# REPORTS OF THE NATIONAL ACADEMY OF SCIENCES OF THE REPUBLIC OF KAZAKHSTAN

ISSN 2224-5227 Volume 6, Number 322 (2018), 137 – 143 https://doi.org/10.32014/2018.2518-1483.43

IRSTI 06.56.21 UDC 330.341.4:339.13

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## MARKET MECHANISMS OF DEVELOPMENT OF THE MINERAL RESOURCE COMPLEX OF KAZAKHSTAN AT THE PRESENT STAGE

Abstract: This article considers the theoretical concepts of the use of market mechanisms for the development of the mineral resource complex of Kazakhstan at the present stage. It defines the features of the formation of the market of mineral resources in Kazakhstan, taking into account the mining and geological, natural resources and socio-economic features of the extraction of mineral raw materials and raw materials at the present stage. The first feature of the development of the mineral resource complex is the difference between the production factor "earth" and other natural resources. The second feature is that the mineral and raw materials production is carried out in the conditions of the natural environment. The third feature in the extraction of mineral resources is the state of working conditions and their effects on the human body. The fourth feature, objectively affecting the rise in the cost of mineral raw materials, will be a large variety of technical means necessary for its production. It has been established that the study of the market for mineral raw materials should be based primarily on a theoretical understanding of macroeconomic processes with developed market relations, taking into account the factor of globalization and the activation of the innovation component of production.

**Key words:** mineral and raw materials market, features of mineral and raw materials production, innovative development of the mineral and raw materials complex.

Introduction. The mineral resource market belongs to the category of the main backbone elements of the market system. The raw structure of the economy in Kazakhstan is not able to ensure the sustainable development of the state. The growth of the economy is achieved through the export of mineral resources, and it accounts for a significant proportion of total exports. This imposes a special responsibility on the process of the formation of the mineral and raw materials market and implies a thorough study of the peculiarities of this process.

Natural resources - the most important components of the human environment, used to meet the material and cultural needs of society. They are very diverse, as are the possibilities of their use by humans.

In domestic science has accumulated some experience in the development of methodical approaches and practical recommendations on the economic assessment of certain types of natural resources.

Proper use of natural resources, and also possession of ways of their use in productions processes is still the main subject of economic researches. The natural resource factor determines the structure of distribution of branches of production on a territorial basis, also affects the specialization of the economy and determines the nature of the use of investment resources. In addition, the final performance of the use of natural resources is determined not only by the total amount of resources consumed, but also depends on their socio-economic assessment, the level of justification for the degree of rationality of their operation.

**Methods of research.** The theoretical and methodological basis of the research is the classical theory of reproduction, the theory of subsoil use and the theory of market formation, and, consequently, the work of domestic and foreign economic scientists in this direction, as well as scientific and theoretical materials in scientific monographs and periodicals.

In preparing this article the systematic approach, methods of comparative analysis, as well as factor analysis and generally accepted methods of economic research were used.

Results obtained. The specifics of the mining sector of the economy were noted by many researchers of mining science, pointing to the difficulties of mining production [1-4]. However, not only the production features take place during the development of the mineral and raw materials market, but also the features of the processes of commodity and money circulation. Based on the fact that one of the decisive factors for the existence and development of the market is the cost value, and for society - the compliance of prices with socially necessary labor costs, we will consider the particularities of the formation of this market from this point of view. The first feature is the difference between the production factor "land" and other natural resources.

It is known that the earth is a universal means of production, and in a broader sense, the whole natural environment. At the present stage of development of society, the nature of the relationship of production with nature is changing. The latter ceases to be something higher in relation to production. The task of the reproduction of natural resources, the more complete and rational use of their non-renewable components, and the protection of the natural environment are becoming more and more acute.

Revealing further this difference it should be noted its spatial, territorial value and the fact that it is both a place of production and a place of work. Let's consider the manifestation of the multilateral phenomena of this feature from an economic point of view.

The extraction of mineral resources is realized only through the continuous investment of significant capital. Thus, four stages are clearly distinguished in the industrial development of mineral deposits: geological exploration of a deposit, design of enterprises for its development, construction of enterprises and their operation.

