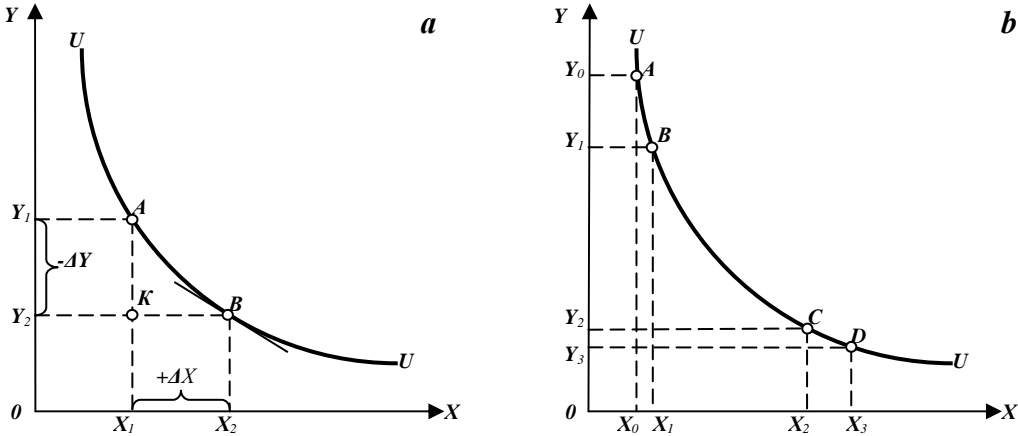
Pic. 5.3. Marginal rate of substitution

Marginal rate of substitution may possess different values; it may be equal to zero, may be constant or may vary while moving along indifference curve. In the case of convexity to the origin, as in the pic. 5.3, MRS decreases as one good is substituted with the other, i.e. consumer agrees to give less quantity of good for the same quantity of substituted good (analogue of declining marginal utility). So, in the pic. 5.3, b consumer, being in the point B, is ready to let Y_0Y_1

of the good Y in return of X_0X_1 increase of the good A. But as he possesses set C, consumer for equivalent increase of the good X ($X_2X_3 = X_0X_1$) will agree to let only Y_2Y_3 of the good Y, that is less than Y_0Y_1.

For two absolutely interchangeable goods MRS = const. In this case indifference curves degenerate into straight lines (line U_1U_1 in the pic. 5.4). Usually several such goods are regarded as one good.
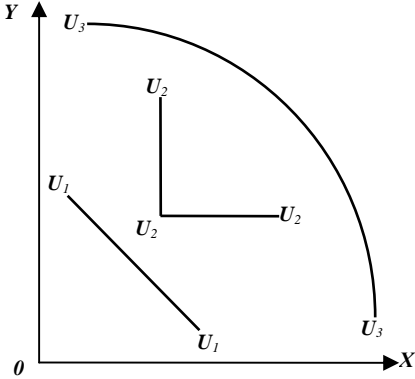
Pic. 5.4. Types of indifference curves

It's also possible that goods may not substitute each other at all, for example, a right and a left shoe. In this case indifference curve degenerates into two transversely-spaced segments (U_2U_2 in the pic. 5.4). Sometimes the more quantity of one good consumer has the more he would like to possess. In this case indifference curve is convex towards the origin of coordinates, and the rate of substitution increments (U_3U_3 in the pic. 5.4). Though none of these variants can be excluded, convexity of indifference curves and decreasing marginal rate of substitution perform the most general and widespread situation.

Let's increase quantity of the good X in the set by shade ΔX.

Consequently, total utility of a set will rise by $MU_X*\Delta X$. Now we'll define how many units it's necessary to decrease so that the good Y will have the same total utility of the set. To achieve this goal we shall $MU_X*\Delta X$ divide by MU_Y:

$$\Delta Y = \frac{-MU_X \cdot \Delta X}{MU_Y}. \qquad (5.5)$$

Minus sign is necessary because X and Y change in opposite directions. The last equality can be transformed:

$$\frac{MU_X}{MU_Y} = -\frac{\Delta Y}{\Delta X}. \qquad (5.6)$$

Lets' recall that we chose such ΔX and ΔY that total utility stays constant. Therefore,

$$\frac{MU_X}{MU_Y} = -\frac{\Delta Y}{\Delta X}; \ U = \text{const} = MRS_{XY}. \qquad (5.7)$$

Indifference curves allow revealing consumer preferences, but they do not take into account two important circumstances are not taken into account – prices the goods and consumers' income. Indifference curves show only the possibility to substitute one good with another. But they don't define which exactly set of goods consumer considers the most beneficial. Budget limit gives us this information.

5.3. Consumer's budget limit

In the previous paragraph we described the system of consumer preferences. Now we will examine the set of his possibilities, i.e. the set of all affordable bundles of products.

Let consumer have certain income M in period of time. During this time he can't spend more than M monetary units. So consumer can buy any bundle of goods $X = X_1, X_2, …, X_n)$ that fulfils the condition:

$$P_1X_1 + P_2X_2 + … + P_nX_n = M, \tag{5.8}$$

where $X_1, X_2, …, X_n$ – number of units of the goods 1, 2, …, n that consumer purchases; $P_1, P_2, …, P_n$ – prices of these goods; M – consumer's disposable income.

Formula (5.8) is called consumer's budget limit. Graphic methods of analysis give us the possibility to describe the case when consumer choice is limited by two products (let's call them X and Y). Then *budget limit* is counted by the following formula:

$$P_XX + P_YY = M. \tag{5.9}$$

The line described by the formula (5.9) is called budgeting line.

Let's presuppose that an individual consumer can't influence the price of any product, no matter how significantly he changes his consumption of this good (in other words, there is a perfect competition by the side of demand in the market). Thereby, product prices act as some external, set by the market quantities.

Now we'll show budget line graphically. Formula (5.9) can be easily transformed into the formula:

$$Y = \frac{M}{P_Y} - \frac{P_X}{P_Y} \cdot X. \tag{5.10}$$
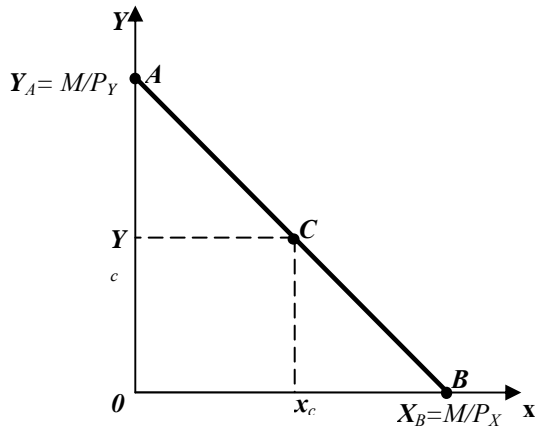
Pic. 5.5. Budgeting line

As far as we suppose that M, P_X and P_Y are constant, formula (3) comprises the equation of a straight line (line AB in the pic. 5.5).

Coordinates of points A and B (cross points of budget line and coordinate axes) characterize maximum quantity of goods X and Y, that a consumer can buy by spending all his income only on good X or Y. Thus, point's A ordinate is following: $Y_A = M/P_Y$. Exactly this quantity of the product Y consumer can buy if he declines to purchase product X. Similarly abscissa of the point B: $X_B = M/P_B$. Any other set of products C = (X_C, Y_C) situated on the budget line has the same price M as sets A = $(0, M/P_Y)$ and B = $(M/P_B, 0)$.

Generally speaking, budget line is a geometrical locus that characterizes all the sets of goods which consumer can buy by spending all his income M when prices P_X and P_Y are given.

As we can see in the pic. 5.5, budgeting line has a negative slope. This characteristic is quite explicable: since sets of products situated on the budgeting line have the same price, increase of purchase amount of one good is possible only if consumption of the second good decreases. Let's recollect that a straight line slope is characterized by variable X given constant in the equation of this straight line. Consequently, budgeting line slope is characterized by the quantity $-P_X/P_Y$. Minus sign indicates the budget line negative slope (as prices are positive quantities, i.e. $P_X>0$, $P_Y>0$, quantity P_X/P_Y is negative).This slope, as we can see, is constant so long because we have determined earlier that individual consumer can't

Pic. 5.6. Set of consumer means

influence market prices of the goods.

Now when we know budgeting line characteristics, let's plot bundle of products set that satisfies budget limit. As far as the amounts consumed can't be negative, affordable set corresponds to the shaded triangle 0AB in the pic. 5.6 limited by budgeting line and axes of coordinates. D and E are unpurchaseable bundles of products.

Since the ultimate goal of our analysis is the study of consumer reaction on prices and income changes, we need to examine how frontiers of affordable set change when prices and income alter.

Income increase, when prices are fixed, results in budgeting line parallel shift upward (and income decrease, of course, – in parallel shift downward, pic. 5.7).

Let us suppose that price of only one good X changes (for example, declines from P_X to P^1_X), when price of good Y and consumer income are fixed.

Cut of the good X price results in budgeting line turn counterclockwise around cross point of budgeting line and axis y, and price growth – in the analogous turn clockwise (pic. 5.8).
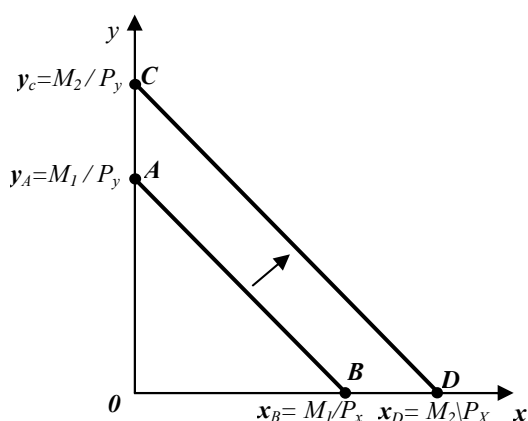
Pic. 5.7. Budgeting line shift when income changes
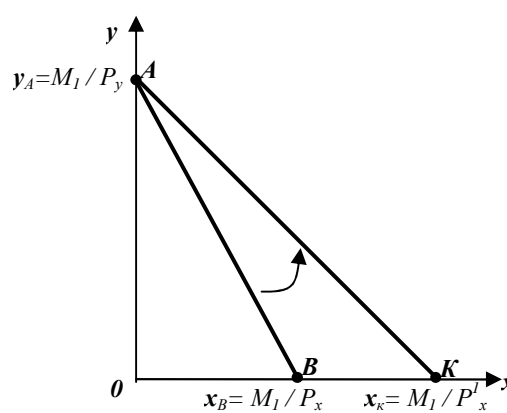
Pic. 5.8. Budgeting line turn when price changes

5.4. Consumer equilibrium

Now using the instrumentality of indifference curves and budgeting lines we will try to develop a model of consumer choice in order to identify the characteristics of that bundle of products which consumers choose from the set of affordable bundles of products when prices and income are fixed. Let consumer have some income which can be spent on two goods. Prices of these goods don't depend on purchase amount of the consumer. Then the set of affordable bundles of products can be portrayed as budgeting line. The system of preferences can be represented in the graphic space by an indifference map of the consumer. Now we will depict budgeting line and indifference map in one diagram (pic. 5.9). What bundle of products will our consumer choose with given budget limit and an indifference map?

Consumer aims at utility maximization, which means that he chooses the most preferable for him bundle of products from the set of affordable bundles.
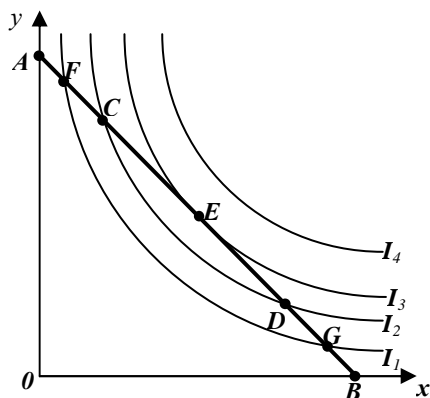
Pic. 5.9. Consumer optimum

In the diagram (pic. 5.9) the set of affordable bundles of goods is represented by triangle 0AB.

First of all, let's imagine that the point of consumer choice is situated lower than budgeting line *AB*. It means that some portion of consumer income is not spent.

Within the bounds of our model income can be spent only on two goods and the possibility to save money is not taken into account. Under these circumstances, supplementary purchases of goods for saved money will raise the utility according to the ordinal theory – "more is better than less". In other words, the point of consumer choice must lie on the budgeting line AB.

What point on the budgeting line corresponds to optimal bundle of products in terms of a consumer? Let's examine point F. Point A is situated on the intersection of budgeting line AB and indifference curve I_1. The indifference curve also crosses budgeting line in point G. Apparently, points A and G are not the most preferable for the consumer because, when moving along the budgeting line downwards from point A and upwards from point G, consumer passes to higher-up indifference curves and, consequently, to higher utility level. Now we will examine point C. It is more preferable than point F. Point C is situated on indifference curve I_2 that crosses budgeting line in point D. Points C and D are the points of the optimal consumer choice by the same token as points F and G.

Generally speaking, if some indifference curve crosses budgeting line in two points, then all the points on the budgeting line between them will be more preferable for a consumer. And only in that case when indifference curve has only one common point with budgeting line (point E in the pic. 5.9), this point corresponds to the most preferable for the consumer bundle of products from all the set of affordable bundles of goods. Point E is called the point of a consumer choice because it is situated on the highest indifference curve, i.e. it corresponds to the highest level of satisfaction when prices and consumer income are given.

As is generally known, that the slope of the curve in each point is equal to the slope of the tangent drawn through this point. Therefore, budgeting line slope is equal to indifference curve slope in point E.

Indifference curve slope in this point is equal to marginal rate of substitution MRS_{XY}, and budgeting line slope – to price ratio P_X/P_Y. It means that in consumer optimum point E: MRS_{XY} equals P_X/P_Y.

But, as it has been shown above, $\dfrac{MU_X}{MU_Y} = -\dfrac{\Delta Y}{\Delta X}$, $U = \text{const} = MRS_{XY}$.

Then, $\dfrac{P_X}{P_Y} = \dfrac{MU_X}{MU_Y}$ or $\dfrac{MU_X}{P_X} = \dfrac{MU_Y}{P_Y}$.

Consumer reaction on prices and income fluctuation

Increase of cash income means budgeting line shifts upwards to the right. Similar result can be achieved when prices of both products decrease which means the growth of active income. When cash income decreases or prices rise, budgeting line shifts downwards to the left.
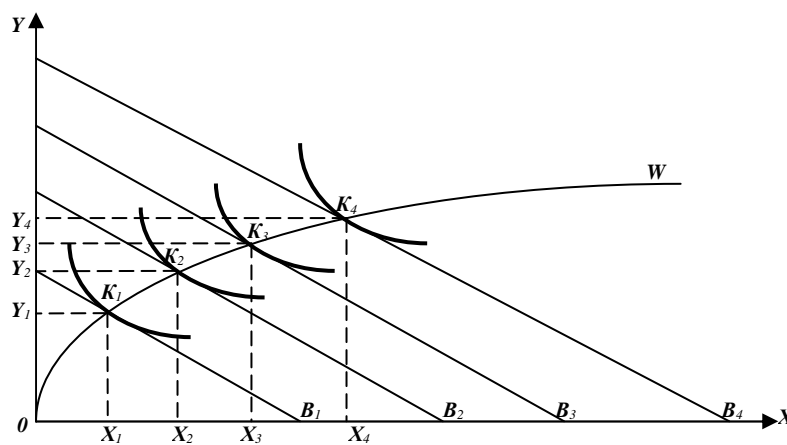
Pic. 5.10. "Income-consumption" curve

When income grows budget limit shifts sequentially to positions B_1, B_2, B_3, …, B_n. Points of tangent of indifference curves and budget lines K_1, K_2, K_3, K_4, …, K_n show consecutive equilibrium positions of consumer in concordance with his income growth (pic. 5.10). This curve, defined by J. Hicks as "income-consumption", in American literature was called standard of living curve.

If "income-consumption" curve is the ray that comes from the origin of coordinates at an angle of 45 degrees, it means that when income grows, consumer raises consumption of goods X and Y in equal parts. If purchases increase disproportionately, slope angle of the curve changes. In our case at first occurs the rapid growth, and then the relative decrease of good Y consumption and gradual growth of good X consumption.

Already in the XIX century it was noticed that if consumer's cash income increases, consumption of secondary goods grows quicker than consumption of first-necessity goods. The first researcher to analyze influence of income changes on consumers' expenditure structure was Ernst Engel (1821 – 1896).
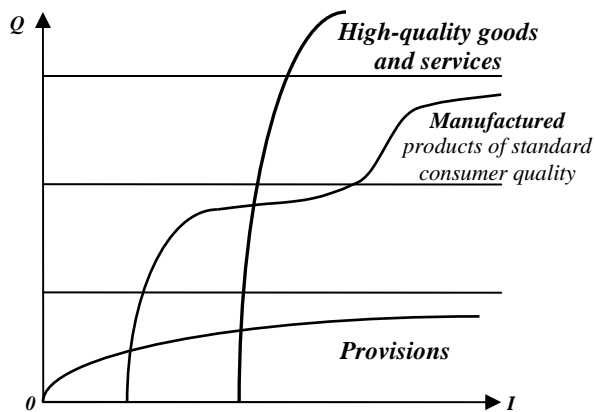
Pic. 5.11. Engel curves in the interpretation of Tornquist

Engel curves in contemporary interpretation are shown in the pic. 5.11. Let's put consumer income I on the axis of abscissa and quantity of products Q – on the ordinate axis.

First of all, saturation of provisions takes place, then saturation of manufactured products of a standard quality and only then – saturation of goods and services of quality. There is an interesting regularity: even after the passage to quality goods consumption, there is another boom of demand on manufactured products of a standard quality that are used in daily needs.

When we studied "income-consumption" curve we proceeded from the assumption of prices constancy and income dynamics. Now we will make the income constant and price of one of the goods (for example, good X) variable. Let's suppose that price of the good X decreases, i.e. $P^1_x>P^2_x>P^3_x>P^4_x$ etc. (pic. 5.12, b). For example, unit of the good X cost 100 US dollars and now it costs 50 dollars. It means that for 100 dollars consumer can buy two units of good X.

The diagram represents budgeting limit shift from position NX_2 into position NX_3 (pic. 5.12, a).

Subsequent price decrease is reflected by lines NX_4, NX_5 etc. Having marked points of tangency of indifference curves U_1, U_2, U_3, U_4 and budget limits as points R_1, R_2, R_3, R_4 and having connected them, we will get "price-consumption" curve.

On the basis of this curve, one can easily construct a demand curve (5.12, b). In this case, the price of the good X (P_X) is on the ordinate axis and the quantity of the good X is on the abscissa axis.

When we analyzed "income-consumption" curve we examined

Рис. 5.12. "Price-consumption" curve (*a*) and construction of demand curve (*b*)

influence of income changes, and when we analyzed "price-consumption" curve we examined influence of price changes on relative substitution of one good with another. Now let's find out in what way changes of demand for the good *X* are generated by the price alteration, and in what way – by the active income.

Income and substitution effects

How does the changing of the price of the good (when prices of other goods and consumer income are constant) influence demand for this good? On the one hand, when other prices are constant price decrease means the reduction of its relative price, which results in the growing prices of all other goods relatively to this good. Consumer will try to substitute relatively expensive products with relatively cheap one. On the other hand, price decrease can be interpreted as consumer's active income increase. The sum of money left at his disposal can be spent on purchase of relatively cheaper supplemental units or other products.

Thus, price change of any good influences alteration of consumer's demand on this good in two ways: firstly, by relative price changing, secondly, by consumer's active income alteration. In this connection it is reasonable to divide total effect into two parts: substitution effect and income effect.

Substitution effect is the demand alteration produced only by the change of relative price when active income is constant.

Income effect is the demand alteration produced only by active income change when relative prices are constant.

If we study "normal products", income and substitution effects act in one way. If we study "inferior products", income and substitution effects act in different directions. In this case, effect of price change will depend on what effect is predominant.
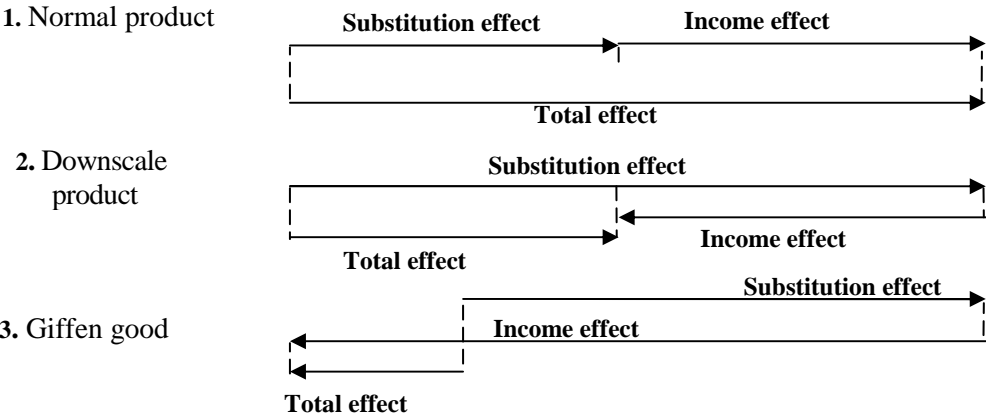
Pic 5.13. Income effect and substitution effect
when price of the good *X* decreases (P$_X$↓)

CHECKLIST

1. "Consumption" and "utility" categories.
2. Total and marginal utility. Utility evaluation problem.
3. Consumer preferences.
4. Indifference curves and its characteristics.
5. Marginal rate of substitution.
6. Consumer's budget limit.
7. Utility maximization rule. Condition of consumer equilibrium.
8. Dynamics of consumer equilibrium.
9. "Income-consumption" and "price-consumption" curves.
10. Income effect and substitution effect.

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Chapter 6. THE THEORY OF A COMPANY

6.1. Company: goals, functions, organizational and legal forms.
6.1.1. Organizational and legal forms of enterprises (companies) and its types.
6.2. Factors of production and production function.
6.3. Production of the company in short-term and long-term periods.
6.3.1. Production net and isoquant. Marginal rate of technological substitution of factors. Isocost.
6.4. Production costs. Economy of scale.
6.5. Company's revenue and profit.

MAIN CATEGORIES

Enterprise, company, competitiveness of the company, sole proprietorship, partnership, corporation, stock-company, factors of production, variable factors of production, fixed factors of production, short-term production run, long-term production run, production function, technology, total product, average product, marginal product, the decreasing ultimate output law, isoquant, optimal combination of production factors, explicit and implicit costs, accounting costs, economic costs, opportunity costs, individual costs, social costs, distribution costs, irrecoverable costs, fixed costs, variable costs, total costs, average costs, marginal costs, economies of scale, diseconomies of scale, constant economies of scale, optimum size of enterprise, isocost, isocost map, manufacturer equilibrium, revenue, total revenue, average revenue, marginal revenue, profit, economic profit, accounting profit, normal profit, profitability.

6.1. Company: goals, functions, organizational and legal forms

In every economic system goods and services are produced by a great number of enterprises.

Enterprise is an independent economic entity that owns the rights of legal entity, produces and sells goods, renders services of a material nature on the basis of using property by the employees. Object of the right of ownership is the complex of property used for entrepreneurial activity.

In the market economic system category "company" is used more often. In economic literature categories "company" and "enterprise" are considered to have similar meaning. But enterprise is a single production unit, and company may include either one or several enterprises.

There are several approaches to define "company" in economics. The evolution one is of the main interest. It states that company is a self-developing organization (airport, vehicle fleet, barber's, shopping center, concrete components plant, etc.).

Concept of the company and its types depends on the type of economic system. And though with the lapse of time it changes, enterprise is:

– the primary link of national economy;
– the main organizational unit;
– the subject of entrepreneurial activity;
– the object of direct combination of production factors;
– the object of forming personnel where interests of society, employees and individual worker are realized.

Features inherent in enterprise are the following:

– organizational unity that supposes that the employees carry out economical activity of the enterprise. Employees are interrelated by the division and cooperation of labour, and common economic interests;

– technical and industrial unity of all range of means of production (or technological unity) suited to produce goods or render services;

– economic isolation of all resources during the process of production (application in engineering process, compensation of expenditures at the cost of the results of economical activity and accounting of specific economic interests). By virtue of economic isolation, enterprise becomes the independent subject of economical activity;

– economic self-sufficiency (independent decision making about what to produce, in what volumes, at what price to sell, what resources to use, and how to develop further, etc.). Enterprise independently defines organizational forms of management, its structure. It establishes contractual relations with other subjects of business activity, bears responsibility for execution of its commitments.

Every enterprise as a legal entity makes up a balance sheet, has a charter, a settlement account in a bank, a name, an address and a seal.

Goals of the company. Strategic commercial goal of every company or enterprise is profit maximization. This goal is also a stimulus of production and economic activity.

Company can provide profitability by realization of tactical goals:

– increase of supply percentage, entering new segments;
– increase in profits relative to invested capital;

- growth of dividends;
- change of capital structure;
- product line diversification and quality improvement of the output;
- output growth, etc.

6.1.1. Organizational and legal forms of enterprises (companies) and their types

According to the legislature of the Republic of Belarus there are:
- unitary enterprises;
- business associations;
- partnerships;
- production cooperatives;
- consumer cooperatives.

State (national or municipal) or private unitary enterprise can be organized in the form of unitary companies. Unitary enterprises (companies) are commercial organizations that belong to one person, which means that their property is indivisible.

Property of republican unitary enterprises belongs to the Republic of Belarus, of municipal enterprise – to political units (regions, cities).

Republican unitary enterprises may be based on the right of economic control or operative administration; the latter are called state-owned.

Property of private unitary enterprise belongs to a natural person.

On the 2nd of August 2006 the Law of the Republic of Belarus "About joint-stock companies, limited liability corporations and additional liability companies" was renamed into the Law of the Republic of Belarus "About corporations". According to the law, there are the following types of corporations:
- limited liability companies;
- additional liability companies;
- joint-stock companies.

Limited liability company (Ltd.) is a company organized by two or more individuals. Charter capital of the company is divided into equity stakes, their value is declared in constitutional documents. Shareholders of the company don't incur its liabilities. They bear a risk up to the amount of their investment.

Additional liability company is also created on the basis of shared property but the liability of the shareholders is significantly extended. They are

liable jointly and incur subsidiary responsibility for obligations of the company according to the volume of their investment enshrined in constitutional documents. In case of bankruptcy of one of its shareholders his liability for the obligations of the enterprise is divided among the remaining shareholders in the proportion to their investments.

Joint-stock company is a company (corporation) which fund is formed by issuing and selling shares. Shares may be ordinary and privileged. Their holders are the owners of the company. They have the right to collect dividends. Owners may be juridical entities and individuals; they are called stockholders or shareholders. Shareholders bear the risk of losses up to the amount of their shares. Joint-stock companies can be classified under two types: public corporations and close corporations. Corporations are founded voluntarily by joining capital through execution of the foundation agreement.

The goal of creating corporations is capital formation, property reforming, and increase in profits. The supreme body of the joint-stock company is stockholders' meeting; also management is elected.

Partnership is a profit making organization founded by two or more individuals by combining their capital on the basis of a contract. It can be founded in the form of general partnership. Members of the general partnership incur joint and subsidiary liability for the results of business activity. Subsidiary liability means additional liability of the "partners" proportionally to their investment. Profit is also divided between members in proportion to their shares in the statutory fund.

In the limited partnership along with full "partners" there are also investors who don't assist business activity. They take part in capital formation, gain profit and bear losses within limits of their investment.

Production cooperatives are voluntary associations of the citizens on the basis of shares to carry out joint production and economic activity. Cooperatives are based on personal labour participation and integration of shares. Cooperatives are generally called artels, in agriculture – agricultural production cooperatives, in other sectors of the economy – public enterprises. They are commercial organizations. Members of cooperatives incur joint liability for the obligations. Revenues of cooperative member consist of wages as participation in activities and profits are distributed proportionally to shares.

By the size, companies are classified as small (less than 50 employees), medium-sized (from 50 to 500 employees), large-scale (more than 500) and especially large-scale (more than 1000).

6.2. Factors of production and production function

Material basis of progressive development of civilization is the progress of social production. *Production* is the process of creation of material benefits. It is an appropriate human activity aimed at satisfying their needs. To carry out any production activity enterprise (company) uses natural, material, manpower and financial resources. Resources, actually involved in the production process, are called factors of production. There are four groups of production factors: land, labour, capital and entrepreneurial activity.

Land is considered a natural factor. It is not the result of human activity. This group of factors includes croplands and mineral wealth.

Capital as a production factor acts as a set of elements – machinery, equipment, transportation links, structure, storage rooms, communication, etc.

Labour is presented by intellectual and physical activity, set of abilities conditioned by education, experience, skills, health.

Entrepreneurship as a special type of economic thinking is characterized by the combination of all production factors, ability to foresee and make efficient decisions; it is characterized by initiative, flexibility, businesslike approach, ability to risk. There are different forms of entrepreneurship – production, commercial business, financial, advisory, commission business. Entrepreneur himself organizes his business, sells goods and services, and distributes received revenues.

Nowadays so called specific factors are of a particular importance. They include information, science, technology and infrastructure. The most important factor in the innovation economy is information. It provides systematization of knowledge materialized in the system of machinery, equipment and management models.

In contemporary production environmental factor takes the greater significance. It acts either as an impulse for economic growth or as a factor limiting its options in relation with hazard, pollution with gases and environmental pollution.

Production of every good or service requires certain combination of factors but the main ones are land, labour and capital. They act together and supplement each other.

At the same time factors are interchangeable. This characteristic is caused by various consumer attributes of a product. As a result, it is possible to manufacture any product using different factors in various combinations and proportions.

Interchangeability of the factors is due not only to specificity of needs and constructional features of the product but mainly to limited resources and efficiency of their usage. Therefore, entrepreneurship presupposes use of different combinations of production factors taking into account inevitable decline of production costs.

Production factors may be fixed and variable. Fixed factors are those the quantity of which can't be changed in the short-term period (production capacity, technology, amount of equipment, industrial structures). In the long-term period all factors are considered variable in most branches of economy.

Possibilities of different combinations of production factors can be seen on the basis of the production function. It describes relationship between maximum production volume of the product Q and minimum inputs of the factors $x_1, x_2, x_3, ..., x_n$: $Q = f(x_1, x_2, x_3, ..., x_n)$. In microeconomic analysis two-factor function is the most commonly used one. It can be represented in the following form:

$$Q = f(L, K), \qquad\qquad (6.1)$$

where K – capital inputs; L – labour inputs.

Production function is constructed for a peculiar technology. Changes in technology lead to a new production function. Concrete form of a production function is established on the basis of observations of how the output changes when amounts of applied labour and capital change. But as the optimum combination of production factors for a company may not always be beneficial (price increase, changes in scientific and technological advance, the company size), it should always be looking for a reasonable combination of factors.

6.3. Production of the company
in short-term and long-term periods

Time, during which it is impossible to change the amount of one of the factors, is called a short-term period; and the factor is called fixed.

A company can change output in a short-term period only if it increases use of variable factors, for example, labour. Amounts of other factors are constant.

As labour costs change (in number of employees or working hours), volume of output will also change. We use such indicators as total, average and marginal product to characterize it.

Total product (TP) of variable factor is the total number of units of production obtained from the variable factor employed, when other factors are constant. Total product of variable factor labour is lettered *TPL*.

Average product (AP) of a variable factor is the total product divided by the number of units of the variable factor employed. Average product is calculated by the formula:

$$AP = \frac{TP}{\text{Variable factor inputs}}.$$

(6.2)

If the variable factor is labour then the formula is

$$AP_t = \frac{TPL}{L}.$$

(6.3)

Average product shows the amount of product manufactured by one employee. It characterizes the productivity of labour.

Marginal product (MP) of a variable factor is the change in total product associated with the change in units of a variable factor of production when other factors are constant. The formula is

$$MP = \frac{\Delta TP}{\Delta \text{ Variable factor inputs}}.$$

(6.4)

If variable factor inputs change by ΔL, and the amount of the output – by ΔTPL then marginal product of labour is

$$MPL = \frac{\Delta TPL}{\Delta L}.$$

(6.5)

In this case *MPL* characterizes ultimate output of labour. [5, p. 128 – 129]

There is a relation between changes of total, average and marginal product. It's based on *the law of diminishing returns*. The law of diminishing returns is the fact that as you add variable factors of production to a fixed factor, at some point the increases in total output begin to lessen.

The law is valid under certain *conditions*:

– at least one of the production factors is fixed, i.e. in a short-term period;

– all units of a variable factor are homogeneous (for examples, employees are equally qualified). Marginal product starts diminishing not because the employed workers are less qualified but because relatively greater number of them is employed at the same level of existing capital;

– technology and engineering conditions are constant.

If due to technical progress technology and engineering are being improved then boundaries of the law change. [5, p. 130] Technology improvement leads to the fact that with the same input of factors the output grows.

6.3.1. Production net and isoquant. Marginal rate of technological substitution of factors. Isocost

In a long-term period a company tends to expand its output. It is necessary to increase all factors. Consequently, factors can be variable. Let's suppose that production process is carried out by using two factors – capital and labour (thus we can use two-dimensional graphical space). So, there is a two-factor production function which characterizes the relationship between inputs of labour and capital and the maximum amount of output:

$$Q = f(L, K), \hspace{3cm} (6.6)$$

where K is capital, L is labour.

Since both factors are variable, production of the same volume of goods can be achieved by using different combinations.

For a given technology, the same output can be achieved with more capital or with more labour involvement. There are also intermediate solutions. Production function doesn't take into account peculiarities in labour organization and production management in individual enterprises.

Combination of resources, needed to produce something, characterizes certain mode of production. Different modes of production can be represented by a production net. There is a tabular form of production function presented (table 6.1).

Table 6.1

Production net ($Q = f(L, K)$)

Capital inputs (K)	Labour inputs (L)					
	10	20	30	40	50	60
100	30	50	65	70	90	85
200	50	70	85	95	100	115
300	65	85	100	110	115	120
400	75	95	110	120	125	
500	85	100	115	135	130	

We can see from table 6.1 that the same output can be achieved by different combinations of production factors. For example, $Q = 85$ units can be produced using a combination of 200 K and 30 L or a combination of 100 K and 60 L.

If we join all combinations of resources the use of which provides the same amount of output, then we will get isoquants.

Isoquant is the curve that reflects different combinations of resources that can be used to produce the same amount of goods (pic. 6.1).
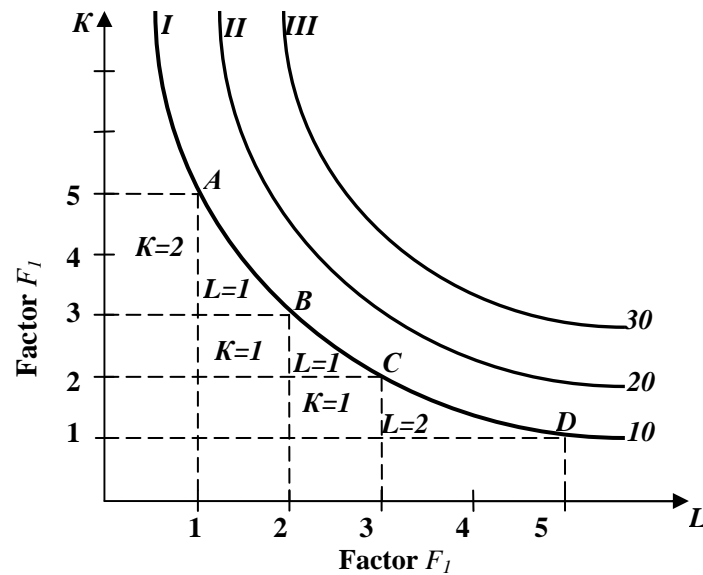
Pic. 6.1. Isoquants

Isoquants have the same meaning for the production process as indifference curves for the consumption process do. They have similar features:
1) they have negative slope;
2) they are convex towards the origin of coordinates;
3) they don't cross;
4) they show different production levels (10000, 20000, 30000, etc.);
5) isoquant, that is above and to the right of the other, represents bigger amount of output.

The set of isoquants, any of which shows the maximum output achieved by using certain combinations of resources is called a chart of isoquants.

Isoquant not only shows that production factors are interchangeable but also gives an opportunity to identify limits of substitution. These limits are determined by marginal rate of technological substitution characterizing the amount of one resource that can be reduced "in exchange for" one unit of the other resource maintaining output constant. Let's examine isoquant (pic. 6.2).
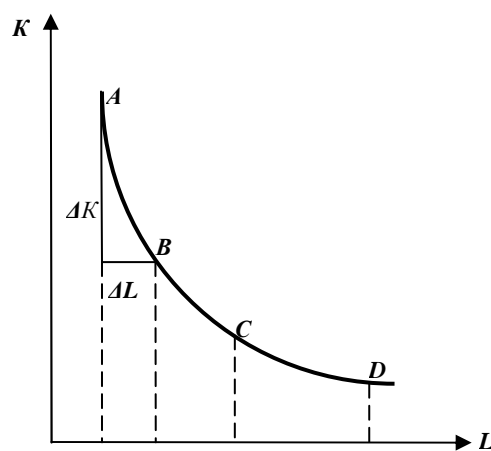
Pic. 6.2. Marginal rate of technological substitution

We will move along the curve top-down substituting capital with labour. If ΔK is the reduction of capital inputs and ΔL is the labour inputs increase, then the amount of factor K which can be substituted by one unit of factor L is $\dfrac{\Delta K}{\Delta L}$. Here is a marginal rate of technological substitution,

$$MRTS_{LK} = \frac{-\Delta K}{\Delta L}. \tag{6.7}$$

The concave form of isoquant shows that $MRTS_{LK}$ declines as we move down along the curve. That means that labour and capital are not absolutely interchangeable. Therefore, there are difficulties when we substitute capital with labour, i.e. there are certain limits of interchangeability of factors. They are determined by the efficiency of factors usage. As we substitute capital with bigger amount of labour, working efficiency declines, and vice versa, when we substitute labour with bigger amount of capital, efficiency of the capital usage reduces. Combination of factors should be optimal in the production process.

There is also another method to calculate marginal rate of technological substitution. When we move down along the isoquant, capital inputs shrink by ΔK. Consequently, production losses from reduction of capital inputs are equal to product of ΔK by marginal product of the capital MP_K. In order to produce former production volume it is necessary to increase labour inputs by ΔL. In this case, gain in production achieved by labour inputs increase, will be equal to product of ΔL by marginal product of labour MP_L.

As the volume of production should be the same, we can write down:

$$-\Delta K \cdot MP_K = \Delta L \cdot MP_L, \tag{6.8}$$

i.e.
$$-\frac{\Delta K}{\Delta L} = \frac{MP_L}{MP_K}. \tag{6.9}$$

However,

$$-\frac{\Delta K}{\Delta L} = MRTS_{LK}, \tag{6.10}$$

consequently,

$$MRTS_{LK} = \frac{MP_L}{MP_K}. \tag{6.11}$$

This formula explains from mathematical point of view the decrease of marginal rate of technological substitution.

Every company seeks to maximize volume of output taking into account its financial capacity.

The sum of money that company has is called budget limit (graphically it is a straight line, isocost).

Isocost is a straight line that shows all combinations of resources the use of which requires the same costs (pic. 6.3):

$$M = P_K \cdot K + P_L \cdot L, \qquad (6.12)$$
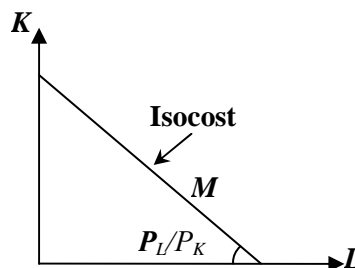
Pic. 6.3. Isocost

where P_K and P_L are prices of unit of capital and unit of labour respectively.

There are variants of isocost location in the pic. 6.4.
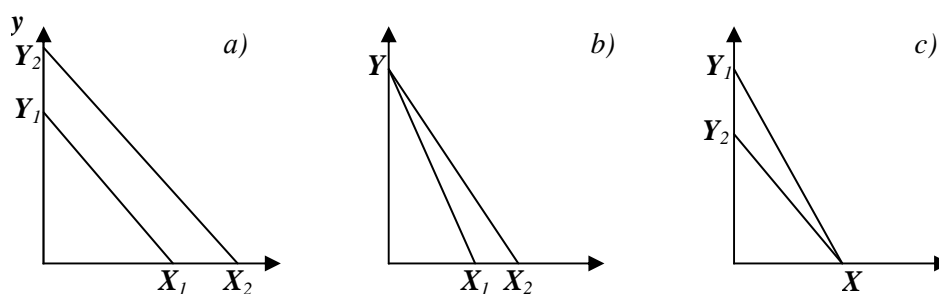
Pic. 6.4. Variants of isocost location: a) when prices are fixed;
b) when price of the good X changes; c) when price of good Y changes

Using the same method, as when we described consumer equilibrium, we will superpose isoquant chart with isocost, and the tangency point will show the biggest production volume for a given budget limit (pic. 6.5).

Manufacturer equilibrium is the state of producer during the substitution of one production factor with the other when the ultimate ruble, spent on each resource, yields the same marginal product.

Mathematically the equilibrium is described by combined equations:

$$M = P_K \cdot K + P_L \cdot L \left\{ \frac{MP_K}{P_K} = \frac{MP_L}{P_L} ; \right. \qquad (6.13)$$

$$\frac{MP_K}{P_K} = \frac{MP_L}{P_L}. \qquad (6.14)$$

Condition of production optimization is the choice among all possible combinations of resources that will have the best effect.

To see the future of enterprise development in the long run, it is necessary to imagine how production volume and expenditures for factors acquisition will

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increase at each stage of production growth. Having linked with the line all the points of tangency of isoquants and isocosts, we obtain the trajectory of company's economic activity or production activity – isoclines-line 0K (pic. 6.6).
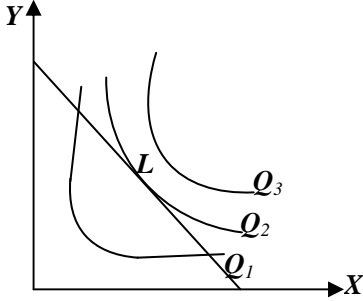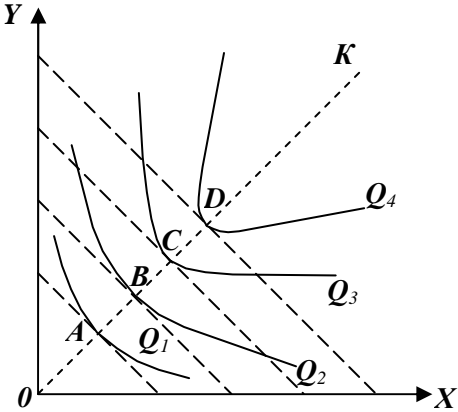
Pic. 6.5. Manufacturer equilibrium   Pic. 6.6. Trajectory of company's business activity

6.4. Production costs. Economy of scale

Production costs were the main subject of classical political economy. Thus, A. Smith introduced a concept of absolute costs, D. Ricardo is the author of the concept of comparative costs. They considered costs to be the average social costs per unit of output.

According to Marxist theory, production costs are the value of the commodity, i.e. all expenditures for the purchase of means of production and labour.

Karl Marx differentiated production costs as the labour inputs and capital expenditures.

Representatives of marginalism (C. Menger, F. Wieser) considered costs to be a psychological phenomenon based on marginal utility. In their opinion, the amount paid by a company for production factors is determined by marginal utility they possess from the point of view of a seller.

Austrian theorist F. Wieser developed a subjective theory of costs or alternative possibilities. According to this theory, real production costs of a given product are equal to the highest utility of the benefits that society would receive if it used manufacturing resources in a different way. Following the institutional theory of costs, J. Clark took up a problem of overhead charges and studied different types of costs – individual and social, short-term and long-term ones. J. Hobson introduced the concept of human costs, which are measured by the quality and nature of work efforts.

Neoclassical theory of costs (A. Marshall) considers them to be the totality of expenditures for production factors acquisition.

Recently the theory of transaction costs has been very popular (R. Coase). It was developed by representatives of new institutional economics. Transaction costs include distribution costs, i.e. expenditures for product supply (K. Arrow). Followers of this theory think the main market function is to save transaction costs.

Karl Marx divided all production expenses into 1) production costs and 2) distribution costs.

Thus, costs are the money means of the expenditures for production and sales.

Let's examine them in detail.

Production costs are total inputs of direct and embodied labour to manufacture the product. These are inputs (expenses) that should be run up to create goods. They cover payments for materials (raw materials, fuel and electricity), wages, amortization, organization expenses. When the goods are sold, their value turns into proceeds in cash. One part of it indemnifies for production costs, the other makes profit, it means that, for what production process is organized. Therefore, production costs are less than value of goods for the amount of profit:

$$Revenue = Costs + Profit. \qquad (6.15)$$

Distribution costs are related to the process of production supply. They include net and additional costs.

Net costs are expenditures connected to buying and selling in a pure form, they are lower than the value of products. Net costs are responded from profit after the offtake (wages of sellers, maintenance of commercial premises, etc.).

Additional distribution costs are expenses for wrapping, sorting, transportation and storing of goods.

This type of distribution costs is connected to the continuation of the production process in distribution. They are included in the value of goods and increase it, and they are reimbursed after the sale of goods from the proceeds.

Modern market economy assumes that entrepreneur expects revenue from all its costs in order to have a sustainable market position. Therefore, all costs are alternative costs and they are called imputed costs, because using them for production of a single product means rejecting to use them for the production of other goods.

All the alternative costs that a company incurs during production process can be either explicit or implicit.

Explicit costs are cash payments to involve resources into production, or money benefits to suppliers of production factors, intermediate products and business services. Explicit costs include wages, the cost of raw materials, supplies, fees to banks and other financial institutions, payments for transportation services.

During production process a company also involves resources that belong to it. These are *internal (implicit) costs* – cash income that could be derived from alternative employment of held resources – money capital, equipment, engineering tools, business ideas of the company's owner, as well as advantages of the company (location, prestige value of the brand, etc.).

So called normal profit of entrepreneur is considered to be one of the elements of implicit costs. Normal profit is the reward for the functions of entrepreneur. Otherwise, he could deposit money in a bank and draw interest on it, give up earnings by working in another firm.

Normal profit is the minimal fee that is necessary to keep the entrepreneur, his entrepreneurial abilities and his money in the given enterprise. Production costs that include normal profit are called economic costs which is not the same as accounting costs. Accounting costs include all the real, actual expenses calculated in money terms.

