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ТЕХНОЛОГИЧЕСКИЙ АУДИТ И РЕЗЕРВЫ ПРОИЗВОДСТВА



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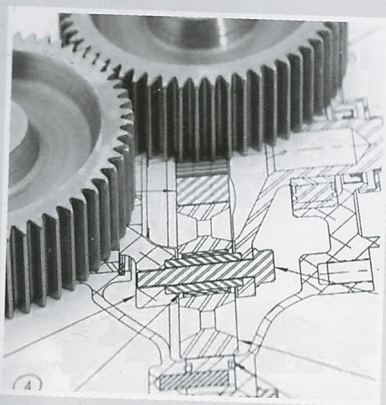
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Economics and enterprise management, Development of productive forces and regional economy, Economic cybernetics, Problems of macroeconomics and economic development



TECHNOLOGY AUDIT AND PRODUCTION RESERVES

№ 4/5(36), 2017

CONTENTS

DEVELOPMENT OF PRODUCTIVE FORCES AND REGIONAL ECONOMY

- 4 Research of the level of socio-economic development of Ukrainian regions
Kozrytska O., Sagunak-Nikifuk R., Kevlyshenko V., Derzhakaya X., Kevlyshenko G.
15 Comparison of port activities of the East Coast of the Baltic Sea: 1996–2016
Pavuk O.
19 Innovative doctrine development of agriculture growth of Ukraine
Khalatur S.
26 Development of methodological concept of resource-saving development of agro-industrial complex
Gerashchuk M.
31 Analysis of the Ukrainian instrument-making industry international competitiveness using porter's diamond
Pekras O.

PROBLEMS OF MACROECONOMICS AND SOGO-ECONOMIC DEVELOPMENT

- 37 Analysis of the costs and revenues of agricultural products in the selected countries of Central Europe
Kudakova Stasova L., Bafus R.
44 Estimation of structural organization of corporate relations at forming of corporation development strategy
Popov O., Serdikov K.
50 Investigation of the underwriting process in facultative reinsurance, its features and influence on balance of insurance portfolio
Andruschenko V.
55 Application of recommendation blocks for conversion management of the internet store
Ashcherkova M., Kulagin A.
59 Abstracts and References

ЗМІСТ

РОЗВИТОК ПРОДУКТИВНИХ СИЛ І РЕГІОНАЛЬНА ЕКОНОМІКА

- 4 Дослідження рівня соціально-економічного розвитку регіонів України
Козирська О. В., Сагуняк-Нікіфук Р. В., Кевльшанко В. А., Дерешакая Х., Кевльшанко Г. В.
15 Порівняння діяльності портів Східного Узбережжя Балтійського моря: 1996–2016 рр.
Павук О. А.
19 Розробка інноваційної доктрини розвитку сільськогосподарства України
Халатур С. М.
26 Розробка методологічної концепції ресурсозберігаючого розвитку АПК
Герашчук М. А.
31 Аналіз конкурентоспроможності приладобудування в Україні за допомогою помбу національних переваг
Пекрас О. С.

ПИТАННЯ МАКРОЕКОНОМІКИ ТА СОЦІАЛЬНО-ЕКОНОМІЧНОГО РОЗВИТКУ

- 37 Аналіз витрат і доходів від сільськогосподарських продуктів в окремих країнах Центральної Європи
Кудякова Стасова Л., Бафус Р.
44 Оцінка структурної організації корпоративних відносин при формуванні стратегії розвитку корпорації
Попов О. С., Сердіков К. І.
50 Дослідження процесу укладання андеррайтингу у фактурювативному перестрахуванні, її особливостей та вплив на збалансування страхового портфеля
Андрусченко В. І.
55 Застосування рекомендаційних блоків для підвищення конверсії інтернет-магазину
Ашчеркова М. С., Кулагін А. І.
59 Abstracts and References

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3. This study supports the argument of economists that industrialization depends on the agriculture improvement. If the economy has a stagnant agricultural industry, this will not mean industrial development. With the expansion of the agricultural sector, industry will develop. Thus, in the case of Ukraine's national economy, the success of development will depend on the growth of the agricultural sector, at least in part. Empirical results indicate that Ukraine must adhere to the agricultural economic growth strategy aimed at innovative agricultural development; therefore, the policy should be aimed at promoting agricultural growth, since agriculture is not a passive sector, but a «leading industry» for economic growth.