Geological survey establishes the degree of difficulty in operating a field. The effectiveness of the subsequent stages of development depends on the reliability of its data.

Designing mining enterprises with the probabilistic nature of the initial information can lead to the adoption of erroneous design decisions, the consequences of which are manifested only during construction or operation. So, when determining the place of laying of trunks or chambers, as well as when tracing the opening and prepared workings, certain difficulties are created due to insufficient knowledge of the structure of the mine field. In some cases, shafts and large chambers due to insufficiently complete knowledge of tectonics are laid in the zone of the displacer in the massaged rocks. In this case, large amounts of money are spent on their penetration and maintenance.

Poor knowledge of the hypsometry of the formation at the time of the design may lead to the wrong choice of the development system. Errors in determining the thickness of the reservoir can lead to the wrong choice of the type (type) of coal mining mechanization.

In this regard, the invested capital pays off, as a rule, only in 3–5 and sometimes more years, depending on the geological conditions, etc. This complicates the turnover of capital. In turn, low capital turnover increases production costs. After all, the classical economic theory in the cost of production includes not only the costs of raw materials, equipment, labor, but also the percentage that a firm could receive on its capital if it applied it elsewhere. As a rule, this comparison is carried out with bank interest on capital. In addition, a long period of capital circulation forces us to abandon today's benefits in favor of the future, which also in modern inflationary processes is not in his favor.

The second feature is that the mineral and raw materials production is carried out in the conditions of the natural environment. This feature determines:

- a) the general dependence of production on mining and geological conditions. At the same time, the production of mineral resources is limited to a certain list of them, for which these particular environmental conditions are optimal, and therefore, under these conditions they will give the greatest effect.
- b) a certain dependence of the production of mineral resources with environmental degradation. This objectively affects labor productivity and production efficiency.

The technology and technology of mining production now and in the future is objectively related to the change in all components of the natural environment.

A large variety of geological, industrial and climatic conditions in which coal mining and processing enterprises operate, require complex technical issues and an individual approach to the problem of environmental protection.

At present, the industry is faced with the task of not only reducing the amount of by-product components that are extracted daily from the subsoil simultaneously with coal, but also of not increasing the already established level of pollution.

Coal mining is accompanied by the release of a significant amount of waste. In this regard, the priority environmental measures in the coal industry include:

- land its rational use, as well as the restoration of land disturbed by mining, development and removal of natural dumps;
- water purification and utilization of coal mining and coal processing wastewater for own needs of enterprises of the basin and in other industries;
  - atmosphere pollution prevention, creation of methods and means of protection;
- subsoil an increase in the degree of extraction of minerals, integrated processing of mineral raw materials;
- production wastes ways of utilization and use, creation of low-waste and non-waste technologies.

As noted environmental measures require, significant investments.

It follows that the protection of the environment is not only an important social task, but also a serious factor in increasing production efficiency. Environmental pollution leads to a decrease in the impact of all types of productive resources of the national economy. There is an economic damage from environmental pollution due to deterioration of public health, violation of working and rest conditions in polluted areas, and a drop in the productivity of land and water resources.

The costs of protecting the environment from pollution should be assessed not only in terms of social efficiency, but also from the point of view of the economic effect they bring. In this case, environmental activities become a tangible factor in production efficiency.

And finally, it is necessary to note the intense wear of mining equipment. If the technical means of the manufacturing industry are in the room, they do not get wet, there is a constant temperature, then mining machines and tools operate at high humidity, often in an aggressive environment, with large temperature differences. All this causes their accelerated depreciation, and hence higher costs than in the manufacturing industry, for repair, maintenance and restoration. Naturally, this factor also affects the costs in the production of mineral resources.

The third feature in the extraction of mineral resources is the state of working conditions and their effects on the human body.

Working conditions have a huge impact on the main economic indicators of enterprises. On the one hand, each enterprise requires certain costs for the implementation of measures to improve working conditions and labor protection, prevention and compensation of the influence of adverse factors. On the other hand, the working conditions and productivity of their labor depend on the state of working conditions, the degree of their impact on the workers' organism, on the relevant parameters of the production process.