From the point of view of an economist, production costs are not only actual expenses incurred in money terms but also unpaid costs.

In addition, there are sunk costs – costs that are incurred by a company once and can not be returned under any circumstances (for example, purchasing a license, registration of an enterprise, advertising and packaging). Sunk costs are not alternative, and are not included in the current costs of the firm.

Production costs in a short-term period

In the short-run the amount of some factors is constant and the amount of others varies. Consequently, there are both fixed and variable costs.

Fixed costs (*FC*) are those costs that cannot be changed due to variations of production (they are connected with the existence of mechanical facilities of companies). These are the cost of use of buildings, facilities and equipment, administration and executive expenses, rent, insurance contributions, etc. They must be paid even if a company produces nothing. Graphically, this is the line *FC*, parallel to the abscissa axis (pic. 6.7).

Pic. 6.7. Structure of production costs

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Variable costs (VC) are those costs that can be changed in the short-run depending on the volume of production. Variable costs include expenses on raw materials, fuel, energy, transportation, labour force, etc. In order to decide how many products to manufacture, the head of the company needs to know how variable costs will grow if the output increases. In the pic. 6.7 the curve *VC* shows the dynamics of variable costs. This curve goes higher because any increase of production is related to the growth of all variable costs.

Total costs (TC) are equal to the sum of variable costs and fixed costs. At zero output, total costs are the sum of only fixed costs. Then, in the production of each additional product unit total costs change by the same amount as variable costs.

According to the definition, the line of total costs repeats the line of variable costs but shifts from it upwards by the amount of fixed costs. The difference between fixed and variable costs is essential for a businessman.

Variable costs are those costs that can be controlled. Their value can be changed in the short-run by changing the volume of production. And while producers do care about the total costs, they are not less concerned about average costs, i.e. cost per unit of output.

There are also *average fixed costs, average variable costs and average total costs*.

Average fixed costs (AFC) are calculated by dividing all fixed costs (*FC*) by the quantity of the output (*Q*), i.e.

$$AFC = \frac{FC}{Q}.$$ (6.16)

Since fixed costs don't depend on the volume of output, as soon as the output grows average fixed costs will decrease. Graphically, the curve *AFC* is shown in the pic. 6.8.

Average variable costs AVC (pic. 6.8) are calculated by the same mode – by dividing all variable costs (*VC*) by the amount of output (*Q*):

$$AVC = \frac{VC}{Q}.$$ (6.17)

As far as variable costs follow the law of diminishing returns, this tendency will also affect average variable costs. Since at the stage of increasing returns less and less additional variable resources are required to produce each subsequent unit of product, then variable costs per unit of output will decline. However, having reached their minimum, they begin to grow as the decrease of returns will result in the need to use more variable resources for each additional unit of output.

Average total costs (*ATC*) can be calculated either by dividing total costs (*TC*) by the amount of output (*Q*) or by adding *AFC* and *AVC*:

$$ATC = \frac{TC}{Q} = AFC + AVC. \qquad (6.18)$$

In the pic. 6.8 the curve *ATC* is got by vertical addition *AFC* and *AVC*.

Marginal costs (*MC*) are additional costs related with the production of each additional unit of output. They can be calculated like the change of the costs that are the result of the production of this unit, i.e.

$$MC = \frac{\Delta TC}{\Delta Q} = \frac{TC\ change(increase)}{Q\ change\ (increase)}. \qquad (6.19)$$
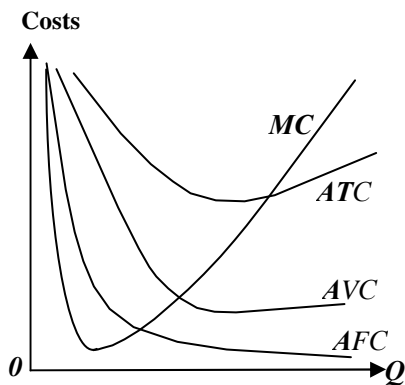
Pic. 6.8. Average production costs

In the pic. 6.8 the graph of marginal costs is the curve *MC* which first goes down and then goes up steeply. This reflects that variable and total costs at first increase at a decreasing speed and then at an increasing pace.

Changes in prices of resources and production technologies will lead to a shift in costs. Thus, the growth of *TFC* will shift up the curve, and since these costs are a part of total costs *TC*, the curve *TC* will also move up.

As for the curves of variable and marginal costs, the increase of fixed costs will not affect their shifting up. At the same time, the increase of variable costs (appreciation of labour) will cause shifting up of the curves *AVC*, *TC* and *MC* but will not influence the curve *TFC*.

Technological change exerts great influence on the costs. If it leads to a reduction in price of production factors or to an increase in productivity, then curves of the costs will shift downward.

Long-run is characterized by the fact that a company is able to change the amount of production factors involved.

In a long term period nature of all variable production factors allows the company to use the best options of their combination, and it will affect the magnitude of change of its average costs (*LATC$_1$*, pic. 6.9).

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Costs per unit of
production
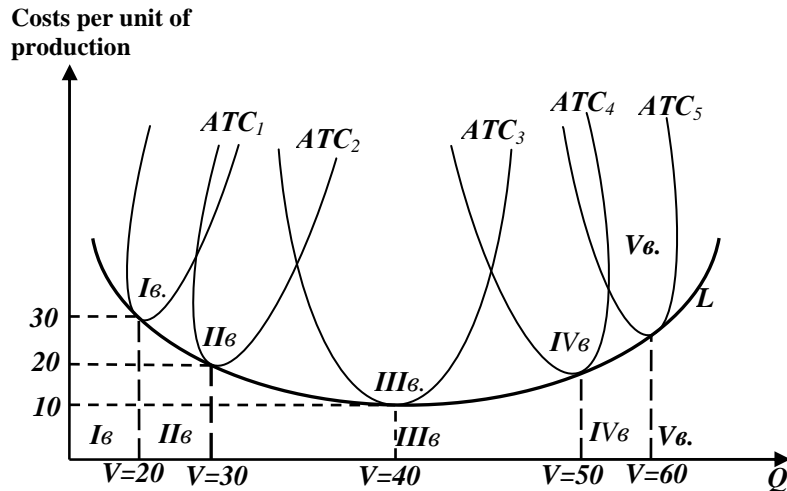
Pic. 6.9. The curve of long-term average costs *(L ATC)*

In the pic. 6.9 there are five different variations (I – V) of the sizes of enterprises meant to produce different volumes of goods at the lowest average total costs (*ATC*) – *ATC₁*, *ATC₂*,..., *ATC₅*. A company may consider these options as stages of its growth. At some intervals of its activity a company doesn't change production capacity and uses what it has. We can assume that at each stage the company adopts a short-term strategy. Therefore, the curve describing its costs at a given stage, is the curve of short-term average costs. The curve *ATC₁* describes sort-term average total costs for the smallest business (I variant). It means that entrepreneur aims at getting output less than 20 units. But this sales volume can be also produced in a big enterprise, and then average total costs will increase because production capacity grows. So, the choice of the enterprise size II presupposes the growth of output from 20 to 30 units, etc.

Each point on the curve of long-term costs *LATC₁* corresponds to a specific size of the company with its own curve *ATC*. Long-term average costs curve *LATC₁* is tangent (envelope) for all possible curves of short-term costs *ATC*. It shows the lowest production costs for any given volume of output on the condition that the company has enough time to change all its production factors.

The pic. 6.9 shows that an increase of production capacities will be accompanied by a decrease of average total costs until the company reaches the size that corresponds to option III. Further growth in production requires an increase in long-run average total costs. Arched shape of the curve can be explained by the economies of scale. There are economies of scale and diseconomies of scale.

Economies of scale: if at some time gap long-term average costs decrease when the output grows, there are economies of scale conditioned by the growth
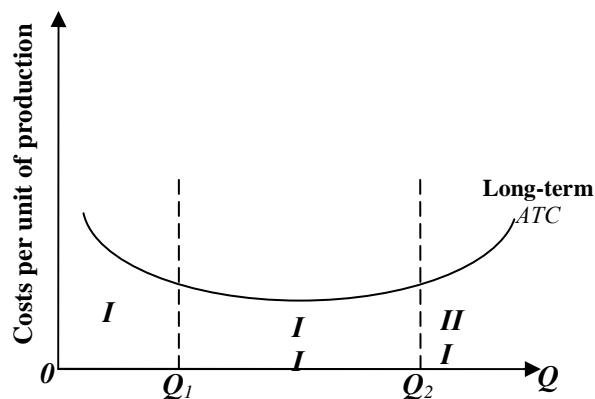
Pic. 6.10. Variants of company's expansion

of scale of operations. Graphically this is a downward part of the curve $LATC_1$. For example, growth of the amount of resources by 10% leads to output increase by 12%. This period of time with output $0Q_1$ corresponds to the variant I of the company's expansion (pic. 6.10).

There are several factors that determine economy of scale:

a) deepening of specialization of production, which leads to increased productivity;

b) indivisibility of production. Every company should have a minimum amount of resources. As a company grows, expenditures for such resources don't increase, so the value of costs per unit of production reduces to;

c) new technologies. The efficiency of new equipment application is high in big enterprises where the volume of production is big. Small businesses can't afford it;

d) manufacturing sideline products. Big companies can use inevitable waste for auxiliary process which decreases long-term average costs.

If at a certain time gap of production long-term average total costs increase with the output increase, then there are diseconomies of scale. Graphically, this is the ascending part of the *ATC* curve. For example, growth of the number of involved resources by 10% leads to output rise by 7%. This interval with the output more than $0Q_2$ corresponds to the variant III of an expanding company operation.

Reasons of diseconomies of scale are:

a) technical factors. Thus, large-scale production requires adequate raw materials sources and failures to deliver them lead to production costs growth;

b) organizational reasons. Growth of office and management personnel, isolation of the "top" floors of management from production process, loss of flexibility lead to average social costs increase.

If during certain time long-term average costs don't respond to output changes which means that they remain constant, company will have constant economies of scale. For example, increase in amount of involved resources by 10% causes production growth also by 10%. This time gap corresponds to variant II of the expanding company functioning.

At the present time transaction costs has become important. They are costs to protect one's own benefits in the market economy, such as:

– costs of searching for information about prices and outlets;
– costs of negotiating, contracting, closure of deals;
– costs of standards engineering, protection of brand names and trade marks;
– costs of property rights protection through the legal system, etc.

6.5. Company's revenue and profit

Revenue is the result of business activity of an enterprise. It is a certain sum of money received by a company as the result of production and sales of products for a certain period of time. Category "revenue" reflects economic effectiveness of company's operation, its economic policy, choice of strategic and tactical decisions. The dynamics of revenue and level of income indicates the effectiveness of a company, public recognition of its products and of its role in the market. There are total, average and marginal revenue.

Total revenue (TR) is total sum of proceeds in cash received as the result of sales of products:

$$TR = P \cdot Q, \tag{6.20}$$

where P is the price of the unit of product; Q is the amount of units of production.

Average revenue (AR) is the amount of cash proceeds per unit of production. It is equal to weighted average price of the unit of output sold during certain period of time,

$$AR = \frac{TR}{Q} = \frac{(PQ)}{Q} = P. \tag{6.21}$$

Average revenue is calculated when prices change during certain time gap or in those cases when the range of goods consists of several products or services.

Marginal revenue (MR) is the increment of the total revenue as the result of production and sales of one unit of production,

$$MR = \frac{\Delta TR}{\Delta Q}, \tag{6.22}$$

where ΔTR is the increment of total revenue as the result of production additional unit of output; ΔQ is the increment of production volume and sales per product unit.

As a rule, total revenue consists of 1) sales proceeds and 2) extraordinary income.

Sales proceeds are money that arrives on the company's account from sales of products. Mainly, sales proceeds correspond to internationally accepted indicator "sales volume".

Extraordinary income is money that is not the result of production activity of a company – interests on deposits, dividends, received fines, penalties, income from exchange transactions, etc.

Profit depends on the amount of revenue. Modern economics considers profit as an income from all production factors – labour, capital, land and entrepreneurship. But at the same time profit is an ambiguous category because there is normal profit as the element of implicit costs due to the nature of business. Therefore, entrepreneur considers normal profit as yield on capital, as entrepreneurial income (normal profit is the element of costs)

$$Profit_S = TR - TC. \qquad (6.23)$$

There are two approaches towards profit calculation – the one of an accountant and the one of an economist.

Accounting profit is the difference between total revenue and external costs (these are explicit actual costs – wages, expenses for raw materials, fuel, auxiliary materials):

$$Accounting\ profit = Total\ revenue - Accounting\ (explicit)\ costs. \qquad (6.24)$$

In economics the totality of internal and external costs forms economic costs:

$$Economic\ profit = Total\ revenue - Economic\ costs\ (internal + external). \qquad (6.25)$$
$$Accounting\ profit > Economic\ profit.$$

Since profit is the difference between sales proceeds and cash costs,

$$Profit_S = TR - TC, \qquad (6.26)$$

obviously, a company tends to maximize this difference.

Production of each additional unit increases total costs by the value of marginal costs (*MC*), but simultaneously it increases total revenue by the value of marginal revenue (*MR*). When marginal revenue is more than marginal costs total revenue increases and company steps up production, i.e. *MR > MC* – output grows, profit increases. As soon as marginal costs exceed marginal revenue, total revenue decreases: *MC > MR* – profit decreases.

Consequently, profit is maximal at such output when marginal revenue (*MR*) is equal to marginal costs (*MC*):

$$MR = MC. \qquad (6.27)$$

This is the marginal revenue = marginal costs rule.

The difference between total revenue and economic costs (explicit and implicit) is *economic profit*.

Profitability is the indicator of production effectiveness of an enterprise, association, and industry in whole which demonstrates the degree of return of involved production factors. There are *production profitability* (profit rate) and *profitability of a certain production line* (operating ratio).

Profit rate is the ratio of balance sheet profit to production facilities expressed as percentage. It characterizes the degree of return of all advanced capital, the efficiency of capital costs of a company:

$$Profitability_P = \frac{Balance\ sheet\ profit}{Advanced\ capital} \cdot 100\% , \qquad (6.28)$$

where *Balance sheet profit* is total profits of a company for a certain period; *Advanced capital* is the sum of basic production assets and circulating assets.

Operating ratio is the ratio of balance sheet profit to product costs expressed as percentage. It characterizes the effectiveness of running expenses. Operation ratio may be calculated for every type of product.

It shows the degree of profitability of production or of a product. The main ways to increase profitability are:
- reduction in cost of the elements of advanced capital;
- reduction of current inputs into production.

The basis of this is a broad implementation of the results of scientific and technological advance leading to higher productivity of labour and lower production costs.

The essence of profit is in its functions – accounting, stimulating and distribution function.

Accounting function is an important criterion of business efficiency. The main indices are the amount of profit, profit rate and operating ratio.

Stimulating function. Profit is a powerful generator of economy. Precisely desire to increase profits underlies most innovations. The amount of profit is influenced by the output, production costs, ratio of capital turnover, working efficiency, level of prices, etc.

Distribution function. Profit is the source of accumulation and development of production, the source of material, incentive of employees. In the market economy profit is the basis of business development.

As mentioned earlier, the main goal of business is profit maximization. It's not quite true. In the western economics there are several theories of optimization of company's activity. Thus, according to one of them, sales but not profit maximization should be the goal. A company's task is to achieve and to retain certain level of profit for the longest possible period. In this case a company will focus on industry average profit rate, resulting from intrasectoral competition. But in a competitive environment, objectively, not all firms can secure a permanent and adequate profitability.

CHECKLIST

1. Characterize goals and functions of a company.
2. What are the main organizational and legal forms of a company?
3. Explain the essence of long-term and short-term periods of company's operation in terms of changes of production factors.
4. What is the production net? How is it constructed?
5. Define isoquant. What is the basis of the construction of isoquant?
6. Why is the equity of marginal revenue and marginal costs the condition of maximum profit?
7. Differentiate categories "expenses", "costs" and "cost price".
8. What is the nature of imputed costs and their significance in economic analysis and developing a strategy of the company?
9. Do you think turning economy of the country into one giant company could be an effective measure? When answering the question remember the attempt to realize it in the command economy. Appraise the attempt.
10. What is the "maximum profit"? Why should a company seek to maximize profit but not production?
11. Define marginal revenue and marginal costs. Why does the profit reach its maximum when marginal revenue is equal to marginal costs?

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Chapter 7. MARKETS OF PRODUCTION FACTORS AND INCOME DISTRIBUTION

MAIN CATEGORIES

Economic resource, demand for a resource, marginal product, income from marginal product of a resource, costs of resource use, price elasticity of demand for a resource, labor market, equilibrium of labor market, demand for labor force, labor supply, salary, monopsony, capital, loan capital, investment, present discounted value, production factor "land", rent, land rent, profit, income.

7.1. Features of functioning of markets of production factors

Economic resource is a set of possibilities and preconditions necessary for creation of economic welfare and satisfaction of corresponding needs [1, p. 488].

To carry out any production activity companies use natural, physical, financial and manpower resources. Business entities whether private or state determine themselves types and application area of certain resources. Hence peculiarities of performance of resources market should be taken into account:

1. Entrepreneurial company is interested not in a production factor itself(as physical object) or ownership of a resource, but its value in use – specific useful properties which are reflected first of all through output in unit time (productivity) and quality of manufactured production.

2. The seller sells an economic resource, and the consumer buys a production factor. But the entrepreneurial company enters the market of economic resources both as a seller and as a consumer. The household acts only as the seller of an economic resource.

3. Some kinds of economic resources are sold and bought by businessmen only (steel, coal, etc.), concluding transactions between themselves. Goods and services of this sort are designated as an intermediate product. The investment welfare acts as an object of such purchase and sale between entrepreneurial firms as well.

4. Expenses of entrepreneurial firm are money income of a resource's proprietor. It turns out that factor income is formed through the market of resources (*labour* – salary; *land and other kinds of natural resources* –rent; *money capital* – percent and etc.).

5. Household incomes (salary, percent, rent) determine its future purchasing capacity and solvent demand for an end product. Through money income of households, which are formed by means of the market of economic resources, it is defined, for whom and in what volumes the national economy will work in the near future.

6. Pricing on resources is directly connected to the problem of generation of factor income (that belongs to proprietors of production factors), hence, well-being and a property status of certain social classes (wage level and profits, land rent and grants to farmers, norm of loan percent, revenues of entrepreneurs). It leads to actualization of problems of ethics of business and social justice.

7. Demand for resources is the reaction of a manufacturer to corresponding market signals about perspectives of consumer goods sale. Therefore demand for resources from firm is derivative of demand for an end-product from household.

8. In the market of consumer welfare change of the proprietor always takes place. In contrast, in the market of economic resources not only object purchase and sale takes place but also rent of this or that resource which is capable to keep the physical cover long time (equipment, land and etc.). Some kinds of resources by the nature are not in a condition to change the proprietor. Such economic resources only pass in temporary use to entrepreneurial firm. In this case the price is paid for service of the production factor.

9. Through the market economic resources are distributed between branches of national economy and kinds of manufactures according to offered prices. Expected money income and profit are hidden behind such prices. However in the market economy continuous specification of the reached degree of economic efficiency takes place. Therefore the existing variant of distribution of resources isn't final.

10. In the market of resources entrepreneurial firms act as consumers. Therefore large wholesale transactions dominate here. The interested parts are commercial banks, trade unions and government and also institutes of economic self-government (associations, economic chambers and etc.). Presence of the developed institutional environment is typical for the market of economic resources. It has strong influence on formation of the mechanism of supply and demand.

11. Scientific and technological advance, technique and technology development influence the condition of the national market of economic resources. Domination of unskilled labor in the labor market, poor development of the market of modern equipment and etc. reveal problems of technical development slowdown and at the same time – weak perspectives of national economy.

In such a way, the market of economic resources represents an integral part of general circulation of the goods, money, and income between business entities.

Resources really involved in production process are called production factors. There are various approaches to classification of factors. The modern economic science as a rule marks out four production factors: land, capital, labor, and entrepreneurship. In this case land is understood not only as ground, as such, but also forests, mineral deposits, oil, gas, water resources, air. In some branches land is the object of management; it simultaneously acts as instrument of labor, subject of labor and property items.

Capital is all accumulated stock of means, which are necessary for production of material benefits. Economists distinguish monetary capital embodied in cars, machine tools, equipment, buildings, constructions, long time functioning during production process. It is called fixed capital. Monetary capital spent on raw materials, fuel and energy, fabricated parts and devices, tools completely consumed in one production cycle, are called operating (current) capital.

Labor is a reasonable activity of a person through which he transforms the nature and adapts it to satisfy his needs. "Any work, - A. Marshall marks, - has the purpose to make any result". In economics labor as a production factor mean any intellectual and physical efforts applied by people during economical activities.

Entrepreneurship is a special factor which helps to combine labor, capital and land.

7.2. Labor market, its nature and features

To study this question let's examine the essence of labor market and its functions in transformational economy.

Labor market is the organic sphere of market economy which carries out function of maintenance of interrelation and balance of manpower and workplaces, concordance of structure of manpower, workplaces with structure of specialists training in establishments of education, achievement of balance of perspective forecasts of social and economic sphere development with demographic forecasts by means of differentiated manpower and workplaces balances based on the industrial-cyclic approach to human resources management.

Labor market functions:

1. Assistance to rational distribution of manpower between application areas of labor, national economy branches, enterprises, i.e. achievement of concordance of available (future) vocational and qualification structure of human resources to structure of available (future) workplaces.

2. Informing of the unemployed and workers, who wish to change a work place, about existing structure of free workplaces which are available in labor market (formed for a long term).

3. Assistance to establishment of relations between enterprises with higher educational (averages special) institutions concerning specialists in demand by the market; with job centers – concerning filling available vacancies in labor markets (various levels) and securing orders for placement of specialists to workplaces which are planned to be created in the long term. Thus perspective data should be accumulated in the differentiated balance of labor force and workplaces, they should generated at a stage of working out of new equipment, workplace creation taking into account professional requirements to the future expert.

4. Assistance to an exchange of professional abilities of labor force to worthy gratuity (in the form of salary), which is possible at the expense of optimization of number of manpower resources at micro – meso – and macro-level.

Accumulation of progressive norms of number of annual workers in the differentiated balance of labor force and workplaces (areas of labor application) is a total result of calculations going from micro-level where, at a stage of working out of new equipment (existing equipment description), by means of the structurally functional analysis, probably to describe industrial-technological parameters of a workplace (on prospect or existing) to count using computer norm of number of workers at each technological limit, taking into account the essence of energy-cyclic planning and contingency coefficient to pass to level of branches and intermediate branches. Calculations are made taking into account volumes of intermediate and end-products, age and sex, educational and qualifying structure of workers. The purpose of creation of such document is to have an information array (suitable to updates) where areas of application of work and vocational requirements to manpower resources are represented. In this way, information about workplaces is created under the certain scheme (pic. 7.1).
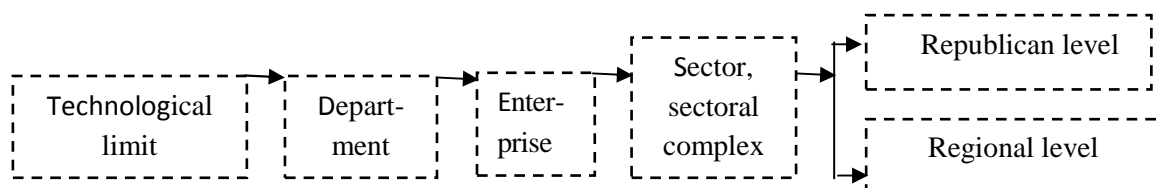
Pic. 7.1. The scheme of creation of an information array about workplaces

Thereby, information about workplaces will be at various levels of economy and even in various geographical points (it depends on where the industrial chain on end-product creation is finished). So far as in functions there is a reservation about creation new equipment (technology) it is possible to speak about formation of information array in prospect. Things are easy – the enterprise, planning input of new equipment or technology, describes industrial-technological parameters of the future (in the long term 5 years) workplace and then the enterprise declares to the employment center (in statistical planned reports) vacancy before occurrence of the workplace with the description of all requirements. It is not a laborious work at a certain institutional framework of labor market and debugged mechanism of functioning of each participant of labor market – higher educational (average special) establishments, enterprises, labor, employment and social protection departments.

We are convinced in necessity of renewal in Belarus statistics of workplaces (unit of measurement is the person) with minute detail elaboration of qualifications, practical skills and abilities.

Labor market equilibrium is a balance of a vocational sentence structure of a labor force supply and economically expedient workplaces. Achievement and maintenance of the equilibrium (approach to it) is possible taking into account constant revealing determinants that define supply and demand for labor force during each given moment of time of social and economic development of economy and elaboration of mechanisms of the coordination of both parts.

Note: pay attention to the essence of labor market equilibrium where authors answer the questions set within the limits of the fundamental economic theory:

What? – A set of the relations arising at formation of vocational characteristics of manpower resources and industrial-technological parameters of workplaces.

Between whom? Or concerning what? – Between vocational characteristics of a manpower resources and industrial-technological parameters of workplaces.

For what purpose? – For achievement the coordination of supply and demand in labor market.

So, it is considered to be, if in a category all questions are presented the category is given at fundamental level. Try to give your definition of the category "labor market equilibrium".

Labor supply and demand are formed under the influence of various factors.

Labor demand depends on:

– the level of development and structure of economy;

– production condition (size and efficiency of capital, feature of technology, perfection of methods of organization of manufacture and work);

– quality of labor (education, professional level etc.);

– the size of demand for the goods and services of industrial and personal consumption.

In our opinion labor demand is defined by following factors:

1) composite norm of number of workers various on sex, age, qualification necessary for manufacture of an end product of the enterprise;

2) volume of output of end-products of various kinds of the enterprise;

3) production technology, enterprise equipment;

4) profit size per unit of end-products volume.

Labor supply is defined by:

– a number of able-bodied population;

– ratio of the occupied and unoccupied population;

– intensity and productivity of labor;

– duration of working hours and working conditions;

– migration of labor;

– pension legislation, etc.

Labor market conditions have direct influence on the price of labor which in turn fluctuates depending on operating market prices.

Salary in a modern economic science is understood as the price paid for use of labor [4, p. 172].

In the market of a free competition on one part the various enterprises, and on the other – numerous proprietors of this labor act. And neither consumers nor proprietors of labor can dictate to the market conditions on definition of level of salary. It is established spontaneously, on the basis of free competition.

The imperfect competition is typical for the majority of labor markets. Its extreme case is represented by monopsony.

Monopsony is the market where one buyer of the goods, service or a resource is [2, p. 775].

Such situation quite often takes place in small cities where the economy almost completely depends on one large firm that employs a great bulk of the population. If alternative kinds of work are not enough, it leads to situation close to pure monopsony. In this case the firm acts as main (and actually unique) buyer in a local labor market that is why it possesses possibilities to influence salary level. It is reached by reduction of number of employees. As a result of competition strengthening between hired workers their salary decreases below equilibrium level.

Nominal and real salary are distinguished.

Nominal is a salary in money terms.

Real salary represents quantity of goods and services which the worker can get for the nominal salary at the given price level after payment of taxes and other deductions.

Entrepreneurship is considered an independent production factor. Entrepreneurship as a special type of economic thinking is characterized by ability to foresee and make the correct decision. Initiative, efficiency, flexibility, innovation, ability to overcome fear to run risks are inherent in it.

Entrepreneurship shows its worth in the most effective connection of all factors. Entrepreneur independently organizes manufacture, defines directions of distribution and income use for the purpose of the expanded reproduction realization. At the present stage so-called specific production factors (information, science, technology, industrial and social infrastructure) are of great importance.

The factors applied in manufacture, are subdivided into *constant and variable. Constant production factors* are those, quantitative scales of application of which can't be changed during given time (short-term period). They include production capacity, volume of output.

Variable production factors are those quantitative structure of which can be changed during given interval of time. It is the long-term period. In the long-term period all factors are considered as *variables*.

7.3. Capital market. Loan interest

Capital is the resources created by the person used for manufacture of goods and services; goods which directly don't satisfy needs of a person; investment goods, means of production [2, p. 773].

Graphic interpretation of structure of capital in the modern market of production factors is presented in the picture 7.2. (made on the basis of [1, p. 575]).
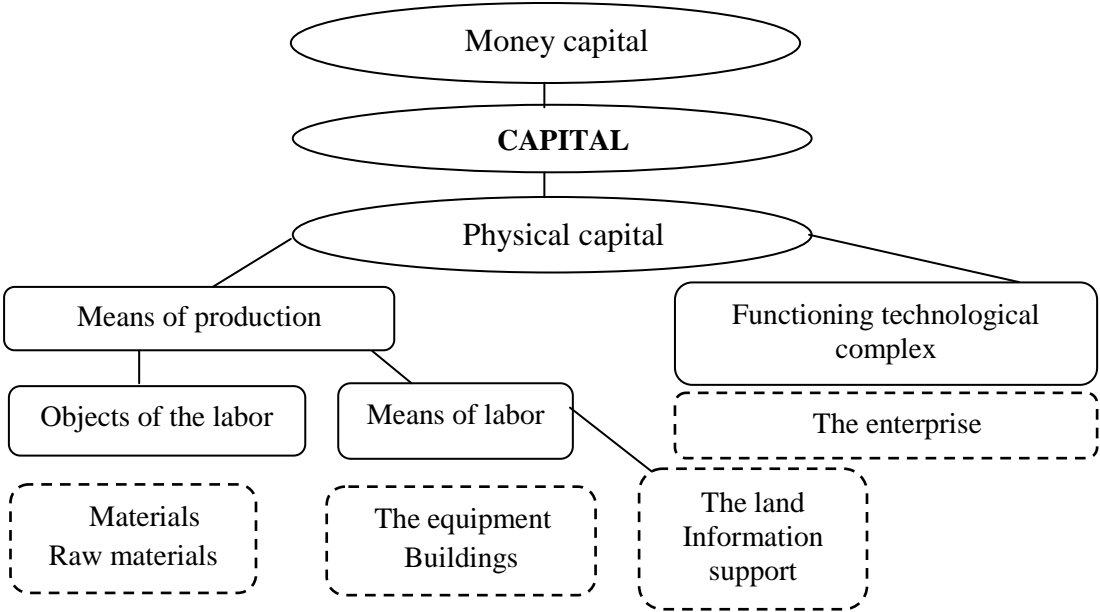
Pic. 7.2. Structure of capital in the modern market of production factors

Two basic forms of capital exist:

1. physical (tangible) capital (machines, buildings, constructions, raw materials and etc.). Physical capital is divided, in turn, into *fixed capital* including real actives of long using such as buildings, constructions, cars, equipment, and *working capital* spent for means for each cycle of manufacture: raw materials, basic and auxiliary materials and also labor.

2. human capital (general and special knowledge, labor skills, know-how and etc.). Human capital is a special version of labor force. Therefore capital is considered to include only physical, material factors.

Capital market consists of two parts:

– stock market where shares of participation in the enterprise property are bought and sold;

– market of loan capital, i.e. credit where both short term funds – money, and long-term – bonds circulate.

In the market of capital the supply and demand law operates.

Demand for capital is a demand for investment means necessary for acquisition of the capital in physical form (means of production: cars, machine tools, equipment, etc.). It is necessary to distinguish demand for money as such and demand for the capital in money terms.

Money is demanded by households for satisfaction of consumer needs (purchase of clothes, foodstuff, household purpose subjects etc.).

Business demands capital. The nature of this demand is another. It is connected to enterprise activity. Entrepreneur needs capital assets to acquire means of production with which help the goods and services will be made. Demand for the capital is derivative, generated by demand for goods.

Loan capital is lent money [3, p. 325].

Loan percent is the price paid to the proprietor of capital for using his money resources during certain period of time [3, p. 325].

Quantitatively loan percent is expressed through the rate (norm) of *loan percent*:

$$\textit{The rate, \%} = \frac{\textit{Income obtained loan}}{\textit{The loan}} \cdot 100\%. \qquad (7.1)$$

The rate of loan percent forms supply and demand in the market of loan capital. With other things being equal the lower the interest rate is the more demand for the loan capital will be. And on the contrary, the supply will be when the percent rate is higher (pic. 7.3).

D_k – demand for the loan capital; S_k – supply of the loan capital; E – the equilibrium rate (norm) of loan percent.

In point E where demand is equal to supply, there is a coincidence of marginal profitableness of the capital and marginal costs of lost possibilities.

Note: How do you think, what for the borrower compares the expected level of income from the capital with current market price of the loan, i.e. interest rate?

It is necessary to distinguish nominal and real rate of loan percent. The nominal rate is calculated in the current prices.

Pic. 7.3. Equilibrium of the capital market

The real rate is the nominal rate corrected by a rate of inflation. It is calculated as a difference between the nominal rate and the rate of inflation. The real rate defines the investment policy of a company. The rate of loan percent carries out function of distribution of money and accordingly real capital among various firms and branches. Branches in which the rate of profit is high, borrow more funds and consequently manufacture develops faster there. Representatives of crisis branches where rate of profit is below interest rate, don't expand manufacture. Thus redistribution of funds is carried out into more effective spheres of economy.

Let's examine the essence of investment.

(1) *Investment* represents expenses for production and accumulation of means of production and increase of inventory [2, p. 773].

(2) *Investment* is property and intellectual values which are used for updating and escalating of industrial potential for the purpose of income gain [1, p. 581].

Note: pay attention to the second definition of investment (2), there we answer all questions set within the limits of the fundamental economic theory:

What? – Set of relations (property and intellectual values).

Between whom? Or concerning what? – Between participants of production.

For what purpose? – For updating and escalating of industrial potential for the purpose of income gain.

So, it is considered to be, if a category answers all presented questions it category is given at a fundamental level. Try to give your definition of the category "investment".

Present discounted value (PDV) is a present cost of 1 ruble paid in a certain period of time.

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For one year:

$$PDV = \frac{1}{1+i},$$ (7.2)

where i – the interest rate.
 For n years:

$$PDV = \frac{1}{(1+i)^n}.$$ (7.3)

Present discounted value depends on interest rate. The higher the interest rate is the lower present discounted value is.

Estimation of future income plays an important role at decision-making concerning investment. For this purpose the concept of *net discounted value* is used (NPV):

$$NPV = \frac{R_1}{1+i} + \frac{R_2}{(1+i)^2} + ... + \frac{R_n}{(1+i)^n} - I,$$ (7.4)

where *NPV* – pure discounted value; R_1, R_2, …, R_n – the income received accordingly in the 1st, 2nd and nth years; i – discount rate (norm of reduction of expenses to the uniform moment of time); I – size of investments;

Note: the size of net discounted value should exceed zero; NPV> 0. It means that the discounted value of future income expected from investment is more than the size of made investments. Hence, it is necessary to invest only when expected income will exceed the costs connected with investments.

7.4. Land market. Land rent

Production factor "the land" includes all forces of the nature necessary or suitable for production of economic welfare [1, p. 622].

Features of land market:

1. Land acts simultaneously as a general subject of labor and instrument of labor.

2. As a production factor land is absolutely limited.

Supply of land is represented by a vertical line (S_1) because the volume of offered land doesn't change even in the conditions of a considerable rise in prices for land (pic. 7.4).

Note: R – land rent (a payment for using the land or price of service of the land), S_1 – the curve of supply of land, D_1 – the curve of demand for land, R_E – equilibrium rent, E – point of supply and demand equilibrium in the land market.

3. Land is a natural factor or nature gift.

4. Land acts as an object of purchase and sale (pic. 7.5 made on the basis of [1, p. 626]).
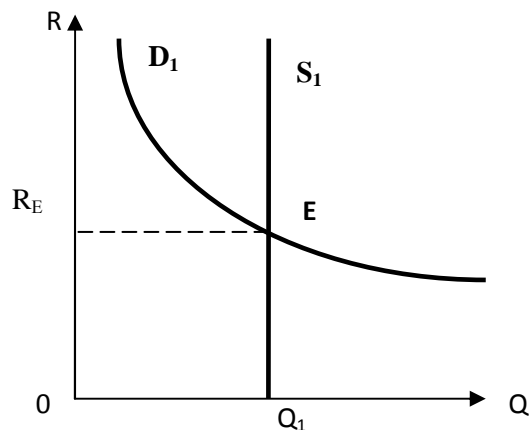
Pic. 7.4. Land market equilibrium
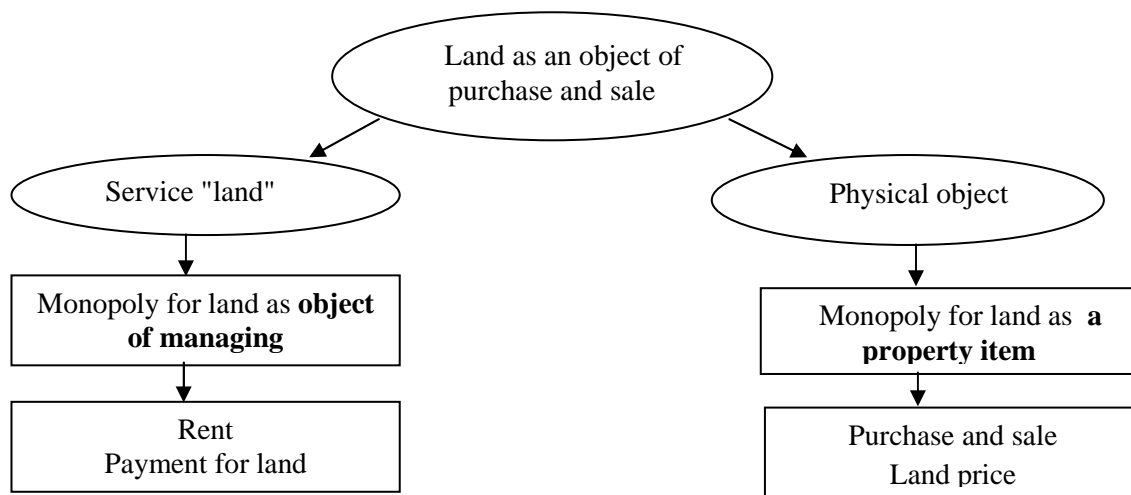
Pic. 7.5. Land as object of purchase and sale

Note: When rented the land isn't on sale, and is only transferred in possession (use) for a certain payment.

Rental payment acts as a full rent estimation of land, it includes:
− land rent;
− capital allowances;
− loan interest on capital invested in land.

Land rent acts as the price of service "land", as a payment in favor of proprietor for the access of tenant to the land.

We will consider the land price in the form of formula:

$$Land\ price = \frac{Land\ rent}{Interest\ land\ of\ the\ loan\ capital} \cdot 100\% . \qquad (7.5)$$

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7.5. Profit as an entrepreneurial income

Profit represents economic profit and normal profit; income of those who provide economy with entrepreneurial abilities or normal profit [2, p. 779].

In a quantitative sense profit is a difference between total receipts and costs.

The essence of the concept "profit" should be considered in two aspects:
– accounting,
– economic.

Accounting profit is a difference between total receipts and external costs.

The difference between total receipts and economic costs forms economic, or net, profit.

Correlation between accounting and economic profit and structure of total revenue of a firm is represented in the form of diagram (pic. 7.6). We can see that economic profit is a certain surplus of total revenue over economic expenses.
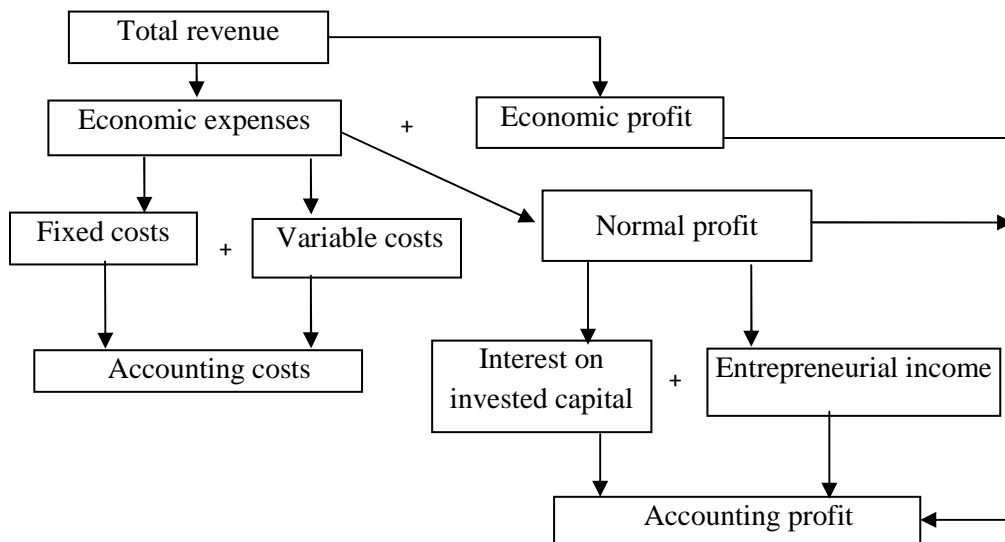
Pic. 7.6. Structure of total revenue of a company

Economic profit creates interest of the manufacturer in the given sphere of business. At the same time it induces other firms to enter this sphere. It leads to expansion of a circle of manufacturers, increase in supply and market price falling. The last leads to decrease, and possibly, to disappearance of economic profit what will cause outflow of some firms from the given sphere of business and attempt of their entry into other spheres. Reduction of number of manufacturers conducts to decline of supply and, as result, to increase of market prices. Economic profit again becomes positive and will grow. Existence of

economic profit is connected to certain influences of businessmen on economic sphere that gives dynamism to economy. Consequently, economic profit is possible only in dynamic economy.

Economic profit is a result of entrepreneurial activity of a subject, his abilities to coordinate production factors optimally, to find the best application for them.

It is possible to explain essence of economic profit and innovation of the businessman, application of innovative decisions by it in economic affairs.

Finally, the essence and the first and second explanations of the nature of economic profit is connected with risk of the businessman, its readiness to bear all completeness of responsibility for made economic decisions.

Therefore at times profit define as a payment for risk. On occasion it can be considered as result of natural or artificial monopoly.

Absolute amount of profit is expressed by the concept «mass of profit» which always should be compared with an annual turnover of a firm or amount of its capital. In this connection the indicator of dynamics of profit, comparison of its size in the given year with the corresponding size of previous years is also important.

Relative indicator of profit is the rate of profit (profitability) showing degree of return of production factors applied in production.

CHECKLIST

1. What is the essence of the concept "economic resource"?
2. Characterize the market of production factors. What are its reveal peculiar features?
3. Tell what labor market and its equilibrium are. Try to examine the categories at a fundamental economic level.
4. What is the specificity demand for and supply of labor?
5. Give the definition of salary, characterize nominal and real salary.
6. What is the specificity of monopsony? Give examples from practice.
7. What is the essence of categories "capital", "loan capital", "investment", "present discounted value"?
8. Characterize the category "production factor land". What is the difference between categories "rent" and "land rent"?
9. What is the difference between profit and revenue? What is the essence of normal and economic profit, accounting profit, mass of profit and profitability?

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PART 3.
FUNDAMENTALS OF MACROECONOMICS
Chapter 8. MAIN NATIONAL MEASURES

8.1.National economy: concept, structure, goals and objectives, arrangements of governmental regulation.

8.2.National economic accounting (NEA). Gross domestic product (GDP) and other indicators of NEA. Principles of GDP calculation. GDP calculation by manufacturing method. GDP calculation by receipts and expenditures.

8.3.Nominal and real GDP, price indices. GDP deflator and Consumer price index.

8.4.National wealth: concept, structure, evaluation problem.

MAIN CATEGORIES

National economy; national economy structure; reproduction structure; industrial structure; social framework; spatial structure; infrastructure; pattern of foreign trade; macroeconomic proportions; proportions between I and II productive industries; national economy balance; national product; national economic accounting; economic agents of national economic accounting; gross national product (GNP); gross domestic product (GDP); net national product; national income; personal income; disposable personal income; nominal GDP; real GDP; GDP deflator; added value; gross domestic receipt; investment; gross investment; national wealth.

8.1. National economy: concept, structure, goals and objectives, arrangements of governmental regulation

National economy is the whole set of economic entities and relations between them that can be characterized by economic integrity and community in certain temporal and spatial limits.

Main features of national economy:

1) close economic ties between business entities based on the division of labour;

2) integrated economic environment formed by business entities:

a. integrated economy legislation;

b. single monetary system;

c. general financial system;

3) general economic centre that controls activities of business entities (government);

4) general system of economic protection. It includes economic borders in the form of export-import duties, quotas etc.

Under market conditions national economy can be represented by totality of markets (goods and services market, factors of production market etc.) and market players (economic agents, business entities) in their interaction (pic. 8.1).
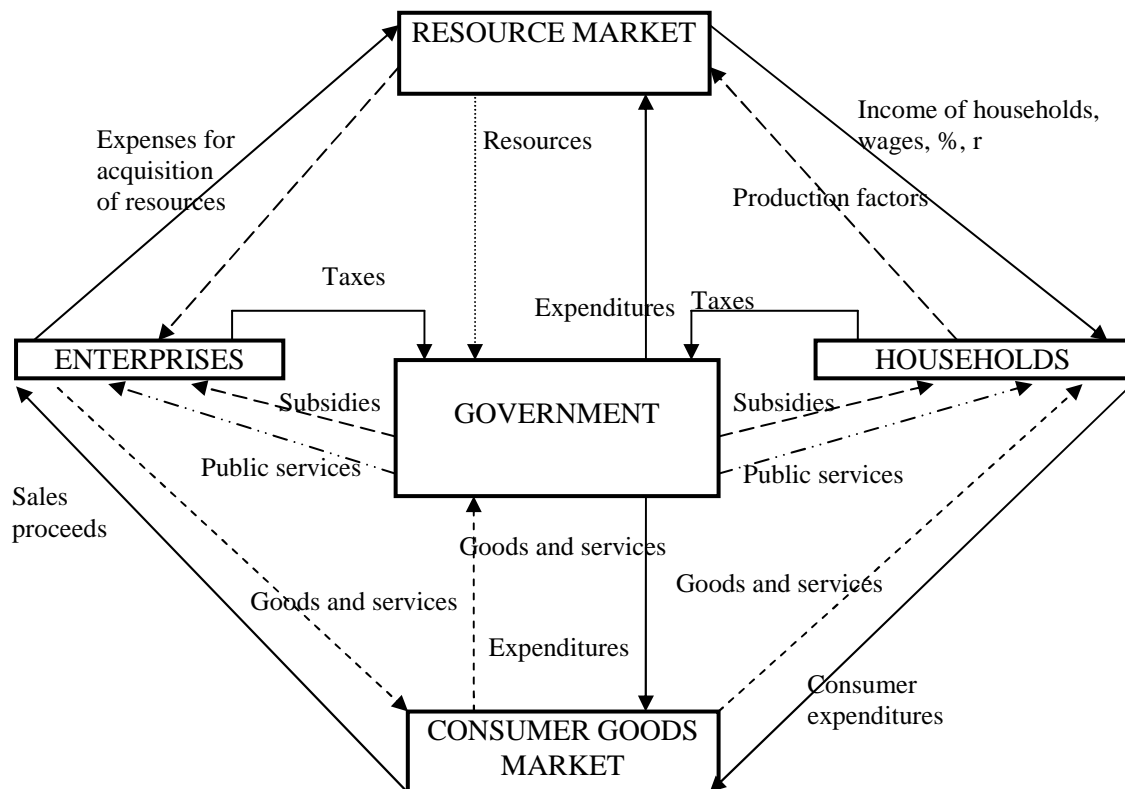
Pic. 8.1 National economy

Economic activity in national economy is highly diversified. All sorts of relations occur between business entities. Enterprises produce and sell; households consume and save up; state budgetary institutions collect taxes and, therefore, cover social or collective wants. Model of economic circulation illustrates difficult connection between subjects in national economy. The main producing link in such system is enterprises. But to produce something they need to use external resources and to organise distribution of their production. It can be provided by households and government (via government order). Movement of resources and goods is put into effect by the means of money – circulation instrument. Obviously, it is one of the most important functions that money performs, after measure of value function.