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РАЗРАБОТКА ИННОВАЦИОННОЙ ДОКТРИНЫ РАЗВИТИЯ СЕЛЬСКОГО ХОЗЯЙСТВА УКРАИНЫ

Предложено инновационную доктрину развития сельского хозяйства Украины на основе процесса синергии элементов стратегии, в которой определены механизмы ее реализации. Эти механизмы предусматривают концентрацию на основных направлениях научно-технического и образовательного аграрного потенциала страны на основе конкуренции, создание национальной и региональных инновационных инфраструктур, формирование организационно-экономического механизма инновационного развития сельского хозяйства.

Ключевые слова: сельскохозяйственная отрасль, инновационная доктрина, человеческие ресурсы, процесс синергии элементов стратегии.

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DEVELOPMENT OF METHODOLOGICAL CONCEPT OF RESOURCE-SAVING DEVELOPMENT OF AGRO-INDUSTRIAL COMPLEX

Розроблено методологічну концепцію ресурсозберігаючого розвитку АПК за допомогою розробки нової моделі формування ресурсозберігаючого механізму та системи основних методологічних принципів формування ресурсозберігаючого механізму. На основі цієї концепції в подальшому буде створений підхід до визначення тенденцій та факторів розвитку процесу економічного регулювання через використання якісних і кількісних показників. Цей підхід, на відміну від існуючих, створює інформаційну основу для прийняття обґрунтованих управлінських рішень щодо вибору системи ресурсовикористання.

Ключові слова: методологічна концепція ресурсозбереження, ресурсовикористання в АПК, ресурсозберігаючий механізм, підприємства АПК.

1. Introduction

Traditionally, the problems of methodology in the sphere of resource saving are oriented at research and ensuring the reduction of the specific material consumption on the

basis of technical, economic and organizational changes. We can say that traditionally the problems of resource-saving methodology were developed only in relation to the sphere of production, that is, there is a technocratic approach.

However, in connection with the complexity of tasks and objectives, the scope of the research methodology is also complicated. There is a discrepancy between the old forms of new content. There is a need to move to higher forms, which contributes to solving the problem of developing the resource potential. Development of the theory of crises of resource supply and reproduction of resource potential should be referred to such forms.

Solving the tasks posed from the perspective of the research methodology on the basis of the previous approach, which can be defined as simple, from the position of today's requirements, even elementary, is no longer possible.

2. The object of research and its technological audit

The author determines that Ukraine needs to use the world experience of state policy to support technical and technological provision of the agrarian sector. According to the results of the analysis, it can be argued that the agrarian and industrial complex of developed countries has a transition from resource-consuming principles to economical management, as well as rapid computerization of all spheres of activity. In the process of evolution of the world's agro-economy, a special mechanism for stimulating the development of resource-saving processes has developed, with the involvement of a complex of financial and non-financial regulators.

To implement the experience of the countries of the world in the Ukrainian agrarian sphere, it is necessary to take into account the peculiarities of a specific period of formation, market relations, analogies of which history does not know. An important conclusion follows from this: the economy of the agro-industrial complex must go its own way to resource saving, but taking into account the advanced scientific and practical achievements of other countries and their models of state regulation of the economic conjuncture. Using points of innovative growth, domestic agribusiness has the opportunity to implement a qualitative leap in development based on resource-saving programs and projects.

3. The aim and objectives of research

The aim of research is development of a methodological concept of resource-saving development of the agro-industrial complex.

To achieve this aim, the following tasks are set:

1. Based on the analysis of traditional methodology to form a new model of the methodology for studying the formation of a resource-saving mechanism.

2. For the construction of a new research methodology, to develop a system of basic methodological principles for the formation of a resource-saving mechanism.

3. With the help of SWOT analysis to justify the solution of social problems in the countryside by introducing resource saving based on a methodological approach to determining trends and factors of the development of economic regulation.

4. Research of existing solutions of the problem

The problems of methodology in the sphere of resource saving are mainly focused on research and maintenance of

reduction of specific material consumption on the basis of technical, economic and organizational changes [1–14]. Traditionally, the problems of resource-saving methodology were investigated only in relation to the sphere of production, characterized as a technocratic approach.