The fourth feature, objectively affecting the rise in the cost of mineral raw materials, will be a large variety of technical means necessary for its production.

Raising the technical level of production with all the diversity of specific areas of scientific and technological progress in various sectors of the national economy has a number of common features. However, depending on the industry, they manifest themselves in different ways, and, perhaps, more than in other sectors in the extractive industry. First of all, it should be noted that the mining industry as one of the most important sectors of the national economy belongs to labor-intensive industries and is characterized by its specific features.

Thus, the conditions of development of coal seams affect the development of the production forces of the industry, as in the coal industry the means of production and labor are specialized not only in technical processes, but also in mining and geological conditions, which are sharply differentiated. The requirement for additional specialization of the production forces constrains their planned character, almost eliminates

interchangeability, which slows down the identification of merits and demerits of new means of production, organizational forms of labor, and with it their improvement.

Besides branch features of introduction of technical progress, there are also regional features. Differentiation of natural factors of coal mining by basins, fields, and mine fields causes different possibilities for introducing new equipment and the intensity of its use. For example, gently sloping seams of medium thickness with quiet occurrence represent the most favorable natural conditions for the renewal of excavation machines, and, consequently, for the improvement and intensification of production. At the same time, for enterprises working off steep as well as gentle seams, the means of producing cleaning work have not undergone significant changes.

The specifics of coal industry production are also objectively inherent in social features. First of all, the conditions of the coal mining industry themselves present increased and special requirements:

- to the physical ability and psychological capabilities of a person, because not only the results of the activities of many other team members, but sometimes life and their health depend on the behavior of an individual worker in the mountains;
- to the level of training and practical experience, in particular, to the selection, training and placement, taking into account their individual capabilities.

The conditions of mining production exclude the use of female labor, which has a significant impact on the socio-demographic structure of the production team and a number of social and everyday characteristics inherent in the development of coal regions. The variety of mining and geological conditions, determining the characteristics of technological systems of production and the level of technical equipment, is directly related to the features of the professional and qualification structure of a specific team. This feature in each case determines the specific quantitative and qualitative composition of workers. At the same time, it should be noted that the degree of differentiation in the conditions of the coal industry, unlike other industries, is objectively limited, since mines produce only one type of product.

In the coal industry, social factors are strongly influenced by mining and technological factors, the equipment and technology used, and the need to maintain high coal output for industry and everyday needs. Natural factors, the influence of which is dominant, in the underground method of coal mining cause a small amount and mobility of the working space of the main production processes, lack of amenities in the workplace, greater depth of work from the surface, significant rock pressure, the possibility of accidents such as fires, explosions, dynamic phenomena, collapse of lateral rocks and coal.

The conditions of production and labor are exacerbated by the lack of natural light, weak uneven illumination, high dust content, gas pollution, humidity, and air temperature.

The complexity of creating for these conditions of production and labor of modern technology and its use leads to an insufficient level of mechanization and automation of work, and consequently, contribute to an increase in the proportion of manual labor. Due to insufficient mechanization, the greater laboriousness of manual work, in turn, contributes to an increase in the influence of adverse factors on a significant number of workers. In cases of a complex influence of natural factors, working conditions, as a rule, need to be improved.

In market conditions of management, the primary task in the justification of new ideas and the dynamics of economic development is the search for specific areas of economic reform, the development and evaluation of appropriate forecasts [5].

Especially important are the issues of economic dynamics in relation to one of the basic and most complex production and economic systems - the coal industry. Significant amounts of coal mining and high costs associated with multiple processes, combined by the concept of "coal mining", the presence of competing energy carriers (such as oil, gas and nuclear fuel), the need to improve technologies related to mining, processing and, especially, the use of coal, issues ecology, provision of competitive reserves for the future - all this makes it very important to consider the future of the coal industry, determining its place in the fuel and energy complex (FEC) and in the national economy.

Under the conditions of the administrative-command system, there were a rather simplified system, when all questions of the extraction, sale and consumption of coal products were decided by a purely centralized way of determining the limits and standards both in the sectoral and in the regional context. This limited the freedom of choice of partners for the sale.

