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PROBLEMS OF TRANSFORMATION OF AREAS OF ECONOMIC DEVELOPMENT AND MANAGEMENT OF RUSSIAN SUBSOIL USE SYSTEM

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Abstract: *Limitedness of the mineral's quantity in the world favors the growth of prices for all metal groups in the long term and assures a permanent attention of the economic community to conditions of the minerals deposit development. The legal, tax, economic fundamentals of the nature management activities regulate a system of the capital access into the minerals deposits development, size of the profit rate of the mining organizations depends on their stability and transparency. The Russian subsoil use system has a lot of contradictions in legal regulation of the subsoil ownership relations, assurance of the national security fundamentals in the subsoil use, in the existing tax system of the mining organizations. The foregoing confirms that the chosen research topic is of importance. The paper substantiated contradictions in the Russian Federation laws, export policy on minerals with strategic goals of the country economy development, a theory of rent relations with the existing tax mechanism of mining organizations. The research is based on analytical development of the legislative instruments, the statistical data, the theoretical fundamentals of rent relations by means of confronting, comparing, generalizing, systematizing and revealing the principal components, extrapolating the information on the mining organizations activities and the subsoil use system on the whole. The paper analytically substantiated a contradiction of provisions of the Federal Law "On Subsoil" of the Russian Federation Constitution, revealed contradictions of the export policy to strategic goals of the economic development, on the basis of analysis of the theoretical papers on the rent relations fundamentals, substantiated and discussed the contradictions of the minerals extraction tax to the principles of economic feasibility and economic justice. The existing system of the subsoil users taxation does not form incentives for developing the deposits with the low mineral content in an ore body and for introducing into production of the scientific-technical progress results. The obtained results are of practical value for assuring the equal conditions of subsoil use by organizations, for forming a fair system of resource taxation, for developing the territories, where the deposits are developed, for replenishing the country budget revenues. The paper substantiated the reasons of changing the taxable base of the minerals extraction tax and other taxes having the rent basis, from proceeds to income.*

Keywords: *subsoil use, taxes, rent, sustainable development of the mining industry, stable mining engineering, metal mining.*

INTRODUCTION

In terms of theory, the subsoil use problems typology is formed by systemic gaps, the so-called "market black holes" and the state inability to mark out and to regulate, in due time, the development factors that were not taken into account earlier. An irony of the subsoil use system in the Russian Federation consists, at least, in three contradictions:

1. The principal state law, the Russian Federation Constitution, permits the private ownership of subsoil, while provisions of the special law enshrine only the state ownership of subsoil. Thus, a change of only a provision of the Federal Law "On Subsoil" on permission of the private ownership of subsoil drastically alters the subsoil use system in Russia;
2. Proceeding from provisions of the official documents, the scarce and other groups of minerals are enshrined for the country economy, but, at the same time, practice of the metal export from Russia reflects a contradiction to the enshrined regulations of the national security on provision of the state with strategic raw materials;
3. An applied system of the subsoil user's taxation contradicts the theoretical fundamentals of the mining rent.

The main peculiarities of the subsoil use development in the Russian Federation, which give rise to environmental, economical and social problems, are as follows: undervaluation of natural resources, their cost in economic processes (Zhironkina, Agafonov, Genin et al., 2017); assurance of the maximum profit in the short term with no account taken of environmental, social and economic consequences in the future; appearance of new, unplanned externalities, cause-effect dependences (Prokopenko, Sushko, Filatov et al. 2017). As a result, refusal from realizing the importance of natural resources, their actual cost is expressed in exclusion of payments for the use of natural resources and the rent constituent from calculations and in the state's unwillingness to acknowledge this problem existence, whose non-solution makes the development of resource-extracting branches of the Russian Federation unsustainable (Gasanov, Kolotov, Demidenko et al., 2017). The resource system of the Russian Federation taxation weakly meets: a generality principle in the subsoil use (a discrimination essence of the minerals extraction tax in favor of oil-producing and gas-producing organizations); a principle of economic substantiation of a tax (the minerals extraction tax as a taxable base fully uses the taxable base of payments to the state non-budgetary funds (at present, insurance payments), partially uses the taxable base of the profit tax. It is charged from the transport tax and insurance payments that are payable and included in the prime cost); a principle of justice (the rent taxes and payments reimbursement is shifted onto a consumer of products of extracting organizations).