The traditional assessment of resource-saving level is based on the use of resource and cost approaches [15]. Most often, in practice, indicators are involved, when calculating the value of the incurred costs, rather than the used resources [16]. This is due to the fact that in the process of consumption of resources, their transformation into expenditures takes place. This makes it necessary to characterize the range of resource-saving indicators from the position of the definition:

- 1) tools for assessing the resource-saving level;
- 2) identity or difference in resource-saving indicators and the efficiency of resource use.

The tool for assessing the resource-saving level can be the indicator of resource intensity of output as a generalized indicator of the effectiveness of resource use in the stages of the life cycle of a product or for its entire life cycle [17, 18]. Depending on the method of formation, the indices of resource intensity of production are divided into absolute, structural and relative.

Complex index of resource-saving level can be integrated material consumption, which is defined as the ratio of the total resource costs in the region to the volume of output produced by it [19]. Integral indicators are the expenditure of all material resources per unit of value of all products of agriculture, livestock and aggregate agriculture. At the current stage of production relations and the transition to market principles of production organization, an important indicator of the material consumption of agriculture is the norm of material costs.

The methodology for developing standards for the material consumption of agriculture provides for a step-by-step solution to this problem [20].

The essence of resource saving organization is that in agriculture there are many industries that conditionally combine into two large areas – plant growing and animal husbandry, in each of which the appropriate methodological approaches are applied [21]. In addition, different production resources are used in various industries. Many resources are common to all sectors of the economy, including land, water, labor, technical, but there are certain types of resources that are specific to a particular area that significantly affect sustainable development. So, in plant growing, the use of scientifically valid doses of mineral and organic fertilizers, chemical plant protection products, the quality of seeds, and in livestock – the types of feed, their quality, the balance of protein content, medicines, etc. is of great importance [22].

5. Methods of research

The problem can be solved on the basis of the use of the dialectical method, which studies the most general connections of the system «nature – society» and the contradictions of these connections, as well as the application of the evolutionary approach – gradual development, which is based on continuous, gradual quantitative change as one of the forms of movement in nature and society.

The author determines that the modern methodology for formation of resource-saving should implement two types of functions.

Firstly, it reveals the essence of resource-saving policy as a category and its relationship with other spheres of activity, that is, considers resource-saving policies from the point of view of practice, society and the effectiveness of social production. Methodological functions are realized here using the methods of dialectics and evolution.

Secondly, the methodology solves the tasks of improving, rationalizing the very scientific activity in the study of resource-saving problems, relying on general methodological guidelines and grounds.

The system approach in the formation of resource-saving development methodology represents a certain stage in the development of cognition methods in the sphere of resource-saving. Resource saving as an object of research is a complex object in the state of development. It is a multi-level and socio-economic system.

6. Research results

The theoretical basis for development of methods for studying such object is the principle of systemic nature. An important feature of the application of the system approach is that not only resource saving is a complex research object, but the research process itself acts as a complex system which task, in particular, consists in combining various elements of the system into a single whole. The greatest effect of this compound can be obtained on the basis of the system approach. In the implementation of the system approach as a methodological tool for developing a resource-saving mechanism, three blocks of problems can be distinguished:

I. Definition of the system of principles according to which it is necessary to develop:

a) the initial principle is the definition of the goal, that is, through resource-saving should come to the resource supply as the highest form of resource-saving;

b) the principle of efficiency;

c) readiness for implementation;

d) socio-psychological readiness of the perception of a new methodology.

II. Determination of the levels of research on the formation of resource-saving based on approaches to which:

a) Global;

b) National;

c) Regional.

III. Determination of the doctrine (guiding political principle):

a) Geopolitical (geo-economic);

b) Historical.

The methodology of studying the development of resource saving is, like the problem as a whole, at the stage of its formation and development. From the presented general type of directions of the research methodology, a powerful research reserve can grow, which studied some large unprocessed topics in the most unexpected questions.

Resource saving research is a difficult task, which is stood at the turn of the 20th and 21st centuries, and is of great importance due to the fact that the natural potential feeding economic development has changed (Fig. 1, 2). At the same time, the fundamental novelty of the situation is still very poorly understood by economic theory.