The process of transition to a market economy involves the study of the laws governing the formation of the coal market. First of all, nowadays, there is a greater need for the development and concretization of existing points of view on various aspects of the market category, in an additional study of a number of poorly studied and debatable problems on this issue.

The market economy has proven that it has no alternative in solving basic economic problems.

Firstly, the market has ensured the interrelation of production and consumption. It performs this function through the establishment of compliance of the offer with the volume of effective demand.

Secondly, it guarantees a public assessment of the performance of individual producers. The mechanism of such an assessment is simple, effective and objective. It consists of one thing: whether the sale took place or not.

Thirdly, the market creates conditions for high production efficiency. This contributes to the universality of competition, which "separates" those who lag behind the previous ones. The winner is the one who better guessed the changes in consumer demand, quickly applied new equipment, reduced production costs. This is the premise of high performance.

In domestic and foreign economic literature, we can meet a large number of concepts of the market. They can be summarized in three groups of market definitions:

- as a set of existing and potential buyers of goods and their interaction with producers of goods;
- as a system of socio-economic relations in the sphere of circulation, through which the realization of goods is carried out;
  - as a set of conditions and requirements for the production and sale of goods [6, p. 10].

In the work [7, p. 90] the market is called the sphere of exchange.

These definitions complement each other, but do not fully reveal the essence of the concept of the market, the conditions and prerequisites for creating a market environment. The role of the market in the performance of intraregional and interregional integration functions is not considered at all.

In the work [8], the market is viewed as a system of institutions consisting primarily of producers, intermediaries and consumers, and each of these groups acts not as an abstract unity, but as a changing moving structure, including certain subgroups in their relationship and interaction. The process of distribution along with the three main agents (producer, consumer, intermediary) requires the participation of a number of infrastructure elements.

The commodity market is not only a mechanism for the movement of goods and working capital, but also a mechanism for transmitting information, a mechanism for coordinating supply and demand, and therefore a mechanism for forming and defining public consumers, which are the basis for production planning.

In all the above definitions, the market is considered in isolation from the problems of the reproduction process that serves its interphase relationships and dependencies. In the work [9], the market is considered as a territorial organization of the sphere of circulation, where the interests of producers and consumers are coordinated, i.e. from the perspective of the reproduction process.

This concept of the market determines a wider range of issues to be investigated. This is a study of the totality of market relations, the conditions for the formation of effective intra-regional and inter-regional relations.

If in the market, for example, the demand for bulk goods is either relatively constant or is a function of income (for example, the demand for non-essential goods), then on the FER market, the size and structure of demand are much more subject to fluctuations under the influence of climatic conditions, conjuncture, economic opportunities and other reasons.

Only by examining various markets from the point of view of the reproduction process can, in general, be given reliable and economically justified interpretations and explanations for various processes of functioning and development. The study of market relations is impossible without knowledge of the laws of the reproduction process and its inherent contradictions, and, above all, its main contradiction - the contradiction between social needs and the material prerequisites for their satisfaction [10]. The essence of this contradiction predetermines the essence of other contradictions of the reproduction process in the conditions of market relations. It should be borne in mind that the constant growth in the need for reproduction resources implies a corresponding change in their structure and qualitative parameters, which can cause shifts both in the structural policy of the economy and in inter-branch production and economic

relations. At the same time, due to the open nature of the regional reproduction process, the requirements for qualitative indicators of inter-sectoral and interregional exchange and production and technical interaction are increasing.

The resolution of the contradiction between the need for reproduction resources and the possibility of their satisfaction depends on the level of development of production, on the one hand, and on the maturity of market relations, on the other. At first glance, the relationship of supply and demand develops between individual subjects of market relations. However, in reality they are influenced by the most important proportions that ensure the integrated development of the economy and an adequate social mechanism that guarantees a certain standard of living of the population and the resolution of contradictions between market relations and social interests.

**Conclusion.** Thus, market research should be based primarily on a theoretical understanding of macroeconomic processes with developed market relations, taking into account the globalization factor [11, 12] and the activation of the innovation component of production [13-15].