The minerals extraction tax does not have any scientifically-substantiated methods of calculating a rate for mining organizations. There are no economic calculations that scientifically substantiate an appropriateness of establishing the 6% tax rate, rather than 12% or 4%. Practice of applying this tax shows that development of deposits with the low metal content in the rock or in the sand, deposits with the lower-than-average characteristics ceases, and the development does not start for deposits of a primary metal with similar characteristics. But development of highly-profitable deposits is accompanied with unfounded appropriation of large rent incomes under the guise of an earned profit. It is necessary to admit that the minerals production tax has a weakly expressed rent essence. As it is impossible to determine if an absolute or

differential rent is charged from the subsoil user, because the rate is stable and established with no account taken of any individual characteristics of deposits. It is necessary to note that the rent must be withdrawn either from the balance or from net profit, which is in full agreement with the differential rent theory. The rent is paid by a person who misappropriates it, rather than consumers – state and private organizations for which a similar situation leads to rise in price of their own products and makes the products less competitive. Finally, the rent is paid by the Russian Federation citizens, the consumers of goods and services, whose price includes the rent. According to the rent theory, the state, the society and, as a result, the Russian citizens receive the mining rent, and, in practice, they pay the rent. Thus, it is necessary to determine the subsoil user profit as a taxable base of the mineral's extraction tax, as the principal resource rent tax.

MATERIALS AND METHODS

For substantiating the legal collisions in a legal aspect of applying the private ownerships provisions to the subsoil, analytical methods were used: deductions, inductions, logical laws, the laws of comparative analysis, legal provisions comparison, determining the dominant legal provisions in issues of the title to the subsoil. For substantiating the contradictions, absence of consistency in the national security issues within a policy pursued by the Russian Federation on the strategic minerals exports, methods of comparing the current provisions of the Russian federal law with actual statistical data on the minerals export from the Russian Federation were applied. For substantiating the divergence of theoretical fundamentals of forming the mining rent with the current system of taxation of the Russian Federation mining organizations, analytical methods, methods of analyzing of the scientific papers made by the rent relations theorists with the tax law provisions of the Russian Federation, the logical laws, the methods of extrapolation and forecasting were used.

RESULTS

1. According to the Russian Federation Constitution, Article 9, Paragraph 2. "Land and other natural resources can be privately owned, owned by the central or local government, or be in other forms of ownership" (Constitution of the Russian Federation… n.d.). When discussing the notion "natural resources", let's read the provisions of the Federal Law dated 10.01.2002 No. 7-FZ (revised on 31.07.2020) "On Protection of Environment", Article 1 "…natural resources are the natural environment components,.. which are used or can be used in implementing the economic or other activities as energy sources, manufacturing products and articles of consumption and are of consumption value;.. " and then "…the natural environment components are the land, the subsoil, the soil, the surface and underground water, the atmospheric air, the vegetable and animal world and other organisms, and the ozone layer of the atmosphere and the near-Earth space environment, which assure, in the aggregate, favorable conditions for implementation of living on the Earth;…" (Federal Law dated 10.01.2002 No. 7-FZ…, n.d.).

Thus, proceeding from the logical chain above the said provisions of the federal laws of the Russian Federation, the land, the subsoil, the soil, the surface and underground water, the atmospheric air, the vegetable and animal world, the ozone layer of the atmosphere and the near-Earth space environment can be privately owned in the Russian Federation (Article 9, Paragraph 2 of the Russian Federation Constitution

and Article 1 of the Russian Federation Federal Law "On Protection of Environment"). However, according to the RF Federal Law dated 21.02.1992 N 2395-1 (revised on 27.12.2019) "On Subsoil" (as amended effective of 31.05.2020), the subsoil is owned by the government (Article 1.2. Ownership of the subsoil) (RF Law dated 21.02.1992 No. 2395-1… n.d.).

Thus, the FZ "On Subsoil" alone enshrines a postulate on the state ownership of the subsoil and the minerals located in the subsoil. While the principal State Law – the Russian Federation Constitution enshrines the various titles to "..and other natural resources", and a notion of natural resources includes, among other things, the subsoil. It is concluded that contradictoriness of the Russian Federal Laws on issues of the titles to the subsoil is substantiated, which is the first peculiarity of the subsoil use in the Russian Federation.