Government performs the main role in national economy development. Its main functions are:

1. *forming legal foundation of economic actions*. Through the instrumentality of laws and other statutory acts government establishes how economic agents "are allowed" or "are not allowed" to act;

2. *protection and development of civilized competition*;

3. *organization of production of public goods and services* (education, medical care, military defense, internal security);

4. *transfer of income* (by means of tax system) through transfer payments;

5. *macroeconomic stability securing*. Absolutely stable national economy doesn't exist.

Each national economy has its own development goals. Ways to reach them can differ considerably, but the main long-term goal of any economy is the most complete satisfaction of rising society needs.

Strategic objectives of national economy are:

– *high and stable growth rate* of the national production volume - strong growth of production volume without decline in output and crisis;

– *price stability, inflation repression*. It's necessary to take into account that constant prices over a long period of time slow down GNP growth rates and reduce employment. Low prices are good for consumers, but they deprive producers of incentives. High prices stimulate production, but they reduce purchasing capacity of the population. Therefore, achievement of price stability in practice doesn't mean price freeze at defined level for a long run, but gradual controlled growth;

– *high employment rate* can be achieved when everyone who wants to get a job, finds it. But natural rate of unemployment always exists. As a rule, unemployed are those who changed place of residence and who didn't have time to find a job or who are in search for a new job. The unemployed also include specialists that are temporarily out of work and who didn't have time to adapt to new production pattern, whose knowledge and skill level became obsolete. They have to be retrained and to upgrade professional skills. Thereby, full employment is always less than 100% of able-bodied citizens;

– *preservation of equilibrium in relationship with outer world* - achievement of relative equilibrium of export and import and also of national currency rate of exchange stability;

‒ *environmental protection and natural resources preservation for succeeding generations* (it's a problem of today).

Structure (location) presupposes selection of component parts of the object (national economy) according to accepted standards.

There are several structures of national economy:

1) *industrial*: national economy is divided into many types of economic units which reproduce themselves and reproduce flows of goods and services among themselves (elements of such structure are household, enterprise, government, pic. 8.1);

2) *sectoral*: national economy is divided into sectors (sector is the group of enterprises that perform similar production functions and carry out homogeneous output regardless of their territorial disposition).

Sectoral structure presupposes national economy division into three sectors:

NATIONAL ECONOMY

PRIMARY SECTOR	SECONDARY SECTOR	TERTIARY SECTOR
Productive industry:	*Monetary and credit sphere:*	*Spiritual production:*
‒all soets of industry; ‒agriculture, forestry; ‒fishery, gamekeeping	‒elements of market infrastructure that service particular field (banks, insurance companies)	‒ social services (public health, education); ‒ scientific and technical organizations

3) *territorial (regional):* country's territory is divided into economic regions. Economic region is a part of country's territory that differs from others by its structure and production specialization subject to available natural, manpower resources as well as climatic conditions. There are seven economic regions in Republic of Belarus – Minsk and six administrative regions;

4) *social pattern:* separation of classes, social groups due to different criteria. For example, the criterion of ownership of the means of production– hired labour (state sector) and entrepreneurs (private sector). Due to income level criterion – elite or well-to-do population, middle class, marginal social group, low-income population.

8.2. National economic accounting (NEA).
Gross domestic product (GDP) and other indicators of NEA.
Principles of GDP calculation.
GDP calculation by manufacturing method.
GDP calculation by receipts and expenditures

Nowadays all the countries in the world use national economic accounting (NEA) worked out by statistical committee of U.N.O. in 1953.

National economic accounting is the system of interrelated indicators that is used for description and analysis of macroeconomic phenomena and processes. It represents all the stages of economic circulation – production and exchange, primary and secondary distribution (redistribution), and consumption. It is the system of tables in the form of accounts that characterize the process of production, distribution and ultimate usage of aggregate social product and *GDP* all the year round. Various balances are drawn up here.

Main stages of NEA development

Stage 1 – 1930 – NEA is worked out in developed western countries.

Stage 2 – 1940–50 – NEA formation. U.N.O. published its first international standard of *GDP*.

Stage 3 – 1968 – approval of NEA variants – Blue Book.

Stage 4 – early 1980 – NEA methodology perfection.

Stage 5 – early 1990 – approval of new NEA including 5 sectors (groups of economic units):

1) non-financial and similar corporations that produce material benefits and services to sell them;

2) financial institutions and organizations that are concerned with intermediary activity;

3) public institutions, rendering services that are not the object of buying and selling;

4) private nonprofit institutions that serve households;

5) households, associations of citizens in different forms.

Principles of national economic accounting:

1) balancing of receipts and expenditures on the basis of the method of dual recording;

2) cost estimate of all goods and services;

3) separate accounting of financial and redistributing flows on special accounts.

NEA structure comes from the fact that a special account or an account group corresponds to each stage of economic circulation.

Economics and statistics use following macroeconomic indicators to measure volume of national production:

1) national product (*NP*);
2) gross national product (*GNP*);
3) gross domestic product (*GDP*);
4) net national product (*NNP*);
5) national income (*NI*);
6) personal income (*PI*).

The result of the economy functioning is national product – all the goods and services produced in the country during certain period of time (usually year).

National product is an aggregate indicator of the situation of country's economy. It reflects economic potential of the country, standard of life, effectiveness of economic and social policy.

Gross domestic product is the aggregate value of all produced goods and services, all end products of the country during the year. End product is a product bought for ultimate consumption.

Gross national product is the sum of end products produced by national manufacturers in the country and also by national manufacturers abroad during the year:

$$GNP = GDP + \text{net factor incomes from abroad.} \qquad (8.1)$$

Net factor incomes from abroad are equal to the difference between incomes received by citizens of the country abroad and incomes of foreigners received in this particular country.

If a country doesn't export its factors, *GDP* and *GNP* coincide. They are also equal in a closed economy when there are no external flows of products and capital.

Gross domestic product can be calculated in three ways:

1) *manufacturing method;*
2) *distributive method;*
3) *ultimate use method.*

These methods reflect processes of national product manufacturing, distribution and utilization.

Manufacturing method is based on summing up the value added at each stage of end product manufacturing. In this case *GDP* is formed by the sum of added values of all manufacturers in the country.

Value added is the value created during production process, so it doesn't include value of a consumed store. Value added in money terms is the difference between the value of the production manufactured by the enterprise and the sum paid to other enterprises for raw materials, componentry, in other words intermediate product. If value added is calculated in all economic sectors, intermediate product is left out of the account. Only those goods and services are taken into consideration that are aimed at consumptive use, i.e. end products. In other words, *GDP* can be determined as the difference between production of goods and services in money terms in the whole country and intermediate consumption that consists of the value of goods and services totally consumed during production process.

Gross domestic product calculated using manufacturing method, includes not only value added, but also taxes, that in national economic accounting include net taxes (minus grants) and import duties. It is the difference between the sum of all production taxes and import duties payed by enterprises, and production and import grants received from the government. Production taxes include value added taxes, excises and other taxes the volume of which depends on produced goods and services cost. Import duties are taxes that are imposed on imported goods and services.

Gross domestic product must include all manufactured products. But not a part of it can be sold on the markets, so it is difficult to evaluate this part. This includes flat renovation by its owner, cleaning the house, washing, cooking, and all kinds of self-service. Also there exists so called "shadow economy" which volumes reach considerable magnitudes and in different countries from 3 to 30% of *GDP*. This part of *GDP* is calculated approximately and forms imputed value. One more calculation shortcoming is value of many goods and services is not included in GDP at all. It makes this indicator not quite reliable. But if calculating error of *GDP* is relatively constant in the course of time then GDP indicator can be successfully used to compare the national economy results in different years.

GDP calculation using *distributive method* (sources of revenues) presupposes summing up the revenues received by the owners of factors of production. It is acceptable to mark following phases when analyzing income circulation: income determination, distribution of primary incomes, redistribution, disposable income forming, and disposable income use to finance consumptive use and savings.

Primary incomes are generated by institutional units (business entities) as the result of their participation in production and from property. These incomes include remuneration, incomes from property and gross (net) profit.

Remuneration is the sum of all remunerations in cash or wages in-kind payed to workers by employer. In addition, it includes revenues of individual proprietors of enterprises received as payment for their labour.

Incomes from property (incomes for management) include:

1) rental income, i.e. income from transmission of rights (for land, patents, mining etc.);

2) profit from owned capital invested into one's own enterprises;

3) corporate income – capital gained (equipment, constructions, patents) in the corporate sector of economy:

4) net interest income – payments to companies and enterprises of the country for given credits.

Gross (net) profit is the part of value added minus wages oncost and production taxes. With respect to households, category "gross mixed receipt" is used instead of the category "enterprise profit". Gross mixed profit includes profit of enterprise and owner's remuneration.

The difference between all primary incomes received and payed by institutional units-residents forms net primary incomes.

At the level of economy net primary incomes may be calculated as gross unit, i.e. without enumeration of basic capital consumption. In this case it is equal to gross national income.

In other cases net primary profits are calculated on the "net" basis, i.e. after deduction of basic capital consumption. It is equal to national income.

National income is a newly created value during a year. In other words, "net" income of the society is earned.

Primary incomes are distributed and redistributed among institutional units or sectors, which results in disposable income formation.

Disposable income – income which is possessed by an institutional unit and used for consumptive use and savings. The sum of all disposable incomes in the country forms *gross national disposable income*. It is calculated for economy on the whole and for each sector separately.

Gross disposable income of households, (income coming to households) is the biggest part of gross disposable income (up to 90%). But not all national income can be at households' disposal as certain elements are eliminated from payments to households. They are part of the company's profit that is left at its disposal and taxes. Moreover, some kinds of income received by households are not included in gross national income. They are a part of the profit at shareholders' disposal in the form of dividends; governmental payments of

interests as they are primarily included in transfer payments; transfer payments themselves – family allowances and other social payments.

GDP calculation *by ultimate use method* is carried out by summing up end production. In this case *GDP* acts as the aggregate value of end goods and services production, which can be calculated as the sum of prices of these goods and services or the sum of economy subjects' expenditures on consumptive use.

Aggregate expenditures in national economy include:

1) *households' expenses* on durable goods, everyday consumption, services; let's letter them *C*;

2) *enterprises' expenditures* on capitalized purchases, i.e. on basic capital (equipment, transport, buildings), and on the goods to maintain production reserve for the purpose of ensuring normal tempo of production (fuel stores, raw materials reserves); let's letter enterprises' expenditures *I*;

3) *government spending* on individual consumer products, public goods and services and investment (for example, on construction of schools, hospitals, roads, supply services); these expenditures will be lettered *G*;

4) *net export*, i.e. export and import balance. If export exceeds import, net export is positive, and vice versa. Let's letter it X_n.

Now we formulate up an equation that reflects *GDP* calculation by ultimate use method:

$$GDP = C + I + G + X_n. \qquad (8.2)$$

This equation is called fundamental macroeconomic identity.

8.3. Nominal and real GDP, price indices. GDP deflator and Consumer price index

Cost estimation of national product is impossible without taking into account price-level. When we calculate current estimation of national product, we use market prices formed at the estimation time. But to compare the volume of produced national product during different periods of time market prices shouldn't be used as they, especially in an inflationary environment, can differ considerably at the beginning and at the end of the chosen period.

Therefore, it's impossible to come to a conclusion at the cost of what national product increased – at the cost of production volume rise or prices increase. To conduct reliable analysis one uses adjusted or comparable (constant) prices. With this purpose, special price indexes – *GDP* deflators are calculated.

It is reasonable to distinguish nominal and real *GDP*. *Nominal GDP* is the product which value is expressed in actual prices. *Real GDP – GDP* adjusted for inflation:

$$Real\ GDP = \frac{Nominal\ \ GDP}{Price\ \ index}. \tag{8.3}$$

Consumer price index (*CPI*) reflects relative change of the *basket of goods* (bundle of products for a typical family – one child and two adults) average price-level. It is often used to estimate living wage value.

Consumer price index characterizes evolution of prices of 300 consumer products and services bought by a typical citizen. It's generally accepted that the composition of the basket hasn't changed since 1984 when it was first calculated. Consumer price index estimates value change of permanent standard of life. This indicator is the most widespread official inflation rate. But it has a shortcoming: it overestimates and overrates real standard of living. As *CPI* presupposes invariable bundle of products, changes of tastes and consumers behavior are left out of account.

Consumer price index is calculated by analogy with *Laspeyres* index:

$$CPI = \frac{\sum_{i=1}^{n} P_i^t \cdot Q_i^0}{\sum_{i=1}^{n} P_i^0 \cdot Q_i^0}. \tag{8.4}$$

CPI shortcoming is overcome to a considerable degree by *GDP* (*GNP*) deflator.

GDP deflator describes the difference between GDP_n (nominal product) and GDP_r (real product). It is used to evaluate the rate of inflation. It shows how much *GDP* has risen at the cost of price has changed:

$$GDP\ \ deflator = \frac{\sum_{i=1}^{n} P_i^t \cdot Q_i^t}{\sum_{i=1}^{n} P_i^0 \cdot Q_i^t}. \tag{8.5}$$

Nominal *GDP* makes pecuniary valuation of production. Real *GDP* characterizes production volume measured in base year prices.

Therefore, *GDP* deflator can be calculated for the market basket bundle of products in the current term:

$$GDP \ deflator = \frac{GDP \ basket \ in \ prices \ of \ year \ i}{GDP \ basket \ in \ prices \ of \ year \ i-1}. \qquad (8.6)$$

Consumer price index and *GDP* (*GNP*) deflator give different information about price level in the economy. Deflator reflects prices of all produced goods and services whereas *CPI* takes into account only prices of consumer products. *GNP* doesn't include imported goods; consequently *GNP* deflator is calculated only for domestic goods.

The difference between the indexes is following. In CPI's case, invariable consumer basket is used. And, in deflator's case, actual weights of goods included in the basket change with the lapse of time.

Gross measures of *GDP* (*GNP*) output do not reflect real picture of common wealth increase (if it takes place). They don't provide deduction of that part of annual product that is necessary to replace value of machinery and equipment consumed during production of a given year.

Besides *GDP* and *GNP*, quite a number of interrelated indicators exist which can be calculated on their basis. In the process of formation of these indicators some amounts are added to GNP (or deduct from *GNP*) in order to get a system of interrelated social accounts.

8.4. National wealth: concept, structure, evaluation problem

One of the main and vexed questions in economics remains question about wealth. What can be considered to be wealth? How can it be calculated? What can be acknowledged as its source?

Mercantilists considered only gold (money) to be wealth. They searched for its source in trade and commerce. Fisiocrates thought that real wealth was only land and its source was in agricultural labour. Classics identified labour in spheres of production with the source of wealth, and natural and human resources, produced and accumulated goods – with wealth.

National wealth is the totality of material benefits and benefits of culture accumulated by the nation over its history by the present time.

National wealth is the totality of use values, intellectual values and intellectual potential accumulated by the society in the course of its development till now.

National wealth includes national assets (plant property and nonproduction capital) and natural resources. At the same time, there is no

pecuniary valuation of durable personal wealth owned by the citizens in official statistics. Therefore, only housing stock is taken into account.

National wealth is calculated using original cost nonmetering ageing and regardless of operation life. National wealth includes durable and nondurable goods. Particularly, among foodstuffs only those are taken into account that are in public sector of economy, not in households.

In the pic. 8.2 there is a structure of national wealth.

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                        NATIONAL WEALTH

        TANGIBLE ASSETS            INTANGIBLE ASSETS AND LIABILITIES

   Reproducible      Unreproducible

 - tangible base          - land, natural resources;   - intangible base production
 production assets;       - minerals;                   assets (software, information);
 - nonreproducible assets - historical sites, etc       - patents, author's rights;
 (property of households,                                - financial instruments;
 accommodation, etc);                                    - potential of the nation, health,
 - stock of materials                                    life interval, etc
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Pic. 8.2. National wealth structure

National wealth is the indicator of economic advancement of the country. National wealth is money equivalent of all totality of use values accumulated by the society over its history by a certain date.

To calculate national wealth in compliance with ONU Office for Statistics categories "assets" and "liabilities" are used.

Assets are those objects in respect of which law of property is exercised and from use of which profit can be made: land, machinery, buildings, shares, bonds, deposits etc. Each of them gives to the owner certain economic effect, benefit.

Liabilities are the sources of assets formed by business entities. Liabilities are debts or commitments of debt repayment.

As a rule, assets are equal to liabilities.

Property is reflected in assets in monetary terms. That makes possible to calculate aggregate value of all property owned by an institutional unit. Aggregate assets minus liabilities form equity capital. At the level of national economy, the category "net wealth" corresponds to the category "equity capital". It characterizes magnitude of country's national wealth.

Financial instruments include gold, securities, loans, cash, deposits, etc.

The ways to increase national wealth are following:

– development of social production and national production volume growth;

– growth of national output;

– ever more widespread and many-sided involvement of natural resources in economic turnover;

– the use of know-how and field experience;

– ever more mastering natural forces.

CHECKLIST

1. Characterize national economy, its goals and structure.

2. Define specific character of industrial structure of Republic of Belarus.

3. What conditioned the necessity of the unified international national economic accounting?

4. How do you understand the economic sense of *GNP*?

5. What is the difference between nominal and real *GNP*?

6. How and for what purpose real *GNP* is calculated?

7. What is *GNP* deflator? How can it be calculated?

8. What is double counting in national economic accounting?

9. Is *GNP* an accurate measurer of people's well-being?

10. What interconnection is between *GNP*, *GDP*, *NNP*, *NI*?

11. What is the economic sense of the indicators of national economic accounting?

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Chapter 9. MACROECONOMIC INSTABILITY AND FORMS OF ITS MANIFESTATION

9.1. Economic cycle. Causes of economic fluctuations. Theories of economic cycle. Business cycle policy.

9.2. Employment and unemployment, their types.

9.3. Inflation: essence and causes. Antiinflationary policy.

9.4. Economic and social consequences of inflation. Phillips curve.

MAIN CATEGORIES

Economic cycle, crisis, structural crisis, cyclical crisis, sectoral crisis, employment, rational employment, underemployment, secondary employment, self-employment, unemployment, frictional unemployment, structural unemployment, cyclical unemployment, institutional unemployment, hidden unemployment, natural rate of unemployment, inflation, disinflation, deflation, stagflation, demand-pull inflation, cost-push inflation, balanced and unbalanced inflation, rate of inflation, creeping inflation, moderate inflation, galloping inflation, hyperinflation, Phillips curve.

9.1. Economic cycle. Causes of economic fluctuations. Theories of economic cycle. Business cycle policy

In the long run, the constant economy growth trend becomes clearly apparent. But in the short run its development is characterized by waves of economic situation's ups and downs. Regularities of macroeconomic dynamics wavy character are considered to be a problem of economic (business) cycle.

Economic cycle (business cycle) can be defined as regularly repeated periods of national economy development; fluctuations of actual *GDP* when periods of expansion are replaced with periods of recession; process of market economy pass from one phase to the next one, similar as, for example, from crisis to crisis.

Economic growth is accompanied by periodic fluctuations of economic activity (alternation of growth and decrease of production volume, investment, income level, employment, prices, costs of money, prices of securities).
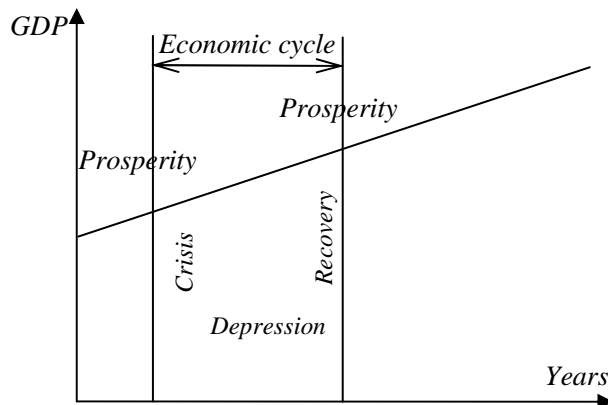
Pic. 9.1. Economic cycle and its phases

Cycle is a mechanism of market economy self-regulation; it is characterized by periodic expansion and setback in production, periodic changes of economic situation (prices, costs of money, prices of securities, remuneration and dividends).

Business cycle consists of four successive phases – crisis, depression, recovery and prosperity (pic. 9.1). The main phase is crisis. It opens and closes the cycle. The main features and antagonisms of cyclic reproduction process are expressed in this phase.

Crisis (slump) is an abrupt shock that emerges as the result of increasing disproportions. Decrease in demand and excess of supply occur. Difficulties with sales lead to the reduction in production and growth of unemployment. Decrease of purchasing power complicates sales even more. Rates of securities go down, bankruptcy appears, entrepreneurs put up the shutters. In this phase business activity recession reaches bottom of the cycle. In the phase of crisis production volume goes down to minimum, unemployment grows. Depression comes after crisis.

Depression, or *stagnation*. Certain stabilization begins in this phase. Fall of national measures (*GDP*, output of industrial production, etc.) stops. Prices, wages, unemployment stabilize at a certain level. Lending rate drops as business activity is low and demand for money is relatively little. The phase of depression is characterized by slow or zero production growth rates appropriate to stagnant state of the economy. In this phase business activity passes the bottom of the cycle.

Recovery. This phase is a period of slow growth after certain stabilization. As a rule, this phase is not expressive (fierce) with clear beginning, but all indicators reflecting economic climate get the trend of economic growth. Gradually the level of prices, employment rate, wages, profits and lending rates grow. In the recovery phase growth rates increase, production outputs and investments rise, they approach the last cycle maximum. Business activity increases reaching peak of the last cycle. Recovery passes into upturn.

Prosperity. All national measures grow. Rising prices are compensated with the growth of wages and profits. All the output is consumed by increasing demand. Employment rises, and manpower resources become a limiting factor of further development. The phase of prosperity is characterized by further growth in production volumes. All indicators exceed the maximum achieved during the previous period. Economy involves additional resources into production which causes an increase in costs and prices. Imbalance between demand and supply grows. Boom ends up with crisis.

Modern western economic theory uses aggregate division which distinguishes two phases – recession and recovery. Recession includes depression and crisis. Recovery includes also prosperity.

Types of economic cycles. Modern economics counts a large number of kinds of cycles.

Following types of cycles can be distinguished.

The Kitchin inventory cycles – short-term fluctuations lasting 2 – 4 years. They are caused by product life cycle. Kitchin attributed this type of cycles to changes in world gold reserves, A. Hansen – to irregularity of circulating capital reproduction, W. Mitchell – to changes in money circulation.

The Juglar cycles – medium-term fluctuations of 7 – 11 years connected with replacement of basic capital periodicity, and the interaction of monetary factors generated by activities of banks.

The Marx cycles lasting 10 years are connected with mass replacement of basic capital periodicity.

The Kuznets infrastructural investment cycles of 15 – 25 years are connected with renovation periodicity of dwelling and some kinds of production facilities. Later these cycles were called "long fluctuations".

The Kondratiev waves or long technological cycles of 45 – 60 years. On the ground of statistical data about economies of the United Kingdom, France, Germany and USA from the end of the XVIII century to the beginning of the XX century Kondratiev revealed long waves of fluctuations of market tendencies. They have international character and are accompanied with transformations in economic as well as in social life.

Kondratiev revealed *four* regularities of long cycles:

1) during 10 – 20 years before upward wave there is a revival in the sphere of technical inventions and discoveries, and their industrial use concur with the beginning if this wave;

2) periods of upward waves are characterized by bigger social shocks and coups (revolutions, wars) than periods of downward waves;

3) downward waves of long cycles are accompanied with long-term depression in rural economy;

4) upward waves of long cycles contribute to shortening of middle-term cycles depression and the tension growth of their recovery.

Economic literature distinguishes following types of crises.

Cyclical crisis of overproduction involves all economic sectors, ousts obsolete equipment, decreases production costs and accordingly adjusts production pattern. By distorting existing balance, this type of crisis leads to a new balance with more effective production. As a result, new cycle begins on a qualitatively new basis.

Transitional crisis, unlike cyclical crisis, is not long and severe. It doesn't involve all economic sectors and has a local character. This crisis is a temporary response to emerging disproportions in economy. It discontinues for some time phases of recovery and prosperity. Consequently, disproportions slightly lessen; cyclical crisis turns out less severe and subversive.

Partial crisis can appear both in the phase of prosperity and during depression or recovery. It affects one certain economic sector. For example, financial crisis of 1997 emmerged on the stock exchanges of South-East Asia affected monetary and credit sphere practically of all countries.

Branch-wise crisis arises as the result of external (rising prices on energy resources and raw materials, cheap import, etc.) and internal causes (ageing of economic sectors, appearance of new sectors, industrial structure alteration). It involves related sectors.

Structural crisis involves as a rule several economic cycles. The cause of this crisis is the necessity of drastic alterations of production pattern on new technological basis. These are, for example, fuel and energy, food crises of 1970 – 1980.

Economic crisis – phase of production cycle that includes sequentially crisis, depression, recovery and prosperity. It appears as the result of overproduction, landslide of prices, wage cut, decline in living standards. Economic crises can be branch-wise, structural, national, regional and local.

Financial crisis – severe disarrangement of state financial structures under the influence of force-majeure (economic, political). As a rule, it is connected with economic crisis. Financial crisis is characterized by chronic government deficit, inflation, disarrangement of tax and credit systems, insolvency on foreign loans.

Money-and-credit crisis is expressed by amounts of commercial credit axe, mass deposit-taking, banking failure, rush for cash and gold, drop in stock and bond prices, jump in interest rate.

In the second half of the XX century economic cycles and crises obtained following features and peculiarities:

1. Crises have become more frequent, cycle duration shortened from 11 – 12 years in the late XIX century – first half of XX century to 5 – 7 years nowadays.

2. The phase of crisis comes in most countries simultaneously.

3. Government has started to realize active anti-crisis policy influencing course of the whole crisis. It led to fading of that boundaries between phases of cycle.

4. Crisis is accompanied with increasing inflation, unemployment becomes chronic and it affects new categories of workers. As the result a new type of economy in crisis appears – stagflationary economy.

5. Character of crises changed: they became shorter, affect different economic sectors and spheres (for example, crises of 1974 – 1975, 1980 – 1982, 1991 – 1993 spread to all developed countries).

Theoretical models that explain causes of cyclicity can be divided into three groups:

1. Theories that find main causes of business cycles in fluctuations of external (exogenous) factors lying outside economic system (for example, scientific discoveries, migration and population growth rates, wars and etc.).

2. Theories that find the cause inside economic system itself, i.e. in changes of internal (endogenous) factors (for example, fluctuations of demand for consumer products and investment goods).

3. Theories that synthesize internal and external causes (the first attempt to examine market fluctuations as natural process of rises and slumps changes belongs to J. Schumpeter – in his opinion, market dynamics is possible due to the innovations of entrepreneurs).

Analysis of market conditions, made by W. Ropke, clarified the factors that influence demand and supply. Changes in demand and supply affect economic rises and slumps.

With the emergence of Keynesianism, the boundary between problems of market situations, crises and cycles was almost erased as the whole economy trend was considered undulating. *Keynesianism* explained fluctuations of market conditions as the result of underemployment. To reach full employment economy needs investment.

For the first time on a national scale the question of economy regulation using the state employment and expenditures policy was raised. Government influencing effective demand should have reduced the amplitude of fluctuations.

Nowadays many economists think that the reason of economy cyclicity is in changes of *aggregate demand and aggregate supply* that result in macroeconomic disbalance. Thereby special attention is paid to factors that influence aggregate demand and aggregate supply – investments, national income, savings and consumption. Also they have concluded that fluctuations of investment lead to considerable changes of national income.

Main ways of economic stabilization are conditioned by policy of economic growth and savings promotion that includes following elements:

– aggregate demand stabilization. Aggregate demand should grow at a speed corresponding to growth rate of natural rate of national production real volume. If aggregate demand grows too fast, inflation will swell. On the other hand, if aggregate demand grows too slowly, economic system will be in recession;

– aggregate supply stabilization by combination of fiscal, monetary and credit policy. The goal of economic policy can be reached by a combination of expansionist fiscal policies and restrictive actions of monetary and credit policy or by contractinary fiscal policy in conjunction with expansionist monetary and credit policy. It is considered that the second combination leads to lower interest rate and, consequently, to bigger amount of investment;

– assistance to aggregate savings growth including arrangements aimed at raising savings profitability and favouring national income redistribution for the benefit of savings by means of fiscal policy.

9.2. Employment and unemployment, their types

Employment is such kind of occupation that doesn't contradict laws of the country; it is aimed at satisfaction of needs and brings earnings and income in return. Employed population includes employees and people who work on their own – entrepreneurs, farmers, members of cooperatives, etc.

One of the main goals of national economy in any country is providing the fullest employment. This situation doesn't presuppose the employment of all able-bodied citizens because it is almost impossible and it's inefficient, unreasonable. That's why economists use categories "rational employment" and "effective employment".

Rational employment is the achievement of such quantitative and qualitative structure of employment that contributes to the fullest use of manpower resources.

Effective employment – such employment that provides the highest production efficiency.

In addition, economists mark out underemployment and secondary employment.

Underemployment – work on terms of shortened working day or half-time.

Secondary employment – additional off-hour job of the people who have a main job.

International Labour Organization (ILO) classification stipulates other forms of employment. For example, *seasonal employment* – work based on a seasonal contract.

Periodic employment – alternate employment and unemployment regardless of period of either during the year.

Self-employment – occupation carried out on one's own initiative under one's own control.

There are different theories of employment. Let's examine fundamentals of the most wide spread ones.

New classical economics (E. Bohm-Bawerk, F. Wieser, C. Menger, L. Walras, A. Marshall) is based on the following propositions.

Firstly, market is automatically self-regulated, therefore any disequilibrium is restored on the basis of interaction of demand, supply and competition, without any assistance. Secondly, long-term unemployment in terms of free competition is impossible because disequilibrium is automatically regulated as the result of changes in prices and labour rates. Thirdly, in terms of long-term self-regulation, there are no grounds for state intervention in the economy.

Representatives of *classical economics* consider market economy to be a self-regulated mechanism. That is why excess of supply of labour over demand emerges only for a short period of time under the influence of force-majeure (wars, natural disasters, etc.). Long-term unemployment is impossible in principle. However, if unemployment appears, market itself can regulate it by reducing price of labour force (wage) to such level, when balance between supply of labour force and demand for it is be restored. That is why there is no need of state intervention in the process of employment regulation.

Marxist theory of employment is based on the law of population discovered by K. Marx. It says that during the process of capital accumulation, demand for labour force and for capital increases, and demand for labour force grows slowlier than demand for capital. The explanation is the following: owing to adoption of new technology and increase in working efficiency, economy will need less workers. The consequence of the law is appearance of a so called reserve army of labour, or the unemployed.

According to *Keynesian economics* modern market mechanism can't regulate employment on its own. The main obstacle is inelasticity of wage and the existence of labour unions. Therefore, of state regulation of employment is needed.

Unemployment is one of the main macroeconomic problems. Its rate affects price-level and production volume, structure and forms of distribution of incomes, state budget and government spending.

In market economy there is always a certain number of people who don't work. However, not every person who doesn't work is considered unemployed. It is evident that children, aged and disabled people are not rated as able-bodied citizens. Also people, who own certain income and don't want to work, are not rated as unemployed.

Unemployed is a person of working age (from 16 to 60 years old) who doesn't have a job or any other income, who is seeking employment and is ready to proceed to it.

Unemployment is a socio-economic phenomenon when a part of the population can't apply its hands or labour force. Unemployment means inability of government to use effectively one of the main factors of production – labour. Reasons of unemployment are decline in economic growth, technical progress, structural change of the economy, inflation, state population policy.

The main forms of unemployment are frictional, structural, cyclical, seasonal and long-term unemployment.

Frictional unemployment affects workers who seek or expect to get a job in the near future. This is the period between dismissal from one job and getting another or returning to former one. Such unemployment lasts from one to three months; its existence is inevitable because it is a natural movement of labour between enterprises, regions and sectors. *Structural unemployment* is called forth by scientific and technological advance, imbalance in development of branches of economy, geographical distribution of workplaces.

Under the influence of scientific and technological advance some branches of economy are dying out gradually, at the same time new factories and branches appear, consequently, structure of demand for labour force changes.

Setback in production leads to *cyclical unemployment*. It affects all spheres and sectors of economy. There are two forms of cyclical unemployment: concealed or hidden and open one. Concealed form means reduction of working hours, forced vacations of personnel, reduction in pay. Open form means dismissal of a worker, complete loss of a job and income.

Seasonal unemployment appears as the result of change in demand for labour force depending on the period of year. It is caused by peculiarities of agriculture and forestry, fishing and hunting, construction. *Long-term unemployment* appears as the result of labour surplus, overpopulation. It influences the least professionally prepared part of labour force. As a rule, they are bankrupt entrepreneurs, former housewives, unskilled workers etc. Such unemployment may last for years. The unemployed live on welfare or casual earnings, lead a beggarly life, gradually become lumpens and sink to the bottom of society. They can get permanent work only the last of the whole population when economy is on the stage of prosperity and labour force is highly rare.

Unemployment has an adverse effect on economic and social situation in the country. It increases burden on the employed, devaluate highly skilled labour, slows down economic growth and creates social tension. To characterize unemployment economists use variable indicators: percentage of the unemployed in total labour force, quantity of the unemployed, average duration of unemployment, percentage of the long-term unemployed in economically active population, etc.

Great amount of the unemployed leads to economic losses and social shocks.

In order to pursue efficient economic policy, government needs to evaluate unemployment rate.

The unemployment rate is the percentage of the work force that is unemployed:

$$The\ unemployment\ rate\ = \frac{Quantity\ of\ the\ unemployed}{Work\ force} \cdot 100\% . \qquad (9.1)$$

If the unemployment rate over the natural rate, country loses part of its output. Calculation of potential losses of output as the result of unemployment growth is based on Okun's Law.

For each 1% the unemployment rate exceeds the natural rate there will be a gap of *b%* between actual *GDP* and potential *GDP* (parameters, determined empirically). Due to Okun's calculations, in the 1960s in the USA when normal rate was 4%, parameter *b* was equal to 2,5%

$$\frac{Q_2 - Q_1}{Q_2} = K \cdot (Y_1 - Y_2), \qquad (9.2)$$

where Q_1, Q_2 – potential and actual outputs respectively; Y_1, Y_2 – actual unemployment rate and unemployment rate at full employment; K – coefficient found empirically and equal 2,5.

Okun's Law states that for each one percent (1%) the unemployment rate over the natural rate there will be a gap of two and one-half percent (2,5%) on the average between actual GDP and potential GDP.

The difference between the unemployment rate and the normal rate characterizes the rate of *situational* unemployment.

It should be noted that burden of unemployment is not uniformly spread across various groups that comprise society. Usually the unemployment rate is higher among common labour than among skilled manpower because companies invest considerable sum of money in training their personnel. In addition, skilled manpower is employed in the branches that are less subject to cyclical fluctuations – in nonmaterial sphere, nondurable goods production.

Industries producing capital goods react to depression more sharply, which can be expressed by higher unemployment rate among men than women.

Lower skill, lack in experience and lower mobility are the causes of higher unemployment rate among young people in comparison with the older

ones. The same causes lead to higher unemployment rate among colored people than white people.

Non-economic or social consequences of unemployment include: loss of skills and self-esteem, complete or partial loss of income, decline in living standards, crime wave, increase of mortality and quantity of mental diseases. High unemployment rate can lead to civil commotion and political disturbances.

Employment policy. Government may pursue three types of policy towards unemployment: social, macroeconomic and employment policy. The function of social policy is rendering assistance to the unemployed in order to maintain their living standard. Macroeconomic policy presupposes the use of monetary and fiscal measures to reduce unemployment. Employment policy is aimed at workplaces creation, system of workers' retraining, job centers opening, etc.

All the methods and measures by which government influences employment and unemployment can be divided into two groups – active and passive.

Active measures are aimed at creation of additional workplaces.

Active measures include:

1) *Keynesian macroeconomic policy directed at aggregate demand stimulation at the expense of the state budget*;

2) institutional, legislative and financial measures conducted by the state (including organization of educational system and vocational training of the personnel on the basis of employment services and enterprises, regulation of the sector and regional staff mobility, expansion of production goods and services at the expense of the government subsidies' growth, public works programs in communal services, construction, repair works, workplaces creation for the youth, employment subsidies for those who are in need of social protection, investment in the most promising or labour-intensive industries, measures to reduce the labour supply, self-employment promotion, assistance for small and medium business).

Passive policy includes establishing a system of social insurance and financial assistance to the unemployed. The system of social insurance provides payment of unemployment benefits in the light of previous earnings; the system of financial assistance is aimed at providing the unemployed with a living wage.

9.3. Inflation: the essence, causes. Antiinflationary policy

The concept and measurement of inflation. Category "inflation" was used first in North America during the Civil War of 1861–1865 and it meant the process of paper money mass swelling. In modern science, inflation is considered as the imbalance of demand and supply, reflected in rising prices. Keynesians explained inflation by excessive demand at full employment, neoclassical economics – by increasing production costs.

For a quantitative evaluation of inflation economists use indicators of inflation. Inflation is defined as a general increase in average level of prices. The latter is measured by the price index, which is defined as the ratio of the value of a particular set of goods and services (market basket) in a given period to the cost of the same set in a particular base period, multiplied by 100%:

$$Price\ index = \frac{The\ value\ of\ market\ basket\ in\ a\ given\ period}{The\ value\ of\ the\ same\ basket\ in\ a\ base\ period} \cdot 100\%\ . \quad (9.3)$$

The rate of inflation shows how fast it is changing or will change in the current period relative to the previous

$$R_{infl} = \frac{PI^a - PI^b}{PI^b}, \quad\quad\quad (9.4)$$

where R_{infl} – rate of inflation; PI^a – price index in accounting period; PI^b – price index in a base period.

There is a more simple method to measure inflation rate which is called *the Rule of 70*. It states that the number of years for the price level to double is equal to seventy divided by the annual rate of inflation.

Causes of inflation. All the causes of inflation can be combined into two big blocs: external and internal.

External causes include two components – internationalization of economic relations (for example, transfer of inflation over the world commerce) and devaluation of national currency (in this case prices of import grow, and exchange of foreign currency to the national requires additional emission of money).

The internal cause of inflation is the monopoly of three types – a state, a labour union which sets wage rates, and the monopoly of the biggest companies on setting prices and their own costs.

Classification of inflation. There is a variety of the classifications of inflation. From a perspective of price growth, economists mark out moderate, galloping inflation and hyperinflation.

Moderate inflation is the situation when increase in prices is less than 10% per year, value of money is saved and there is no risk of making contracts in nominal prices. This kind of inflation is considered to be quite good for economic advancement because it stimulates manufacturers to increase production volume.

Galloping inflation occurs when increase in prices ranges from 10 to 200% per year what makes serious difficulties for economy. In these circumstances, contracts are tied to price growth or foreign currency, money rapidly materialize into products.

Hyperinflation is characterized by the astronomical growth of prices. Formal criterion of hyperinflation has been introduced by American economist F. Kagan, who proposed to count its duration from the month in which growth of prices is more than 50% for the first time, and till the month preceding the prices fall below this critical level without reach it at least during the year.

Taking into consideration the divergence in prices for various commodity groups, economists distinguish balanced and unbalanced inflation. In the first case, a moderate growth of prices simultaneously applies to most goods and services; in the second case price increase in individual welfare takes place with a different pace.

Depending on the degree of predictability, economists speak about expected inflation that is predicted and expected in advance, and the unexpected one, which is characterized by a sudden spike.

By the mode of manifestation, economists distinguish open and hidden inflation. In the first case there is a continuous inflation when market prices are free and flexible, in the second case – increasing commodity shortage as a result of the state monopoly on pricing.

Depending on the object of study, there is national inflation rate, localized within a particular country, regional, inflation rate that occurs in a certain area, and world inflation rate inherent in all the community.

By the nature of inflationary impulses, considered in relation to a particular country, inflation can be exported or imported.

Types of inflation. There are two main types of inflation – demand-pull inflation and cost-push inflation.

Demand-pull inflation occurs as a result of demand increase in the situation of full capacity utilization, and, therefore, manufacturers can not respond to it by increasing output. Macroeconomic equilibrium is upset on the part of demand. While supply is the same, demand shifts to the right or increases. It leads to prices overestimation when production volume of national product is constant. The reasons for demand growth include increase of government order, wage-push and growth of purchasing power. Uncovered money quantity occurs in circulation (pic. 9.2).

The rise of demand leads to the shift of demand curve to the right from position AD_1 to AD_2. In this case price rises from P_1 to P_2.

If economy is at an intermediate or classic segment of the aggregate supply curve AS, it causes inflation due to rising prices.
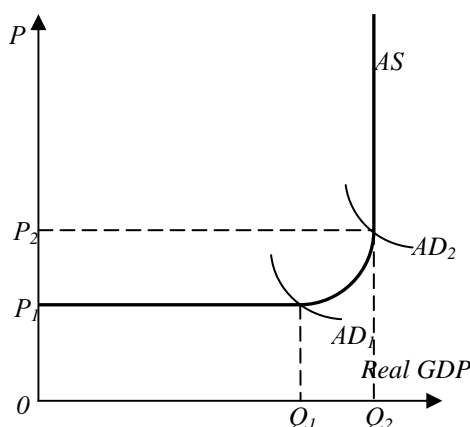
Pic. 9.2. Demand-pull inflation
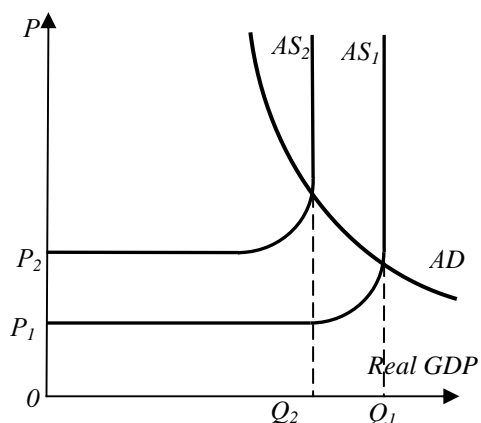
Pic. 9.3. Cost-push inflation

Cost-push inflation occurs as a consequence of price advance because of rising production costs. Causes of rising costs may include increasing prices on raw materials and energy, actions of trade unions to raise wages, monopolistic or oligopolistic resources' pricing, etc. Cost inflation curve is shown in the pic. 9.3.

Value increase of total costs leads to curve *AS* shift from position AS_1 to position AS_2. Prices grow (from P_1 to P_2), real output reduces (from Q_1 to Q_2).

Price advance lowers standard of living, so trade unions demand higher wages, and government starts carrying out policy of social protection of population from the consequences of inflation, using compensation and indexation of their income. Growth of nominal incomes raises costs, what leads to a new round of price rises and requires further increase of income.

However, cost-push inflation ultimately restrains itself. It either gradually disappears or "cures" itself because when supply decreases, real volume of national product and employment shrinks. It limits increase in costs.

In addition, economists distinguish tax inflation and inflation of price extra charge. Tax inflation occurs when government sets excessive taxes and manufacturers are forced to raise prices significantly. Similar rise in prices occurs when producers raise prices in advance in order to compensate future losses that can not be identified in advance.

9.4. Economic and social consequences of inflation. Phillips curve

Consequences of inflation become apparent as soon as it redistributes income and affects the volume of national production. To understand how inflation affects redistribution of income, it is necessary to distinguish categories "nominal" and "real income". Nominal income is the amount of monetary units that a person receives in the form of wages, rent, interest or profit for a certain period of time; the real one is a quantity of goods and services that can be bought for the sum of nominal income.

If nominal income grows faster than price level, real income increases; if price-level change exceeds analogous tendency of nominal income then real income decreases. Thus, the fact of inflation and decrease of the purchasing power of monetary unit does not mean decrease of real income and living standard. These parameters will go down only if the growth of nominal income lags behind inflation.

People who receive relatively fixed income are affected by price increases most of all. Inflation redistributes money in such a way that the amount of people with fixed income drops in favor of other groups of citizens. Individuals, who receive non-fixed income, sometimes even benefit from price increases. Nominal incomes of some categories of employees may exceed price-level and cost of living, while their real incomes increase. However, managers of companies and owners of the capital gain from inflation most of all. It occurs when price of finished commodities change more rapidly than their costs.

Inflation may influence national production volume, and this influence may be either positive or negative. In case of cost-push inflation, at a certain level of aggregate demand production costs will increase and, as a result, advance in prices will take place. So that with such costs in the market individual can buy only a part of the product. Thus, national product will decrease and unemployment will increase.

To characterize the direct relation between inflation and volume of national production we can use naïve model of aggregate supply showing that the existence of some moderate inflation is necessary to achieve full employment and potential production. High level of aggregate expenditures, contributing to expansion of production and to low unemployment rate, causes the continuation of inflationary developments. In other words, there is an inverse relationship between inflation and unemployment.

Phillips curve was named after the English economist A.W. Phillips, who was the first to give its interpretation in his work "Who said that? Who did it? ".

Phillips curve reflects the relation between unemployment rate and inflation rate (pic. 9.4).