The problem of methodology, as well as the development of a resource-saving mechanism, requires serious further development. The task of developing a new methodology for studying the formation of resource saving becomes critical.

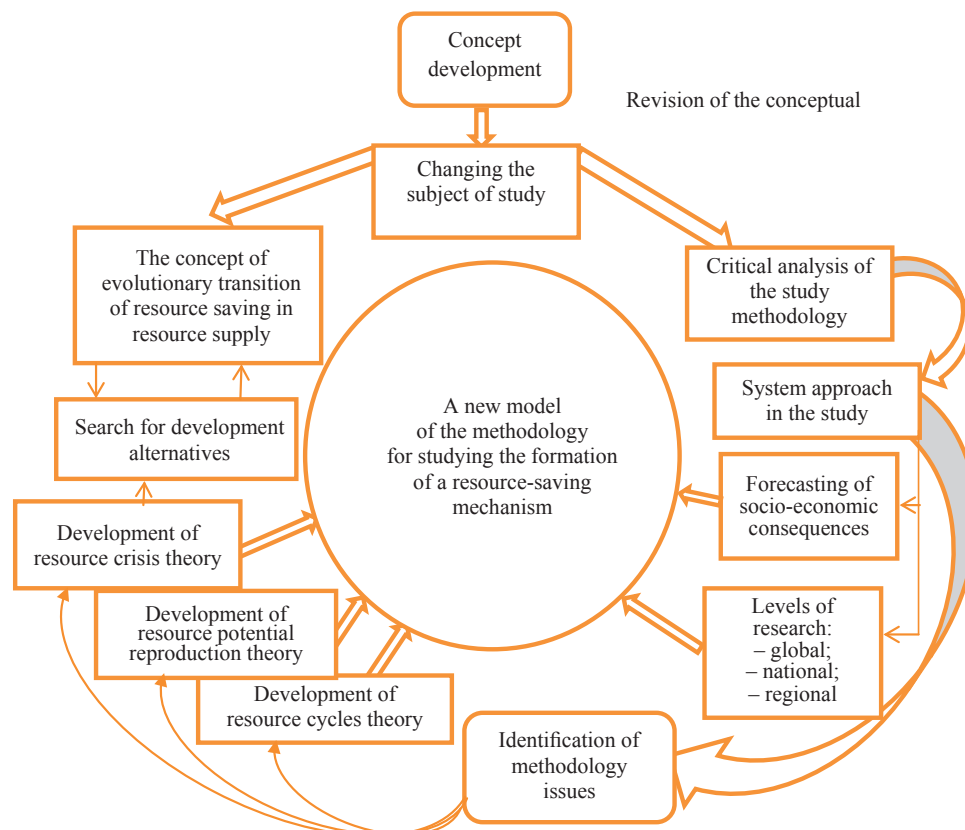


Fig. 1. Model of technology to change the methodology of RP research

In the implementation of this task, the principle of the system approach takes center stage, with which we learn what is excited and why, we analyze the situation and find the «pain points» of the problem and correct the system.

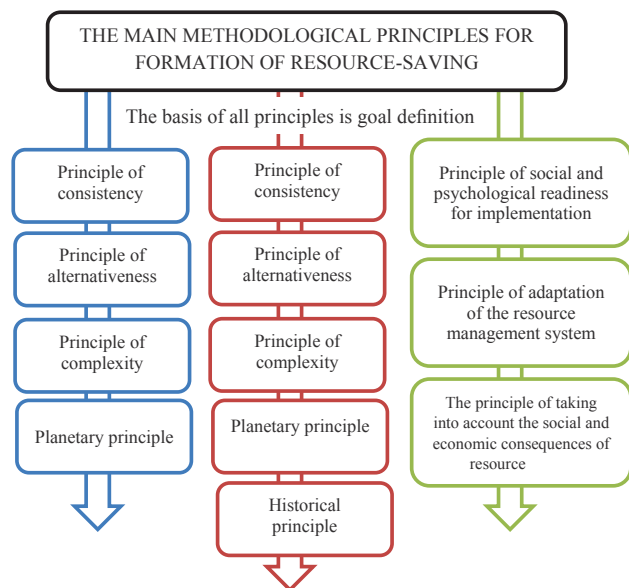


Fig. 2. The system of basic methodological principles for formation of a resource-saving mechanism