2. The second peculiarity of the subsoil use in the Russian Federation is export from the Russian Federation of the whole legally enshrined list of the main kinds of strategic raw materials including export of scarce metals and raw-materials for the Russian Federation economy. By the Order of the Russian Federation Government dated January 16, 1996 No. 50-p, a list of the main kinds of strategic minerals was approved, which include oil, natural gas, uranium, manganese, chromium, titanium, bauxites, copper, nickel, lead, molybdenous, wolframite, tin, zirconium, tantalum, niobium, cobalt, scandium, beryllium, stibium, lithium, germanium, rhenium, rare earths of yttrium group, gold, silver, platinoids, diamonds, especially pure raw quartz (Order of the RF Government…, n.d.).

The irony is that the above-mentioned kinds of raw-materials are needed for the Russian Federation itself, they are of paramount importance for the country economic development, technological transformations in the industry, for forming the sixth technological setup of the Russian economy. But all the kinds of strategic raw-materials, which are of importance for the state national security, are exported from the Russian Federation. More than that, they are exported from Russia in the form of the first-processed product or as raw materials, primary commodity.

Table 1. Grouping of kinds of strategic raw-materials by provision with them of the state needs and the economy with reflecting the availability of facts of the minerals exports

Kinds of strategic mineral raw-materials, according to the Order of the Russian Federation Government dated January 16, 1996 No 50-p	Quantity and quality of the raw-materials meeting the state and economy needs till 2035	Quantity and quality of the raw-materials that is not sufficient for meeting the state and economy needs till 2035	Scarce minerals for the Russian Federation	Exported minerals
Oil		+		+
Natural gas	+			+
Uranium			+	No official information available
Manganese			+	+
Chromium			+	+
Titanium			+	+

Bauxites			+	+
Copper	+			+
Nickel	+			+
Lead		+		+
Molybdenous	+			+
Wolframite	+			+
Tin	+			+
Zirconium			+	+
Tantalum	+			+
Niobium	+			+
Cobalt	+			
Scandium	+			
Beryllium			+	
Stibium		+		
Lithium			+	
Germanium	+			
Rare earths of yttrium group			+	+ in alloys
Gold		+		+
Silver		+		+
Platinoids	+			+
Diamonds		+		+
Especially pure raw quartz		+		+

(Export from Russia, n.d.; Iron ore: plans and realities, n.d.; World market of metallurgical raw materials… n.d.; Export of ferrous metals, n.d.; Export of non-ferrous metals, n.d.; Bulletin of the Gold Producer… n.d.).

The table data show that the Russian Federation extracts and exports the metals, which fully meet the country economy needs for two decades in advance, as well as scarce minerals for the Russian Federation, such as zirconium, titanium, chromium, manganese (in the form of alloys with iron or a pure metal) and others.

3. Study of processes of forming and distributing the rent is of importance in terms of the economic theory and it is necessary for creating the objective conditions of management for the natural resources users, rational use of the minerals and functioning of the budget system, including on the principles of delimitating the incomes and expenses between the budget system levels, the budgets independence, completeness of reflecting the budget incomes and expenses, the efficiency and economy of using the budgetary finds.

"It is possible… to establish as an indisputable truth, that as the nation reaches the significant richness and significant population volume, separation of the rent as something intimately connected with the lands of known quality, is a law that is as permanent as the law of gravitation", then Malthus wrote "… land monopoly… since old times allowed the government to demand a known part of the product … which, whatever it was named, was a rent in essence" (Ricardo, 1955a). The rent relations theory, despite much literature covering this problem, is of importance in the economy even now. The rent relations theory fundamentals were laid by the papers made by

many economists: William Petty, Adam Smith, Thomas Malthus, David Ricardo, Karl Marx and others.