Some economists supposed that an economic system would function in the optimal way in the point K (pic. 9.4), where full employment can be achieved with moderate inflation. Opponents of inflation in any manifestation chose point M where, in their opinion, price stability existed only due to some unemployment rate.

From the point of view of modern economics, inverse relation between unemployment rate and inflation takes place only during a short-term period of time. During a long-term period Phillips curve is a plumb line N characterizing natural rate of unemployment. Ordinate of intersection of short-term and long-term Phillips curves corresponds to the value of anticipated inflation rate.

Unemployment rate, %
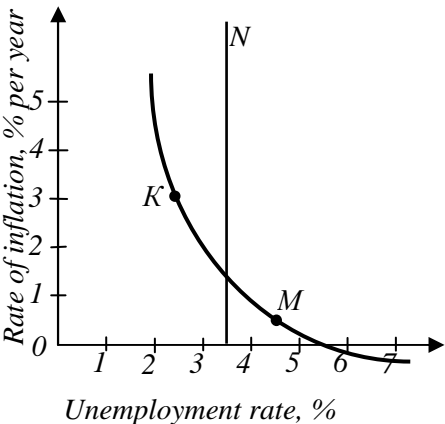
Pic. 9.4. Phillips curve

CHECKLIST

1. What is the business cycle and what is its essence?
2. What kinds and types of business cycles do you know? Characterize them.
3. What are the names of economists who have made significant contribution to the elaboration of problems of cyclicality?
4. What do you think, whether state regulation of cyclicity is necessary?
5. N. D. Kondratiev asserts that periods of high waves of long-term cycles are characterized by major social upheaval (revolutions, repressions, recessions). Confirm this statement by a list of historical events that took place during years of low or high waves of a long-term cycle.
6. What are the employment and the unemployment?
7. Characterize types of unemployment.
8. What are the main types of inflation?
9. What is hyperinflation?
10. What are the consequences of anticipated inflation and unexpected inflation?
11. What indicators reflect the rate of inflation?
12. What does Phillips curve characterize

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Chapter 10. GENERAL MACROECONOMIC EQUILIBRIUM: AGGREGATE DEMAND AND AGGREGATE SUPPLY MODEL (AD-AS)

10.1   The concept of aggregate demand. Non-price factors of aggregate demand.

10.2   The concept of aggregate supply (Keynesian and classical models). Non-price factors of aggregate supply.

10.3   General macroeconomic equilibrium. The ratchet effect.

MAIN CATEGORIES

Aggregate demand, volume of aggregate demand, curve of aggregate demand, real wealth effect, interest-rate effect, effect of import purchases, non-price factors of aggregate demand, aggregate supply, curve of aggregate supply, Non-price factors of aggregate supply, Keynesian and classical versions of aggregate supply, short-term and long-term balance in the model AD-AS, changes in equilibrium, shocks of aggregate demand and aggregate supply, ratchet effect.

10.1. The concept of aggregate demand. Non-price factors of aggregate demand

The basic macroeconomic model is the model "aggregate demand-aggregate supply". It allows: 1) to reveal conditions of macroeconomic equilibrium, to define the size of equilibrium volume of output and equilibrium price; 2) to explain fluctuations of volume of output and price level in economy; 3) to show reasons and consequences of these changes; 4) to describe various variants of economic policy of the government.

Aggregate demand (AD) represents the sum of demands of all macroeconomic agents (households, firms, government and foreign sector) for end goods and services. The components of aggregate demand are:

– demand of households, i.e. consumption demand – C;
– demand of firms, i.e. investment demand – I;
– demand of the state, i.e. government spending – G;
– demand of foreign sector, i.e. demand for net export – Xn.

Consequently the formula of aggregate demand is

$$AD = C + I + G + Xn. \qquad (10.1)$$

The volume of aggregate demand represents that quantity of end goods and services which will be demanded by all macroeconomic agents at each given price level. The above overall price level is, the less volume of aggregate demand will be, i.e. the less money all macroeconomic agents will spend on purchase of end goods and services. Hence, the dependence of aggregate demand volume on overall price level is inverse.

Graphically it can be presented in the form of a curve having negative slope (pic. 10.1). Each point of the curve of aggregate demand (curve AD) shows cost of that quantity of end goods and services which will be demanded by all macroeconomic agents at each possible price level.
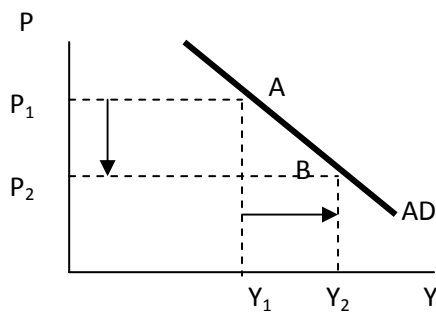
Pic. 10.1. Aggregate demand curve

In the picture on an axis of abscissa (volume of aggregate demand) there is real GDP measured in monetary units (in dollars, euro, rubles, etc.), i.e. it is a cost indicator, and on an axis of ordinates – overall price level (GDP deflator), measured in relative sizes. At higher price level (P_1) volume of aggregate demand (Y_1) will be less (point A) than at a lower price level (P_2) to which volume of aggregate demand (Y_2) corresponds (point B).

Negative slope of curve AD is explained by following **effects**.

Real wealth effect (effect of real money balances) or Pigou effect.

As real wealth or real money balances are considered as the relation of nominal wealth of an individual (*M*) the money form to overall price level (*P*):

$$\text{Real money balances} = M/P. \tag{10.2}$$

Thus, it is *real purchase power of nominal wealth* of a person with fixed nominal value. If price level grows purchasing capacity of nominal wealth falls, i.e. for the same sum of nominal money balances it is possible to buy less goods and services than earlier. The effect of Pigou consists in the following: if the price level rises, the size of real money balances (real wealth) decreases, people feel rather poorer than earlier, and reduce consumption and as consumption (consumption demand) is a part of aggregate demand the size of aggregate demand decreases. This effect can be written down in the form of the following logic chain:

$$P \Uparrow \rightarrow M / P \Downarrow \rightarrow C \Downarrow AD \Downarrow.$$

Interest-rate effect or Keynes's effect. It consists in the following: if price level rises, demand for money also increases because people need more money to purchase risen in price goods. People draw money from bank accounts; possibilities of banks to issue credits are reduced. Credit resources become more expensive, "price" of money (credit price), i.e. interest rate grows. And as first of all companies take on credits using them to purchase investment goods, it means that rise in price of credit leads to reduction of investment demand which is a part of aggregate demand, and, hence, volume of aggregate demand decreases. Keynes's effect can be presented in the form of a logic chain:

$$P \Uparrow \to M^D \Uparrow \to R \Uparrow \to I \Downarrow \to AD \Downarrow.$$

Besides, growth of the interest rate reduces also consumer expenses. On the one hand, not only firms, but also households take on credit (consumer credits), especially to purchase durable goods, so that its rise in price leads to reduction of consumer demand. And, on the other hand, growth of the interest rate means that higher income from savings is paid that stimulates households to increase savings and to cut down consumer expenses. The volume of aggregate demand decreases in to a far greater degree.

Effect of import purchases (effect of net export) or Mundell-Fleming effect. It consists in the following: if price level rises, goods of a given country become rather more expensive for foreigners and consequently export declines. Imported goods become rather cheaper for citizens of a given country, therefore import increases. As a result net export decreases and as it is a part of aggregate demand the volume of aggregate demand decreases. We will write down this logic chain:

$$P \Uparrow \to Ex \Downarrow; \ Im \ \Uparrow \to Xn \Downarrow \to AD \Downarrow.$$

These three effects show influence of *price* factors (overall price level change) on the *volume* of aggregate demand and cause *movement along the curve* AD.

Non-price factors influence *aggregate demand* itself. That means that the volume of aggregate demand changes at each possible price level. It causes *shift of the curve AD*. If aggregate demand increases, *curve AD shifts* to the right and if it declines the curve moves to the left. Non-price factors of *change of aggregate demand* are those which influence aggregate expenditures.

They are:

Factors influencing aggregate consumer expenditures:

- *wealth* (*W*). The higher wealth is, the more consumer expenditures are and the more aggregate demand is. *AD* curve shifts to the right. Otherwise it shifts to the left;

- *disposal income* (*Yd*). Growth of income level leads to consumption growth and consequently – aggregate demand increase (shift of the curve AD to the right).
- *expectations*. To analyze their influence on aggregate demand two kinds of expectations should be considered:
  - *expectations concerning expected disposal income* (Yd^e). If a person expects income increase in the future it increases consumption already in the present time that leads to growth of aggregate demand (shift of the curve AD to the right).
  - *expectations concerning expected inflation* (π^e). If people expect growth of price level they raise demand for goods and services, aspiring to buy them as much as possible at rather low prices in the present (so-called "inflationary psychology") that also leads to aggregate demand increase.
- *taxes* (*Tx*). Growth of taxes leads to reduction of disposable income, part which consumption is and, hence, to reduction of aggregate demand and shift of the curve *AD* to the left.
- *transfers* (*Tr*). Increase of transfers means growth of personal, and if taxes are invariable (i.e. with other things being equal) growth of disposable income. Consumer expenses grow, aggregate demand increases.
- *debts of households* (*D*). The higher debt level is, the greater part of income of a household are forced to direct at payment of debts in the present or to save for payment of debts in the future that leads to reduction of consumption and, accordingly, aggregate demand (shift of the curve *AD* to the left).
- *interest rate on consumer credit* (*R*). The higher interest rate on consumer credit, which households take on to purchase expensive durable goods, is, the less consumer expenses are.
- *number of consumers* (*N*). It is obvious that this factor is in direct relation with aggregate demand.

Thus, consumption function looks like:

$$C = C\,(Yd,\ W,\ Yd^{\,e},\ \pi^e,\ Tx,\ Tr,\ D,\ R,\ N).$$
$$+\quad +\quad +\quad +\quad -\quad +\quad -\quad -\quad +$$

Factors influencing aggregate investment expenditures:
- *expectations* (*E*). Expectations of investors (firms) are connected, first of all, to expected internal return rate from investments (expected rate of return), i.e. to what J.M. Keynes called "marginal efficiency of capital". Keynes

considered that the basis of investment decision-making is subjective factor – animal spirit, mood of investors. If investor optimistically estimates future and expects high norm of return from investments, he will finance capital investment project. The investment demand will increase, and the curve of aggregate demand will shift to the right. If economy is in crisis investors are pessimistic concerning future incomes, and investment spending decreases.

- *interest rate* (R). This factor is also important for investment decision-making. The higher interest rate is, i.e. the more expensive credit resources are, the less credits investors take on, and the less investment expenditures are what will shift the curve AD to the left (and vice versa).

- *amount of yield (Y)*. As far as companies may spend a certain part of their income on capitalized purchases in order to expand production, then the higher yield is, the greater capitalized purchases are. Investment depending on aggregate income is called *induced investment*.

- *taxes* (Tx). Growth of taxes reduces revenue (profit) of investors, which is internal source of company's financing and the basis of net investment. Consequently, investment expenditures decline shifting the *AD* curve to the left.

- *transfers* (Tr). Transfers to companies in the form of grants, subventions and easy tax credits stimulates investment demand.

- *technological progress* (τ). Emergence of new more productive technologies leads to growth of investment expenditures and to shift of the curve to the right.

- *excess production capacity* (N_{excess}). Excess production capacity lowers investment demand of companies because growth of capital supplies is pointless when there is underutilization of existing facilities.

- *capital supplies of a company* (K_0). If companies dispose of optimal capital supplies and their profit has reached maximum they will not invest. The less capital of a company is in comparison with the optimal, the greater investment demand is.

Investment function:

$$I = I(E, R, Y, Tx, Tr, \tau, N_{excess}, K_0).$$
$$+ \quad - \quad + \quad - \quad + \quad + \quad - \quad -$$

Factors influencing government purchases of goods and services. The amount of government purchases is an exogenous variable. It is determined by state legislative bodies when they set state budget for the next financial year.

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Government purchases increase augments aggregate demand (shift if the curve to the right) and vice versa.

Factors influencing net export:

- *gross national product and national income in other countries (Y_{world}).* Growth of GNP and NI in foreign sector leads to growth of demand for goods and services produced in a given country and, hence, to increase in its export and as a result to growth of net export that increases aggregate demand.

- *gross national product and national income in a given country ($Y_{domestic}$).* If domestic GNP and NI increase, economic agents start to show greater demand for goods and services of other countries (foreign sector) what leads to growth of import and, hence, decline of aggregate demand in a given country. The curve AD shifts to the left.

- *exchange rate of national monetary unit (e).* Exchange rate is the price of national monetary unit in monetary units of another (or other) country, i.e. this is quantity of foreign currency which can be bought for one monetary unit of the given country (for example, 1 pound sterling = 2 marks). Growth of exchange rate (in our case, 1 pound sterling = 3 marks) means that now it is necessary for Germans to change greater quantity of marks to receive the same quantity of pounds and to buy the same quantity of English goods as earlier, therefore English goods become rather more expensive to Germany, and export of Great Britain will reduce.

Thus, German goods become for Englishmen rather cheaper because the Englishmen will need to change smaller quantity of pounds to purchase the same quantity as before of German goods. Import of Great Britain will increase, and, hence, its net export will decline what will cause reduction of aggregate demand. Thus, growth of an exchange rate of national monetary unit reduces pure export and conducts to reduction of aggregate demand.

We should distinguish change of net export as a result of alteration of exchange rate as a non-price factor of aggregate demand shifting the curve AD from *effect of import purchases* when change of net export is the result from price factor action (i.e. price level changes) which changes the volume of aggregate demand and causes movement along the curve AD.

Function of net export looks like:

$$Xn = Xn\ (Y_{world},\ Y_{domestic},\ e).$$
$$+ \qquad - \qquad -$$

10.2. The concept of aggregate supply (Keynesian and classical models). Non-price factors of aggregate supply

Aggregate supply (AS) represents cost *of that quantity of end goods and services which all manufacturers* (private concerns and state enterprises) *supply to the market* (on sale). As well as at the analysis of aggregate demand, it is not a question of actual volume of output, but that volume of aggregate release which all manufacturers are r*eady* (intend) to make and supply to sale in the market at a certain price level. Dependence of the volume of aggregate supply on price level in short-term period is expressed by a straight line. The higher price level is, i.e. at higher prices manufacturers can sell their products, the more the volume of aggregate supply is. Therefore it is possible to construct a curve of aggregate supply (*AS* curve), each point of which shows **volume of aggregate supply** *at each given price level*. Thus, price factors (overall price level) influence volume of aggregate supply and explain movement *along* the curve *AS*.

What concerns the concept of aggregate supply and factors influencing it representatives of different schools don't have a sameness of views. Disagreements concern description of form of the curve *AS*. There are two approaches to this problem: *classical and Keynesian.*

In short-term period, according to **Keynesian approach**, the curve of aggregate supply (*SRAS* – short-run aggregate supply) *has a horizontal slope if in economy there is a considerable quantity of unemployed resources*. It is so-called "extreme Keynesian case" (pic. 10.2, segment I).

When resources are unlimited, prices for them don't change, therefore costs don't change, and there are no preconditions for a change of price level for goods.

However *under current conditions* economy has an inflationary character, the rise of prices for goods doesn't occur simultaneously with a rise of prices for resources (as a rule, there is a gap, time lag, therefore growth of prices for resources takes place *disproportionately* to overall price level growth) and expectations of economic agents have the increasing value.
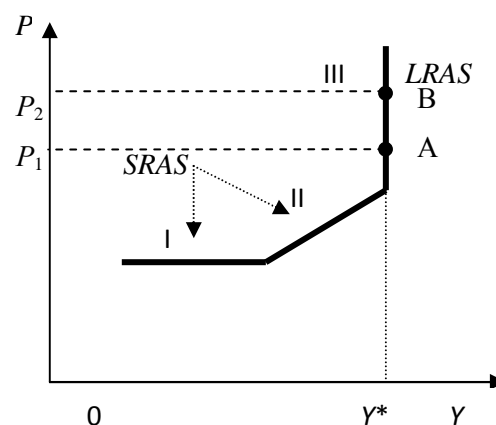
Pic. 10.2. The aggregate supply curve segments I and II are short-term.
segment I – an extreme Keynesian case
segment II – modern kind segment III – long-term – a classical case

Therefore in macroeconomic models the curve of *short-term* aggregate supply (SRAS) is graphically represented as a curve having a *positive inclination* (pic. 10.2, segment II).

The long-term curve of aggregate supply (*LRAS* – long-run aggregate supply) is represented as vertical curve (***classical model***) as in the long-term period markets come to a mutual equilibrium, *prices for goods and prices for resources change proportionally to each other* (they're flexible), expectations of agents change, and economy aspires to its potential volume of output (pic. 10.2, seg. III). Thus real volume of output doesn't depend on price level and is determined by productive potential of country, quantity of available resources. The volume of output thus is called *potential* (greatest possible – Y^*).

As far as when price level changes the volume of aggregate supply doesn't alter*, price factors don't influence the volume of aggregate supply in the long-term period* (movement *along* a vertical curve of long-term aggregate supply from point *A* to point *B* (pic. 10.2). If price level grows from P_1 to P_2 output remains at potential level.

Non-price factors which influence aggregate supply and *shift* curve *AS* are all factors changing cost for a unit. If costs grow, aggregate supply reduces and the *AS* curve shifts to the left-upwards. If costs decrease, aggregate supply increases and the curve *AS* shifts to the right-downwards. The majority of non-price factors influence aggregate supply in short-term period, but some factors change aggregate supply in long-term period.

Non-price factors of aggregate supply include:
- *prices for resources* ($P_{resources}$). The higher prices for resources are, the more expenses are and the less aggregate supply is. Basic components of costs are: 1) prices for raw materials and stuff, 2) rate of wages (labor price), 3) interest rate (payment for capital). Thus, interest rate is a non-price factor both of aggregate demand and aggregate supply. The rise in prices for resources leads to shift of the curve *AS* to the left – upwards, and their decrease – to shift of the curve *AS* to the right-downwards.

Prices for resources are influenced by:

a) *quantity of resources* which the country (quantity of labor, capital, land and entrepreneurial skills) has. The larger supplies of resources of country are the lower price for resources is.

b) *prices for imported resources*. So far as resources, especially natural, are distributed between countries non-uniformly, change of prices for imported

resources for a country importing resources can make essential impact on aggregate supply. The rise in prices for imported resources increases costs reducing aggregate supply. The curve *AS* shifts to the left-upwards.

c) *degree of monopolization in the market of resources*. The higher monopolization degree is in the resource markets, the higher price for resources is and costs rise, hence, aggregate supply decreases.

• *productivity of resources* (τ). Productivity is the ratio of total production volume to expenses, i.e. it is value, inverse to costs per product unit. The higher productivity of resources is, the less costs are and the greater aggregate supply is. Productivity growth occurs, if: a) output increases at the same expenses; b) at the same volume of output expenses decline; c) both situations take place. The main cause of productivity growth is *scientific and technical progress* providing emergence and use of new, more perfect and productive technologies, more productive equipment during production and demanding growth of a skill level and vocational training of workers. Therefore this factor influences aggregate supply not only in short-term but also in the long-term period, leading to shift of the long-term curve *AS* and providing economic growth. Technologies (τ) (technological progress) influence both aggregate demand and aggregate supply.

• *taxes on business* (*Tx*). Firms consider taxes on business (especially indirect) as a part of costs, therefore growth of taxes on business leads to reduction of aggregate supply. (We remind that change of taxes on business is also a non-price factor of aggregate demand). Change of taxes, for example, on salary, influencing aggregate demand, doesn't directly influence aggregate supply because doesn't change company's costs.

• *transfers (grants) to companies (Tr).* It is possible to consider transfers to companies as antitaxes. Their influence on aggregate supply is positive.

• *government management of economy (G_{management}).* Degree of government management of economy also has serious influence on aggregate supply. The greater degree of state interference in economy is, the more organizations and establishments regulating economy it creates, the bigger burden of keeping of state apparatus is, hence, the more funds withdraw industrial sector of economy that leads to reduction of aggregate supply.

Function of aggregate supply can be written down:

$$AS = AS\ (P,\ P_{resorses},\ \tau,.Tx,\ Tr,\ G_{management})$$
$$+\quad-\quad+\ -\ +\quad-$$

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10.3. General macroeconomic equilibrium. The ratchet effect

Equilibrium in the model "*AD-AS"* is established in a point of intersection of aggregate demand curve and aggregate supply curve. Coordinates of the point of intersection show equilibrium volume of output (equilibrium GDP) and equilibrium price level. Change of either aggregate demand or aggregate supply (shifts of curves) leads to change of equilibrium and equilibrium values of GDP and price level.

As we can see in the pic. 10.3. *the consequences **of aggregate demand change*** (in this case it is growth) *depends on the **type of aggregate supply curve***. In short-term period if *AS* curve is horizontal growth of *AD* only leads to growth of equilibrium volume of output (Y_1 grows up to Y_2).without changing of price level (pic. 10.3, *a*). If short-run curve of aggregate supply has a positive slope increase of aggregate demand results in growth of both equilibrium volume of output (from Y_1 to Y_2) and equilibrium price level (from P_1 to P_2) (pic. 10.3, *b*). In long term change of aggregate demand doesn't influence equilibrium volume of output (economy still produces potential $GDP - Y^*$) but influences alteration of price level (from P_1 to P_2) (pic. 10.3, *c*).
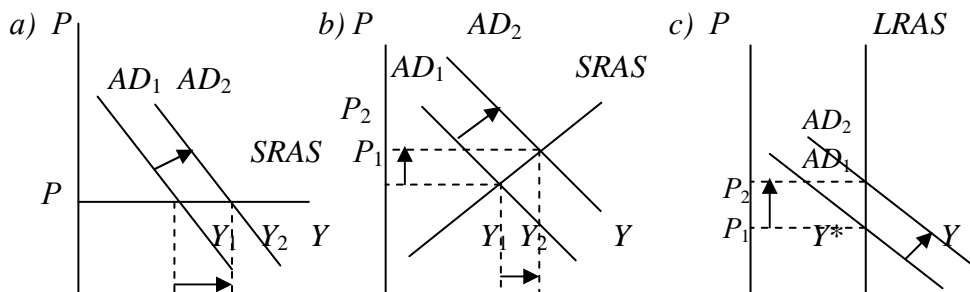
Pic. 10.3. Effects of the increase in aggregate demand in the AD-AS model

Change of aggregate supply *influnces **the same way** regardless of the AS line type*. As we conclude from the pic. 10.4 in all three cases growth of aggregate supply (if the line *AS* is horisontal, has a positive slope, or it is vertical) leads to growth of equilibrium volume of output (from Y_1 to Y_2) and decrease of equilibrium price level (from P_1 to P_2).

The difference consists only in the fact that volume of actual *GDP* grows in short-term period (when *SRAS* shifts) (pic. 10. 4, *a, b*) while in the long-term period (if *LRAS* shifts) potential *GDP* (Y*), i.e production capabilities of economy increase (pic. 10.4, *c*).

Shock is an unexpected sharp change of either aggregate demand or aggregate supply. There are positive shocks (unexpected sharp increase) and adverse shocks (unexpected sharp reduction) of *AD* and *AS*.

Positive shocks of aggregate *demand* shift curve *AD to the right. Positive shocks* of *aggregate supply* shift curve *AS*: downwards, if it is horizontal (*SRAS*); *to the right-downwards*, if it has a positive inclination (SRAS); *to the right*, if it is vertical (*LRAS*).

Adverse shocks of aggregate *demand* shift curve *AD to the left. Adverse shocks* of aggregate *supply* shift curve *AS* depending on its type *upwards* (*SRAS*), *to the left-upwards* (*SRAS*) or *to the left* (*LRAS*).
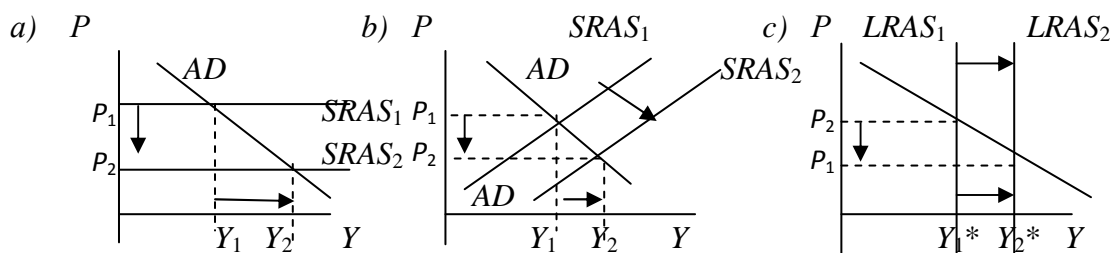
Pic. 10.4. Effects of the increase in aggregate supply the *AD-AS* model

Causes of positive shocks of aggregate demand are either sharp *unforeseen increase of money supply* or *unexpected sharp increase of any component of aggregate expenditures* (consumer, investment, government or foreign sector).

Causes of adverse shock (sharp reduction) of aggregate demand (pic. 10.5) *are either unexpected reduction of money supply or sharp reduction of aggregate expenditures*. In short-term period it leads to decrease of volume of output and means transition of economy from point A to point B – point of short-term equilibrium (decrease of aggregate demand, i.e. aggregate expendotures causes increase supplies of firms, overstocking, impossibility to sell production that serves as a reason of curtailment of production). In conditions of a perfect competition businessmen will start to reduce prices for their production, price level will decrease (from P_1 to P_2), i.e. deflation will
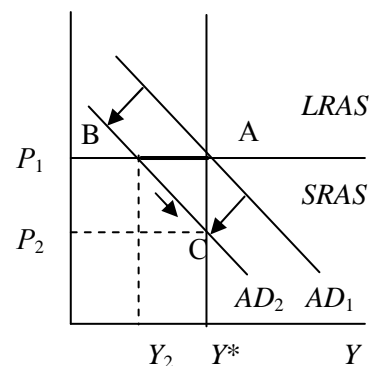
Pic. 10.5. Adverse shock of aggregate demand and effect of a ratchet

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take place, volume of aggregate demand will increase (movement *along* the curve *AD*), and economy will get to point *C* – point *of long-term* equilibrium where volume of output is equal to potential.

However such situation can take place only in conditions of a perfect competition. In conditions of an imperfect competition so-called *" the ratchet effect"* (ratchet in engineering is a mechanism allowing devices to move only forward and and doesn't afford to move back) acts. In macroeconomic "the ratchet effect" means the fact that prices rise easily but it is almost impossible to lower them what is connected first of all to sticky nominal salary rate (in modern conditions neither workers nor trade unions will tolerate its decrease), making a considerable part of costs of firms, and, hence, prices of goods.

CHECKLIST

1. Define the concepts "aggregate demand" and "volume of aggregate demand". Show and explain the curve *AD*. What price factors of aggregate demand do you know? What non-price factors influence aggregate demand?

2. Define the concept "aggregate supply". What non-price factors influence aggregate supply? What is the difference of interpretations of aggregate supply between classical and Keynesian theories?

3. Describe equilibrium in the model *AD-AS*. What are the consequences of change of aggregate demand in the model? Of aggregate supply? What shocks of aggregate demand and aggregate supply do you know? What is the essence of "the ratchet effect"?

Chapter 11. MODEL OF COMPILED RECEIPTS AND EXPENDITURES

11.1. Aggregate consumption and aggregate savings.
11.2. Investment.
11.3. "Receipts-expenditures" model.
11.4. Aggregate expenditures multiplier.
11.5. Deflationary and inflationary gaps.

MAIN CATEGORIES

Aggregate consumption, average and marginal propensity to consume, aggregate savings, factors of consumption and savings, investment, function of demand for investment, autonomous investment, planned and actual investment, factors determining investment volume, multiplier of aggregate expenditures, "receipts-expenditures" model, deflationary and inflationary gaps.

11.1. Aggregate consumption and aggregate savings

There are two approaches to explanation of goods market equilibrium: classical and Keynesian. ***Classical model*** explains equilibrium in a long-term period and proves that equilibrium becomes established at level of full employment of resources that's why volume of potential output Y* will always by equilibrium volume of output (aggregate demand is equal to aggregate supply) to which equal volume of aggregate demand (aggregate expenditures) corresponds. This model studies economy from *point of aggregate supply*.

But such automatic equality of aggregate expenditures to aggregate output may not take place in a short period. In 1963 J. M Keynes offered a model which made it possible to define volume of equilibrium national income and volume of equilibrium production capacity, having proved that volume of total output is defined by the amount of aggregate expenditures, i.e. demand determines supply. Aggregate demand became the main macroeconomic problem. This model is called "receipts-expenditures" model. Another name is a simple Keynesian model or model of "Keynesian cross".

Let's study two-factor model in which there are only two macroeconomic agents – households and firms. Therefore aggregate demand is equal to the sum of expenditures of households (amount of consumer expenditures C) and expenditures of firms (amount of investment expenditures – I).

Studying of the factors influencing amount of consumer expenditures enables to deduce a consumption function.

The theory of consumption, which was offered by J.M. Keynes, was called *the theory of absolute income*. It is based on the following preconditions: consumption level depends only on absolute volume of *current disposable income*: **C = C(Yd)**, and this dependence is positive, i.e. if disposable income rises consumption grows, however *the psychological law* acts in economy according to which "as a rule, people are inclined to increase their consumption when income grows but in a less degree than the growth of income". It is explained by the fact that disposable income is divided into consumption and savings: *Yd = C + S*. It means that if disposable income grows both consumption and savings will increase. Therefore in economy there are certain behavioral coefficients which Keynes named "the marginal propensity to consume" and "the marginal propensity to save".

The arginal propensity to consume (*mpc*) is a coefficient which shows how much consumption will increase (reduce) if income increases (decreases) by a unit: $mpc = \dfrac{\Delta C}{\Delta Y}$, it is obvious that $0 < mpc < 1$.

The marginal propensity to save (*mps*) is a coefficient which shows how much savings will increase (reduce) if income increases (decreases) by a unit: $mps = \dfrac{\Delta S}{\Delta Y}$, $(0 < mps < 1)$.

The sum of marginal propensity to consume and marginal propensity to save is equal to 1: $mpc + mps = 1$.

A part of consumption doesn't depend on disposable income and is called *autonomous consumption* – $\overline{C}$.
Thereby *the Keynesian consumption function* looks like

$$C = \overline{C} + mpc \cdot Y_d$$
(11.1)

In the pic. 11.1, *a* there is a graph of *the Keynesian consumption function*.

Slope ratio of consumption function is equal to marginal propensity to consume which is a *constant* variable in a short term and is defined by national features of a country. The more *mpc* is, the more the slope ratio of consumption function is (the curve is steeper). Shift of the curve may be caused by a change of autonomous consumption (*C*), if it increases the curve will move up.
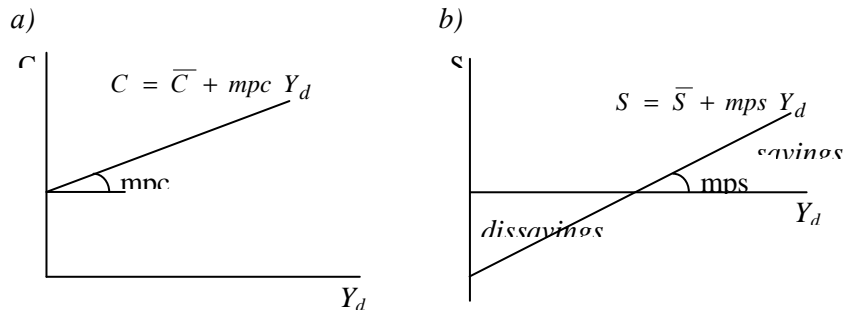
Pic. 11.1. Consumption function and saving function of Keynes

The savings function of Keynes looks like

$$S = Y_d - C = -\overline{C} + mps \cdot Y_d. \tag{11.2}$$

The graph of savings function is presented in the pic. 11.1, *b*. Slope ratio of savings function is equal to marginal propensity to save. The more *mps* is, the more the slope ratio of savings function is (the curve is steeper). Shift of the curve will happen if autonomous consumption changes (C), when it increases the curve moves down.

Using consumption function of Keynes we may conclude that if income grows propensity to consume $\dfrac{C}{Y_d}$ decreases and propensity to save $\dfrac{S}{Y_d}$ – grows. Consumption share in income (i.e. ratio of consumption volume to amount of income) Keynes named ***the average propensity to consume*** (*apc*) and share of savings in income (i.e. ratio of savings to amount of income) – ***the average propensity to save*** (*aps*):

$$apc = \frac{C}{Y_d}, \, (0 < apc < 1); \tag{11.3}$$

$$aps = \frac{S}{Y_d}, \, (0 < aps < 1). \tag{11.4}$$

The sum of average propensity to consume and average propensity to save is equal to 1

$$apc + aps = \frac{Y_d}{Y_d} = 1. \tag{11.5}$$

Modern theories of consumption take in account the factor of time. American economists *F. Modigliani* who created *theory of life cycle*, and *M. Friedman* who developed *the concept of fixed (permanent) income* have achieved the greatest success in it. Both concepts are based on *the theory of intertemporal choice* which was created by American economist *I. Fisher* in which consumer behavior is analyzed from positions of macroeconomic analysis.

11.2. Investment

Investment expenditures are expenditures of firms for purchasing investment goods which increase capital stock (expenditures for purchasing of equipment, buildings construction): $I = \Delta K$. Investment is the most unstable component of aggregate expenditures.

Investment may be: *net* (providing growth of output) and *replacement* (compensating deterioration of fixed capital).

Investment can also be *autonomous* (not depending on income level) and *induced* (its amount is determined by income level). Keynes used only *autonomous* investment ($I = \bar{I}$) in analysis.

According to Keynes, the main factor defining investment is *marginal efficiency of capital* which is understood as efficiency of the last investment project which gives non-negative value of net income. So far as investment expenditures are compensated only in a certain quantity of years, it is necessary to use discounting, i.e. to reduce amount of future income to present moment. Present value of investment project (*PV*) can be calculated using formula

$$PV = \frac{X_1}{1+r} + \frac{X_2}{(1+r)^2} + \frac{X_3}{(1+r)^3} + ... + \frac{X_n}{(1+r)^n}, \qquad (11.6.)$$

where $X_{1,......}X_n$ – net income from the investment in 1st, …, n^{th} year; r – rate of discounting (rate of preference of future income to present one).

Investor will invest his funds only if expenditures on financing of the investment project will be not more than discounted net profit (internal norm of return) from realization of this project: $I <$ or $= PV$.

Keynes thought that everybody had his own rate of discounting (*r*) determined by psychology, i.e. this magnitude is subjective, first of all, based on intuition of investor (animal spirit), on its expectations of future profit rate (internal norm of investment return), on pessimism or optimism concerning future.

Therefore Keynes thought that interest rate didn't substantially influence the amount of investment
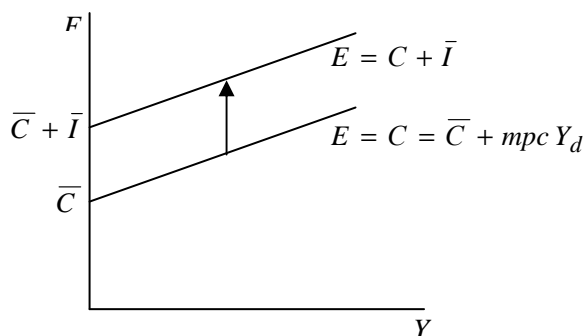
Pic. 11.2. The impact of investment

expenditures, especially in short-term. Keynes worked out his own model which defined national income, based on precondition about invariance of interest rate. As far as investment in the model "Keynesian cross" is autonomous and depends neither on income level, nor on interest rate, it is necessary to move curve of consumer expenditures parallel and up by amount of investment expenditures to receive the curve of aggregate (consumer and investment) expenditures (pic. 11.2).

11.3. "Receipts-expenditures" model

To investigate how equilibrium is established, it is necessary to introduce a concept of *actual and planned expenditures* which may be not equal to each other. **Actual expenditures** (E) are expenditures, which have been by actually made households (consumer expenditures – C) and firms (investment expenditures – I), i.e. in two-sector model

$$E = C + I .$$ (11.7.)

Planned expenditures (E_p) are expenditures which households and firms intended (planned) to make. *Actual expenditures are always equal to output* ($E = Y$) *and planned expenditures may be not equal to output*. If planned expenditures are less than output ($E < Y$) firms will not be able to sell a part of produced goods, and trade stocks of firms will increase, i.e. there will be the stockpiling of unsold products. If planned expenditures exceed output ($E > Y$) it means that economic agents want to buy more than firms have produced in a given year, firms will reduce their stock by selling products which have been in warehouses. And inventory investments (change in stocks) are a component of investment expenditures. Thereby actual investments consist of planned investments (I_p) and unexpected investments to stock (I_{un})

$$I = I_p + I_{un} .$$ (11.8.)

So actual expenditures are equal to the sum of consumer expenditures and actual investment expenditures: $E = C + I$ and planned expenditures are equal to the sum of consumer expenditures and planned investment expenditures: $E_p = = C + I_p$.

So far as actual expenditures are always equal to output and to planned expenditures only when unexpected inventory investments are equal to 0, equilibrium of the goods market is established if *actual expenditures are equal to planned ones ($E = E_p$) and planned expenditures are equal to output ($E_p = Y$).*

According to the model preconditions total output is equivalent to total income and total income is spent on consumption (*C*) and savings (*S*): $Y = C + S$. Since in equilibrium $Y = E = Ep$ then $C + S = C + I_p$.

Consequently in equilibrium *savings are equal to planned investments*. As far as savings are withdrawals from the flow of expenditures and receipts and investments are injection the expenditures and income flow, in the state of equilibrium **injections are equal to withdrawals**.

The Keynesian cross is graphically presented in the pic. 11.3. The curve of actual expenditures represents a *bisector* because actual expenditures are equal to output and any point of this curve corresponds to this condition. The curve of *planned expenditures* is a line which has a *positive slope* (the angle of inclination is defined by magnitude of marginal propensity to consume – *mpc*) proceeding not from the origin of coordinates because there is always autonomous consumption ($\bar{C}$) which doesn't depend on income level. As a result it looks like an inclined cross that is why the model is called "**Keynesian cross".**

Pic. 11.3. Equilibrium in the model of Keynes

Equilibrium of expenditures and receipts, i.e. equilibrium of the goods market is the point of intersection of two curves (point *A*). In this point: 1) planned expenditures are equal to output (receipts): $E_p = Y$; 2) actual expenditures are equal to planned expenditures: $E = E_p$; 3) injections are equal to withdrawals: $I = S$; 4) planned investments are equal to savings: $I_p = S$.

Let's study non-equilibrium points. For example in point *B*

$$E_p < Y; \; E_p < E \Rightarrow I_p < S$$

and injections are less than withdrawals.

On the contrary, in point *C*

$$E_p > Y; \; E_p > E \Rightarrow I_p > S$$

and injections are more than withdrawals.

How is equilibrium of the goods market established? If economy is in point B where planned expenditures (how much production economic agents *want* to buy) are less than output (how much *is actually produced*), part of

products won't be sold and there will be unforeseen accumulation (increase) of stocks of unsold goods. As a result economy will come to equilibrium state (movement from point *B* to point *A*). If economy is in point C where planned expenditures exceed output what means that economic agents want to buy more than what was actually manufactured, firms will start to sell stocks of products unsold in previous period, stocks will reduce, demand will be satisfied and economy will come to equilibrium state (movement from point C to point A). Thereby the mechanism, which provides restoration of equilibrium in the market goods, is a change (accumulation or reduction) of stocks.

11.4. Aggregate expenditures multiplier

To define the amount of equilibrium output (equilibrium national income), it is necessary to equate it to planned expenditures:

$$Y = C + I_p, \text{ where } C = \underline{C} + mpc \cdot Y, \text{ i.e. } Y = \underline{C} + mpc \cdot Y + I_p. \qquad (11.9)$$

What will happen if expenditures increase? Keynes has shown that growth of expenditures entails the income growth, but income increases in a greater degree than the increase of expenditures which has caused it, i.e. multiplier effect takes place.

Multiplier is a coefficient which shows how many times total income (output) increases (reduces) in answer to an increase (reduction) of expenditures by unit.

Operation of multiplier is based on the fact that expenditures made by an economic agent necessarily turn into income of another economic agent who spends part of this income to create income of the third agent etc. As a result total sum of receipts will be more than the initial sum of expenditures.

Let's suppose a household increases its autonomous expenditures by $100, i.e. it buys goods and services for this sum. It means that producer of these goods and services receives $100 income which he spends on consumption and savings. We will assume that marginal
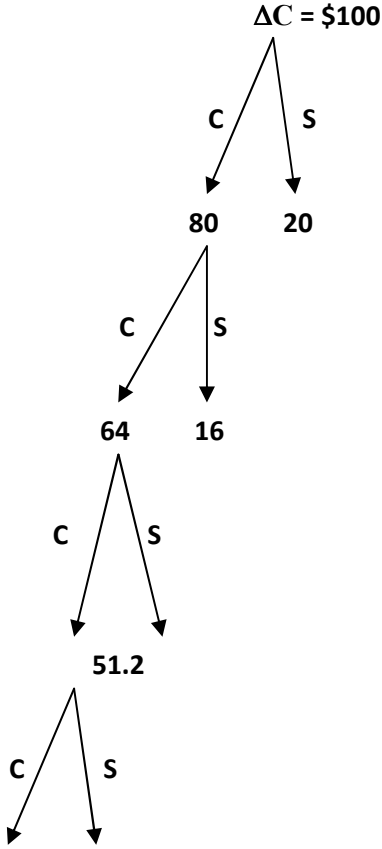
Pic. 11.4. Multiplier of aggregate expenditure

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propensity to consume *mpc* = 0,8. It means that from each additional 1 dollar of income economic agent spends 80 cents (i.e. 80 %) on consumption and saves up 20 cents (i.e. 20 %) (i.e. marginal propensity to save *mps* = 0.2). In this case having received $100 of additional income the producer will spend $80 on consumption (*Y·mpc* = 100·0,8 = 80) and $20 will go on savings (*Y·mps* = 100·0,2 = 20). $80 spent on consumption (on purchase of goods and services) create additional income of one more seller who spends $64 on consumption (*Y·mpc* = 80·0,8 = 64) and saves up $16 (respectively 80·0,2 = 16) etc. The process continues until expenditures increase reaches 0.

Let's sum up all received incomes to learn how much total income has increased as a result:

$$
\Delta Y = \Delta \overline{C} + \Delta \overline{C} \cdot mpc + \left(\Delta \overline{C} \cdot mpc\right) \cdot mpc + \left(\Delta \overline{C} \cdot mpc^3\right) \cdot mpc +
$$
$$
+ ... = \Delta \overline{C}\left(1 + mpc + mpc^2 + mpc^3 + mpc^4 + ...\right).
$$
(11.10)

We have received infinitely decreasing geometrical progression (and this is mathematical sense of the multiplier) with the basis (*mpc*) less than 1. Consequently its sum is equal $\dfrac{\Delta \overline{C}}{1 - mpc}$, i.e. $\Delta Y = \dfrac{\Delta \overline{C}}{1 - mpc}$. Expression $\dfrac{1}{1 - mpc}$ is the *multiplier* of autonomous consumer expenditures. In our example the multiplier is equal to 5 (1/(1 – 0,8) = 5). Consequently if autonomous consumer expenditures grow by $100, growth of total income is $500 (100 · 5 = 500).

Similar reasoning is applicable to a change of autonomous investment expenditures. Increasing investment firm buys producer goods, creating income to their producer who spends part of this income on consumption, providing income to producer of these consumer goods etc. As a result growth of total income will be several times more than initial increase of investments, i.e. multiplier effect (in this case of investment expenditures) will operate and producer also will be equal to $\dfrac{1}{1 - mpc}$.

Graphic representation of the multiplier effect of expenditures (for example, multiplier of investment) is presented in the pic. 11.5.

Each following increase of income is less than previous. Multiplier process continues until income increase doesn't become equal to zero.

The higher marginal propensity to consume (*mpc*) is the more magnitude of the multiplier of autonomous expenditures. For example, if *mpc* = 0.9, the

multiplier = 10 (1/(1 – 0.9) = 10) and if *mpc* = 0.75, the multiplier = 4 (1/(1 – 0.75) = 4). So far as *mpc* determines slope of the curve of planned expenditures, the more *mpc* is, the steeper the curve is.
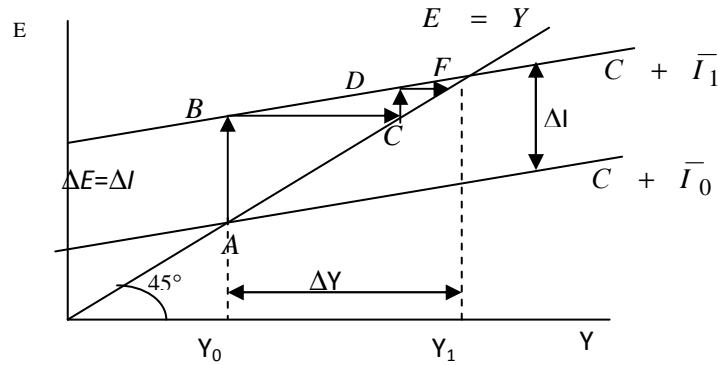
Pic. 11.5. Multiplier of autonomous expenditures

The steeper the curve of planned expenditures is (i.e. the higher *mpc* is and consequently multiplier is more), the larger increase of income similar increase of expenditures gives.