The basis of the research methodology, in our opinion, is the application of the alternative method that is determined by the following:

- analysis of the dynamics of changes in the sphere of resource saving and formation of resource potential, oriented to the prospects of ensuring the growth of the resource supply, requires a multivariate, rather than scenario-based forecasting;
- recognition of the alternative in the formation of a resource-saving mechanism raises the problem of comparing its various variants with each other and choosing the optimal one, most consistent with the long-term interests of mankind, and in relation to Ukraine – its supreme national and state interests. The choice of the optimal variant of resource saving is only an initial stage for the development of conditions and practical steps designed to direct the social and economic transformations in the field of resource saving in the desired direction. An important role here is played by the analytical and expert functions of science in the mechanism for making strategic decisions, creating structures that allow coordinating actions to overcome resource crises and implementing a resource saving mechanism on a global and national scale.

Taking into account the possibilities of an alternative method of forming the resource potential, scenario construction of predictions of models of options for its implementation will stimulate the search for answers to the questions of the way out of the resource crisis at the threshold of the new millennium.

Formation of a resource-saving mechanism has a direct impact on the changing socio-economic development of society. Therefore, the need to study the consequences caused by the formation of a resource-saving mechanism on the social and economic spheres of life as a methodological tool becomes very urgent. In connection with

this, let's dwell on the social aspect of the problem of saving material resources.

The economy of material resources allows to mitigate to some extent the negative consequences of the current stage of development, which are presented below:

1. The growth of unemployment, due to the reduction of resource provision. Providing raw materials production and employment of the population have a direct and rigid connection: no raw materials – no work.

The growth rate of unemployment increases in a multiple proportional relationship to the rate of decline in the supply of raw materials. It must be borne in mind that the same unit of material resource that has entered the process of industrial production, basically, is a multi-process processing. And the more complex the production process, the more people are employed in the production process, and even more, when the supply of raw materials is disrupted, will be unemployed. This connection is now neglected.

However, the connection between these two processes is not defined and taken into account, although it is absolutely necessary to make such calculations for the forecast data. Some generalizing predictive calculations carried out by us have made it possible to determine the possible additional demand for labor resources in the sphere of recycling.

2. The deterioration of the environmental situation due to the persistence of a low level of use of secondary resources and production waste. The state of the environment and the level of use of secondary resources and production waste have a direct and rigid relationship: how resources are used – such and ecology. The rate of deterioration of the ecological situation corresponds to the rate of formation of unused production waste.

It is necessary to pay special attention to two points.

First, the growth of large cities is accompanied by active housing construction in the areas adjacent to it, where landfills were located for construction.

Secondly, these lands as a result of the «cumulative» nature of waste have an environmentally hazardous effect on human health (salts of heavy metals, radioactive background, etc.). According to experts, despite the measures of sanitary cleaning of places of construction, this «delayed-action» bomb has its influence on the health of people living in these places for a long time.

Today, this «delayed action» of unused waste can't even be fully appreciated. But it is possible to evaluate based on the resource approach, how much can make secondary raw materials, how much will it cost compared to the security measures and what will be the socio-economic effect. An active position, based on a resource approach, focused on saving resources, will directly affect the improvement of the ecological situation and human health.

3. Decrease in living standards, due to losses in consumption of resources. The living standard of the population is directly dependent on satisfying the demand for essential goods, the level and dynamics of prices for material resources, the state of which, to a certain extent, is a consequence of the level of use of material resources. This aspect of the problem is well developed in theory.

4. Decreased level of spiritual development of the individual. In the future, a certain dependence of the level of the person's spiritual development on the availability of raw materials and materials will become more and more

evident, due to their ever increasing scarcity. It is difficult for a young artist to develop his abilities, if there is no canvas and colors. While the ratio of free and working time has traditionally been the criterion for assessing the social effect, the situation is now changing dramatically and this approach is becoming inadequate to the requirements of the environment.

In the future, the criterion for assessing the social effect will not be free time, but the possibility of employment, its orientation on the possibility of using abilities, labor for development of the individual.