The reproductive approach is focused on the constant resumption of production of goods to meet the needs of a particular market with a lower total cost per unit of effect compared with the best similar object in this market. The reproduction approach includes: applying a forward comparison base when planning to upgrade an object that ensures its competitiveness at the time of sale, and not at the time of production of the object in the relationship and dynamics of reproduction cycles of the designed and prospective model of the object; monitoring of environmental parameters in order to develop assumptions to ensure the proportionality of their development and reproduction.

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#### Ж.Г. Шугаипова

### РЫНОЧНЫЕ МЕХАНИЗМЫ РАЗВИТИЯ МИНЕРАЛЬНО-СЫРЬЕВОГО КОМПЛЕКСА КАЗАХСТАНА НА СОВРЕМЕННОМ ЭТАПЕ

Аннотация. Рассмотрены теоретические концепции применения рыночных механизмов развития минерально-сырьевого комплекса Казахстана на современном этапе. Определены особенности формирования рынка минерально-сырьевых ресурсов в Казахстане, с учетом горно-геологических, природно-ресурсных и социально-экономических особенностей минерально-сырьевого производства на современном этапе. Первая особенность развития минерально-сырьевого комплекса заключается в отличие фактора производства «земля» от других природных ресурсов. Вторая особенность заключается в том, что минерально-сырьевое производство осуществляется в условиях естественной среды. Третьей особенностью при добыче минерально-сырьевых ресурсов является состояние условий труда и их воздействия на организм человека. Четвертой особенностью, объективно влияющий на удорожание минерально-сырьевой продукции, будет большое разнообразие технических средств, необходимых для её производства. Установлено, что исследование рынка минерально-сырьевой продукции должно строиться, прежде всего, на теоретическом осмыслении макроэкономических процессов при развитых рыночных отношениях с учетом фактора глобализации и активизации инновационной составляющей производства.

**Ключевые слова:** минерально-сырьевой рынок, особенности минерально-сырьевого производства, инновационное развитие минерально-сырьевого комплекса.

#### Ж.Г. Шугаипова

# ҚАЗІРГІ КЕЗЕҢДЕ ҚАЗАҚСТАННЫҢ МИНЕРАЛДЫ-ШИКІЗАТ КЕШЕНІН ДАМЫТУДЫҢ НАРЫҚТЫҚ МЕХАНИЗМДЕРІ

Аннотация. Қазіргі кезеңде Қазақстанның минералдық-шикізат кешенін дамыту үшін нарықтық тетіктерді қолданудың теориялық тұжырымдамалары қарастырылады. Қазіргі кезеңде минералды-шикізат өндірісінің геологиялық, табиғи және ресурстық және элеуметтік-экономикалық ерекшеліктерін ескере отырып, Қазақстандағы минералды-шикізат нарығын қалыптастырудың шарттары анықталды. Минералдышикізат кешені дамуының бірінші ерекшелігі өндіріс факторы ретіндегі «жердің» басқа табиғи ресурстардан айырмашылығын ескеруден туындайды. Екінші ерекшелік ретінде минералды-шикізат өндірісін жүргізу тек қана табиғи жағдайларда жүзеге асатыны қарастырылған. Үшінші ерекшелік ретінде минералды-шикізат ресурстарын өндіру кезінде адамның жұмыс жағдайын бақылау мен оның ағзасына тигізетін әсерін толық ескеру қажеттігі қарастырылған. Төртінше ерекшелік болып, минералды-шикізат өнімдерінің қымбаттауына объективті әсер ететін және оларды өндіру үшін қажетті техникалық құралдардың алуан-түрлілігі табылады. Минералды-шикізат нарығын зерттеу, ең алдымен, жаһандану факторы мен өндірістің инновациялық құрамдас бөлігін ескере отырып, дамыған нарықтық қатынастардағы макроэкономикалық үдерістердің теориялық түсіндірілуіне негізделуі керек.

**Түйін сөздер:** минералды-шикізат нарығы, минералды-шикізатты өндіру ерекшеліктері, минералды-шикізат кешенінің инновациялық дамуы.

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