11.5. Deflationary and inflation gaps

If actual equilibrium *GDP* is less than potential equilibrium *GDP* ($Y_{act} < Y^*$) so-called ***recessionary gap*** occurs in economy. According to Keynesian conception this situation is determined by *insufficiency of aggregate expenditures* for ensuring output of a full employment, therefore it is necessary to increase aggregate planned expenditures E_p to achieve this output (Y^*).(pic. 11.6, *a*).
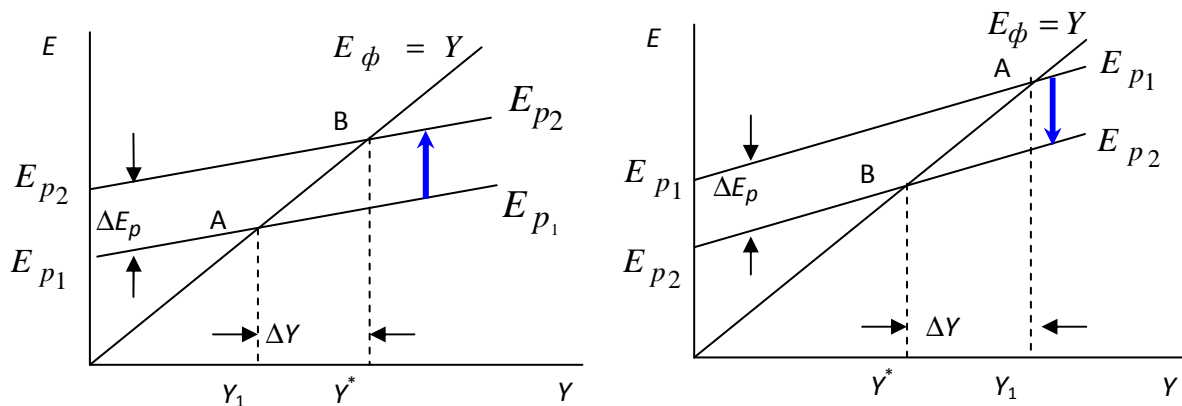
Pic.11.6. Gaps in the Keynesian model: *a* – recessionary gap; *b* – inflationary gap

Initial equilibrium is point A in which the amount of aggregate planned expenditures is equal to E_1 and equilibrium actual output – Y_1 that it is less than output of full employment Y^*. To provide output Y^* planned expenditures should be increased, i.e. curve E_{p1} should shift to E_{p2}. It is important to distinguish recessionary gap of expenditures and recessionary gap of output (*GDP*). The difference between the amount of planned expenditures E_{p1} and E_{p2} is *a recessionary gap of expenditures* (ΔE_p), and the difference between volume Y_1 and Y^* (ΔY) is *a recessionary gap of output*. Opposite situation, in which actual equilibrium output Y exceeds full employment output (potential *GDP*) Y^*, i.e. $Y_{act} .> Y^*$, is known as ***inflation gap** of output* what is a consequence of inflation gap of expenditures in Keynesian model, i.e. redundancy of aggregate expenditures. To return to potential volume of output it is necessary to reduce aggregate planned expenditures. This situation is presented in the pic. 11.6, *b*.

Inflation gap of output is equal to ΔY and inflation gap of expenditures – ΔE_p when ΔY is multiplied magnitude ΔE_p. To liquidate inflation gap planned expenditures should be reduced by ΔE_p what corresponds to a shift of the curve of planned expenditures from E_{p1} to E_{p2}.

According to Keynes and his followers it is difficult enough to change amount of private sector expenditures (especially to increase them if households have low incomes and can't increase consumer expenditures and firms are pessimistic about future and don't wish to invest), public sector expenditures should change what will provide regulation of economy and if not a complete liquidation, then reduction of gaps of output.

CHECKLIST

1. Give a definition of the concepts "aggregate consumption" and "aggregate savings". Keynesian theory of consumption.

2. Which alternative theories of consumption do you know?

3. What are "investment expenditures"? autonomous and induced investment? What factors do they depend on?

4. Define concepts of actual and planned expenditures. Show and characterize the model of "Keynesian cross".

5. Introduce basic points of Keynesian theory of multiplier of aggregate expenditures.

6. Paint deflationary and inflation gaps in Keynesian model of macroeconomic equilibrium. Characterize them.

Chapter 12. FINANCIAL SYSTEM AND FISCAL POLICY OF GOVERNMENT

12.1. Financial system: structure and principles of construction.

12.2. Government budget: principles of construction, functions, forming of incomes and direction of expenditures.

12.2.1. Structure of income and expenditures of government budget.

12.3. Budget deficit and government debt.

12.3.1. Government debt: its types and consequences.

12.4. Theory of taxes. Taxation and its principles. Tax classification. The Laffer curve.

12.5. Fiscal policy: the essence and kinds.

MAIN CATEGORIES

Finances, financial relations, money relations; economic players of financial relations; objects of financial relations; budget, budgetary system; state budget; local budgets; extrabudgetary funds, taxes; subjects of taxes, theory of taxes; taxable object; tax sources; tax rate; budget deficit; government debt; fiscal policy; discretionary and nondiscretionary policy; stimulating and constraining policies.

12.1. Financial system: structure and principles of construction

Financial system is a set of laws, rules, norms, financial institutions that regulate financial activity and financial relations of the state. Financial relations are carried out in monetary form herewith them economic interrelations during activity of economic players are established. The integral element of financial system is finances. In translation from Latin "finances" mean "payment" which has begun to be applied as a term in XIII – XV centuries in Italy. Any payment can't function without normally organized flow of money between banks, firms and population. Therefore there is a term "monetary relations" which involves all economic relations connected to fulfillment of money functions (medium of exchange, instrument of payment, measure of value, wealth accumulation).

Financial relations are a narrower concept than monetary relations. They are a component of monetary relations because they are only connected to flow of cash assets funds. Financial relations don't include relations connected to goods and monetary circulation in retail trade, payment for transport, personal services, entertainment services, utilities. Financial relations are formed between: government and firms; firms and banks; within enterprises; among various levels of government; government and population.

Subjects of financial relations are government, enterprises, organizations, natural persons and population. Objects of financial relations are financial resources – a set of all kinds of money resources, financial instruments which economic player has: net income, capital allowances to renovation, taxes and non-tax payments, bankrolls.

The essence and role of finances are shown in their functions. Distribution function consists in primary and secondary distribution (redistribution) of net income. Primary distribution provides the process of extended reproduction (reconstruction of spent production factors). Secondary distribution provides formation and replenishment of centralized monetary funds of state which are necessary for fulfillment of functions and also funds-in-trust of enterprises, firms, organizations and population income. Control function is shown in control of distribution and use of financial resources by means of information through various financial indicators on the basis of their comparison with standard indicators (norms, specifications). Such indicators are profit, profitability, revenue, and amortization. Stimulating function of finances promotes expansion and perfection of production, full employment, development and introduction of innovations.

Fulfillment of finance functions is realized through financial system. Basic links of its structure are:
– budgets: republican and local;
– funds of social, property and personal insurance;
– exchange reserves of state;
– finances of business entities and households.

Financial system includes laws, decrees and other regulatory legal acts which settle monetary and financial relations.

Financial system consists is centralized and decentralized finances.

Centralized finances include:
– budgets of all levels;
– extrabudgetary funds (pension, social insurance, state fund of employment, obligatory medical insurance;
– credits.

Decentralized finances consist of finances of:
● firms, enterprises having funds of:
– accumulation;
– capital allowances;
– consumption;
– reserve.
● organizations and establishments;
● households.

Financial system is based on certain principles. Main principles are principles of democratic centralism and fiscal federalism. The first principle assumes concentration of the right to mobilize and direct a prevailing part of financial assets on realization of government programs in hands of superior bodies of governmental authorities. It is characteristic for a planned economy.

The principle of fiscal federalism means distribution of powers between republican (federal) and regional authorities and fulfillment of functions by separate links of system of using of finances proceeding from requirement of ensuring national priority and prime purposes (social sphere, defense, space, foreign trade activities, etc.). The source of their financing is state budget.

12.2. Government budget: principles of construction, functions, forming of incomes and direction of expenditures

Budget is recognized or accepted profile, table, and sheet of incomes and expenditures of an economic player, state or a family for a certain period of time, usually for a year. Budget is calculated for accounting of quantity of disposable and spent cash assets and their correspondence.

Budget is a central part of finances and financial system. It is a financial plan, an estimate of incomes and state expenditures. It represents full information about finances, centralized fund of cash resources and directions of their expenditure. The role of budget is considerable in national economy. Firstly, it is a tool of state regulation and law, which is obligatory for execution by participants of monetary relations. Secondly, budget is a mean of accumulation of cash resources for deciding global economic problems. Thirdly, the budget allows solving difficult problems.

Depending on economic player, in relation to funds of which budget is drawn up, we may distinguish state, regional and local budgets. Set of all budgets of a country is characterized by consolidated budget. In Belarus there is a two-level budget – republican and local (municipal). It forms budgetary system.

Budgetary system is based on the main principles:

– unity which means that government should have only one consolidating budget of the country to unite all incomes and expenditures. Unity is provided with a legal basis, uniform budgetary classification form of document circulation, unity of tax system and standard;

– completeness, i.e. reflection of all income sources and direction of expenditures at each level of budgetary system;

–   reality, which means that sources of receipts are represented in incomes in amounts corresponding to the forecast of economic development and in expenditures – directions of financing which are based on prognostic indicators;

–   publicity presupposing that budget projects are shown to public by their discussion in parliament, its commissions and it is taken up in mass media.

Functions of budget (distribution and control) are fulfilled through budgetary system. *Distribution function* presupposes accumulation of cash assets in the state through certain channels of receipt and their use for carrying out of state obligations. Department of the treasury and its regional bodies carry out this function in many countries. *Control function* becomes apparent through implementation of control measures for generation and utilization of cash assets in various structural parts of economy. Control measures are carried out by tax inspectorate and police, departments of treasury, national bank and state control.

With the help of budget government accomplish combination of centralized and local interests of regions by distribution of taxes, transfers and subsidies. Budget redistributes more than a half of national income and 75% of cash assets.

Local budgets of regions and towns are not included by their incomes and expenditures in state budget. Under the conditions of development of market relations in the Republic of Belarus there is a tendency of increase of the role and influence of local government (including on the basis of municipal support) on development of regional economy, entrepreneurial sector.

A component part of state finances is extrabudgetary funds having special purpose. They are not included in budget but they are equivalent to it on the principle of distribution and utilization. Extrabudgetary funds are at disposal of central and local administration. These are funds of social insurance, pension, unemployment benefits and illness allowances.

12.2.1. Structure of income and expenditures of government budget

Public revenues are estimated in monetary form government receipts at the expense of levying of taxes, duties, payments for services of public offices, foreign trade operations and foreign credits.

Receipts are classified according to *sources* (mode of payment, subject, object, and branch), *types of receipts* (taxes from subjects of business entities), *way of collection* (taxes and penalties, payments for services, added fees), *timing* (untimely, temporary). Taxes account for from 80 to 90% of receipts in state

budget. In local budgets they account for 50%. Non-tax receipts include incomes from state ownership, gold and exchange currency reserves, penalties, assignments from profit of national bank and etc.

Budget spending characterizes directions and purposes of budget assignments for development and regulation of economic and social processes. Non-repayable provision of public funds from budget for target development is called budgetary financing.

Structure of government spending in each country has its features. In developed and developing countries basic item of expenditures is defense. In countries with socially oriented economy considerable part of expenditures is occupied with social items.

In Belarus budget expenditures are divided into following groups:

– expenditures which finance development of real sector of economy (industry, agriculture, building, transport etc.), acceleration and increase of paces of development of branches and manufactures for the purpose of maintenance of economic situation and economic growth;

– development of agricultural sector and subsidy of objects of social sphere in villages;

– expenditures which finance objects of social sphere including education, public health services, culture, payment of social benefits, support of the poor, and maintenance of social and cultural sphere, wage payment, provision of subsidies;

– national defense, law-enforcement activity and maintenance of national security;

– internal and external debt service;

– securing of foreign goods delivery to internal market, export crediting, material support of foreign economic relations;

– financing of scientific and technical, innovation programs and developments, expenditures on public administration.

Well-being and standard of living of population depend on suitability and orientation of using the centralized fund.

Depending on a role in social reproduction process all budget expenditures are divided into current and capital. *Current expenditures* form budget of current consumption: transfers, payment of interest according on government debt, costs of maintenance of armed forces, governmental authorities and state administration, science and space development. *Capital expenditures* are budget of development connected to financing of capital investments in fixed capital, investment activity.

Dynamics of structure of public expenditures in long-term outlook is substantially determined by changes in demographic structure of population. When number of older people grows the share of the expenditures connected to pensions, financing of special social establishments expenditures, establishment of benefits and guarantees, realization of additional measures of social protection of citizens increases in state budget.

In countries with rather young population expenditures on preschool and school establishments, education, creation of new workplaces increase.

Structure of expenditures of state and local budgets has own features, however the tendency of growth of a share governmental expenditures in national income and *GDP* is everywhere. So there is a close interrelation between state budget and *GDP* magnitude. If we conceive that sum of state purchases of goods and services is a constant which doesn't depend on level of income, then if income level is low it will lead to budget deficit and if the level is high –budget surplus. If budget is balanced amount of receipts from taxation, duties and fees coincides with size of state expenditures in point D (pic. 12.1). It is also equal to segment DE. If national product doesn't grow sum of tax revenues of budget decreases to level BC. Size of budget deficit will be segment AB. If economic activity increases size of tax revenues will exceed level of governmental expenditures, then surplus will be equal to segment MN.
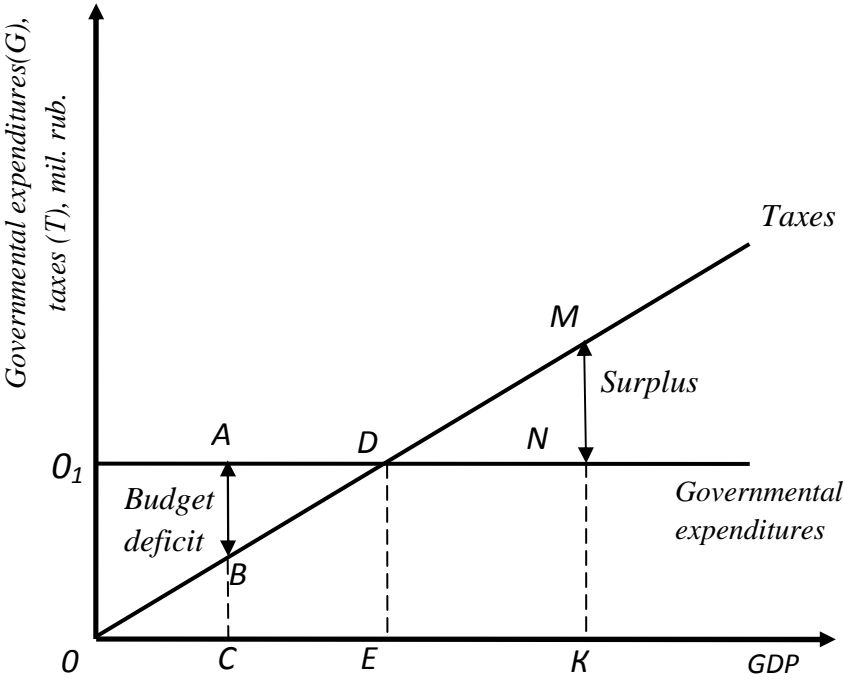
Pic. 12.1. Deficit and Surplus of budget

Thereby size of budget deficit is influenced by fluctuations of volumes of a national product and national income. Even if growth of governmental expenditures raises aggregate demand causing increase of incomes, it doesn't provide such an increment of tax and other receipts which would balance the increased expenditures, i.e. sum of tax revenues will always be less than increment of governmental expenditures.

12.3. Budget deficit and government debt

When state budget is planned government strives that sum of income would cover expenditures. When this equality is reached there is a balance of budget, if incomes exceed expenditures there will be a surplus and excess of expenditures over incomes forms a deficit of government budget. So **budgeted deficit** is an excess of expense items over income items, the sum which government expenditures period surpass incomes for a certain. In developed countries budget deficit establishes (including the Republic of Belarus) within three percent from *GDP*. According to IMF methodology it is important that budget deficit doesn't exceed 10% from national volume of output, in case of increase up to 20%, economy and country are insolvent.

Causes of budget deficit are:

– permanent increase of a role of government in solving problems in various spheres of economy; expansion of economic and social functions of government, growth of expenditures on maintenance of social sphere, army, state apparatus and etc.;

– necessity of increasing living standard, well-being of people;

– realization of government programs (social, farm, investment, innovation);

– structural changes and market economy formation are carried out;

– imbalance of public finances caused by instability of monetary circulation;

– delay of privatization of state ownership and opposition to economy liberalization;

– instability of an institutional and legal basis of development of market relations and enterprise sector.

The question about desirability or undesirability of budgeted deficit is determined by reasons for its creation. From this point of view active (structural) and passive (cyclic) budget deficit are distinguished.

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Structural deficit is a result of consciously used measures of government expenditures increasing, i.e. excess of expenditures over income is built into state budget when planning of execution of certain social and economic programs. Such structure of budget deficit is formed when there is natural rate of unemployment in economy. Deficiency payment is more often carried out at the expense of credits of National bank and emission of state securities.

Cyclic budget deficit is formed as a result of business recession and reduction of tax revenues. Underproduction and decrease of income cause growth of payments and unemployment benefits, grants for repayment of obligations of citizens.

Budget deficit causes certain consequences. Firstly, the savings of citizens reduce and their amount directed at financing investments decreases. Secondly, consumer expenditures, aggregate demand for goods and services decline. Thirdly, deficiency growth causes decreasing living standard.

In this respect various methods of regulation of budget balance are undertaken in many countries.

There are some *concepts of regulation* in economics:

– the concept of annual balancing of budgets with the help of state running of income and expenditures;

– the concept of budget balancing on basis of cyclic development, i.e. government adopts business cycle policy and simultaneously balances its budget during a business cycle. For example, at a phase of recession government:

– reduces taxes;

– increases government expenditures;

– stimulates aggregate demand.

As a result budget deficit emerges.

During inflationary prosperity phase that follows recession opposite measures are taken (formed in the previous period deficit is compensated by surplus of budget).

According to the concept of functional finances government's main objective is economy stabilization, and not budget balancing. Thus macroeconomic stability can be accompanied by steady positive balance as well as by budget deficit, i.e. budget deficit will liquidate itself.

In developing countries with transitive economy where financial markets are insufficiently developed budget deficit is compensated by currency issue. In this case monetization of budget deficit takes place. Also financing of budget deficit is carried out by means of output and sale of state securities in open stock

market. But debt financing leads to growth of expenditures of the state on payment of percent on securities. Regulation of income and expenditures is also carried out by means of tax rates but such mechanism leads to decreasing business activity of business entities. Quite often government resorts to raising external loans. Thus, budget deficit and a government debt are closely interconnected. Therefore studies of budget deficit are impossible without analysis of structure and volume of government debt.

12.3.1. Government debt: its types and consequences

Government debt is the sum of the budget deficits accumulated for a certain period except surpluses; it is general amount of liabilities of government to owners of state securities. In other words *government debt* is the sum of issued and outstanding state loans with not paid percent on them. It is formed by temporary mobilization by state of additional funds to cover expenditures which were not balanced with income.

Government debt may be internal and external. First of all loans usually are floated within country. Social insurance funds, commercial banks, non-bank financial institutions, population are possible owners of securities. But country can also have external debt. That part which state borrows from other countries for covering of state budget deficit is included both into state and foreign external debt.

Internal government debt causes redistribution of income among population of the country. External government debt is liabilities of country to other states, natural and legal persons of these countries.

Government debt payments lead to a situation when money (income) from less well-off citizens passes to more well-to-do people because precisely they buy government bonds.

Government debt leads to economic and social consequences:

– firstly, it reduces capital supplies in economy. Capital withdrawal for acquisition of bonds and other securities leads to share capital reduction. It means output reduction;

– secondly, interest on government debt service is burdensome for population because it is necessary to cover them at the expense of increase in taxes and currency issue; growth of taxes reduces economic activity;

– thirdly, payments of internal debt are accompanied by redistribution of income among population to the most well-to-do citizens;

–   fourthly, reduction of share capital causes reduction of output, income and to falling of living standard in the future;

–   fifthly, it causes possibility of bankruptcy of the nation;

–   sixthly, government debt causes transposition of debt burden on other generations.

According to payment terms current and capital government debt are distinguished. Current debt is a debt payment term on which has come during the current year. Capital debt is a debt on which payment term hasn't come yet.

Government debt management is carried out using the following measures:

–   issue of new loans;

–   carrying out of conversion, i.e. change of initial terms of loan or bonds refunding;

–   debt consolidation – prolongation of period of validity of a debt, unification of several debts in uniform with possible change of loan interest. At consolidation current liabilities may be transformed into long-term ones by a mutual agreement between government-borrower and government–partner.

For a quantitative characteristic of government debt following indicators are used:

–   general liabilities;

–   ratio of various kinds of debts;

–   differences between received and given out credits;

–   comparison of debts per capita;

–   degree of involvement in external debt calculated as the ratio of external debt to national produce;

–   ratio of external debt to currency revenue;

–   ratio of annual amount of debt to currency proceeds during the year.

Critical value of this indicator is considered to be 25% of *GDP*. In 2010 public debt of the Republic of Belarus was equal to 37%.

12.4. Theory of taxes. Taxation and its principles. Tax classification. The Laffer curve

In finance law revenues from taxation and nontax revenues are clearly distinguished as types of public receipts according to modes of payment and methods of levying. One of solutions of the problem of distinguishing these terms is industry normative criterion, i.e. fiscal relations are regulated and specified by fiscal legislation and Tax Code of the Republic of Belarus, nontax obligatory payments – by legislation of other spheres, for example, pension legislation, social safety, environmental and patent laws.

In this respect nontax payment is defined as an obligatory individually non-refundable payment or fee to budget which directly forms part of fiscal system of a country imposed by nontax acts. Nontax payment is a quasitax, tax surrogate which is defined as an obligatory payment that is not included in fiscal system and is regulated by other legislation. One-time government withdrawals are payments imposed by the government in a particular procedure as a rule in case of emergency or as a punishment (penalties).

From a legal standpoint there are the following characteristics of a tax:

– abstract mode of payment;
– obligation of payment, i.e. not voluntarily but forced;
– cash payment;
– gratuity of tax payment and specificity of recipient (budget or a non-budget fund);
– lawfulness of levying taxes;
– tax is government takeover of part of property when paying taxes to the budget.

In terms of these characteristics tax can be defined as the only legal form of property alienation on the principles of individual gratuity, irrevocable character provided by government compulsion but not a punishment or contribution which aims at provision of financial solvency of bodies of power. This definition allows separating a tax from charges and duties payment of which requires a special target (for example, the object of taxation) and special interests (compensatory nature of payment).

Theory of taxation is scientifically grounded conceptual models of fiscal systems comprising principles of construction, structure which define the role and objective of functions of taxes. Theories of taxes are dynamic, the change depending on concrete historical and socio-political conditions, level of economic development and national peculiarities.

Formation of scientific beliefs about taxes as an economic category was preceded by beliefs about tax relationships between government represented by supreme power and citizens. Early philosophers Aristotle, Xenophon advised to diversify sources of state income and not to limit it to taxes only. The mercantilists (Th. Hobbes) marked out direct and indirect taxes, discussed which ones were more preferable not denying the absolute right of government to impose taxes. Consequently they didn't deny the interrelation between taxes and economic processes. The physiocrats (F. Quesnay, A. Turgot) first raised questions about tax equity and sources of incomes.

Adam Smith defined taxes as more or less ordered regular withdrawal of part of income from business entities and set up principles of taxation:

– uniformity;
– definiteness;
– convenience of payment;
– cheapness.

The followers of A. Smith and D. Ricardo, for example, J. Mill thought that taxes play only a role of sources of budget revenues and they shouldn't be burdensome.

Fundamental and applied researches of the problem of taxes were held by Russian economists A. Isaev, A. Sokolv, I. Kulisher, V. Tverdohlebov. They gave proof of taxes as an important reproduction mechanism. Their recommendations were applied while providing financial reforms. Later, after the cleavage of the world community into two antagonistic camps, two political systems universally recognized theory of taxes in the USSR underwent changes. The science of our country was influenced by the ideas of Marxism. The main goal of theoretical researches of Marxism was explanation of the nature of taxes as an economic category of administrative regulatory distribution of income and property of subjects of economic relations, ideologizing of taxes and payments. The way out of the situation as it had developed was transition of post-Soviet countries to market economy.

In developed countries (the USA, Japan, countries of Western Europe) economic relations in the field of taxation were built on Keynesian, neoclassical and new Keynesian theories and on monetary economics. Followers of Keynes think that taxes as well as interest rate serve to regulate economy. They act in the economic system as 'built-in flexibility mechanism', level out aggravation of economic instability from a decrease in budget incomes – during upturn economic cycle taxable income grows more slowly than revenues from taxes; during crisis the tax drops faster than income falls. By that relatively stable station of life can be reached.

New classical economics is based on the preference of free competition, stability of economic functions. External adjustment measures are directed only to eliminate obstacles impeding hold of the laws of free competition. Government fulfills indirect functions in economy regulation and first of all –monetary policy of national bank.

Taxes are a very important element in new Keynesian theory. Irving Fisher and Nicholas Kaldor found necessary to differentiate taxable items in

reference to a consumer: to tax end value of a consumed good and saving being limited to deposit interest rate. The idea of a consumption tax is at the same time an incentive for savings and an instrument of drive against inflation. Graduated consumption tax with the application of tax deductions and concessions for certain goods is fairer for people with low income.

Monetary economics (M. Friedman) suggests limiting the role of government only to that functions which only the state can fulfill – to regulate currency in hands and impose tax rates.

Having analyzed all the theories of taxation we see that there is no one perfect theory of economic regulation but there is a cooperation of three main concepts:

– Keynesianism and its different variations;
– theory of supply;
– monetarism.

Foreign theories of taxes differ by statements which form the basis of fiscal policy financial legislation.

In the Republic of Belarus theoretical and applied researches only arise. The research subject is foreign experience in construction of fiscal system, place and role of taxes in the management of economy. Due to peculiarities of transformation processes in the country native fiscal legislation is not stable and subject to improvement and quite often – radical changes. Especially changes negatively affect business activity.

Taxation is the process of imposing and levying taxes in the country, determination a size of taxes and their rates, procedure for payment of taxes, number of legal and natural persons subject to taxation. Taxes are the main source of replenishment of government income and one of the main instruments of government regulation of economy, consequently construction of effective tax system is one of the most important goals of the country.

Taxes are one of the main elements of taxation and tax system. Taxes are obligatory payments levied by government on legal and natural persons that form part of state and local budgets. Tax system is the totality of interconnected taxes, taxation methods, and tax use and taxation bodies. The main legal document is the Tax Code. It is a code of legislation acts about taxation united in one integral document.

There are several principles that form the basis of tax system construction:
– generality – tax coverage of all legal and natural persons possessing income and property;
– obligation – tax payment within set deadlines;

– taxation at uniform rates;

– one-time taxation;

– stability – tax rates and procedures for payment shouldn't often change;

– simplicity;

– flexibility – tax system should stimulate development of branches of economy;

– equity – taxpayers should pay equal and unequal sums on the assumption of economic status of a person.

Tax system comprises the following elements:

– taxpayer – legal or natural person;

– items subject to tax – income, property, land;

– bearer of taxes – person whose income is levied by taxes;

– source of taxes – assets from which tax payments are carried out (wages, profit, revenue);

– tax rate – the amount of a tax per unit subject to pay;

– tax relief – tax reduction, withdrawal of certain elements of taxable items from taxation, tax exemption;

– tax payments – types and groups of taxes;

– tax base – a sum which is subject to taxation;

– tax burden – the amount of tax collections.

In economy taxes fulfill different functions. *Fiscal function* provides with cash flows into state budget and non-budget funds. To fulfill this function it necessary to determine the amount of a collected tax because high tax level brings down work incentives and reduces manufacture, the low one – doesn't make it possible to complete the budget and to perform the duties of the government. *Regulating function* supposes that we can influence manufacturing process and its development by means of graded tax rates and reliefs. *Social function* enables government to smooth income differences in society by introduction of progressive taxation.

There are two main concepts of taxation in economics – the concept of received welfare and the concept of inability to pay. According to the first concept taxes are considered to be a method of financing of government expenditure, according to the second concept the size of tax is defined by amount of income.

Kinds of taxes. According to items subject to tax there are *direct* and *indirect* taxed. *Direct* ones are taxes on revenue of legal and natural persons or

on property items (profit, income and wages – income tax, real estate tax, land tax and tax on securities). These taxes can't be put on other people. They are payed by owners.

Indirect taxes are included in price of a good or service and raise it. Indirect taxes comprise Value added tax (*VAD*), sales tax, excise tax and tariff duties.

Due to the aim taxes can be *general* and *specific* (purpose). *General* ones form part of state budget and they are used for non-excludable costs. *Specific* taxes have a purpose.

State and *local* taxes are distinguished. *State* taxes form state budget of a country. *Local* ones are a part of regional and municipal budgets.

As it was stated, the goal of fiscal policy is to choose an optimum level of taxes. Now we will use the graphic method to understand how to choose the optimum tax rate and if it really exists. We will construct the Laffer curve.

There is an interpretation of Laffer's idea in the pic. 12.2. Tax payments to budget (T) are plotted along abscissa axis and marginal tax rate (t) – along ordinate axis. Let income tax rate rise. In proportion to raise of tax rate from zero to 100% yield (Y – tax revenues) at first will grow from zero to maximum (point H corresponding to 50 % tax rate) and then – decrease again to zero.
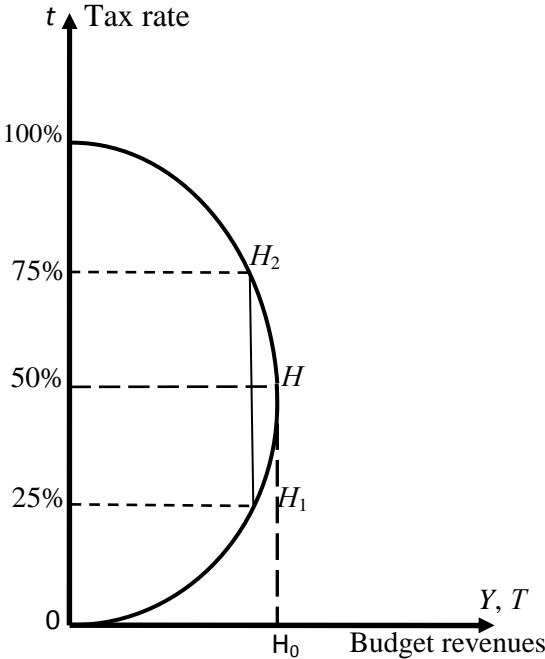
Pic. 12.2. Laffer curve

It is seen in the picture that 100% tax rate will not provide payments to budget as well as zero tax rate. The tax above 50% acts as a confiscatory tool. The answer to a high tax rate will be adequate: legal activities may cease and turn into "black market".

Laffer supposed that if economy was in point H then reduction of tax rates will bring tax revenue closer to point H_0 in the picture, i.e. maximum level of budget revenues. This tendency, according to Laffer, is connected to the fact that lower tax rates raise work incentives, savings, investment what leads to broadening of taxable base and lessening of government social payments. Manipulation of tax rates is reasonable within 25 – 40 per cent.

12.5. Fiscal policy: the essence and kinds

Fiscal policy is government activity in the sphere of taxation, government expenditure and state budget aimed at employment of population, balance of payments equilibrium and growth of non-inflationary *GDP* (*GNP*). It is one of the main instruments of macroeconomic policy by changing if taxation and state expenses.

Its main goals are flattening out economic cycle, provision of sustainable rates of growth, achievement of high employment rate and low inflation.

According to the mechanism of manipulation of economic situation fiscal policy can be *discretionary* and *nondiscretionary,* so called policy of built-in stabilizers. *Discretionary* police presupposes conscious manipulation of taxation and government expenditures by legislative power to influence economic activity, i.e. changes in production volume, employment, price level and economic growth acceleration. These changes are directly connected to adjustments of budget revenues and expenditures by making appropriate law regulations. These measures also influence aggregate demand and aggregate supply. Changes in one of the components of aggregate demand – consumer expenses, investment, government expenditure or net export will have multiplier effect leading to a relevant change in yield.

Nondiscretionary policy presupposes that level of budget revenues and expenditures nay change automatically without any decision made by government but as a result of built-in stabilizers performing. Progressive tax system, system of public transfers, unemployment insurance, etc. are considered as such stabilizers. For example, during the recession revenues fall which automatically reduces tax revenues and remaining revenues of enterprises and population nave a positive impact on economic development.

At a decrease in volume of output not only income but also tax rates may reduce which is accompanied by a decrease in the absolute amount of tax revenues as well as their share in income of society.

System of unemployment benefits and special payments also have countercyclical effect. Thus, increase in employment leads to higher taxes and tax revenues and lower unemployment benefits. With a slump in production there is an increasing number of the unemployed, which reduces aggregate demand, but also increases unemployment benefits. This, in turn, supports consumptionб slows the fall in demand, prevents crises, and helps to stabilize output of national product.

The main drawback of nondiscretionary policy is that it only helps to smooth out cyclical fluctuations but cannot remove them.

Discretionary fiscal policy depending on a phase of business cycle can be stimulating or restrictive.

Stimulating fiscal policy or fiscal expansion (expansion of economic impact) in the short term softening business cycle, helps to overcome economic downturn, supposes increase in government spending and tax cuts. In the long-run tax cuts may stimulate economic growth.

Restraining fiscal policy is intended to limit cyclical recovery and assumes a reduction in government spending, tax increases. In the short term, these measures are aimed at reducing aggregate demand, inflation decrease, reducing costs, and increase in taxes. In the long term restraining policy leads to decline in production and increase in unemployment.

To see if fiscal policy is carried out by government correctly, it is necessary to evaluate its results. For this purpose, often state budget is examined, its content and ratio of its revenue and expenditure. But you cannot always make a clear conclusion as actual budget deficit and surplus can vary due to changes in taxes and government spending, as well as by the volume change of national product or income. To resolve these issues and to determine the measures analysis of the situation of full employment is used and then it is necessary to estimate what would be a deficit or surplus of the state budget.

CHECKLIST

1. Essence of finances, financial and money relations.
2. Structure of financial system.
3. The concept of budget and its functions.
4. What are the principles of budget and budgetary system?
5. What are the main principles of fiscal system?
6. Characterize direct and indirect taxes.
7. Construct the Laffer curve, explain it.
8. What is the essence of impact of tax mechanism on economic processes regulation?
9. What concepts of budget management du you know?
10. The reasons, concept, types and main methods of public debt repayment.
11. Define the essence of fiscal policy, its instruments and built-in stabilizers.
12. Mechanisms of stimulating and restraining fiscal policy.
13. Name main features of fiscal policy of the Republic of Belarus.

Chapter 13. MONEY MARKET.
MONETARY-CREDIT SYSTEM
AND MONETARY-CREDIT POLICY

13.1. The concept of money and its functions.
13.2. Monetary system: the idea, structure and types.
13.3. Money market and its elements.
13.4. Credit and bank systems. Banks and their types.
13.5. Monetary-credit policy. Types of monetary-credit policy.

MAIN CATEGORIES

Money; circulation of money, monetary system; bimetallism; monometallism; monetary market; monetary aggregates; money supply; demand for money; the banking multiplier; monetary base; credit and bank system; national bank; commercial bank; credit, required reserves, loan interest; discount rate; open-market transactions; issue; excess reserves.

13.1. The concept of money and its functions

Money is an amazing invention. It represents the integral element of our daily life. In different centuries, historical epochs in various cultures rice, cheese, furs, stones, metals both other natural substances and jewelry were used as money.

Question of money origin was investigated by theoretical schools and by many generations of human civilization. Origin of money is connected to developments of exchange and the simplest form is exchange of goods for goods, or barter. Barter transactions as an exchange form were limited by quantity of participants, a set of goods offered to an exchange. Barter as a rule excluded a set of intermediate commercial transactions and phenomena. During the process of deepening, division of labor and development of exchange in different regions these difficulties were resolved by a good possessing the greatest possibility to be sold and ability to exchange for other goods satisfying initial needs of consumption. Hence, ability of goods to be purchased and sold has a set of restrictions. They affect people which have no needs, are debarred of possibility to consume owing to legal foundations, transportation problems and too high costs on delivery and service; borders of sales volume, time and terms of realization of certain goods.

Thus, money is a product of historical development having got the greatest capacity to be sold. At an early stage of development of trade in different countries and regions people searched for goods which would meet one requirement – to obtain general recognition of buyers and sellers as a medium of exchange. Gradually precious metals – gold and silver – became an absolutely liquid medium of exchange. These metals became money because they possessed a set of qualities allowing them to carry out a role of absolutely liquid medium of exchange (conservability, high value in small volume, divisibility, rarity in the nature).

Money is a special kind of a specific good used as a universal equivalent by means of which cost of all other goods is expressed. Money carries out a number of functions:

– money as a medium of exchange. In transactions of goods exchange they become intermediary between sellers and buyers of goods and services. The formula of barter exchange $G - G$ turns into the formula of commodity exchange $G - M - G$. Money releases each economic agent from necessity of searching coincidence of interests of participants of purchase and sale. The ability of money to carry out circulation function is caused by such properties as divisibility, difficulty of falsification, capability to be in circulation over a long period of time, value exceeding its weight measurement;

– money as a measure of value. The essence of this function is that "cost of any good can be expressed by means of money", i.e. units in which we measure value of things. As "weight is measured in kg, so value of things is measured in money" and that considerably simplifies exchange transactions. Price and measure of prices are connected to this function. Measure of prices is a way and a medium of measuring and expression of cost of goods in monetary units;

– money serves as an instrument of payment when goods need to be bought or sold on credit, at repayment of liabilities and loans, payment of taxes, rent payments, penalties etc. Bill of credit is the form of long-term obligation made in written under established form. It is a tool that services business transactions. The bill guarantees to so-called holder unconditional right established by law to accept or return monetary debt given by it for a fixed term and under certain conditions;

– sometimes money is used as means of hoarding or a form of savings, store of value. Money allows saving value of wealth in absence of inflation. Monetary form of savings is formed when households don't spend part of income on current consumption postponing for subsequent consumption, for future. Convenience of keeping of savings in the form of money is explained by its absolute liquidity. Liquidity is ability of any asset to turn into means of payment.

– in the world market money acts as international payment and consumer means. US dollar is recognized as a general universal instrument of payment. It spreads to 86% of currency transactions in the world. Collective monetary unit euro.

Hence, money represents a leading asset which carries out main functions. As opposed to other long-term assets (bonds, shares, cheques, etc.), money doesn't bring income to its owner. Absence of income is a payment for high liquidity of money.

As it was already marked, originally commodity money was used as money and also was sold and were bought as usual goods. Till the end of XIX century the most widespread commodity money was gold and silver coins.

The epoch of so-called modern money replaced the epoch of commodity money. It was called symbolic money. Paper money was chosen as a medium of exchange – they are convenient for keeping and carrying. Its value was supported by protection frames on legislative basis.

Further development of exchange trade led to emergence of credit money. It is a form of money generated by development of credit relations. Credit money is banknotes of central banks and bank deposits, also liabilities of physical persons, firms and banks which can't be changed for gold.

Components of monetary aggregates in the Republic of Belarus are presented in the picture. 13.1.
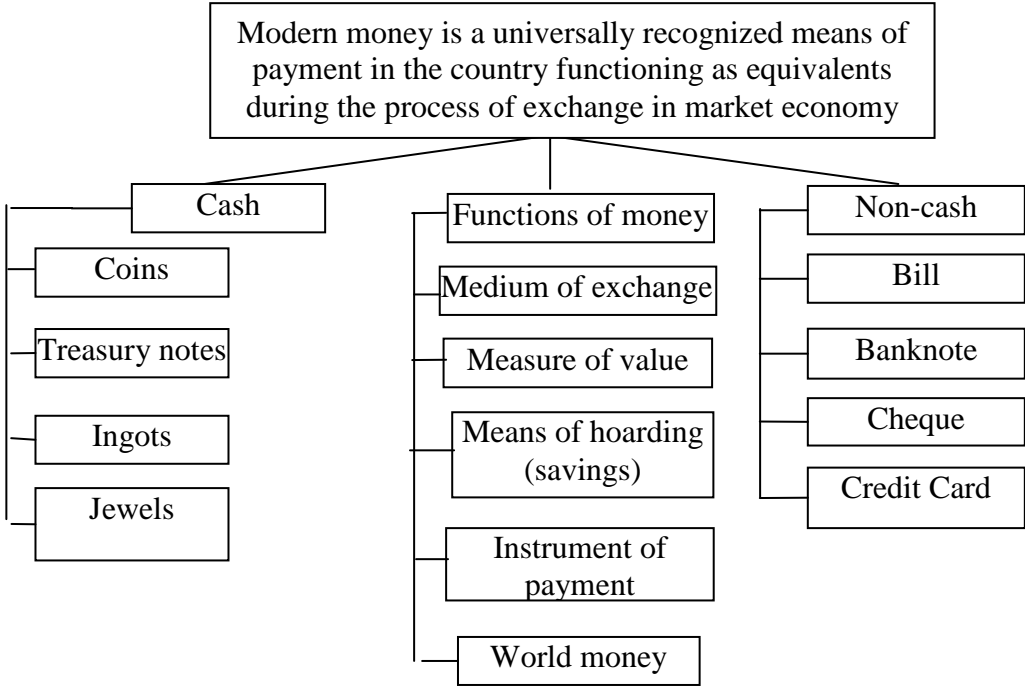
Pic. 13.1. Components of monetary aggregates and function of money

Modern money is represented by monetary established by law (decree) of authorities and proclaimed as obligatory for reception at an exchange and as a lawful way of payment of taxes.

It is possible to consider the majority of money as bank money in each country. It takes form of deposits in banks or other financial institutions.

Money can be divided into cash and non-cash. Cash money serves cash-in-hand flow. It is represented by coins, paper money, bullions and jewels, i.e. cash assets in their first-born form.

Non-cash money is money resources on bank accounts used for payment, clearing by means of transfers from one account to another. Non-cash money includes bills, banknotes, cheques, plastic cards.

13.2. Monetary system: the idea, structure and types

Carrying out its functions money continuously moves or circulates. Form of organization of monetary circulation in the country developed historically and fixed legislatively forms monetary system. Basic elements of monetary system are:
–   national monetary unit;
–   types of banknotes having lawful payment force;
–   order of issue and circulation of money;
–   forms of a non-cash and payment turn;
–   measure of prices;
–   state institutes which regulate monetary circulation;
–   order of exchange of national currency for foreign and exchange rate fixed by government.

Depending on kind of money circulation we can distinguish two types of monetary systems:
–   system of coin circulation;
–   system of paper and credit money circulation.

In the system of coin circulation two versions were generated: bimetallism and monometallism. Historically system of coin circulation emerged first. In the majority of countries in Europe system of silver monometallism was established. In certain countries it existed till the middle of the XIX century. But then monometallism was replaced by bimetallism (*bis* – twice). Two metals – gold and silver – began to carry out the role of money. Two kinds of bimetallism exist: system of parallel currency and system of double currency. Crucial distinction between them is that in the first case value parity between gold and

silver coins formed spontaneously according to market cost of metals. At the system of double currency certain value parity between two metals was established by government. It was an obligatory requirement at stamping of coins and their acceptance in out transactions of purchase and sale.

Gradually silver was driven out from circulation and gold in the majority of countries began to carry out a role of money. Gold monometallism existed in three versions in the basis of which was gold standard as a form of organization of monetary and currency relations. Gold standard which has existed in many countries until World War I was characterized by free circulation of gold coins and gold performed all functions of money. Free export and import of gold from one country to another was supposed. In Russia according to currency reform in 1895-1897 monetary unit was the gold coin "gold rouble" with the gold maintenance of 0,774 gram of pure gold. Gold coins circulated as "imperials", "semi imperials", and also 10 and 5 rouble coins. The most known gold coins of other countries are English sovereigns, American eagles (10 and 20 dollars), French napoleons (FF20), Swiss vreneli (FS10, FS20).

At the beginning of the First World War exchange of banknotes for gold was stopped, gold export was forbidden, it was extracted from circulation in all countries except America.

After the First World War some countries of Europe introduced gold bullion standard. Banknotes exchanged for gold ingots if sums of money established legislatively were paid. Countries which possessed small stocks of gold in the twenties of the last century introduced gold-exchange standard. Credit money and banknotes could be changed for foreign currency (foreign bill). Foreign bill represented the international means of payment in the form of currencies of other countries.

Since 1930-s monetary system based on unchangeable credit money started functioning. Gold was withdrawn from internal circulation of all countries. It was possible to exchange banknotes for gold for foreign central banks till 1971 only in the United States of America.

There were established in monetary systems of all countries:
– exchange of banknotes on gold;
– emission of cash and non-cash money on the basis of credit operations;
– prevalence of a non-cash turn;
– strengthening of state regulation of monetary circulation. [5, p. 188]

As a result of world economic crisis 1929 – 1933 system of metallic currency ceased to exist and system of unchangeable paper and credit money was set in all countries. Paper money (treasury notes) and credit money (bank

notes) remained legitimate means of payment only in Belgium and the USA. Treasury notes are issued by the Ministry of Finance for financing of state expenditures, bank notes are issued by central bank.

Exclusive right of emission and withdrawal of money from circulation and monetary issue belongs to national bank. Non-cash money is put into circulation by commercial banks in the course of credit operations. Withdrawal of non-cash money passes at returning of credits and cash – at surrender by commercial banks of monetary cash to payment processing centres of a central bank.

Organization of cash and non-cash monetary circulation can be distinguished. Cash flow is regulated by National bank by of:
– order of cash operations and work of banks with cash assets;
– order of culling and annihilation of damaged, dilapidated banknotes;
– rules of keeping, collection and transportation of cash assets.
Central bank determines mechanism of non-cash circulation:
– rules of bank remittances of money;
– standards of payment instrument;
– forms of clearing settlements.
Thus, modern monetary system is characterized by:
– loss of monetary functions by precious metals such as gold and silver;
– reduction of their use as money resources in connection with expansion of credit money (bank notes) and non-cash money application, etc.
– demonetization of gold, its exclusion from internal and external circulation.
– transition to circulation of paper and credit money;
– emission of money for state securities and increase of official gold currency reserves pledged collateral;
– development of non-cash circulation and reduction of cash one;
– distribution of monetary forms facilitating accounts (checks, plastic cards);
– regulation of money circulation with state instruments.

13.3. Money market and its elements

Money market is one of types of market of purchase and sale of a specific good – money. Elements of money market are demand for money, money supply and price of money. Agents of money market are banks, broker and dealer firms and nonbank financial intermediaries.