7. SWOT analysis of research results

Strengths. Saving of material resources is a prerequisite for additional, but even the main resource, and, at the same time, serves as a prerequisite for reducing unemployment growth. The use of secondary resources, as shown by the estimates of experts of the Ministry of Industrial Policy of Ukraine, requires additional involvement of labor in this sphere.

Weaknesses. A decline in the standard of living, due to losses in the consumption of resources. The living standard of the population is directly dependent on satisfying the demand for essential goods, the level and dynamics of prices for material resources, the state of which, to a certain extent, is a consequence of the level of use of material resources. In the future, there will be a growing dependence of development level of the individual on the availability of raw materials and materials, in connection with their increasing scarcity

Opportunities. The social effect of this direction is determined by the cumulative result of the previous ones. The development of a methodology for calculating the social effect of saving material resources is a complex, independent issue. It should be said that currently there is not only a methodological basis for comparing the costs and results of social efficiency of saving material resources, but also the very formulation of such task.

Threats. The impact of unused secondary resources on the state of the environment is «cumulative», in addition, also the nature of «delayed action». The volume of unused waste constantly increases, requiring the alienation of all large areas under landfills, which, of course, has a direct negative impact on the habitat. Influence does not change only quantitatively according to linear dependence, it also has the property of qualitative transformation: with time it can occur at an accelerated pace, for example, various wastes react with each other.

8. Conclusions

Thus, it can be concluded that the resource saving in solving the problems of the enterprises of the agro-industrial complex has a considerable potential for solving them based on a methodological approach based on the identification of trends and factors in development of economic regulation process because of the use of qualitative and quantitative indicators, unlike existing approaches, creates information basis for making informed management decisions on the choice of resource management system.

As a research results:

1. Tendencies and factors of development of economic regulation process are identified, namely, research and main-

tenance of reduction in the specific material consumption based on technical, economic and organizational changes, which is characterized by a technocratic approach.

2. A new model of the methodology is formed for studying the formation of a resource-saving mechanism, taking into account the study of the consequences caused by the formation of a resource-saving mechanism on the social and economic spheres of life as a methodological toolkit with an emphasis on the social aspect of the problem of saving material resources.

3. System of basic methodological principles for formation of a resource-saving mechanism is developed. These principles provide opportunities for an alternative method of forming a resource potential, scenario-based forecasting of models of options for its implementation, which will stimulate the search for answers to the questions of the way out of the resource crisis at the threshold of the new millennium.

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РАЗРАБОТКА МЕТОДОЛОГИЧЕСКОЙ КОНЦЕПЦИИ РЕСУРСОСБЕРЕГАЮЩЕГО РАЗВИТИЯ АПК

Разработана методологическая концепция ресурсосберегающего развития АПК при помощи разработки новой модели формирования ресурсосберегающего механизма и системы основных методологических принципов формирования ресурсосберегающего механизма. На основе этой концепции в дальнейшем будет создан подход к определению тенденций и факторов развития процесса экономического регулирования через использование качественных и количественных показателей. Этот подход, в отличие от существующих, создает информационную основу для принятия обоснованных управленческих решений по выбору системы ресурсопользования.

Ключевые слова: методологическая концепция ресурсосбережения, ресурсоиспользование в АПК, ресурсосберегающий механизм, предприятия АПК.

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ANALYSIS OF THE UKRAINIAN INSTRUMENT-MAKING INDUSTRY INTERNATIONAL COMPETITIVENESS USING PORTER'S DIAMOND

Проведено аналіз міжнародної конкурентоспроможності приладобудування України за допомогою ромбу національних переваг М. Портера. Аналіз проводився за такими показниками, як: факторні умови (людські ресурси, природні ресурси, фінанси, технології, інфраструктура), кластер підтримуючих галузей, попит на внутрішньому ринку та конкуренція на внутрішньому ринку.

Ключові слова: приладобудування України, застосування ромбу Портера, міжнародна конкурентоспроможність приладобудування.

1. Introduction

Competitiveness is a key indicator that answers the questions of opportunities in achieving and maintaining certain competitive positions in the international and global markets. The instrument-making industry is one

of the most promising in the economy of our state, since it includes a complex process of production from the use of raw materials to high-precision production, thereby increasing the competitive positions of the country as a whole. That is why in this paper the competitiveness of the instrument-making industry has been studied.