Supply of money in money market is total amount of money which is available in the country during certain period (for example, a year). It is not only

cash but deposits of all kinds, short-term state securities. To calculate quantity of money macroeconomists use the term "monetary aggregates". Monetary aggregates reflect kinds of money and money resources which differ from each other by degree of liquidity, i.e. possibility to turn into cash quickly (for example, from bank deposits or securities into cash or non-cash means of payment). Monetary aggregates M_1, M_2, M_3, and M4 are illustrated in the pic. 13.2. [5, 17, p. 190, 174]

Among authors of course books in the field of economics there is no a uniform position about structure of monetary aggregates. N. M. Zubko, M.I. Plotnitsky and L.N. Davydenko pick out aggregates M_1, M_2, M_3, M_4 or L; E.L. Lutohina picks out M_0, M_1, M_2, M_3, M_4, M_5, L; P. Samuelson and W. Nordhaus focus their attention on main measuring instruments of money flow – M_1 and M_2; B.A. Raizberg and other authors consider that aggregates M_0 (cash), M_1 (cash, cheques, nonfixed deposits), M_2 (cash, checks, nonfixed deposits and small time deposits), M_3 (cash, checks, any deposits), L (cash, checks, deposits and securities) are most commonly used. Analysis shows that monetary aggregates are of different structure in different countries. Precisely they characterize indicators of structure of currency mix and supply of money.

Amount of money in circulation	
M_1	Includes cash paper money and coins, money which is on hands of population and in cash desks of business entities and also money in deposits at call of population, business entities and municipal control bodies.
M_2	Includes M_1 plus checkless savings accounts, time deposits of population, business entities, local authorities up to 100 thousand dollars. Aggregate M_2 includes money as medium of exchange and also that part of saved money which is easy for involving in circulation.
M_3	Includes M_2 plus big time deposits (targeted at capital investment and money of population, business entities, municipal control bodies in the form of securities.) It is called "quasi-money".
M_4	Includes M_3 plus deposits of population, business entities and municipal control bodies in foreign currency, easily sold assets such as short-term state securities. They are called liquid because they can be quickly transformed into cash.

Pic. 13.2. Monetary aggregates

In our opinion, the optimal variant of structure are units M_0, M_1, M_2, M_3, M_4, M_5 and L as they are more diversified and reflect content of each aggregate more objectively.

At analysis of macroeconomic flows of money circulation aggregates M_1 and M_2 or M_0 as a part of aggregate M_1 are often used. Narrowly money supply according to M_1 consists of cash in the form of metal and paper money in circulation and deposits in commercial banks. Metal and paper money is liabilities of government and state agents.

Metal money forms a small part of money supply in developed countries, about 2-3 % of total supply. It is convenient to the extent that it allows concluding any kinds of small purchases. But it is symbolic money. Its real cost, for example, cost of a metal coin (ingot) is insignificant. It is made to prevent plunder, meltdown in larger, raw ingots for the purpose of favorable sale. If value of metal exceeds value of coins as money they will stop functioning as medium of exchange.

Paper money is about a quarter of money supply in many countries. Up to 90 % of all transactions are carried out using cheques. Check settlements are convenient, safe, plunder or loss of money are impossible, it is more convenient to draw a check than to transport, send, recalculate, store money. Consequently, clearing settlements are a basic form of settlements in many countries.

Broader money supply includes aggregate M_2 which besides M_1 includes non-checkable bank accounts and also small, not exceeding 100 thousand dollars fixed deposits. Accounts and fixed deposits form "quasi-money" or "near money" – non-cash money resources in time and savings deposits in commercial banks and short-term state securities. Broader money supply is represented by aggregates M_3, M_4 and others depending on presence of this or that structure of the aggregates in different countries.

Money supply depends on a policy of National bank, activity of commercial banks, and behavior of economic agents. National bank regulates activity of banking system: carries out emission – issue of bank notes into circulation. Currency emission means not only printing of bank notes but also an increase in all supply of cash and non-cash money in circulation.

National bank supervises money supply influencing monetary base. Monetary base (B) is a sum of cash out of banking system (C) and reserves of commercial banks (R)

$$B = C + R. \tag{13.1}$$

Monetary base is less than supply of money because commercial banks can create new money. Let's study the role of commercial banks in a change in money supply in economy. Banks carry out passive banking transactions if they attract clients' money for deposits but don't provide loans; monetary resources attracted for deposits become absolute bank reserves. However the purpose of commercial banks is to carry out active monetary policy by means of credit granting. By using attracted deposits commercial banks create credit money. At the same time national bank requires that commercial banks keep part of their deposits as required reserves in the form of cash in hand or on their accounts. Therefore the National Bank determines reserve requirements for commercial banks calculated as ratio of reserves to deposits.

Let's suppose that initial deposit is equal to 100 mln. roubles.

Additional money supply as a result of granting loans reserve requirement of 10% is equal to:

1^{st} *Bank Credit = (RUB 100 mln. $\cdot (1 - 0,1)$) = RUB 90 000 000;*
2^{nd} *Bank Credit = (RUB 100 mln. $\cdot (1 - 0,1))^2$ = RUB 81 000 000;*
3^{rd} *Bank Credit = (RUB 100 mln. $\cdot (1 - 0,1))^3$ = RUB 72 900 000;*
4^{th} *Bank Credit = (RUB 100 mln. $\cdot (1 - 0,1))4$ = RUB 65 610 000 and etc.*
Total money supply is equal to:

$$100\,mln.\left[1+(1-0,1)+(1-0,1)^2+(1-0,1)^3+(1-0,1)^4+...\right]=$$

$$=\frac{1}{0,1}\cdot 100\ mln.=1\,000\,000\,000\ roubles.$$

As a result of the new deposit additional money supply counted on the basis of deposit or bank multiplier can be calculated with the formula:

$$m_d = \frac{1}{rr}\cdot D, \qquad (13.2)$$

where m_d – bank multiplier; rr –reserve requirement; D – initial deposit.

The total amount of money irrespective of market can be represented as a vertical line S_m starting at a point that corresponds to total amount of money available in country.

Demand for money is based on functions fulfilled by money. First of all it is based on the function of money as a medium of exchange and as a store of value. Fulfillment of the first function is based on the fact that people need

for this purpose is called operational transactions demand for money. Its amount is determined by nominal value of produced goods and services. The higher the total monetary value of goods and services in economy, the more money is required for transactions.

Pic. 13.3. The demand for money

At the present day different interpretations of the theory of demand for money exist. The most common is the concept of economics of I. Fisher, A.C. Pigou, L. Harris. I. Fisher introduced the following equation:

$$MV = PQ, \tag{13.3}$$

where M – quantity of money in circulation; V – velocity of money in circulation; P –weighted average price level; Q – supply of goods and services in kind.

This equation states that the quantity of money can be expressed using the next formula:

$$M = \frac{PQ}{V}, \tag{13.4}$$

i.e. quantity of money in circulation *(M)* is directly-proportional to volume of production or GDP *(PQ)* and inversely proportional to velocity of money *(V)*.

In the neoclassical theory equation $MV = PQ$ is called the quanitive theory of money.

The meaning of the function of money as a store of value is that people can hold their financial assets in various forms: in the form of bonds, equities or currency. Demand for money in this case depends on the lending interest rate and is known as speculative.

Types of demand for money are represented in the picture 13.4. [17, p. 175]: picture *(a)* describes operational demand which does not depend on interest rate, *(b)* – speculative demand depending on interest rate and *(c)* – total demand for money.

Picture 13.5 [17, p. 176] represents money supply S_m as a vertical line, demand for money D_m – sloping line.

Interaction of supply and demand or money market is represented by combining of the curves S_m and D_m.
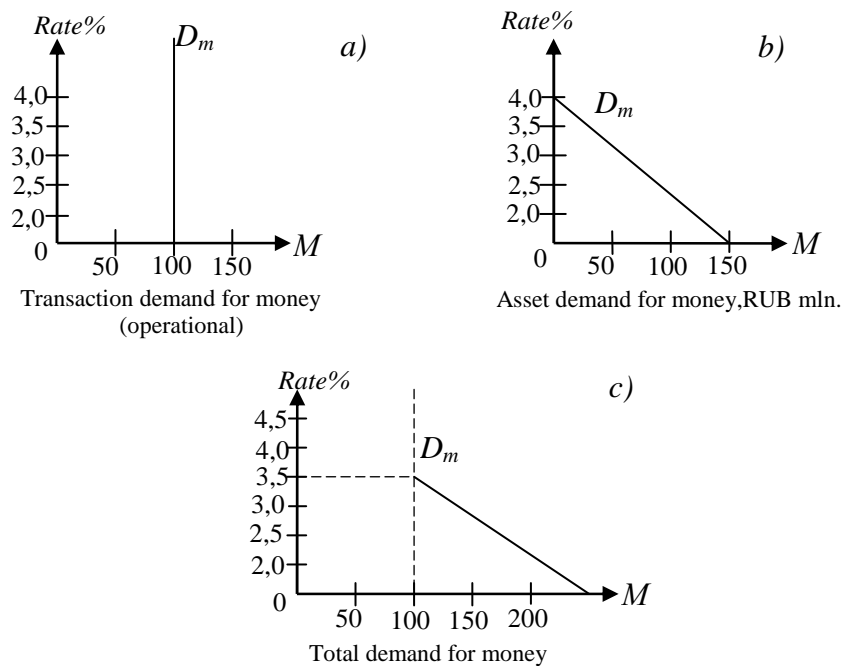
Pic. 13.4. Types of demand for money
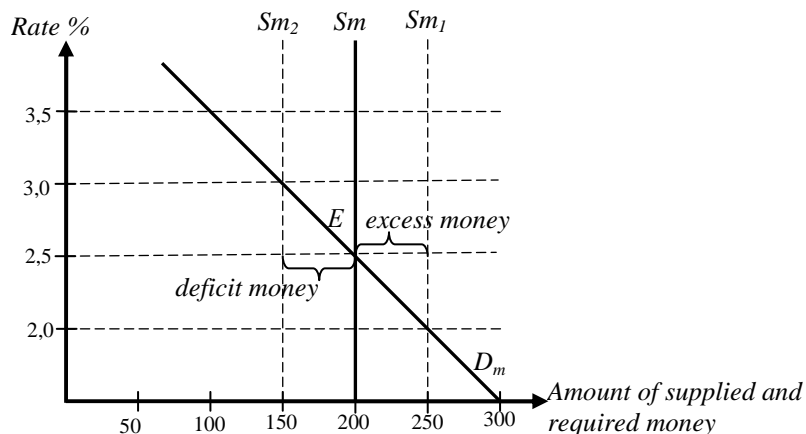
Pic. 13.5. Equilibrium in money market

S_m is supply of money of certain amount that does not depend on lending interest rate; D_m is line of demand for money.

Equilibrium in money market is settled at intersection point *(E)* of lines of supply and demand for money. The point of intersection determines equilibrium interest rate, i.e. cost of money. Money market equilibrium can be distorted due to changes in both supply and demand for money. Interest rate restores money market in response to these changes.

13.4. Credit and bank systems. Banks and their types

Credit system is a set of credit relationships, a form of crediting and credit institutions. Credit system of a country consists of national and commercial banks, specialized credit and financial institutions. Currently credit system of developed countries usually consists of three levels identified by role specialization of financial and credit institutions. The National Bank occupies the highest level and a special place in the system. Joint-stock commercial banks form the second level. Specialized institutions form the third level. Both national bank and commercial banks form banking system in which they operate as a single financial and economic mechanism. Bank (from Italian *banko* – bench) is a financial organization or institution that produces various types of transactions with money and securities and provides financial services to government, enterprises and citizens. Central bank is called "bank of banks". It is independent from government in its activities in the Republic of Belarus but is accountable to Parliament and acts on the basis of the Law "About the National Bank". The main objectives of the National Bank are protection and stabilization of the ruble, its purchasing power and exchange rate against foreign currencies, development and strengthening of the banking system of the country.

The National Bank controls emission, credit and settlement activities and fulfils the following main functions:
– develops and carries out common monetary policy;
– issues and withdraws currency from circulation;
– provides keeping of gold and currency reserves of the country;
– sets discount (refinancing) rate whereby grants credits to commercial banks;
– performs credit and settlement operations for government;
– monitors activities of credit institutions;
– carries out exchange control and transactions;
– sets reserve requirements for commercial banks;
– gives licenses and registers banks and specialized financial institutions and fulfills many other functions.

The exceptional role of national bank in credit system is manifested in the fact that it does not aim at profit maximization and does not compete in business sector with commercial banks.

The basis of credit and banking systems is joint-stock commercial banks. They perform the following functions:
– accept and keep depositors' funds;
– give out funds from accounts;

– grant credits at their own risk;
– accumulate available cash assets;
– carry out purchase of securities;
– open and maintain accounts of natural and legal persons and etc.

Commercial banks favor acceleration of money turnover and reduce circulation costs. They are one of major institutions of government economic regulation and implementation of monetary policy. They provide direct financial services for enterprises, organizations and individuals.

Commercial banks can be both universal and specialized. Universal banks serve all customers regardless of industry. They perform following operations: credit, depositary, fund exchange, settlement, confidential. By virtue of diversification of risk universal banks are the most stable and this factor allows them to drive out specialized banks. Specialized banks serve a particular industry, business, a group of clients or perform a small number of transactions. Investment, mortgage and cooperative banks refer to this kind of banks.

Nonbank financial institutions include nonbank thrift institutions, pension funds, insurance, investment, leasing companies and credit unions. Companies, funds, unions and other special institutions form and accumulate available cash flow for granting purpose credits, loans and etc.

Necessity for credit relations occurred when some individuals had free cash while others urgently needed it. System of economic relations was created gradually in the process of assignment of funds for temporary use on conditions of obligatory repayment and interest payment. It was called credit. Credit (from lat. *credit* – to believe) means a "loan" in the form of money or goods provided by one individual (lender) to another (borrower) under the terms of payment of a certain percentage for the use. There are several types of credits:
– state credit when government acts as a borrower and National Bank acts as a lender;
– banking credit provided by banks in the monetary form to legal and natural persons;
– consumer credit provided to public in the form of durable goods loans. Lombard loans secured on property or jewelry for a certain period are regarded as a consumer credit as well. In the case if the loan is not repaid in time, valuables delivered at the pawnbroker's are sold and the proceeds cover the debt.
– mortgage credit secured on property, apartments being purchased or built;
– international credit issued by selling side to the side which buys in the form of prepayment for the purchase of goods of the lender.

– commercial credit provided by natural and legal persons to each other on debt or in the form of commodities by sellers on the installment plan to customers;

– leasing is a credit intended to provide equipment or motor vehicle lease with reservation of right of ownership in favor of leasing holder till complete redemption.

Depending on the time period there are short term and long term credits as well as credits against security.

Credit provides transformation of money capital into the loan one and expresses money relations between lenders and borrowers. In productive-economic relations credit is necessary, first of all, as a flexible mechanism of money capital movement from one sector to another. Beyond that, credit is necessary to maintain the steadiness of circulation of funds of business entities, support the process of flow and realization of produced goods, continue the reproduction process, increase capacity of enterprises and manufacturing departments, construct new industrial, social, infrastructural facilities and apartments. Thus, loan affects formation of structures of social reproduction, the most important proportion of economy, relation between funds of compensation, savings and consumption, ratio of the growth rate and development of productive and nonproductive spheres.

Summarizing, it may be stated that credit performs the following functions: redistribution of money capital, replacement of cash by credit money based on non-cash transactions, acceleration of capital concentration and production development, ensuring its continuity and efficiency, regulation of financial and monetary relations at the macro and micro levels.

The basic principles of lending are:

– repayment of credit means that funds borrowed by a business entity after the completion of all transactions must be repaid.

– principle of definite term means credit reimbursement within certain time limits prescribed by agreement.

– purpose oriented credit disbursement means that the funds granted can be spent only for purposes specified in the contract or business plan.

– differentiated approach means various lending terms to a potential borrower.

– principle of availability against interest payments means that bank collects from borrower a certain interest rate for the use of credit resources.

Interest rate is a payment made by borrower to lender for a credit use.

Interest rate fulfills the following functions:

– redistribution of share of profits of legal entities and income of individuals;

– regulation of production and money circulation by means of allocation of loan capital at industrial, inter-industrial and international levels;

– anti-inflationary protection of money savings of banks' customers at stage of instability and disturbance of macroeconomic equilibrium.

The value of interest rates depends on the following factors:

– discount rate;

– value of loan granted;

– inflation rate;

– amount of credit resources;

– cyclical fluctuations in economic development.

13.5. Monetary-credit policy. Types of monetary-credit policy

Monetary policy is a government strategy and motivated actions in the field of money circulation and credit in order to ensure stable and productive economic performance and to regulate monetary system.

The objectives of monetary policy are classified as final and intermediate. The underlying purpose is to help economy in attaining overall production characterized by:

– economic growth;

– full employment of able-bodied population;

– stability of price level;

– balance of payments steadiness.

The most important intermediate objectives still are deliberate policy of maintenance of money stock, interest rate and exchange rate. For example, if business entities have insufficient free cash, then implementation of commercial deals, domestic investments and social functions becomes more difficult, on the other hand excess of money causes monetary depreciation and decline in living standards, generates inflation. Consequently, in the first case, monetary policy should be oriented at expansion of lending operations of banks, while in the second – at their reduction, that is a transition to a tough lending policy.

Direct and indirect monetary instruments are distinguished. The direct ones include regulation of interest rates and limit lending.

The indirect monetary instruments are:

– change in required reserves ratio;

– trend of discount rate;

– open market operations.

Monetary system control is carried out by National Bank with a help of indirect instruments. National Bank sets required reserves ratio in percentage of deposit volumes.

Required reserves do not fulfill a function of deposit insurance but serve for control and guiding function performance of National Bank and maintenance of interbank payments.

Fulfillment of these functions by National Bank allows accumulating both required and excess reserves for unexpected increase of demand for liquid funds. The higher required reserves ratio is set by national bank, the lower the portion of funds may be used by commercial banks for active operations.

Another instrument of monetary regulation is changes of discount rate. National bank grants credits to commercial banks at this rate. In the case if discount rate rises, the volume of borrowing from national bank is reduced and lending operations of commercial banks decrease as well. Besides, the tighter credit is, the higher interest rate is set by commercial banks. Money supply is reduced in economy, interest rates of commercial banks increase, demand for them slows down. That in turn reduces amount of investment and government expenditures.

Open market operations with securities are the third instrument of money supply control. It assumes purchase and sale of government securities by national bank. When national bank acquires securities from commercial banks it increases amount of money at reserve bank account. If bank sells securities, the backward process takes place. Affecting monetary base through open market operations, national bank regulates money supply in economy. There are flexible, tight and elastic monetary policies.

Let's suppose the national bank fixes lending rate at the level r_0, and carries out a flexible monetary policy. Thus it tends to keep it, changing the money supply M_S. Initially, the money market is in equilibrium at the point E_1. If demand for money increases, that inevitably leads to increase of interest rates. In order to keep it at r_0 level the national bank is forced to
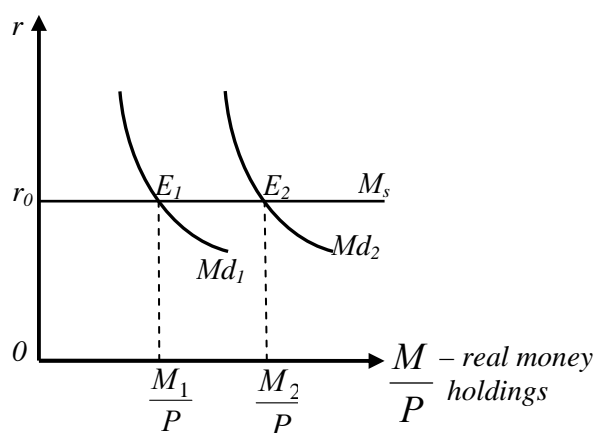
Pic. 13.6. Flexible monetary policy

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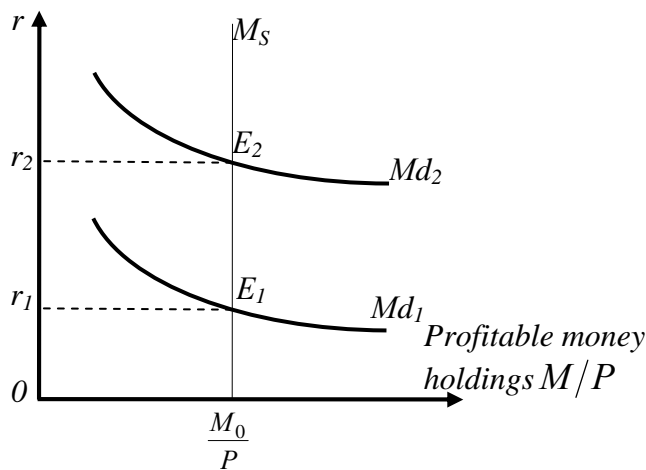
Pic. 13.7. Tough monetary policy

increase money supply from $\dfrac{M_1}{P}$ to $\dfrac{M_2}{P}$. As practice shows, fixing of lending rate is justified only in the short run (pic. 13.6.).

Now let's suppose that the national bank has selected money supply as the object of control. Based on a situation and condition of money market, it fixes money supply at $\dfrac{M_0}{P}$ level. Then the money supply curve M_S looks like a vertical line in the pic. 13.7. When demand for money is Md_1 the market is in equilibrium at the point E_1 at the interest rate (r_1). Growth of demand for money from Md_1 up to Md_2 leads to disequilibrium and increase of interest rate at the unchanged supply of money.
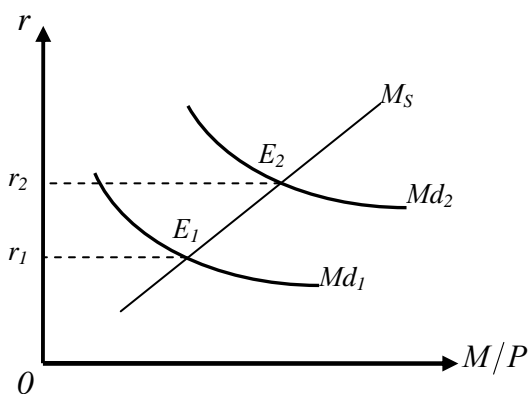
Pic. 13.8. Resilient monetary policy

In the long run interest rate fixing may lead to inflation. The national bank is unable to maintain money supply unchanged. So it follows resilient monetary policy. It is based on the fact that the national bank allows some expansion of money supply, but regulates its growth rates and corrects interest rate level (pic. 13.8.).

There are two types of monetary policy, "tight money policy" and the "easy money policy". "Tight money policy" is carried out under conditions of inflation (restrictive credit policy (from lat. restrictio – restriction). It is directed at tightening and scope limitation of credit operations of commercial banks, i.e., at decrease in money supply. The national bank conducts operations of government securities sale, increases required reserves ratio, raises the discount rate. In case of insufficiency of these measures it reduces flow of credit, limits deposits and cuts the range of consumer credit. With a help of these measures bank carries out the anti-inflationary adjustment.

government securities sale, increases required reserves ratio, raises the discount rate. In case of insufficiency of these measures it reduces flow of credit, limits deposits and cuts the range of consumer credit. With a help of these measures bank carries out the anti-inflationary adjustment.

The main directions of monetary policy in the Republic of Belarus are determined by implementation of sustainable development of the national economy and social welfare. The aim is to promote all economy sectors, assure internal and external stability of national currency and expand the resource base of banks. Particular attention is given to arrangement of conditions of deposit insurance.

CHECKLIST

1. The concept and evolution of money.
2. What is the system of money circulation and its types?
3. Behavior characteristic of the money market. Demand and supply of money.
4. What are the main instruments used in the performance of monetary policy?
5. What institutions make up the structure of bank-credit system?
6. What are the objectives of monetary policy referred to the activity of national bank?
7. The main functions performed by a banking credit.
8. Goals and objectives of the policy of "tight" and "easy" money.
9. What features does the monetary policy have under conditions of the occurring phenomena of financial crisis?

Chapter 14. MACROECONOMIC EQUILIBRIUM OF COMMODITY AND MONEY MARKETS: THE IS–LM MODEL

14.1. Real market equilibrium. Construction of the *IS* line.
14.2. Money market equilibrium. Construction of the *LM* line.
14.3. Joint equilibrium of real and monetary markets (*IS – LM*).
14.4. The coordination of fiscal and monetary-credit policy. Use of the *IS – LM* model for the analysis of consequences of stabilization policy.

MAIN CATEGORIES

Real market equilibrium. Curve IS. Shifts of the curve IS. Money market equilibrium. Curve LM. Shifts of the curve LM. Interaction of real and monetary sectors of economy. The IS – LM model.

14. 1. Real market equilibrium. Construction of the *IS* line

The *IS – LM* model represents a model of joint equilibrium of real and money markets. It is a model of Keynesian type (demand-side); it describes economy in the short-term period and forms a basis of modern theory of aggregate demand.

The *IS – LM* model has been developed by English economist John Hicks in 1937 in the article "Mr. Keynes and the classics" and was widely adopted after that in the book of American economist Hansen "Monetary theory and fiscal policy" (that is why model sometimes is named as the model of Hicks-Hansen).

The *IS – LM* model **allows**: 1) to show interrelation and interdependence of commodity and money markets; 2) to reveal the factors influencing an establishment of equilibrium as on each of these markets separately, and in conditions of their simultaneous balance; 3) to consider influence of change of balance in these markets on economy.

The IS model (investment – savings) – an organic component of the *IS – LM* model. It reflects interrelation between savings, investments, level of percent and income level (pic. 14.1). Using this model it is possible to understand balance conditions in the real market and in a commodity market because equality of *I* and *S* is a condition of this equilibrium. Dependence between investment and savings is a straight line. If savings are higher in national income, there is bigger possibility for credit system to direct them to investment projects.

The rate of market loan interest represents the price of extra means used by investors for purchase of investment goods, and households for purchase of consumer goods of long using.

Change of rate of interest influences investment expenses. Occupying means for purchase of investment goods, firms try to get profit. Therefore they invest means in equipment and industrial constructions (get real capital) until the norm of return from additional unit of the capital exceeds cost of extra means for purchase of this additional unit, i.e. interest rate. Any increase of interest rate reduces efficiency of investment projects. Therefore, if interest rate is so high that expected rate of return below this rate, firm refuses realization of such investment project and size of investment expenses will be reduced. Hence, there is an inverse negative relationship between size of investment expenses and interest rate. The lower interest rate is, the lower desire to invest is. Function of investments can be written down:

$$I = I(\underline{r}), \tag{14.1}$$

Or, if it is linear relation

$$I = \underline{I} - dr, \tag{14.2}$$

where I – independent investments, r – interest rate, d –factor reflecting sensitivity of investment expenses to interest rate and showing size of investment expenses. The factor d> 0 and that is why before it in the formula there is a sign "minus", the curve has a negative inclination.

Construction of the curve IS is characterized by the pic. 14.1.

There is inverse dependence between investments and the market rate of percent. [16, 327] Let us start analysis from quadrant I.

We can see from the picture that when the rate (r) is higher, there are fewer investments I. Investments I_0 correspond interest rate r_0, I_1 – to the r_1.

In quadrant II bisector IS is starting from the orogon of coordinates, reflects equality $I=S$. Equality of investments to savings allows to assert that $I_0=S_0$

In quadrant III presented curve (S) characterizes the schedule of savings which volume depends on real income (Y). The income Y_0 corresponds to the level S_0. Knowing income parameters (Y_0) and interest rate (r_0), having restored perpendicular to axes of ordinates, we find point IS_0 in quadrant IV.

If the interest rate rises from r_0 to r_1 it will lead to reduction of investments to I_1 and to decrease in economic activity and income to Y_1. By analogy we find the other point in quadrant IV - IS_1. Having found points IS_1 and IS_0 it is possible to spend curve IS.
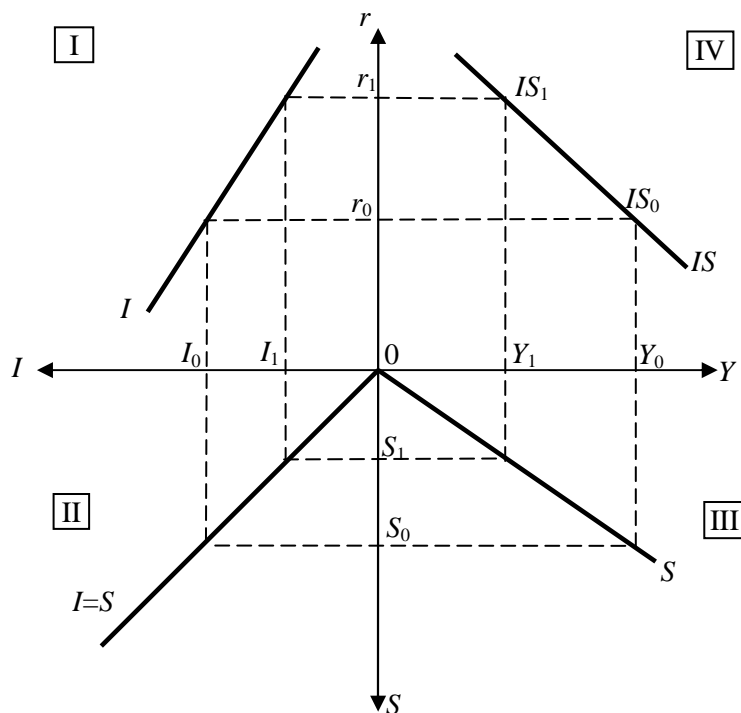
Pic. 14.1. Equilibrium model in the commodity market
"Investments – savings" (*IS*)

The curve *IS* shows all possible combinations between interest rate (*r*) and income (*Y*). Any point in the curve reflects equilibrium level of savings and investment or balanced market. It also confirms that a balance condition in the real market is equality of investments and savings.

The curve *IS* has a negative inclination, its volume of output counterbalancing a commodity market, submits with interest rate growth. Higher level of interest rate causes reduction of investment and consumer expenses or aggregate demand that conducts to lower level of equilibrium income. Movement along the curve (*IS*) (pic. 14.2) shows that income level should change when there is a change of level of interest rate. After that equilibrium in the market can be saved.
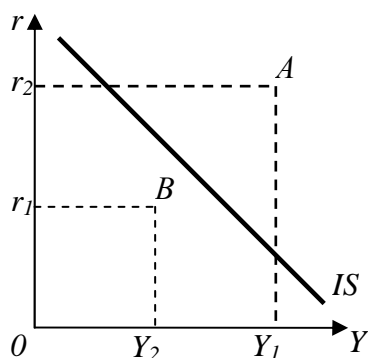
Pic. 14. 2. The curve *IS*

The curve *IS* splits economic space into two areas. In all points lying above, volume of income is bigger than planned expenses because supply of goods is bigger than demand for them. At the point A total output (Y_1) is bigger than the equilibrium one. This surplus of goods conducts to unplanned accumulation of stocks. The volume of output as a result decreases, and economy moves to equilibrium condition *IS*. At all points

below the curve *IS* deficit in the market can be observed. For example, at point "*B*" volume of total output (*Y₂*) is below equilibrium and increasing aggregate demand assumes growth of volume of output and displacement in a direction to the curve *IS*.

Shifts of the curve *IS* are caused by changes of any component of expenses: consumer (C), investment (I), government spending (G) and tax (T). The curve *IS* moves from position IS_1 to position IS_2 (pic. 14.3.) as a result of increase: consumer expenses, planned investments (which are not connected with interest rate change), the government expenditure and decrease in taxes.
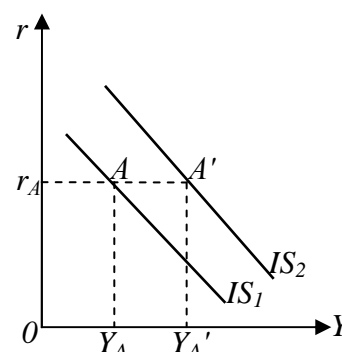
Pic. 14.3. Shift of the curve *IS*

Construction of curve *I=S* carries great importance for understanding of macroeconomic equilibrium. However for the complete picture, it is necessary to know balance conditions in the monetary market for constructing the model *IS-LM*

14.2. Money market equilibrium. Construction of the *LM* line

Equilibrium of the money market is defined by the curve *LM* (liquidity preference – money supply) which shows all possible parities of *Y* and *r* at which demand for money is equal to supply of money. In this case money represents the monetary unit M_1 including cash and means on current accounts (demand deposits – check accounts or accounts poste restante) which at any moment can be transformed into cash easily.

The Keynesian theory of preference of liquidity underlies construction of the curve *LM*. This theory explains how supply and demand correlation and parity of real money balances define interest rate. Real money balances represent nominal stocks corrected on change of a price level and are equal to *M/P*.

According to the theory of preference of liquidity, supply of real money balances $(M/P)^S$ is fixed and defined by national bank. Within the limits of the given model supply of money will make

$$Ms=C+D, \qquad (14.3)$$

where *C* – cash; *D* – assets on current accounts.

As supply of money is exogenous and doesn't depend on interest rate.

Graphically it can be presented by vertical curve M_S (pic. 14.4), corresponding to the real quantity of money set in economy.
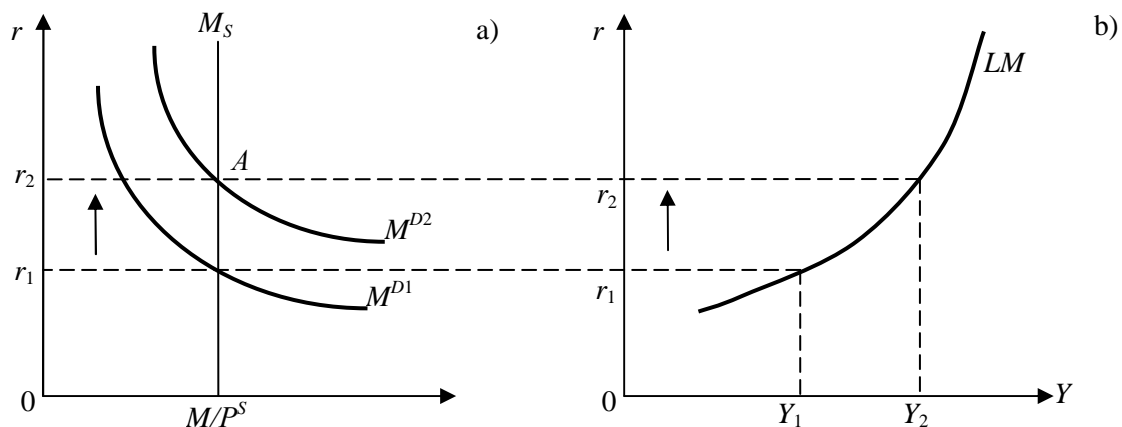
Pic. 14.4. Graphic conclusion of a curve *LM*

Demand for real monetary stocks M_D includes all kinds of demand for money, namely: 1) transactional demand for money representing demand for money which is used for purchase of goods and services (demand for money for fulfillment of transactions, i.e. for transaction), following from function of money as currencies, its properties of absolute liquidity and positively depending on income level; 2) demand for money from motive of precaution, also positively depending on income level; 3) speculative demand for money, resulting from function of money as value stock, i.e. as financial active.

The higher interest rate is the less money is expedient to have in the form of cash. If interest rate is low, it attracts people and they start selling bonds, increasing the amount of cash. (The theory of money of Keynes carries the name "the liquidity preference theory"). Thus, a person prefers to have so-called "portfolio" of financial assets which comprises both cash and securities. The portfolio structure changes depending on dynamics of interest rate.

The curve of aggregate demand for money has negative inclination which is caused by its inverse relationship with interest rate.

Crossing of demand curve with supply curve gives the rate r_1 which counterbalances the market of money at a given levels of income Y_1 (pic. 14.4, b). If income increases to level Y_2 the curve of demand for money moves to the right (upwards) (pic. 14.4), the higher equilibrium interest rate r_2 corresponds to the higher level of income. Set of all pairs (Y_r) which counterbalance the market of money, would give the curve *LM* (pic. 14.4, b).

Thus, equilibrium of money market is established at a cross point A of a curve of demand with a curve of supply. The economic mechanism of establishment of this equilibrium is also explained by the Keynesian theory of

preference of liquidity which is based on negative correlation between interest rate and a bond price.

Movement of interest rate to equilibrium occurs because people start changing structure of portfolio of their actives. (At the equilibrium interest rate parity of monetary and non-monetary actives in a portfolio is optimum). It is lead by both change of demand for money, and change of supply of money. If demand for money increases, and supply remains without a change, interest rate raises.

Interest rate increases even when national bank reduces supply of money. Reduction of monetary weight forces people to sell bonds. If demand for money decreases, or the national bank increases supply of money interest rate falls.

However not only interest rate size r influences size of demand for real money balances, influencing balance of monetary market. Level of income Y also influences demand for money. When income is high, expenses are high and people make more transactions, buying more goods and services and increasing transactional demand for money.

In the case of infringement of balance the economy aspires to equilibrium position, defined by the curve *LM* (pic. 14.5.). If economic situation corresponds to the point "*A*" which is above *LM* it is possible to speak about superfluous supply of money. Population will buy obligations to get rid of "excessive" money. It will cause rise in prices for obligations and interest rate will decrease until equilibrium set by the curve *LM* is not established.
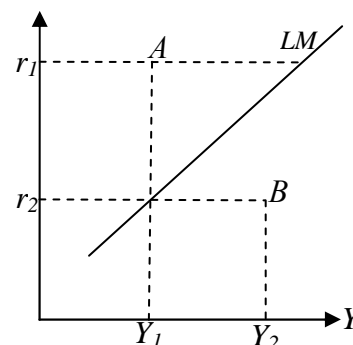
Pic. 14.5. The curve *LM*

If economy is characterized by the point "*B*" on the right of *LM,* there is a requirement for increase of money. At the point "*B*" there is a need to have more money and that is why obligations will be sold. Their price will decrease, and interest rate will rise until equilibrium is defined by the curve *LM* is established.

It is necessary to mention that the curve *LM*, as well as the curve *IS*, doesn't express functional dependence of national income on interest rate. It defines all possible combinations of equilibrium values of income and interest rate.

Change of the following factors can lead to shift of the curve *LM:*

– demand for money;
– supply of money.
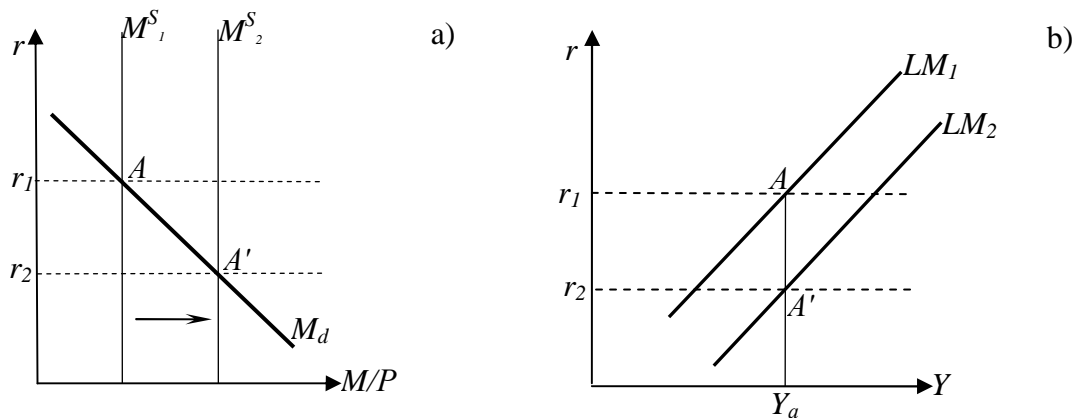
Pic. 14.6. Shift of the curve LM
a) increase in supply of money;
b) equilibrium displacement

The growth of supply of money at a set level of interest rate and fixed volume of output (pic. 14.6.) shifts the curve of supply of money in the position M^S_2, and the equilibrium rate falls to level r_2. In the pic. 14.6 (b) the decrease in equilibrium rate from r_1 to r_2 corresponds to displacement of equilibrium from the point A into the point A' and to movement of the curve from position LM_1 to position LM_2 (lower and to the right).

In the picture 14.7 shift of the curve LM is caused by change of demand for money because of exogenous reasons and at a set price level and fixed volume of output at the level Y_a. We will consider the point A on the curve LM_1. We may assume that as a result of financial crisis in economy people desire to have more money. It increases demand for money at the fixed level of the income and it is presented in the picture 14.7, b.
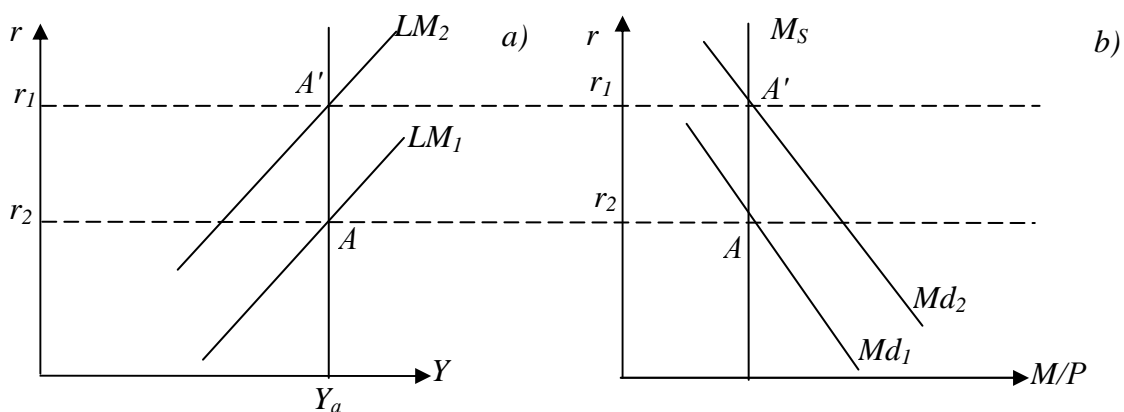
Pic. 14.7. Shift of the curve LM (increase in demand for money)

We can see that the shift of the curve of demand for money from position M_{d1} into M_{d2}. New equilibrium in the money market shows that the equilibrium interest rate will increase to the level r_1, and the equilibrium point will be displaced from the point A to the point A'. With the growth of demand for money the curve *LM* in the pic. 14.7. Moves from position LM_1 to position LM_2 (upwards, to the left).

14.3. Joint equilibrium of real and monetary markets (*IS – LM*)

Neither the curve *IS*, nor the curve LM define by itself the volume of equilibrium income Y_e and equilibrium interest rate r_e. Equilibrium in economy is defined by the curves *IS* and *LM* jointly at a point of their crossing (pic. 14.8, *a*).

Simultaneously, equilibrium in money and commodity markets exists only at unique values of equilibrium level of the income (Y_e) and equilibrium interest rate (r_e) (pic. 14.8, *a*). Equilibrium in economy is established at the point E. Other volumes of interest rate and income level mean that there is disequilibrium in one or both markets. For example, at the interest rate r_1 equilibrium in the money market will be established at level of income Y_1 (line crossing r_1 with the curve *LM*), but in the commodity market with the same interest rate equilibrium exists at level of income Y_2 (crossing r_1 with the curve *IS*).
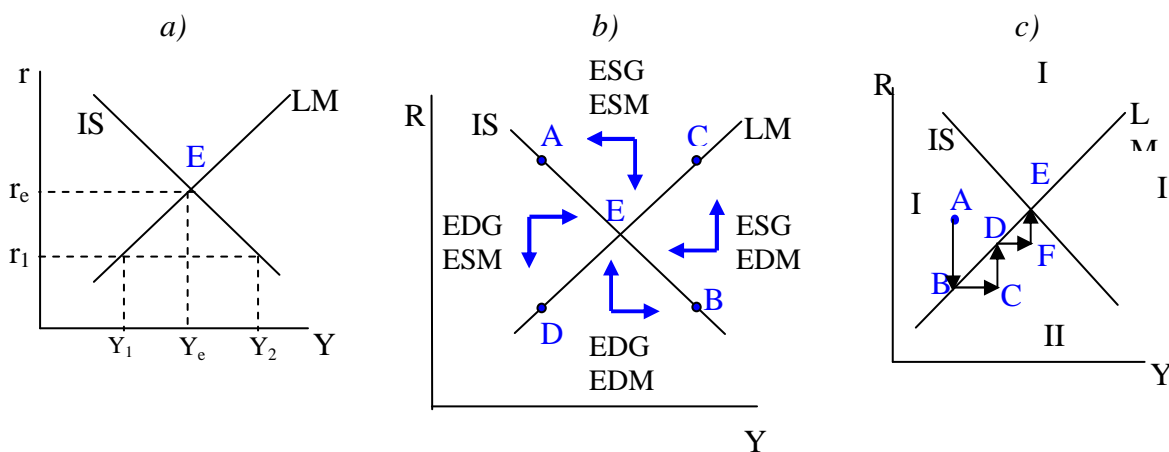
Pic. 14.8. Joint equilibrium in the real and monetary markets

In the pic. 14. 8, *b* in points *A* and *B* there is equilibrium in the commodity market (demand for goods is equal to supply of goods) as they lie on the curve *IS*, and in points *C* and *D* there is disequilibrium. On the contrary, points *C* and *D* correspond to a balance in the monetary market (demand for money = supply of money) as they are on curve the *LM*. Points *A* and *B* in this case correspond to a disbalance.

General equilibrium is a situation of simultaneous balance in the commodity and monetary markets which can be seen at point E (pic. 14.8. (a) and 14.8. (b)). The amount of equilibrium income Ye (pic. 14.8. (a)) corresponds to the simultaneous equilibrium of the commodity and monetary markets (and, hence, it also corresponds to the financial market), Keynes named it **"the volume of effective demand".**

How does the system come to general equilibrium if it is in disequilibrium? If the commodity market is imbalanced there is an unforeseen change of stocks, and firms either reduce, or increase volume of output, moving economy to the point E.

Crossing of curves *IS* and *LM* divides a plane into 4 areas (pic. 14.8, *c*, in each of which disequilibrium takes place. In areas *I* and *II* there is a superfluous supply of money as it is above the curve *LM*, and in areas *III* and *IV*, lying below the curve *LM* there is a superfluous demand for money. Thus, areas *I* and *IV* correspond to the superfluous supply of goods and services as they are above the curve *IS* while in areas *II* and *III* there is a superfluous demand for goods and services.

Directions of adaptation of economy and its movement to equilibrium are shown by arrows. If there is a superfluous supply of goods in the commodity market, stocks of firms will increase, and the volume of output (income) *Y* will decrease (horizontal arrows go to the left in areas *I* and *IV* in direction of the curve *IS*). At superfluous demand for goods stocks of firms are reduced, and output increases (horizontal arrows go to the right in areas *II* and *III* in direction of the curve *IS*). When there is superfluous supply of money in the monetary market, people buy bonds.

That conducts to decrease of interest rate (vertical arrows go downwards in direction of the curve *LM* in areas *I* and *II*), pic. 14.8b. On the contrary at superfluous demand for money people will start selling bonds to receive cash in conditions of their shortage and that will lead to growth of supply of bonds and to decrease in their price and, accordingly, to growth of interest rate (vertical arrows go downwards in direction of the curve *LM* in areas *III* and *IV*). It is necessary to mention that there is a balance restoration in the monetary market. For this purpose it is enough to change structure of a portfolio of actives because that doesn't demand considerable expenses of time while for a change of volume of output continuous time is required.

Let us examine **the economic mechanism of achievement of equilibrium** if economy is imbalanced, for example, at point A (pic. 14.8, c). This point is in area II where superfluous supply of money and superfluous

demand for goods and services take place. Excess of supply of money over demand for money will cause decrease in interest rate. It will create people's desire to transform "superfluous" money in securities because of the growth of demand for bonds and the increase of their prices. Equilibrium in the money market will be established at point *B* on the curve *LM*. But superfluous demand existing in this area will lead to decrease in stocks of firms and to growth of output (income) that will cause disequilibrium of the monetary market in area *III* (point *C*) which is corresponding to superfluous demand for money. That will lead to growth of interest rate and return it on the curve *LM*. However, the remaining superfluous demand in the commodity market despite possible reduction of investment demand is caused by growth of interest rate. It will provide further reduction of stocks and manufacture increase.

The monetary market will appear in disequilibrium (superfluous demand for money owing to income growth will appear). That will cause growth of interest rate and will return economy on curve *LM* at a point D which lies below curve *IS* and corresponds to superfluous demand for the goods and services. As a result of further reduction of stocks and growth of manufacture economy will move to point *F,* again having broken balance of the monetary market etc. until it comes to point *E.* So, the economy will be like on a ladder until it hits the nail of simultaneous equilibrium of the commodity and monetary markets. It is a point of intersection of the curves *IS* and *LM*.

14.4. The coordination of fiscal and monetary-credit policy. Use of the *IS – LM* model for the analysis of consequences of stabilization policy

Curves IS and LM can change position under the influence of following factors:
  – changes of the government expenditures;
  – changes of taxes;
  – increase or decrease in supply of money.
In the model *IS – LM* influence of fiscal policy will be reflected in shifts of the curve *IS* and monetary policy – in shifts of *LM*.

Let's examine a shift of the curve IS which is caused by growth of government expenses. Equilibrium of commodity and money markets was reached at point E_1 at interest rate r_1 and at national income Y_1 (pic. 14.9). Economic situation in the country has demanded increase in state expenses. It led to increase in total expenditure and to growth of national volume of output.
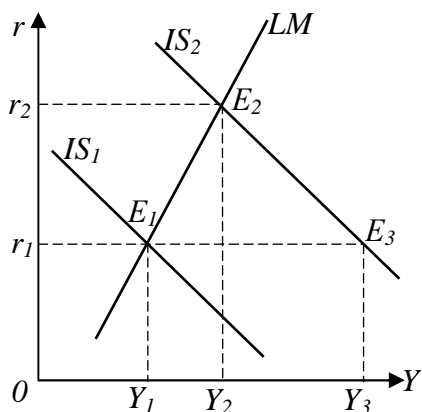
Pic. 14.9. Stimulating fiscal policy in the model *IS-LM*

The Curve IS_1 moves to position IS_2 as the commodity market extends and starts exceeding supply of money. Balance infringement at point E_1 leads to interest rate growth to the level r_2. New equilibrium in commodity and money markets will be reached at point E_2 and total output will increase to Y_2 by size Y_2-Y_1 because the interest rate growth reduces animated effect of government expenditure, and their increase reduces volume of investment. That is the effect of replacement which is reducing efficiency of stimulating fiscal policy influences.

Monetary policy assumes the tools of regulation of market macroeconomic balance. Even if the economy is in equilibrium state at point E_1 (pic. 14.10) the monetary policy which tool is the increase in supply of money, conducts to growth of level of income and decrease in interest rate. Let's suppose government decides to lower rate of unemployment and to increase volume of total release by increasing of the offer of money. These changes are characterized by shift of the curve LM_1 to the right (downwards) on the schedule. As a result interest rate decreases from r_1 to r_2, income size grows from Y_1 to Y_2, and the curve occupies position LM_2. Falling of interest rate creates superfluous supply of money in the market. It causes growth of investment expenses and increase in demand for goods and services. Joint equilibrium of commodity and money market moves to point E_2.

The result of a constraining monetary policy is decrease in incomes and growth of interest rate which is based on reduction of supply of money. The decrease in supply of money is supposed to be a return process: the shift of the curve *LM* to the left (upwards), the growth of interest rate and decrease in volume of output. [21,141]

At any change in monetary or fiscal policy it is important to know that tools of one policy can influence results of the other. According to the model *IS = LM*, national bank will make any changes in reply of increasing the taxes.

Pic. 14.10. Stimulating monetary policy in model *IS-LM*

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Some variants are possible:
1. The national bank supports supply of money at constant level.
2. The national bank supports interest rate at constant level.
3. The national bank increases supply of money to keep level of income at constant level.

Note: students are recommended to construct schedules of interaction of fiscal and monetary policy in the model IS – LM independently.

CHECKLIST

1. What does the curve *IS* show? How is *IS* deduced?
2. What factors make impact on negative inclination IS? How do they make impact on negative inclination IS?
3. What does the curve LM show, what does construction of its model show?
4. How is equilibrium in the LM – IS model is established?
5. What are the reasons for a shift of the curves LM and IS? Construct a model.
6. Explain the schedule "the Stimulating fiscal policy in LM – IS model ".
7. Construct and explain the schedule "the Stimulating monetary and credit policy in LM – IS model ".

Chapter 15: SOCIAL POLICY OF THE GOVERNMENT

15.1. Social policy: the idea, aims, functions, principles and directions.
15.2. Living standard of population.
15.3. Quality of living of population.
15.4. Incomes of the population, distribution and redistribution of income in market economy.
15.5. The problem of inequality in distribution of income and social justice provision.

MAIN CATEGORIES

Social policy, object, subject, entity, standards of life, quality of life, consumer budget, minimal consumer budget, reasonable consumer budget, basket of goods, low-income poverty threshold, incomes of population, cash incomes, incomes in kind, real incomes, social inequality, economical inequality, poverty, social policy, public assistance, social insurance, social service, social justice.

15.1. Social policy: the idea, aims, functions, principles and directions

Social policy is the activity of governmental institutions and economical entities aimed at social development management and ensuring living and working facilities of people.

Social policy concerns all levels of public and economic activities. At a micro level, social policy is one of the instruments of creating facilities to provide hired workers with earnings needed to satisfy primary necessities, reproduce and support working efficiency, bring-up and educating children, create normal conditions in a family. At a macro level it is a regional and national social policy, that is an integral part of socio-economic government policy. Material security of social policy doesn't form itself, it requires creating specified macroeconomic preconditions. This process is one of the main tasks of the government control.

Social policy not only helps to achieve social agreement, but also helps markets to function better, ensure stable earnings, reduce the risk, smooth out problems by redistribution of income, to meet social and economical challenges.

The subjects of social policy are certain citizens, groups of citizens, tied with certain relations that might be business, economic or labor, and population of a whole country.

Entities of social policy – state run public authorities of local and national levels, private organizations, profit organizations of certain citizens, who take act of civic and civil initiative. They fix aims, tasks, priorities and normative legal principals of social policy. Also they bring into effect necessary. The main entity that coordinates social policy realization is government.

The object of social policy is forming socially stable and highly-developed society able to ensure adequate standard and quality of living simultaneously with an adequate level of social compliance. Also its purpose is to neutralize deleterious consequences of market economy avoiding social conflicts. Consequently entities of social policy perform equalizing and promotional functions. Realization of the first function is achieved by practicing transfer of income, social safeguards development and social protection of all people and definite social groups. The second function implies maintenance and stimulation of economical activity of the society within legal boundaries and forming work motivation of employees.

Carrying out these functions is really hard and requires special effort like solution of difficult and sometimes conflicting problems.

Social policy is based on the following principles:

– *principle of social justice*, that has its own historical peculiarities. It assumes the equality of all people without reference to their individual and social differences. It assumes differentiation of people according to their contribution to producing welfare. Under this principle government should seek to ensure equality of starting positions and satisfaction of needs (equalizing type of justice). But government must give an opportunity to get more profit for the most active, able and effective members of society (distributive type of justice).

– *principle of social safeguards* assumes that citizens must be given compulsory minimum of social physical and spiritual values to be ready for independent living.

– *principle of individual social responsibility*. It means that every person who is able to function, must make an effort to ensure satisfaction of their needs. If there is no possibility to do that, government should help its citizens in compliance with conditions of national law.

– *principle of generality* presupposes that all citizens should be involved into social activities. Of course it should be based on differentiated approach [23, p. 198].

Social policy of entities exists at national and regional levels.

At the national level aims, tasks and priorities of social development are defined, normative legal documents are adopted and minimal social safeguards are established.

It concerns such areas as:
–   remuneration of labour;
–   pension system;
–   grants;
–   medical care, education and culture;
–   benefits and social service;
–   target social programs.

At the regional level decisions that control social-economic relations of certain territory are made and social programs directed to solve specified problems of population of a certain territory are developed.

Guidelines of social policy are:
–   development of sociocultural sector;
–   income of the population policy;
–   policy in the sphere of labor relations;
–   social protection of the disabled and the poor people;
–   population and migratory policy;
–   environmental protection.

Thereby social policy is directed to ensure appropriate conditions for satisfying needs, improvement of the well-being of people, support less-well-off sections, and creation of conditions for reproducing work force.

15.2. Living standard of population

Standard of living includes the level of wealth, consumption of material goods, intellectual wealth and services.

In addition, it's a complex of indicators and conditions that define satisfaction of needs in comparison with historically conditioned social standards of consumption. Measures of consumption are defined by different human needs, id est the necessity in resources for physical, social and spiritual development. But people need not only a number of things or goods, but also some useful properties.

There are two levels of needs: top level and low level. Top level is based on education, knowledge, culture and mentality. The low one is defined by the level of subsistence minimum necessary to ensure vital functions in certain historical conditions.

There are three kinds of consumer budget: minimum consumer budget (MCB), the real one (RCB) and the optimum one (OCB). MCB is the cost size

of expenses on consumption of the benefits that provides reproduction of unskilled labor. RCB considers the actual level of the economy development in a country that is defined on the basis of reasonable norms of consumption of the welfare. OCB assumes the structure of the welfare, according to the norms of consumption that are possible in connection with the actual level of science and mechanics development in a society.

Consumer budget is calculated for a family or per head for different social-demographic groups.

There are two ways to define the structure and standards of consumption in consumer budget. They are a normative method and a statistical method. According to the normative method items of expense are formed by science-based standards of goods and service consumption. The statistical method implies analysis of consumer's behavior, which reveals structures of different social groups.

Metrics of standards of living includes 12 groups of indicators (according to the UN):
– infant natality, mortality;
– hygiene and sanitary conditions of life;
– housing conditions;
– education and culture;
– labor conditions and employment;
– income and charges of people;
– cost of living and prices on consumer products;
– transport;
– recreation and entertainment;
– social welfare;
– freedom and etc.

According to the domestic methodology there are the next groups of indicators:
– real income of population;
– living conditions;
– medial care standard;
– means of getting education;
– social welfare development and social insurance;
– communal-general and cultural service;
– working hours;
– employment.

15.3. Quality of living of population

Quality of living is a socioeconomic category that provides consumption level of material welfare and services, as well as satisfaction of spiritual values, interests of individual and population, which are endorsed by government and population.

Unlike the standard of life, the quality of life is very hard to define, because this factor is an integral estimate, and qualitative indicators by-turn can be hardly ever calculated.

The basic indicators of quality of life are:
– health of people;
– life expectancy;
– conditions and safety of work;
– physical and cultural development of population;
– environmental conditions;
– content, character, intensity of work;
– moral and psychological climate;
– interrelations between employees.

The estimation of the quality of life has two forms: degree of satisfaction of scientifically well-founded needs and interests and satisfaction with the quality of living. The term 'quality of life' appeared in the 1950s, because the category 'standard of living' didn't reflect all-round well-being of the population.

15.4. Incomes of the population, distribution and redistribution of income in market economy

Population income is one of the most important indicators of standard of living in any country.

The term 'income' can apply to a country as a whole (the national income), an enterprise or a company (net income), a citizen (cash and natural income of citizens, personal income). Income of citizens is the sum of natural and cash income. Cash income is:
– salary;
– entrepreneurial income;
– dividends;
– social transfers (pensions, grants, grants-in aid);
– receipts after selling personal and house property;
– income from letting or selling immovable property;
– income from selling agricultural products.

Natural income is:

– payment in products;
– the value of natural income from a personal part-time farm;
– the goods and the services consumed without monetary compensation.

Real income of the population is the cash income of citizens that is estimated by taking into account the real prices on goods and services and raised taxes, or quantity of articles of consumption (goods, services) which can be actually taken into personal income. Real income is defined, thus, by the size of nominal income, by the price level on goods and services, and by taxes.

Incomes can be legitimate, received by legal means, or illegitimate (received from illegal activities, or covered from taxation, or have a criminal origin).

Level of income depends on:

– the level of development of the national economy;
– social policy;
– individual abilities of people, diligence;
– predisposition to individual or teamwork, etc.

15.5. The problem of inequality in distribution of income and social justice provision

Income is the factor of stratification of the society and the root of inequality in it. There are two types of inequality: social and economic one. Social inequality is an unequal access of the population to the social welfare, scarce resources, immovable property.

Economic inequality is the state, when the minority owns the most part of the national wealth, so that there is an inverse relationship between level of income and the number of its primary accumulation.

On the one hand, the population of country is distributed unevenly if the level of incomes is taken into account; on the other hand, the total amount of income is also distributed between groups of population non-uniformly. Lorenz curve and Gini index are used when the level of inequality in distribution of income is measured.

Lorenz curve shows, what part of a summarized year income was received by population percentagewise, starting with the poorest citizens and households and finishing the richest ones.

For curve construction on the horizontal axis one specifies the percent of the families that have a certain level of the income, and on the vertical one a part of the cumulative income, that these families have, is given (pic. 15.1).
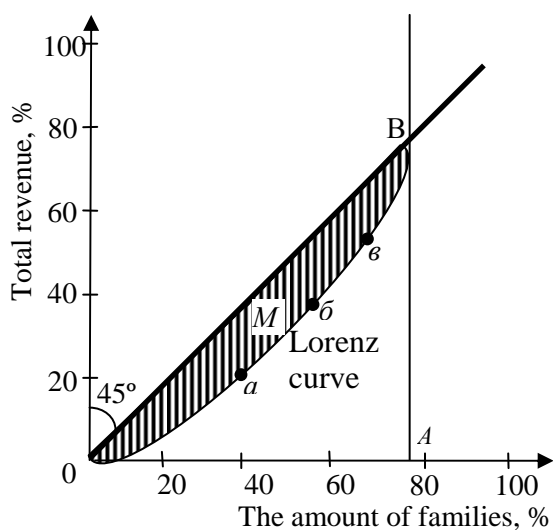
Pic. 15.1. Lorenz curve

Lorenz curve of absolute equality (absolutely even distribution of the income) takes the form of a straight line (OB) in case when the first group, 20% of the population, receive 20% of all incomes; 40% of the population, accordingly – 40% of all incomes etc. Actually there exists a rupture between a line of absolute equality and a line of actual distribution. The more the curve deviates from the line of absolute equality, the more there is inequality in distribution of incomes among the population. That is, real distribution will be characterized not by straight the line OB, but by the curve OabvV. The form of Lorenz curve shows the degree of uneven distribution of incomes.

Between the straight line (OB) and the curve (OabvV) the area M is formed. If we divide the area M into the area of the triangle OBA we will receive an indicator that measures the level of inequality, which is called Gini index. Thus Gini index equal to zero of percent characterizes a situation of absolute equality, and the index of Gini equal to 100% indicates of "an absolute inequality".

More simple way of defining an inequality in population incomes is parity definition between highly remunerative and low profitable levels of the population, between "top" and "bottom" groups of the population or households.

The excessive income inequality has a negatively influence on people's quality of life and causes rise in number of poor citizens in the country.

Poverty is an extreme insufficiency of money resources and goods for normal life and activity for a family or for a person. Low-income poverty threshold is the established level of monetary income for a certain period of time which provides physical and a living wage. There are three kinds of poverty: absolute, relative and subjective. Absolute poverty is a state, when income level of a person, family, group doesn't allow them the acquisition of welfare of the first necessity according to the established norms. Relative poverty is the absence of the worthy income in comparison with other members of a society. Subjective poverty is person's estimation of his well-being according to his own understanding of worthy living. The signs of poverty are low quality of food,

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unsatisfactory accommodation, problems connected with health and education, poverty of human potential.

One of the major forms of the minimal social state standards is the minimum consumer budget (MCB). MCB is the minimal income, and if it becomes less, a person can not provide simple reproduction and socially comprehensible way of life. MCB is calculated for different social groups, usually for an average family consisting of four persons. It is used as the basic specification for the establishment of the minimum salary.

Ensuring social justice assumes first of all overcoming poverty, realization of the address help for families and citizens in need, creation of conditions for new generation to get education and vocational training, effective employment etc.

In the limited conditions of budget possibilities government does not always have money to solve all the problems. In these terms the main aim is by coordinating social purposes and rational economic ways to provide a harmonious combination of state actions and market principles and mechanisms, which are adapted to economically developed countries. Effective social policy assumes creation of essentially new functioning mechanisms of socio-labor relations, regarding redistribution of incomes of the population, reduction of dating and preferential crediting of social sphere branches, carrying out payment reforms, creating conditions for active enterprise activity of all members of the society.

One more important part of social policy is social protection. It includes the system of principles, norms and measures, used by the government to create and regulate socioeconomic conditions, which ensure citizens' protection.

Social protection principles are:
– humanity;
– generality combined with the differentiated approach to different socially-demographic stratum and population groups;
– addressness of protection;
– flexibility of system;
– resource provision of taken measures reliability;
– control of needs in social protection;
– continuous perfection.

The basic components of social protection system are:
– social insurance;
– social help;
– social service;
– social support.

The purpose of social protection in the intermediate term is non-admission of population standard of life decrease, especially the least protected categories (retirees, people, having physical inability or many children and incomplete families, veterans of war and other categories of citizens) according to the law of the Republic of Belarus "About state social privileges, rights, guarantees for separate categories of citizens" and other regulatory legal acts of the country.

CHECKLIST

1. Characterize systems of indicators of level and quality of life of the population.

2. List the principles and tell about the intrinsic maintenance of formation and functioning of social policy.

3. What is the purpose of social policy?

4. What is the essence of a policy of regulation, distribution and redistribution of income?

5. What is the essence of social guarantees and social protection?

6. Name basic regulatory legal acts of the state social guarantees.

7. Prove justice of the Lorentz's curve in the process of the analysis of income distribution.

8. What are the features of the socially-focused economy model in Belarus?

Chapter 16. ECONOMIC GROWTH

16.1. The idea and measurement of economic growth.
16.2. Factors, sources and types of economic growth.
16.3. Models of economic growth.
16.4. State regulation, problems and possibilities of economic growth.

MAIN CATEGORIES

Economic growth, real gross national product, real gross national product per capita, average annual gain rates of gross national product, a magic quadrangle of national economy, factors of economic growth, sources of economic growth, intensive economic growth, extensive economic growth, Post Keynesian models, neoclassical models, models "expenses – output", look-ahead models of a transition period, state regulation of economic growth.

16.1. The idea and measurement of economic growth.

Economic growth is the process of quantitative increase and qualitative perfection of consumer costs or the welfare created in the national economy, as well as an increase in scales of cumulative manufacture and consumption of the benefits and services in a country, that helps to increase level and quality of life on the basis of using limited resources. In other words, economic growth is a relative volume change of real gross national product (*GNP*) that takes place over a period of time, for example a year, five years etc.

Economic growth is characterized first of all by such indicators as gross national product (*GNP*), gross domestic product (*GDP*), the national income (*NI*) and it is measured by rates of increase or a gain of these indicators. Increase rate is a relation of economic indicator size at present moment (*GNP*, gross national product, *NI*) to its reference value that is accepted for base of readout, measured in relative sizes, percent.

$$Y_r = \frac{GDP_1}{GDP_0} \cdot 100\%. \qquad (16.1)$$

where Y_r – the rate of increase in percentage; GDP_1 – volume of real GDP_1 during the considered period, rub; GDP_0 – volume of real GDP_0 during the previous period, rub.

Gain rate – the relation of economic indicator's size gain for a certain period of time to its initial level; or it is a difference between real gross national product during the considered and previous periods:

$$Y_{gr} = \frac{Yt - Yt-1}{Yt-1} \cdot 100\% = \frac{\Delta Yt}{Yt-1} \cdot 100\% , \qquad (16.2)$$

where Y_{gr} – rate of gross national product growth, rub; Y_t – volume of real gross national product in the concerned period, rub; Y_{t-1} – volume of real gross national product during the previous period, rub.

Economic growth is a dynamic cumulative indicator. It characterizes the state of the country's economy as a whole in time aspect. This indicator can be used to characterize separate sectors of economy, a branch or an enterprise.

Economic growth represents a long-term tendency of real gross national product increasing. In this definition the key words are:

– tendency, which means that real gross national product shouldn't increase necessarily every year, but specifies only a direction of economy movement, so-called "trend";

– long-term, because economic growth is an indicator, that characterizes the long-term period, and therefore it is the question of increase in potential gross national product, and growth of economic production potentialities;

– real gross national product (instead of nominal).

Though the size indicator of real gross national product is widely used for level estimation of economic development, its economic potential, it is necessary to remember that it is an absolute indicator which can't apply to ideality of economic growth calculation. All the more the indicator of economic growth not always happens to be positive. The analysis of the statistical information says about zero rates of economic growth. If in the considered period the volume of a cumulative product doesn't increase, we have to confirm zero economic growth. During a crisis economic activity decreases, the national product is reproduced in volumes that are smaller than the potential possibility of economy permits. Throughout the first half of 1990-s negative economic growth was observed.

Let's assume that the country population grows faster, than its real gross national product. And even if both indicators increase, the share of a cumulative product will be reduced per capita. Therefore it is possible to characterize state of the economy and a population standard of living more precisely using an indicator of real gross national product per capita, i.e. the relative indicator that

reflects cost of some quantity of goods and services that are necessary for one person. The matter is that the standard of living heavily depends on increase in population. On the one hand, population of the country defines the number of labor force, i.e. manpower. However, on the other hand, population growth reduces an indicator of gross national product for an average person, i.e. it leads to a decrease in the standard of living. It is possible to speak about economic growth when economic development is accompanied by faster growth of real gross national product in comparison with population growth. However these statements are also not faultless. We will admit that as the result of death rate excess over birth rate, the country population reduces. In this case if the rates of real gross national product increment are equal to zero the share of a cumulative product will increase per capita. It is possible to present theoretically similar picture for negative rates of gross national product increment in case the rate of population reduction has exceeded the rate of real gross national product increase.

Therefore, at the theoretical level it is quite possible to use the mentioned formula to define the level of economic growth for simplification and if according to other equal conditions are identical.

There is a big difference between different countries in the level of real gross national product per capita. It is characterized by gross national product volume per capita.

But with the lapse of time the ranging of countries by the level of real gross national product per capita changes. It occurs because every country has different speed of economic growth. The growth rate indicator is an indicator of economic growth dynamics of which allows to define what country develops faster. Speed of economic growth is expressed by mid-annual rates of gross national product increment or average annual rates of *GNP* per capita increment (it is a more exact indicator) during a certain period of time. Differences of increase rates to real gross national product per capita are very big.

Economic growth has a great influence on such important macroeconomic processes as stability of the prices, employment, balance of foreign trade operations, real gross national product. The given system of indicators is called "a magic quadrangle" because a little change in one of these parameters inevitably causes the change in the others. This scheme assumes that difficultly compatible purposes can be achieved. In this sense it reflects rather a desirable situation, than a real one even for the most well-to-do countries. Each of the indicators of "a magic quadrangle" can be accepted as the national economy purpose [23, p.103].

Economic growth in a country has economic and social consequences. They can be positive and negative. Economic ones cover an initial stage of begetting process – manufacture, its efficiency, that is characterized by increase in labor productivity and its intensity; improvement of technologies and organization. Social consequences are defined by economic ones in distribution and consumption phases. These are income growth of population, improvement of quality of the consumer goods at the expense of structure perfection of a national product.

At the same time constant growth is an inconsistent process that isn't always desirable, because by resolving ones problems, it aggravates others. Therefore there are supporters of growth and its opponents as well.

Supporters are inclined to assert that economic growth helps to eliminate inequality in distribution of incomes, promotes social justice, resolves contradictions between increasing requirements and limited resources etc.

Opponents pay attention to the fact that high level of innovative technologies introduction, which is accompanied by moral aging of skilled personnel, the necessity of its training for a new profession or replacement with new workers; industrialization worsens the state of environment, pollutes air and water pools, the inequality in reception of incomes isn't solved automatically. High rates of economic growth cause overproduction crises and not always rational use of rare resources. The model of economic growth is presented in the pic. 16.1.

Pic 16.1. Economic growth and its movement

16.2. Factors, sources and types of economic growth

Potential output is characterized by production function which describes the maximum size of possible release of using certain quantity of resources. Hence, concept of production function, for example, $Y = f(L, K)$, shows that the sources are: quantity of entered resources (work and the capital) and occurrence of new more perfect methods, processes of the manufacture organization.

The essence of the first source assumes the ability of economy to growth through a set of factors.

They can be distinguished as direct and indirect. Factors which make the growth physically possible are the direct ones that are proposal factors:
– quantity and quality of natural resources;
– quantity and quality of a manpower;
– fixed capital volume;
– technology and manufacture organization;
– a level of development of enterprise abilities;
– cumulative demand.

Table 16.1 visually proves it.

Table 16.1

Factors of economic growth

Factors	Factor quantity indicator	Way of the best use of the factor and efficiency increase	Indicator of use efficiency
Natural sources (N)	Various for each kind of the given resource	The fullest extraction, complex and deep processing of raw materials	Decrease in a material capacity of production
Manpower resources (L)	Number of able-bodied population, its qualification	Improvement of formation, vocational training of personnel, improvement of working conditions, preventive maintenance of diseases etc.	Labor productivity growth, labor input decrease
Entrepreneurial abilities	Formation, talent, diligence, fidelity to idea of national progress	The state encouragement of enterprise activity, its support	Growth of production efficiency indicators, profit maximization
Fixed capital (K)	The price of a capacity unit, one workplace	Perfection of technology and the manufacture organization	Yield of capital investments increase, qualities of production, capital intensity decrease.
Scientific and technical progress	Level of expenses for a unit of production	The best use of results, creation of new high technology production	Growth of production efficiency indicators, environment improvement
Cumulative demand	Volume of cumulative demand in cost expression	Encouragement of demand by reduction of prices, inflations, developments of credit systems.	Growth of potential gross national product, expansion of scales and structure of the cumulative supply

Each of factors has its own structure and promotes economic growth in the quantitative and qualitative relation. So, the factor "earth" can't bring the

essential contribution to economic growth as the given measure is set within the limits of the state territory and its borders, but there are possibilities for improvement soil conditions, extraction of minerals.

Increasing quantity of work in the course of manufacture needs increasing population. The determinative of growth are investments in manufacture which increase weight of the capital in subjects of managing, and in economy as a whole.

However presence of natural, labor and other factors is not always defining. As an example we can take the comparison of possibilities of growth in Russia and Belarus, Japan and Africa which have ambiguous mineral, scientific and technical potential, but the level of gross national product isn't adequate to possibilities and the presence of resources.

Indirect factors are:
– a tax climate in the country;
– the sizes of consumer and state expenditures;
– the mechanism of distribution of incomes;
– degree of the international integration and division of labor.

The second source of economic growth is connected with innovations. It is characterized by:
– occurrence during each period of time of a certain volume of knowledge, essentially new achievements of science, techniques, ways of manufacture that provide economic growth on an intensive basis;
– reproduction of an initiative, formed worker, capable to accept difficult technical and information systems to create new samples of modern machines, equipment, technological lines etc.;
– expansion and deepening of understanding the influence of processes in other spheres of public life on the possibility of economic growth (for example, the consolidation of a society, support and realization state programs of the economy liberalization, effectiveness of governance).

The production potentials increase and the growth of potential gross national product are connected with change of either the quantities of resources, or their qualities. There are two types of economic growth: extensive and intensive (pic. 16.2).

Extensive growth was a dominating variant of development for a long time. The economic growth that is caused by expansion of involving factors *K, L, N* into manufacture, is called extensive and is quite limited in character. Limitation is explained by the presence of limits in security production factors that is in a certain physical volume of the resources which are available in the

economy of this or that country. Among the negative moments of extensive economic growth are technical stagnation and a rule of decreasing limiting productivity of the factor that is backlog of rates of labor productivity increase from rates of involving in manufactures of economic resources. Therefore the extensive type of development inevitably gains cost-based character.

EXTENSIVE	INTENSIVE
Mobilization of additional production factor. Using of prior technological base. Orientation on expansion of production, without taking into consideration costs	Using of production factors on the technological base. Orientation on cost minimization
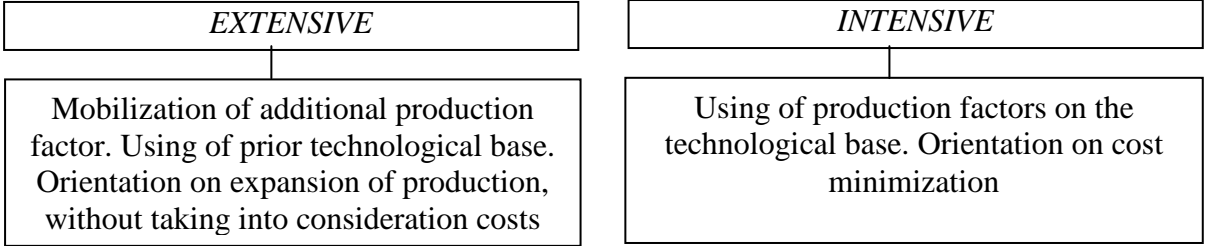
Pic. 16.2. Main types of economic growth

After general consideration of economic growth from the point of view of the structural approach that uses quantity indicators, let's observe the influence of qualitative relative indicators on economic growth. They concern:

– labor productivity as the relation of volume of release to quantity of work (Q/L);

– productivity of the capital, as the relation of volume of release to quantity of the capital (Q/K);

– productivity of natural resources, as the relation of volume of release to quantity of resources (Q/N).

These indicators define quality of manufacture factors and, hence, quality of economic growth and confirm that the increase in volume of a cumulative product can be observed without expansion and even at smaller use of factors of manufacture, but only at the expense of growth of their productivity, that is a more effective application.

The growth of gross national product which occurs only because of the increase of labor productivity, the capital and the natural factor, without additional involving of these factors in manufacture is called as intensive economic growth. In the conditions of limited resources it is more effective than extensive growth.

It is possible to show economic growth and how technical progress influences it graphically by means of a curve of production potentialities (table 16. 1). It shows that when investments grow from I to I1 the volume of potential *GDP* of a country increases as well.

16.3. Models of economic growth

Basic purpose of models of economic growth is that they serve as a basis for analytical works and allow predicting economic processes.

There are several models of economic growth: the Postkeynesian; the neoclassical; models "expenses – release"; look-ahead models of a transition period, etc.

In Neokeynesian models economic growth is studied using tools and methods of the analysis of Keynesian school of dynamic processes. Dynamic balance is understood as equality of growth rates of cumulative demand and the cumulative supply. The basic models were developed by the American economist E. Domar and the English economist R. Harrod. As provided by Keynes's methodology they believed that:

– firstly, "aggregate demand is a decisive condition of development of economy", stable economic growth. If cumulative demand absorbs all cumulative supply the planned rates of volume of output will remain in the future;

– secondly, "the major factor of growth are investments". In model of economic growth of E. Domar the gain of investments is considered as the only and decisive factor of the cumulative demand that causes the active cumulative supply.

Achievement of identical rates of change of cumulative demand and the cumulative supply is the condition of economic growth equilibrium in the current period. Cumulative demand increases as a result of a gain of investments and under the influence of the animator (*I, K*). The increase in the cumulative supply is caused by limiting productivity of the capital. Domar model has shown that there is a condition under which the performance of long-term equilibrium growth is possible. To maintain the equilibrium rate of increase at a constant level it is necessary to increase the gain of investments for a total load of growing capacities from the one period to another.

Unlike Domar model, Harrod model aims to investigate a trajectory of economic growth and to find out how in the course of growth capital, work and income size per capita interact. Thus investments are considered as a variable which is dependent on level of the income and is a derivative.

In his research Harrod rests upon the situation that developed in economy in previous years. Rates of increase remain invariable if during the previous period demand was equal to the supply. If demand exceeded the supply businessmen increased the supply. By supporting the same growth as in the previous interval when demand was equal to supply, businessmen can count on

equality of supply and demand in the current period as well. In this case the saved up capital is used completely, but the full employment isn't guaranteed. That is R. Harrod is solidary with E. Domar's theory of 'the guaranteed rate of increase'. At the same time it is known that when planning the release businessmen can deviate from the guaranteed rates of increase and actual rates of increase can not coincide with the guaranteed rates (to be more low or to exceed). In this case the system will leave from an equilibrium state. In this connection we believe that economic growth has the restrictions, certain natural borders which are set by rates of technical progress and population growth. Hence, "natural rate of increase is such equilibrium rate of increase which provides a full employment not only the capital, but also work".

From the stated it is possible to draw a conclusion that such equilibrium condition when the guaranteed, natural and actual rates of increase coincide may be the ideal development of economic system (growth). But as specified coincidence is actually improbable, dynamic balance in R. Harrod's model appears unstable.

The generality of preconditions and research objectives, affinity of results make E. Domar and R. Harrod models similar. Therefore they are called Harrod-Domar model.

Neoclassical models of economic growth also are constructed on the basis of production function and are based on preconditions of a full employment, flexibility of prices in all markets, complete interchangeability of manufacture factors. Macroeconomic equality of investments and savings I=S is the basis of the mechanism of economic growth in a model of the American economist R. Solow. This model is based on the creation of cost of a product by all production factors, that create each part of cost. Thus manufacture factors are interchangeable, between them there is a certain dependence.

The model of economic growth of R. Solow describes the economy, where a homogeneous product is made by means of two factors: labor and capital. The economy has a competitive character and always functions in the conditions of full employment [5, p. 227]. Each factor creates a part of cost.

To account each manufacture factor in growth of production volume production function is included into models. With its help one can describe the supply of goods $Y = f(K, L)$ which means that the volume of output depends on the quantity of capital, applied work and, hence, their effective utilization. Efficiency of work is estimated by its productivity.
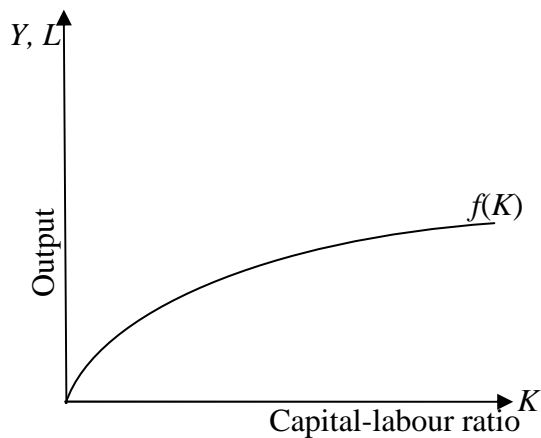
Pic. 16.3. The curve of production function

Let's correlate all values of function with quantity of workers, having divided both parts of equation by quantity of work (*L*). We will receive equation $Y/L = f(K/L; 1)$ which shows that the volume of output counted per worker (*Y/L*) is the capital function per worker (*K/L*) or expresses a production function indicator counted per worker. Having designated $Y/L = y$ we will receive the quantity of production per one worker (labor productivity), and $K/L = K$ is the capital per worker (capital endowment of labor), production function will become $y=f(K)$, where $f(K) = f(K; 1)$. That is, in such kind of production function correlates labor productivity with capital endowment.

The graphic model that expresses production function $f(K) = f(K; 1)$ testifies to reduction of an angle of slope of a curve, that is the curve becomes more flat (pic. 16.3) At such production function each additional unit of the capital makes less product than previous, that is marginal productivity decreases because of the absence of workplaces and full employment, dynamics of economic growth falls.

Technical progress means that with same expenses of work and capital economy is able to provide much more volume of output. Development of technical progress depends on investments as basic source. Owing to introduction of technical progress cumulative production function will move upwards from position Y_1/L to position Y_2/L (pic. 16.4).
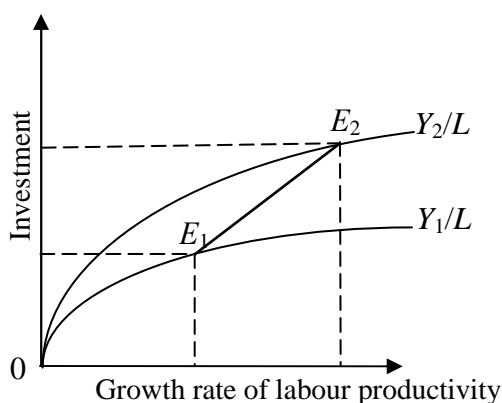
Pic. 16.4. Function of technological progress

The given shift means the increase of labor productivity as a result of introduction of new technics, high technologies, new methods of labor organization and economic growth.

Steady level of maintenance and fixed capital updating can promote balance of economy in the long-term period.

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Models "expenses – release" are models of interbranch balance introduced by the Russian economist V. Leontiev. In the given models it is supposed that a fabricated product by its natural and ware structure is subdivided on intermediate and final. Depending on how the end-product structure is considered the volume of investments and, hence, possibilities in the future periods can be reflected in the model in an explicit form (or not to be reflected at all). In this sense models can consider (dynamic type) or not to consider (static type) time factor.

The look-ahead models of a transition period used in Belarus consider interrelations between the basic sectors (the state, households, not financial enterprises, bank system other countries) with methodology of IMF and the World bank so that the incomes of one subject are the expenses of another one. Beside balance parities, the equations that express functional dependences between branch indicators and allow–carrying out the independent analysis are included into the model. Possibilities of such models are limited owing to unpredictability of the parameters (for example, inflations.)

16.4. State regulation, problems
and possibilities of economic growth

During transition to market economy the state regulation role is more significant than in the conditions of the developed market economy. In market economy the state doesn't exercise administration of economic sphere directly. The regulator of economic relations is the market, except the branches that have paramount value for national security maintenance. Effectively working market mechanism allows solving many problems of social and economic development successfully. However practice of many countries that carry out transition from planned economy to market one, has shown that in economic development it is impossible to provide progress without effective state intervention, and well-being of a society can't be reached only by means of a market mechanism.

In this connection state possesses the following functions:
– currency issue, monetary credit and budgetary controlling;
– formation of the steady macroeconomic situation including effective functioning of financial institutions;
– developments of a science, innovative activity and information technology;

– carrying out of an active external economic policy;

– formation of industrial, social and economic infrastructures of nation-wide value, maintenance of conditions for economic growth, increase of well-being of the population;

– formation of rational territorial proportions of reproduction and complex development of industrial forces;

– working out and realizations of strategy of social and economic development.

For regulation of social and economic processes state uses a system of methods and tools that change depending on the developed social and economic situation, gained experience, chosen model and strategic targets of development.

Legal regulation of economy consists of working out and realization of laws providing norms of functioning of subjects of managing of all patterns of ownership and market infrastructure, and also antimonopoly regulation.

Administrative methods of economic regulation of management of economy include a direct control and indirect regulation. Laws, decrees, orders and state institutes that are obliged to operate according to them with no options are attributed to the direct regulation. By means of administrative measures the state controls expenditure of budgetary funds, establishment of prices by monopolists, protection of national interests in foreign trade activities system, in the field of preservation of the environment and population social protection.

Indirect regulation of economy is carried out using economic methods, such as:

– budgetary and tax policy;
– monetary and credit policy;
– price regulation;
– amortization policy;
– scientific forecasting of economic growth;
– indicative planning of economic development;
– subsidizing of investment activity to influence phases of cycles;
– differentiation of taxes, establishment of privileges, tax rates, loan percent;
– employment and unemployment policy;
– currency policy etc.

Direct methods of regulation assume the establishments of state orders, quotas, delivery of licenses, direct budgetary financing and other measures.

The special form of realization of stable development of economy, maintenance of the developed structure and proportions is working out and acceptance of government programs according to long run strategies of steady social and economic development of a country.

CHECKLIST

1. Concept and indicators of economic growth.
2. Characterize economic growth of the Belarusian economy for three previous years?
3. Characterize the types of economic growth.
4. What type of economic growth is the most preferable one?
5. Sources of economic growth that differ factors and sources of economic growth.
6. What are the models of economic growth? Models of economic growth by R. Solow, R. Harrod, E. Domar.
7. The role of investments in the development of the Belarusian economy.
8. The purpose and directions of structural reorganization of the Belorussian economy.

PART 4.
THE PRINCIPLES OF INTERNATIONAL ECONOMY
Chapter 17. MODERN WORLD ECONOMY
AND ITS STRUCTURE

17.1. The concept of world economy. Subjects of world economy and levels of their interaction.

17.2. International division of labour as a basis of forming and world economy development.

17.3. Modern tendencies of world economy development.

MAIN CATEGORIES

World economy, international division of labor, globalization, internationalization, integration.

17.1. The concept of world economy.
Subjects of world economy and levels of their interaction

The growth of intercommunications and interdependency of world public processes, increasing integrity of the world become more noticeable in modern terms, material basis, one of major displays of which the world economy comes forward.

World economy is the system of economic intercommunications different on socio-economic nature and level of development of countries and corresponding to her system of international economic relations [4, p. 9].

World economy is a totality of national economies of the world countries connected to one another by mobile factors of production [2, p. 403].

Let's study the concept "World economy" (table 17.1 on the basis of [1, p. 4]).

As it is obvious from the table 17.1, all researchers acknowledge that the world economy is a certain system.

Its integrity acts as a basis of origin and existence of the system, which supposes economic co-operation of all component parts of the system at a steady enough level. Only in this case regular circulation of reproduced product is possible in a global scale and permanent activity is provided, viability of the system, its self-regulation and development. Such unity of world economy, circulation of a reproduced product is provided by national and international markets with inherent to them commodity-money relations and multiplicity of prices.

Table 17.1

Basic approaches to interpretation of economic category "world economy"
in the national literature

Approach	Main point
The first theoretical approach	Understanding of world economy as a totality of national economies interconnected by the system of international division of labor, economic and political relations. In this determination nationally isolated countries act as dominants without depending on if their production goes to the internal or external market. At such approach reasons, which determine intercommunications, state and prospects of development of world economy are not visible.
The second theoretical approach	The world economy is interpreted as a system of international economic mutual relations, as universal connection between national economies. Similar conception many western researchers adhere to, in particular, considering that the international economic system includes both trade and financial relations and also unequal allocation of capital resources and labor force. In this case production falls out of eyeshot of researchers, which determines international economic intercommunications in a great deal.
The third theoretical approach	Determines it as an economic system self-replicating at the level of productive forces, productive relations and certain aspects of building on relations in that measure, in what national economies included in it possess certain compatibility on each of three adopted levels. Basic component parts of economy find a reflection in it, including a material base realization of different patterns of ownership and set procedure of functioning of reproduction processes.
The forth theoretical approach	The world economy is the system of economic relations, arising up on the base of international division of labor and collaboration of national economies. It is difficult, contradictory, specifically, subject to influence of different factors and changes, but always has the initial, organized beginning. If to go near a world economy as to the organized system of relations, it is necessary to determine economic mechanism of it internal self-development and motion. Morally, exactly with this mechanism it is necessary to correlate general principles of construction of economic system, pattern of production, system of exchange by activity, other links of national economies. However in any case basis of economic relations set within the framework of world economy will be a public division of labor, specialization and socialization productions showing up in the conditions of certain relations of property.

Note: on the basis of these theoretical approaches try to formulate (authorial) the vision of maintenance of this category, but reflect in it next structural elements: totality of what relations, concerning what they arose and for what purpose.

Table 17.2

The characteristic of stages of formation of the world economy

Stages	Content	Character of economic relations
Ancient centuries	1. Alexander Macedonian drawn by great riches of Ancient India and China took the troops to the foot-hills of the Himalaya mountains; on gates Tsargrad (Byzantium) fastened as a token of victory the shield the Old Russian ruler. 2. After a gold fleece on the north coast of the Black sea ancient Greeks walked in a hike; with trade aims in the last fourth of XIII of century. 3. Made voyage to China and lived there 17 Italian Easily Soiled Hollow. 4. In the end the XV century the Portuguese navigator Vasko and Din left to India and attained her. 5. A few for before years Genoese of Christopher Columbus in search of short cut to India opened America.	Episodical
The end of the XVIII century	Appearance of large machine production, transport systems and communications	Economic relations in the world economy purchased stable, dynamic lines
The end of the XIX century	Folded originally trade and economic connections were actively complemented by productive and financial and economic relations that resulted in creation of world economy	Active role in economic life of countries began to play external economic factors.
Period of world economy formation	Capitalist managing regions, zones of colonial domination, system of feudal relations were included in the sphere of international division of labor. After victory of October revolution the system of world economy was filled up by Soviet Russia and then and by other socialistic states; the shipwreck of the colonial system generated economies of developing economies which began to be actively pulled in the system of world division of labor introducing new economic relations in it	Steady character
Modern stage	Changes occurring at the present stage in economic development of countries also introduce corrective amendments in the world economy.	Complex character

The reasons for occurrence of the world economy (table 17.3):

– necessities of exchange are the basis of development of economic intercommunications of different countries. Example: discovery of new, unknown before lands search of adventures; development of marine navigation and finding out transport ways between countries. Nevertheless it is early to talk about world economy in this period;

– as an integral system world economy formed only on the border of the XIX – XX centuries. The law of limited resources in the period of industrial revolution was one of basic pre-conditions of origin of world economy. The action of the law of limited resources in the period of industrialization resulted in that world economic relations became steady and regular and it liquidated the apartness of national economies did them dependent on one another;

– international division of labor forms the economic basis of world economy. International division of labor is the system of multilateral economic relations based on specialization of different countries on manufacturing of certain types of products formed under acting of such factors as natural and climatic distinctions, different material well-being by natural resources; geographical location of a country, its location of relatively world transport ways and markets of sale; distinctions are in the quantity of population and occupied territory; distinctions are in technical equipped of production of qualification of workers; distinctions are in the level of scientific and technical potential; distinctions are in external economic especially scientific traditions; features of historical development.

– productive co-operation, world infrastructure, world market of commodities, capital and labor force, certain international financially-credit system.

At wide interpretation the world economy is totality of national economies interconnected by the international division of labor, economic relations and necessity decisions of global problems arising before humanity.

In narrow interpretation the world economy is the system of economic relations between countries. In either case at the heart of world economy definition there is the concept of international economic relations, or world economy communications which are understood as economic communications and relations which have fallen outside the limits of national borders.

The specificity of these connections consists in that they submitting to the laws of demand and supply are at the same time most regular outside both national states and special international organizations – IMF, IBRD, WLO, GATT (WTO), and organizations of the UNO. In addition, they are regulated by norms of international law. The necessity of such adjusting is explained by the fact that world economy relations are folded on the joint of national economies which differ from one another and by the level of economic development by both economic aims and public policy.

Table 17.3

Preconditions of the world economy formation

Preconditions	Basic description	Result of influence of the factor on interaction of countries
Natural, climatic and geographical features	1) influence volume and pattern of requirements of people (calorie content of feed for population of north breadths of the earth must be higher, than for population of south; it belongs also and to clothes; it is more difficult in the north to obtain natural resources anymore expended electricity more expensive building and maintenance of dwelling fund treats et cetera); 2) some countries are located in mountain locality and cannot have developed agriculture; others are located on coasts of seas and oceans and have advantage in development of steamship line and marine trades; there are countries rich in an iron-stone, copper, tin, but indispose the beds of coal, gas, oil etc.	Countries are simply forced to put right between themselves trade and economic, productive, tourist and other connections.
International division of labor	Shows up in that national economies are specialized on producing of that food which is the most expedient and economically advantageous for them leaning against resource potential.	At the same time division of labor not only specializes productions but simultaneously makes them interdependent, complementary one another.
Industrial revolution	Gave a powerful push to development of international integration processes which were pre-condition of stowage of world economy. International economic integration leads to creation of constantly operating productive structures carrying intergovernmental character. On their basis new technologies, informative structures are created, there is an international infrastructure. A productive process follows the sphere of appeal and all more frequent flows on territory of a few states.	It gave an opportunity to economists to speak about international production of goods and services and pattern of international requirements.
Technical development, development of productive forces and science.	On the one hand, international production makes economic connections and relations global, their adjusting is impossible by efforts of one country however powerful its economy was. On the other hand the world economy generated the row of global problems, such as ecological, food, resource, defeat of ozone layer of planet, rise in temperature of climate, elimination of forests, offensive of the deserts etc.	Joint decision-making of global problems

New technological conditions of production allow creating a production taking into account not national but world market. Appearance of new types of transport and connection facilitates access to resources in any corner of the earth, management by enormous international productive complexes. All of it testifies to the new high-quality state of world economy for denotation of which in economic literature the term "world economy" is used, implying his growing integrity. If earlier world economy connections were secondary by derivatives from national economies, then today national economies become dependent on world economy relations.

World economy is an integral as well as inwardly contradictory economic organism.

Common to all mankind interests form the objective basis of its integrity foremost. They include prevention of threats of terrorism, nuclear catastrophe and disarmament, maintenance of environment of habitation of man, overcoming of problem of deficit of resources. In addition, scientific and technical development and structural changes in the world economy, development of world trade and currency-credit relations trends, flows of labor force and capital activity of international monopolies affect interests of every country. At the same time every country has historical and national specific which generates socio-economic features determining the level of development.

The major factors predetermining formation of integrity of world economy are:

– strengthening of internationalization of the world economy;

– development of all-embracing character of modern scientific and technical development and facilities of information;

– internationalization of possibilities of the use of resource potential of planet;

– growth of danger of general ecocatastrophe, problem of survival of the majority of mankind;

– intensifying of problem of sale and realization of commodities'

– a search of possibilities for more profitable appendix of resources'

– adjusting of collaboration in area of study and permission of global problems of humanity.

There are two world economy trends: one is the integration in the world market, the other – with the national apartness.

In opinion of some economists, considerable influence on world economy connections is rendered by next tendencies:

– development high-quality renewed technological bases of production and introduction of resource-saving technologies;

– fundamental changes in structure, character and content of processes of production and consumption;

– orientation of economy on ecological and humanitarian criteria;

– increasing influence of sociocultural factors.

Note: to define the place of the Republic of Belarus in the world economy at the modern stage (on the line of trade by commodities and services, exchange by technologies and investments).

Tendencies of development of the international economy. Certain development of world economy trends shows up in its structure on the groups of countries, differentiating on the level of industrial development, types and models of market economy.

The most widespread criterion of classification of countries of world community is the level of their development. Such division is based upon theories of the American sociologists W. Rostow and D. Bell according to which different stages of economic development of society are distinguished. They reflect modern state of the world economy as different countries of the world are today on different stages of economic development. As basic signs of such division come forward technical equipped of production, rates and quality of the economy growing, income level per capita.

From this point of view two large groups of countries are distinguished:

1) Industrially developed. Such industrially developed countries as the USA, Canada, Australia, New Zealand, Japan and most the countries of Western Europe belong to the first group. These are the countries with the formed market economy based on large resources of fixed assets, front-rank technologies, and skilled labour resources. High index of *GDP* per capita is peculiar for them. This group of countries differs by comparatively law, but steady rates of economy growth (average annual growth rates are 3% of *GDP*). Not quantitative but qualitative are peculiar to them.

2) Countries which hadn't passed the stage of industrialization. This group is much differentiated. These countries are at different stages of economic development: countries with relatively developed productive forces and relatively high level of profit and countries backward, poor, where problems of hunger and poverty exist. Most countries of this group are characterized by

higher rates of economy growth as compared to the countries related to the first group (from 3 – 4 to 8 – 10 % *GDP*).

Among the countries included in the second group it is possible to distinguish:

− firstly, a group of countries – exporters of oil (Saudi Arabia, Kuwait). They cannot be attributed to the number of industrial, but level of *GDP* per capita due to the export of oil is great;

− secondly, the new industrial countries. For the first time this rubbed-mines has sounded in the middle of 1970th when industrialized countries collided with a sharp strengthening competition from a big group of developing countries and territories of South Korea, Taiwan, Hong Kong, Singapore, Brazil and Mexico.

In world press this "six" began to be called the new industrial countries. They differed from other developing countries by high paces of growth of economy and export of industrial goods. In structure of a national economy and a society eventually the number of the new industrial countries has replenished with fast and cardinal shifts: Turkey, India, Malaysia, Argentina, Thailand, Indonesia and even the Peoples Republic of China were included into that group;

− thirdly, poorly developed and economically backward countries (the majority of countries located in Africa, Asia, Latin America). These countries, in turn, are divided onto two categories: the poorest countries (Chad, Bangladesh, Ethiopia) and the countries with the average income;

− fourthly, a special group is formed by the majority of the countries of Eastern Europe and the CIS with transitive economy.

With objective of revealing the most requiring countries in preferential financing the World bank offers the following allocation of groups of countries: with a high level of income (from 9266 dollars per capita); with an average level of income (the low average income up to 2995 dollars and the high average income up to 9265 dollars per capita); with a low level of income (below 755 dollars per capita).

According to the report of UNCTAD "Developing countries in international trade 2007 – the Index of commerce and development", Belarus is at place 57 in the world and ranks among most dynamically developing CIS countries. Among strengths of Belarus experts of UNCTAD especially noted high parameters of both economic and social well-being of population and observable growth of volumes of foreign trade. On the specified parameters Belarus takes 34 place in the world and advances all the CIS countries [5].

17.2. International division of labour as a basis of forming and world economy development

International division of labor (IDL) and production factors. In modern world development of economic and scientifically technical communications, participation in IDL is the important means as for solving internal economic problems and strengthening peace, good-neighborhood between countries.

International division of labor is the highest form of public division of labor which crosses borders of national economies and leads to specialization of those or other countries on manufacturing of certain types of production and to their mutual exchange [3, p. 352].

International division of labor is the highest grade of development of public territorial division of labor between countries which provides stable concentration of manufacture of certain production in certain countries [2, p. 403].

The factors of formation and development of IDL:

1. Distinctions in natural and climatic conditions of countries have affected the degree of provision of their agricultural production and raw goods.

2. The manufactory stage of development of capitalism caused occurrence of diverse number of subject matters of work, an indispensability of supplementing by factors of manufacture of enterprises of various countries. International division of labor had a limited character and was realized basically in the form of bilateral economic relations.

3. Industrialization of national economies, wide introduction in manufacture of achievements of scientific and technical development. Intensive development of international specialization and cooperation of manufacture.

Industrial specialization may be interbranch, intrabranch and interfirm. Territorial specialization is realized between countries and regions. The basic types of international specialization are subject, detailed and technological specialization.

IDL presupposes international nationalization of manufacture as a process of transformation of isolated acts of economic activities in the uniform, internally interconnected process.

In actual practice it is expressed in internationalization of economic life – process of nationalization crossing frameworks of national facilities [3, p. 353].

In other words, IDL is a system or a way of organization of interdependent manufacture at which enterprises from different countries specialize on manufacturing of certain goods or services and then exchange them [6, with. 19].

Forms of IDL:

1. Intrabranch form of IDL expresses concentration of efforts of enterprises of different countries entering into any branch of a national economy, on manufacture of certain subject matters, including details, units and knots and an exchange of these subject matters between them.

For example, we shall study tractor industry, here the intrabranch form of division of labor between countries will be expressed by that one of them will make wheel tractors, another – caterpillar, the third – spare parts to them and to exchange these subject matters among themselves.

1.1. Partial (one-specific): this is such division of labor between countries when this or that country focuses efforts to manufacture only one type of any good, for example a garden tractor.

1.2. Multispecific subject specialization represents such division of labor when a country participating in it makes some types of a given subject matter.

1.3. All kinds subject specialization means that the country specializes on manufacture of all types of this or that good existing in a given period. For example, if as specialized subject matter we shall consider the same tractor then specialization of a country will be all kinds in the case that it makes and sells to a foreign market not only garden tractors and other existing types of these cars.

2. Interbranch form of IDL represents division of labor not between various branches of a national economy, for example motor industry and plant growing but between various branches of the same sorts of manufacture (industry, agriculture or any other sort of manufacture).

3. Interpatrimonial form of IDL is division of labor between various sorts of manufacture. For example, between industry and agriculture, industry and construction, etc.

4. Macroeconomical form of IDL by its economic content corresponds to inter-regional form of division of labor inside of a country. Both of them are similar in that they express economic relations not between enterprises incorporated in certain groups on the basis of general features but between a set of groups of enterprises. The difference consists in that at the inter-regional form inside of the country it is a question of set of all enterprises located in different regions of one country and at the economic form the division of labor is carried out between set of the enterprises located on all territory of the countries-partners.

Thus economic form of IDL represents division of activity between countries in the scale of their full national economies. This form expresses a concentration of efforts of separate countries on release of certain part of a total

internal product (*GDP*), intended for sale on a foreign market. In other words it shows what part of *GDP* of the given country is exchanged for any part of *GDP* of another country.

The basic theses opening content IDL are:

– IDL is a specific type of public division of labor; unlike interstate the international division of labor occurs between enterprises of different countries.

– IDL has two characteristic features: specialization of manufacture and an exchange; specialization of enterprises is shown in three forms – subject; professional and territorial; unlike forms of specialization of manufacture different forms of IDL express exchange between certain groups of enterprises. These forms are intrabranch, interpatrimonial and economic.

The essence of economic content of IDL is it represents a system or way of organization of coproduction at which enterprises from different countries specialize on manufacturing of certain goods or services and then exchange them.

Special-purpose production is separately made products by member countries of the international division of labor which are delivered by them on the world market.

There are the following types of specialization:

1) manufacture of end goods;

2) specialization on manufacture of details and units;

3) technological specialization.

Industrial cooperation represents objective development of stable industrial communications between stood apart enterprises irrespective of whether it is inside the country or on international scene. Cooperation is caused by all course of differentiation of a social production, division of the increasing number of its components in independent sectors of industrial activity [6, p. 43].

Characteristic features of cooperation:

1) in conditions of development of this process independent manufacturers from different countries on a contractual basis carry out joint activity of creation of separate types of production having strictly address purpose and forming elements of end production. In other words, independent manufacturers specialize or differentiate between itself industrial duties on joint release of coordinated production;

2) cooperation presupposes a partial exchange between participants of jointly made production.

But it means that cooperation possesses two characteristic features of the international division of labor and consequently is one of its forms.

The reasons for development of international industrial cooperation:

–   tendency of increase in capital intensity of output of new production requiring huge financial assets;

–   possibility by rather greatest growth of components purchases to achieve substantial growth of output of end products including going on export;

–   possibility of an increase in labor productivity at enterprises;

–   aspiration of the large enterprises and corporations to increase revenues from export of production

–   in some countries there is a difference between import duties on ready cars and on a complete set of components. Exporters of industrial countries pass to export of intermediate production trying to raise income the specified difference.

The laws of IDL development. On the one hand many enterprises of countries participating in IDL make production more than it is necessary for satisfaction of personal or industrial demands of the own population. On the other hand the managing subjects of each separately taken country making this excessive production on purpose exchange it for goods they at all do not make or produce in insufficient quantity, but they are let out by the enterprises of other states.

On the whole this phenomenon represents precisely concentration of efforts of enterprises on manufacture of some goods and exchange of them, but not inside the country, and at another level – in scale of group of countries or all world economy.

Now there are processes of convergence of models of national, economic and social values and attitudes and the economy of vast majority of the countries became open.

Open economy is economy of a country where all subjects of economic relations can make without restrictions operations on the international commodity and capital markets.

One of the main criteria of the level of openness of countries to the world market is export quota (E_q) – ratio of volume of exported goods and services to GDP/GNP of countries (table 17.4).

Economy is considered to be relatively closed if its export quota is less than 10%, and relatively opened if export quota is more than 35%.

But estimation of economic development level is not unique criterion of a situation in the country, its development. Modern life focuses attention on a person. In 1990 in special United Nations Development Programme human development index was developed which reflects quality of life of population of countries. It is published in the annual report.

Table 17.4

Parameters of participation of the country in international trade

The formalized form (%)	Analytical value of a parameter
$E_q = \dfrac{Ex}{GDP} \cdot 100,$ where E_q – export quota; Ex – volume of export; GDP – volume of total internal product.	Firstly, testifies to a degree of dependence of manufacture of any national economy on selling goods in foreign markets. Secondly, export quota shows possibilities of a given country to make certain quantity of production for sale in the world market.
$I_q = \dfrac{Im}{GDP} \cdot 100,$ where I_q – import quota: Im – size of import; GDP – volume of total internal product.	Import quota shows what part of GDP import is. It is possible to compare it with export quota and thus to establish a parity between export and import. They can be equal, but more often these sizes do not coincide.
$FT_q = \dfrac{FT}{GDT} \cdot 100,$ where FT_q – foreign trade quota; FT – size of foreign trade turnover; GDP – volume total internal a product.	Shows total amount of external commodity circulation of a given country with a country-partner or with all world community, but does not give any qualitative characteristic.

Human development index is calculated on the basis of three base parameters:

- life expectancies,
- level of education,
- *GDP* per capita.

According to report for 2007 Belarus has improved its position on human development index and for the first time became a country with a high level of human development. Compared to the previous year Belarus moved from 67th position to 64, that is the best parameter among the CIS countries. The Russian Federation takes 67th position, Kazakhstan – 73rd, Ukraine – 76th [5].

17.3. Modern tendencies of world economy development

Defining processes of world development nowadays are integration and internationalization of economy of certain countries, consecutive entrance into the world system, regionalization and globalization.

American professor G. Duning – the recognized authority in the field of international entrepreneurial business – tracked stages of globalization of world production. The first stage under its statement proceeded 30 years prior to the beginning of the First World War.

The second stage – 25 years after the Second World War.

In the middle of 80th the third advanced stage of globalization of world production began. Between the second and third stages there was a pause in intensive growth of international direct investment falling onto 70th and first half 80th. Each stage of intensive formation and development of transnational enterprises was accompanied by accelerated economic growth. At the same time each stage of globalization of economy pursued its own objective.

Primary purpose of the first stage was exploitation of natural resources in the territories which were under control of countries-exporters of capital which direct investment looked for the most profitable investment.

On the second stage export of capital in the form of direct investment was directed at moving to other countries of manufacture of that goods and services which had passed the phase of fast growth in capitalist countries-exporters.

The third stage (modern) is characterized, upon Duning, by desire of transnational companies to get natural resources or commodity markets. Their aspiration to rationalize structure of capital investment and to take advantage of advantages of global or regional economic integration to get additional technological, organizational or market possibilities more effectively to provide, keep and raise global competitive positions to become stronger in most quickly growing markets.

Let's study the essence of economic categories "globalization", "internationalization" and "integration".

Globalization represents transformation of economic from the sum of national facilities connected by to some extent certain relations into a uniform industrial zone and uniform market in which capital, goods and services, labor and currency move more and more freely.

Internationalization on a global scale is universal economic development which finds expression in increasing international integration (rapprochement, association) manufactures, investment, markets, economic mechanisms, various subjects of the world economy.

Integration is a process of economic interconnection of countries leading to rapprochement of economic mechanisms taking the form of interstate agreements and to coordination regulated by interstate bodies.

The primary objective of numerous integration associations arisen and developing in modern international economy can be reached by decision of some problems: [4]

1. Use of advantages of economy of scale.
2. Creation of favorable foreign policy environment.

3. Assistance to restructuring of the countries-participants.

4. Support of young branches of national industry.

5. Increase of the status in the field of carrying out of a world commercial policy.

Characteristic features of integration

Firstly, economic integration is distinguished by very high level of international division of labour in economic cooperation. Between countries connected by integration exchange of goods, services, capital and manpower developed intensive, owing to concessionary terms.

Secondly, these countries pursue general coordinated internal and foreign policy in trade, agriculture, transport, currency and other areas.

Thirdly, areas of cooperation of the countries constantly extend in conditions of economic integration. Between them general projects are carried out and joint ventures, banks, currency unions, collective monetary units, etc. will be organized.

Forms of international economic integration [4]:
- free trade zone;
- customs union;
- common market;
- payment union;
- economic and currency union;
- political union.

CHEKLIST

1) What is the essence of the category "world economy"? Formulate your own theoretical approach to the content of the given category.

2) What are preconditions of formation of the world economy?

3) Characterize stages of development of world economy.

4) Show the place of the Republic of Belarus in the world economy at present stage.

5) What is the essence of international division of labor?

6) Name factors of occurrence and development IDL.

7) What are the forms IDL?

8) Indicators of participation of a country in international trade.

9) What do globalization, internationalization on a global scale, integration mean?

10) Forms of international economic integration.

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Chapter 18. FORMS OF INTERNATIONAL ECONOMIC RELATIONS. BALANCE OF PAYMENTS OF A COUNTRY AND ITS STRUCTURE

18.1. World trade of goods and services. Technology as the goods in the world market.

18.2. International currency and credit relations.

18.3. International labour migration.

18.4. Balance of payments as generalizing indicator of foreign economic relations of the country.

MAIN CATEGORIES

International trade, international technology transfer, international currency relations, currency system, world money, currency, complete convertibility of currency, internal convertibility, external convertibility, currency quotation, reverse quotation, cross--quotation, spot market, spot rate, forward currency market, hedging, currency risks, balance of payments, trade balance, current account, capita account, reserve assets.

18.1. World trade of goods and services. Technology as the goods in the world market

International trade is the sphere of international commodity-money relations representing a set of foreign trade of all countries in the world [6, p. 30].

Technology is represented by scientific methods of achievement of practical purposes. The concept of technology usually comprises three groups of technologies: technology of products, technology of processes and technology of management [6, p. 342].

International technology transfer is interstate movement of scientific and technical achievements on a commercial and gratuitous basis [6, p. 342].

Research and Development intensity of trade is a share of expenses for researches and workings out in volume of manufacture and trade in goods of certain branches [6, p. 352].

Features of the market of technologies consist in that technology becomes a good when the real basis for commercialization of idea is created. The basic forms of commercial sale of technologies are:

– licenses;
– a know-how;
– engineering;
– consulting.

The market of technologies is very perspective considering a role and value of modern technology in production process of competitive products.

There are certain tendencies in development of technology:

− exchange of technologies should be considered as a part of business strategy of a firm equal in rights;

− even more often sale of technologies occurs in shape in the form a complex-patent rights, various documentation, performance of works of type "engineering";

− rates of sale of technologies advance rates of growth of all other types of service. Today the world trade turnover in technologies has made over 500 bn. dollars This trade is very profitable: costs form less than 10 – 15% of sales volume; on the basis of license agreement on sale of technologies cooperation communications between firms occur even more often;

− technology trade demands very high professional qualification to deal with license agreements.

The leaders in export of licenses are developed countries - the USA, Japan, Germany and Italy. They and also some fast developing countries of South East Asia are main importers of licenses. In the countries OECD:

− trade of space equipment (22,7% of expenses for research and development in total output), office equipment and computers (17,5%), electronics and its components (10,4%), medicines (8,7%) is considered to be high technology-intensive;

− trade of cars (2,7%), chemicals (2,3%) is considered as average technology-intensive;

− low technology-intensive is trade of brick, clay, glass (0,9%), tree and furniture (0,3%). [6, p. 352]

The World Bank classifies services into the following groups according to their interaction with other forms of international economic relations:

1) factor services – payments which occur in connection with international movement of capital, labour and technology;

2) non-factorial services – other types of service (transport, tourism and other non-financial services).

Classification of services [16, p. 251]:

1) The services connected to investment (financial services and travel services).

2) The services connected to trade (transport and accompanying services – freight; storage and warehousing; cargo handling works; cargo support during transportation; attendance of customs formalities).

3) The services connected to investment and trade:

– business-services: marketing researches, audit, consulting, insurance, advertising services, rent operations,

– communications,

– building and engineering-consulting services,

– computer and information services,

– cultural services (carrying out of exhibitions, fairs).

At the present stage there are changes not only in structure and dynamics of development of certain segments of the world market of services, but also in geographical directions of international trade in services:

1) The share of industrially developed countries has slightly decreased though their percentage still remains high – about 90%. Eight leading countries dominate – 75% of export and 50% of import of services. The decrease in share of international trade of services of industrially developed countries has took place at the expense of considerable reduction of the EU countries share (the European union) which wasn't compensated by growth of the USA (the United States of America) and Japan share.

2) The share of developing countries, first of all, at the expense of the countries of Asia has increased. The share of the countries of Latin America and Africa in international trade of services has decreased, nevertheless, growth rates of export and import of services in the countries of Latin America remain the highest in developing countries.

3) In receipts of industrially developed countries the greatest share is occupied by business services; in receipts of developing countries – item "Tourism" (on the average 17% of all currency receipts, and in a number of the countries, for example, in Jamaica – 30%, in Panama – 55%).

4) The share of the former Soviet countries is still low – 3,5% and 2,9% in export and import of services accordingly.

In the world market of cargo and passenger transport services the leaders are industrially developed countries: Japan that has the biggest fleet in the world, therefore navigation is up to 50% of export of services of this country; Great Britain, Germany, Norway, the USA.

In sphere of foreign tourism Great Britain, France, Italy, Canada, Switzerland dominate where tourism brings 40 – 50% of export gain.

Business services (financial, insurance, consulting, auditor, advertising, etc.) form the greatest share of receipts industrially developed countries.

Belarus in 2008 increased volume of foreign trade in goods and services in comparison with 2007 by 36,1% to 79 billion dollars.

According to National statistical committee, export increased by 35,1% and reached 37,3 billion dollars, import – by 37% to 41,7 billion dollars. Following the results of last year balance of foreign trade in goods and services was negative at a rate of 4410,9 million dollars, including goods – minus of 6103,5 million dollars, services – 1692,6 million dollars. The increase in cost volumes of foreign trade in greater degree is caused by increase of average prices for exported and imported goods. In comparison with 2007 average prices of export increased by 33,3%, import – by 20,1%. The physical volume of export increased by 1,7%, import – by 14,6% [2].

The volume of foreign trade in services for 2008 reached 6,807 billion dollars, having increased by 28,6% in comparison with 2007. Export of services increased by 30,2% to 4,25 billion dollars, import – by 26% to 2,557 billion dollars [2].

18.2. International currency and credit relations

International currency relations are a set of public relations developing at functioning of currency in the world economy and serving a mutual exchange by results of activity of national economy.

Development of international currency relations is caused by:
– growth of productive forces,
– creation of the world market,
– deepening of international division of labour,
– formation of world economy system,
– internationalization of economic relations.

Though currency relations are secondary in relation to reproduction, they possess relative independence and make on its return impact.

In conditions of internationalization of economic life dependence of reproduction on external factors increases – dynamics of world production, foreign level of science and technique, development of international trade, inflow of foreign capital. Instability of international currency relations, currency crises make negative impact on reproduction process.

The form of organization of monetary agreements fixed in international agreements represents international monetary system.

International monetary system is a form of organization of monetary relations fixed in international agreements that functions independently or serves international movement of goods and production factors. [7, p. 17]

Currency system is a form of organization and regulation of currency relations fixed by the national legislation or interstate agreements. There are (table 18.1):

– national currency system;
– world currency system;
– international (regional) currency system.

Table 18.1

Basic elements of national and world currency systems

National currency system	World currency system
National currency	Reserve currencies, international monetary units
Conditions of convertibility of national currency	Conditions of mutual convertibility of currencies
Parity of national currency	Unified mode of currency parities
Presence or absence of currency restrictions, currency control	Regulation of exchange rate regimes. Interstate regulation of currency restrictions
National regulation of international currency liquidity of a country	Interstate regulation of international currency liquidity
Regulation of use of international credit means of circulation	Unified rules of use of international credit means of circulation
Regulation of international payments of a country	Unification of basic forms of international payments
Regime of national currency market and gold market	Regime of world currency markets and gold markets
National bodies regulating currency relations of a country	International organizations which are carrying out interstate currency regulation

Currency is not new type of money but its functioning in sphere of international transactions' service.

National regime of currency transactions by various kinds of operations for residents and non-residents defines convertibility of currency.

Currency convertibility is ability of residents and non-residents to exchange national currency on foreign one freely, without any restrictions and to use foreign currency in transactions with real and financial assets. [7, p. 19]

Full convertibility supposes absence of any control and any restrictions both on current and on capital operations.

Full convertibility of currency means:

– free (without restrictions) exchange of national currency for a foreign one;
– possibility to use a foreign currency in transactions with real and financial assets;
– free import and export of foreign currency.

Full convertibility became the privilege of advanced countries with very strong export positions.

Regime of full convertibility of national currency (fully convertible currency) operates in very few countries. Today such countries as the USA, England, European Union, Japan, Canada, Singapore, Australia, New Zealand and some rich oil-producing countries use it. Full convertibility is presumed only by countries which have constant powerful inflow of a foreign currency. Similar situation occurs when countries have considerable competitive export of their goods and services and also inflow of foreign capital, wishing to be invested in their national market.

Countries with weak economy do not presume regime of full convertibility. Using it they:

– risk to remain without foreign currency;

– seriously lose at exchange operations as rate of foreign exchange is too high;

– face domination of import.

The noted negative effects make countries with weak competitive positions take safeguard measures to protect the country from threats of international competition. They impose restrictions on regime of currency convertibility which degree is rather differentiated:

1) full convertibility;

2) partial convertibility;

3) isolation of national currency.

Partial convertibility of national currency may be:

– according to differentiation of restrictions of currency transactions on national and the world market;

– according to degree of restrictions on operations of balance of payments.

Internal convertibility presupposes:

– the right of residents to exchange free conducting commercial transactions and operations with financial assets;

– the right to exchange domestic money for a foreign currency;

– the right to have currency deposit accounts in a national bank.

External convertibility is the right to hold operations with a foreign currency with non-residents, the right to perform exchange operations directly in the world market with its participants.

Internal convertibility can be accompanied by restrictions on operations conducting to outflow of currency from the country. In that case internal convertibility is reached in the absence of external convertibility. It can be reached for the account of:

– currency export embargo (establishment of barriers);

– Central Bank requirements to exporters to sell at a currency stock exchange a part of foreign currency earnings.

Imposed demands and restrictions are aimed at keeping of foreign currency in the country. Threats of its outflow will sharply weaken country positions.

Currency co-circulation represents use of one or several foreign currencies in monetary system of a country along with national currency recognized as lawful payment means [7, p. 23].

For example, except for the national currency, in the country the most widespread currency – the US dollar, and collective European currency – circulate. This currency co-circulation may also have illegal character. The reasons of aspiration of the population to use of foreign currency for internal calculations are its higher purchasing capacity and steady character. In conditions of inflation storage of savings in foreign currency serves as means of their preservation, protection against depreciation threats.

Currency co-circulation allows inflow of foreign investments expanding. Operations with reliable currency are a guarantee of stability of foreign business. Storage of capital in the form of currency savings is favorable and for domestic business for the same reasons.

However society as a whole sustains very big losses from currency co-circulation of national and foreign currencies:

1) Positions of national currency are undermined because demand for foreign currency automatically reduces demand for the national one as a result the latter depreciates.

2) There are additional complexities of monetary policy in struggle against inflation. Money supply contraction of Central Bank does not reach desirable effects as limited assets are compensated by additional demand for foreign currency. This process leads to extending inflation against which Central Bank initially tried to struggle.

Standards of currency systems:

1. **Gold standard –** international currency system based on official fastening by countries of the gold maintenance in a unit of national currency with obligation of the central banks to buy and sell national currency in exchange for gold.

2. **Gold – exchange standard –** international currency system based on officially established fixed parities of currencies to the US dollar which, in turn, was converted in gold at a fixed rate.

3. **Modern currency system** is a system with a combination of fixed and floating rates of exchange regulated on a bilateral basis by agreements between countries, and on multilateral – through IMF mechanisms.

4. **The European Monetary System** – zone of the coordinated 'float' of courses of national currencies to dollar created by EU member countries for the purpose of maintenance greater stability [4].

The main element of currency system of each country is its national currency. National currency is a monetary asset of a country and it possesses certain purchasing capacity. It is formed by quality of home market and level international relations.

Internal factors of purchasing capacity of money are:

– labour productivity in the real sector defining steady level of established prices;

– money supply and velocity of its turnover;

– rate of bank percent.

In open economy purchasing capacity of money is characterized by a fourth component – rate of exchange. It shows what volume of foreign goods (actives) can be bought for a certain sum of national money.

Purchasing capacity of money in home market characterizes its ability to exchange for goods of this market, on a foreign market rate of exchange becomes the indicator of efficiency of exchange of national money for foreign goods.

Rate of exchange is defined finally by level of real sector development of the country, level of its competitiveness. But it possesses also return action on purchasing capacity of national money. Falling of the rate of national currency will necessarily cause increase of internal prices because of import rise.

In each country purchasing capacity of national money is formed first of all by level of internal prices. The level of national prices depends on the accepted measure of prices and their dynamics.

Exchange rate defines price of one unit of foreign currency which should be paid by national money. Unlike real rate of exchange, exchange rate is not abstractly payment magnitude, and a concrete market price of foreign currency. Exchange rate shows how much national money it is necessary to give at present time for foreign currency purchase.

Currency quotation is definition of exchange rate on the basis of selected market mechanisms. In different countries two basic methods of currency quotation are used - direct quotation and indirect, or cross-country-quotation.

Note. Familiarize independently with essence of categories "spot-rate", "forward-rate", "nominal rate of exchange", "real rate of exchange" [7, p. 41-58].

Speculations in the currency market are operations, allowing to receive income at the expense of rate difference at converting of one currency in another.

Hedging represents action of a participant of the currency market, pursuing the aim to exclude loss of future income at possible change of rate of exchange [20]. Hedgers aspiring to secure themselves against currency risks, should mark out first of all such risks, monitor them constantly, and measure their size and dynamics**.**

The factors influencing exchange rate. Different directions in movement of exchange rates between national and foreign currencies lead to the situation when increase in rate of one currency leads to fall of rate of another (see pic. 18.1).
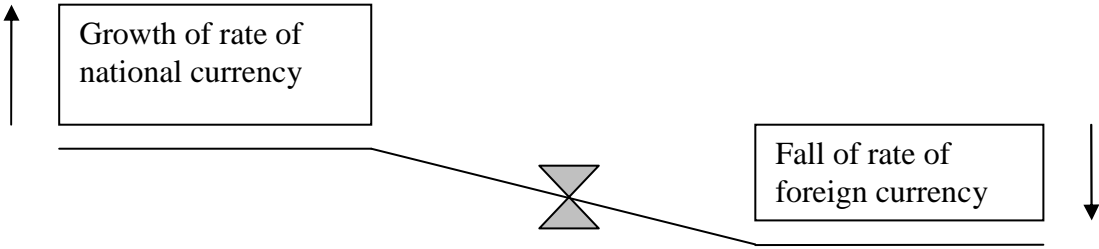
Pic. 18.1. Inverse relationship of dynamics of rates of national currencies

Increase in supply of foreign currency occurs **as a result of** two interconnected processes:
– inflow of foreign currency to the country;
– growth of demand for national currency.

Each of them defines features of dynamics of uniform process of interaction of currencies between different countries (pic. 18.2).
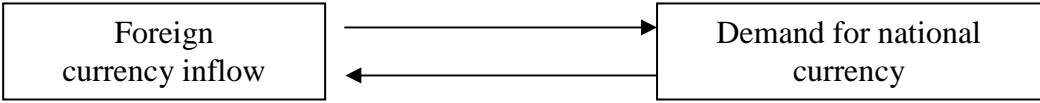
Pic. 18.2. Mechanism of supply of foreign currency

Factors of demand for foreign currency:
1) import of goods and services;
2) storage of savings in foreign currency;
3) demand for currency credits;
4) export of capital or "capital flight";
5) tourist trips of citizens abroad;
6) aid to foreign states in their currency.

Factors of supply of foreign currency comprise:

1. Export of goods and services. It is that field of activity which provides inflow of foreign currency to the country. Exporters sell goods to foreigners and bring currency gain to the country.

2. Receipt of an external currency loan.

3. Arrival of foreign tourists that require currency for their expenses in the country.

4. Capital import:

a) inflow of foreign loan capital in the form of deposits (increases inflow of currency which is converted into the national);

b) enterprise capital (settling down in another country should have a stock of its national currency. Therefore it is compelled in a certain part to exchange money resources for currency of that country where he decides to spend the business).

Currency policy in the Republic of Belarus. Exchange rate policy has been directed at preservation of financial stability and stability of Belarusian rouble exchange rate to the basket of foreign currencies including in equal shares the US dollar, euro and Russian rouble. From January, 2nd till November, 1st, 2009 parameters exchange rate of Belarusian rouble to the basket of foreign currencies was within the anticipated values. For the specified period cost of a basket of foreign currencies has increased by 5,4% (from 960 to 1012 roubles).

Taking into account mutual rates of foreign currencies the official exchange rate of Belarusian rouble decreased from January, 2nd till November, 1st, 2009 to the US dollar by 3,5% (from 2650 to 2743 roubles for 1 dollar), to euro – by 9,2% (from 3703 to 4044 roubles for 1 euro), to Russian rouble – by 3,7% (from 90,16 to 93,48 roubles for 1 Russian rouble).

In 2010 binding of Belarusian rouble exchange rate to the basket of foreign currencies (euro, the US dollar and Russian rouble) will remain. For maintenance of necessary flexibility of reaction of exchange rate on situation change on foreign markets the corridor of fluctuations of the basket of foreign currencies plus/minus 10% from the central value equal to cost of a basket, developed to the beginning of 2010 will be used. [17]

18.3. International labour migration

Theoretical approaches to the essence of manpower migration are generalized in the table 18.2 (worked out on the basis of [4, 5, 13]).

Thus, on the basis of the systematized theoretical approaches the author deduces the following definition: **Migration of manpower (labour force)** is a process reflecting qualitative and quantitative moving of able-bodied population from one country or region to another, because of unemployment and low standard of living of population, for the purpose of improvement of material well-being and life conditions.

Table 18.2

Ordering and generalization of theoretical approaches to manpower migration

Author/source	Essence of the concept
The law of the Republic of Belarus "About external labour migration" from June, 17[th], 1998. №169-3 (with the last changes and additions from July, 21[st], 2008)	**Migration of manpower** is voluntary legal departure abroad of citizens constantly living in the territory of the Republic of Belarus and also entrance of foreign citizens and persons without citizenship, constantly living out of borders of the Republic of Belarus, on its territory for work reception under the labour contract.
A.I. Dobrynin, L.S. Tarasevich	**Migration of manpower** - high mobility of labour, its free moving from one regions to others for the purpose of search and work reception.
Business Dictionary	**Migration of manpower** is moving of able-bodied population from one country to another because of unemployment, low standard of living of population.
The modern economic dictionary	**Migration of manpower** - moving of people, workers, connected with the change of place of living and work place.
S.P. Katsubo	**Migration of manpower** is a process of moving of able-bodied population searching for work or better conditions of life.

Emigration is leaving abroad, and immigration – arrival from abroad. Reemigration – returning of emigrants to a constant residence [18].

The difference between these two streams (emigration and immigration) gives amount of pure migration, their sum – volume of total migration.

Depending on geographical directions external and internal migration of population are distinguished.

Internal migration is understood as population moving between cities and regions of one country, and external is migration from one country to another. In turn, external migration may be intercontinental and midland.

Depending on duration of each moving population shift is divided into:

− constant or irrevocable (intercontinental migration and also migration from village to city usually has irrevocable character);

− temporary – as a rule, midland;

− seasonal, connected with annual trips on earnings or movement of nomads;

− pendulum, presupposing daily trips to a work place out of border of municipality.

Depending on legal status migration can be legal and illegal.

Global world market is a mechanism of interaction of demand for work and its supply on the world scene [20].

Economic consequences of labour migration:

1. The countries accepting foreign labour use it as a factor of development of productive forces.

2. Immigrants allow industrially developed countries during the period of economic growth with smaller expenses moving of manpower and smoothing disproportion in their distribution between countries and manufacture branches, exposed to considerable structural shifts in connection with scientific and technological revolution or integration process.

3. As a result of development of processes of labour migration there is a double labour market in many industrially developed countries.

4. Local businessmen win from import of foreign labour also because it allows them to constrain to a certain extent rates of growth of wages.

Migration policy. Host countries have a selective approach to migration policy: creation of favorable conditions for reception of foreign labour in which the country is most interested also cutting off of other migration inflows.

Scales of admissible migration:

− highly skilled experts connected to high technology manufacture;

− experts with a world name in activity of any kind;

− workers ready for heavy and harmful unskilled work for minimum salary of the country;

− businessmen investing in real sector of economy.

Programs of remigration stimulation:

− payment of indemnification for driving off;

− training on new specialties;

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− rendering of material aid to countries-donors of mass emigration

Professional-branch restrictions also exist in the form of an indirect interdiction i.e. when priority trades for entrance are allocated. The preferable mode of host countries, as a rule, concerns following five groups:

− workers applying for low-paid, not prestigious, heavy and harmful work (work on harvesting, in hothouses or repair shops, habitation building, drilling of oil wells);

− experts of quickly developing spheres of national economy - bookkeepers, workers of trade, banks, new hi-tech branches;

− representatives of rare professions, i.e. "piece" experts (diamond cutters, restorers of pictures and manuscripts, doctors practicing nonconventional methods of treatment etc.);

− experts of higher class and representatives of liberal professions (outstanding scientists, musicians, sculptors, sportsmen, highly skilled doctors etc.);

− supervising personnel of firms and their divisions, and also businessmen which transfer activity, in a host country and create workplaces.

As an example of indirect restrictions can serve "the List of concrete professions", made by the Ministry of migration in New Zealand on basis of the careful analysis of a national labour market. Other kinds of activity fall under an actual interdiction.

The Republic of Belarus and international labour market. According to decision of Ministers of the Republic of Belarus "About the state migration program for 2006-2010" №1403 export of labour is a perspective direction of migration which will allow the Republic of Belarus to join international labour market and in the long term – to promote growth of investment into national economy. [14]

The geography of labour contacts on labour import is also extensive: more than from 30 countries of the world come for work to Belarus, but the stream from the CIS countries is the most considerable – 1089 persons (87%), including from Ukraine 975 persons (77,9%). The stream of migrants from Russia is insignificant – 42 – 45 persons (3,6%) every year. Besides from the far abroad countries (Turkey, Austria, Algeria, Vietnam, Poland, etc.) – approximately 150 persons annually [14].

Officially registered number of workers-migrants who have arrived for work to Belarus, is insignificant: the maximum quantity of the arrived was observed in 1998 – 2969 people, lately their number was reduced: in 2003 1252 persons arrived

and in 2004 – 530. In 2006 basic importers of labour were countries of the CIS – of 55% of all arrived, including: Ukraine – 21%, Russia – 23% [9].

Analyzing migration streams from the country and in the country, the basic migration exchange of Belarus occurs to Russia, Ukraine and Kazakhstan. Immigrants from these countries make 85,3% in general number arrived to republic of the CIS countries and Baltic. Still for Belarusians attractive countries for labour export are the USA and Germany in which in the first quarter of current year 96 and 136 persons accordingly have left. However, experts have noted, it in times is less, than was 10 years ago. In their opinion, the number of persons leaving abroad from Belarus will gradually decrease [15].

If we speak about age structure of workers – migrants among arrived for work to Belarus in 1996 persons at the age of 30 – 39 years (44.5%) prevailed. The next years number and a share of persons of this age has decreased to 25%.B too time the share of people till 24 years – from 29% to78% (in comparison with 2002) [21], [9] has considerably grown.

18.4. Balance of payments as generalizing indicator of foreign economic relations of the country

Balance of payments: concept, the reasons of drawing up, the theory. Balance of payments is understood as statistical record of all economic transactions or liabilities which have been carried out (or term on which has come) during a certain interval of time (month, quarter, year) between residents of a given country and residents of any other countries of the world [20].

Balance of payments fixes a condition of payments and receipts of a given country. International monetary fund characterizes balance of payments as "statistical record of all economic transactions during a given period between residents of the reporting countries".

Such formulation demands some explanations.

Firstly, considerations of concept "resident". Diplomats, military, tourists even if they are out of territory of the country, act as residents of that state, which citizens they are. It also concerns firms. It is a resident of that country where it was registered but not where it carries out the operations. As to branches and divisions they too can be residents and be a representative of places of their registration. The status "resident" depends on the fact of registration of its constant location or residing. The exception is made for international organizations (the United Nations Organization, the International monetary fund, the General agreement on Tariffs and Trade, etc.) which are not residents of that country where they are located.

Secondly, it is necessary to specify that balance reflects not individual, but aggregate transactions between the country and other states.

Kinds of the foreign trade transactions [20]:

1. Export of goods.
2. Export of services.
3. Percent and dividends.
4. Unilateral transfers or transfers.
5. Long-term loans and investment of foreign residents.
6. Short-term investment and loans of foreign firms and organizations.
7. Foreign reserves.

These kinds of transactions can be united in three groups: current account transactions which concern first of all:

− export-import transactions (points 1, 2, 3 and 4);
− transactions connected to movement of capital (points 5 and 6);
− accounts of official reserves (point 7).

Kinds of balances of payments:

1. To estimate position of a country in international payments export and import ratio first of all is defined. Line under volumes of receipt and sale of goods abroad allows to receive trade balance.

2. Addition to balance of goods and services of sums in unilateral transfers and gifts allows to receive current account balance.

3. Addition current account balance by article on long-term transfers and payments allows to deduce basic balance.

4. Addition to basic balance of article "movement of short-term capital" gives balance of independent accounts. Importance of such balance is connected by that movement of international short-term capital can be not a temporary phenomenon, but a consequence of development of a national economy.

5. One more version is balance of liquidity. It differs from balance of independent accounts by inclusion of such articles, as errors and admissions, short-term obligations which are in hands at non-residents, and foreign short-term obligations which are at residents of the country

The role of government reserves:

− guarantees of maintenance of national currency rate,
− insurance upon unexpected losses at poor harvests, acts of nature, civil disorders, military actions.
− reserves guarantee credit status of the nation and at use in the form of credit provide additional profit in the country budget.

6. In practice of some countries balance of international investment debts is used. It fixes increase or, on the contrary, outflows of liabilities and assets.

Such balance can be defined as a sum of all last debit and credit accounts in time business of movement of capital.

Methods of regulation of balance of payments are generalized in the pic. 18.3.

METHODS OF CURRENT REGULATION OF BALANCE OF PAYMENTS
Administrative – current direct control of articles of balance of payments, use of currency restrictions. Foreign trade policy methods – economic levers of government on regulation of trade balance: grants to exporters, introduction of additional duties on importers; Methods of fiscal policy – economic levers of government influencing economic growth, its efforts in industrial and structural policy promoting import of foreign capital and interfering outflow of capital; Credit-and-monetary – Central Bank influence on balance of payments through regulation of monetary weight of the country and, accordingly, through discount rate.

Pic. 18.3. Methods of regulation of the balance of payments

Theories of balances of payments [20]:
1. The classical theory
2. Keynesian theory of balance of payments.
3. Monetary theory of balance of payments.

Note. Study balance of payments of the Republic of Belarus independently, using [1].

CHECKLIST

1. Characterize international trade of goods, services, technology.

2. Show a place of Belarus in the world economic processes in the area of trade of goods, services and technology.

3. International migration of labour force: concept, reasons, kinds, modern tendencies, scales, directions and economic consequences.

4. Modern centres of gravity of manpower.

5. Forms and methods of governmental and international regulation of external labour migration.

6. The Republic of Belarus and the international labour market. Migration policy and the Republic of Belarus.

7. What are the tendencies of migration of labour in modern conditions?

8. What reasons induce people to move from one country to another?

9. Name problems of illegal migration and methods of its regulation in the Republic of Belarus.

10. Estimation of operating mechanisms of management of migration processes in Belarus.

11. Characteristic of migration processes of Germany.

12. Economic consequences of migration of labour for countries.

13. Branch distribution of migrants in Belarus.

14. Social and economic problems of labour migrants.

15. Why is balance of payments always balanced in the conditions of floating rates?

16. How is it possible to reach equilibrium of balance of payments at a fixed exchange rate of national currency?

17. Why is deficiency of balance of payments dangerous?

18. What are possible threats for a country at proficiency of balance of payments?

19. What levers does government have for alignment of balance of payments?

20. What arsenal of means does National Bank have for balancing of balance of payments?

21. What factors can affect toughening of currency control in Belarus?

22. Why is long passive condition of balance of payments considered an aggressive inflationary threat for a country?

23. How does revaluation of national currency solve equilibrium problems of balance of payments?

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