In the main, the rent relations theory can be acknowledged as formed, although it continues to develop in accordance with the production development. As appearance of the rent teaching is based on the agriculture, the discussions about rent relations in the economic literature are built, in the main, on the land rent. At present, there is no single concept and approach to forming and using the rent in the sphere of nature management, including the mining industry. "Actually the mine rent is determined in the same way as the land rent" (Marx, 1989). The main idea of this statement made by Karl Marx was originally consolidated by David Ricardo in a fundamental paper "Principles of political economy and taxation". "Mines as well as the land usually give their owner the rent, and this rent is similar to the land rent… " (Ricardo, 1955b), which is indisputable in the modern economic literature. Yuri Vladimirovich Yakovets believes that in the context of a socialistic way of management, it is necessary to single out a differential mining income and a differential mining rent. Qualitative differences between them consist in the fact that the differential mining rent is formed by monopoly on subsoil as a management entity and reflects the rent relations between the subsoil owners and the mining enterprises owners, while the differential mining income (loss) is an economic implementation of the self-sustained relations, which are formed between the economically detached mining enterprises, which, like the subsoil, belong to one owner (state) and do not hold a monopoly on the subsoil as a management entity (Yakovets, 1964).

"… The rent is a result of high prices and things that the landowner receives in this way, he receives at the expense of the whole society. The society wins nothing from the rent reproduction. Everything boils down to the fact that a class obtains profits at the expense of another class" (Ricardo, 1955b). The author does not agree with Buchanan that "the society wins nothing from the rent reproduction … " (Ricardo, 1955b), because if the government owns the subsoil and the land, then the society receives a rent when it leases the natural resources via a system of resource taxes and payments, which is reflected in the budget revenues of many states. But even if a private person owns the natural resources, then the society receives incomes from the resources use by means of the taxation system.

"The rent is a difference between products of the same two capitals used in the land cultivation" (Ricardo, 1955a). The author believes that Malthus' rent definition is not complete. "The rent is a share of the product, which is paid to the landowner for using the original and indestructible forces of the soil" (Ricardo, 1955b). This is one of many rent definitions by David Ricardo. "… The rent can be regarded as a product of the forces of nature, the use of which the landowner gives to the farmer", then Adam Smith continues: "After deduction or payment of all the things that can be recognized as a human business, only a product of activities of the nature itself remains" (Ricardo, 1955b). "… The existing rent, and any rent, made up a profit in former times, and so it must be a deduction from the latter" (Ricardo, 1955a). "There is a surplus product in the agriculture, from which the profit and the rent are taken" (Ricardo, 1955a). Proceeding from the above-mentioned definitions, a review of the rent definitions is over and, as a result, *the rent from the natural resources use is an additional part from the nature managers profit, which is received above the profit rate, which is objectively determined by the average value of the bank rate, through the natural resources exploitation.*

A theoretical research of the rent issue in respect to the mining industry will be based on papers by David Ricardo, Karl Marx and Adam Smith, which are fundamental in

this issue, and generally acknowledged in the domestic and world science, although thy have their protagonists and opponents. "An income, which is brought by the poorest mine paying no rent, will regulate the rent of all other more productive mines. It is supposed that this mine yields a usual capital profit. It goes without saying that everything, which other mines yield above this profit, will be paid to their owners as a rent" (Ricardo, 1955b). "… Above it… ", in other words, which is gained from using the best mining-and-geological, geographical-and-economical conditions and from application of additional capital on a specific deposit.

As it is known, "The landowner is always ready to gain a rent, in other words, to receive something free of charge… " (Marx, 1989). "The farmer will admit somebody to the development, only demanding to pay a rent… " (Smith, 1992). Therefore, a title to natural resources makes it possible to charge payment for using any subsoil blocks and land plots including the worst ones. "If air, water, the elasticity of steam, and the pressure of the atmosphere were of various qualities, if they could be appropriated, and each quality existed only in moderate abundance, they, as well as the land, would afford a rent, as the successive qualities were brought into use." (Ricardo, 1955a). Adam Smith's opinion is confirmed by Karl Marx "… land ownership… is driven by the contribution to the landowner" (Marx, 1989). Thus, *a monopoly of ownership of the natural resources is a reason for the rent appearance in the worst plots, in other words, an absolute rent*. According to the Russian Federation tax laws, proceeding from the calculation methods, the absolute rent in the mining industry is withdrawn, in the main, via the minerals extraction tax.

"Other coal-mines in the same country, sufficiently fertile, cannot be wrought on account of their situation" (Smith, 1992). Adam Smith also wrote "The value of a coal-mine to the proprietor frequently depends as much upon its situation as upon its fertility. That of a metallic mine depends more upon its fertility, and less upon its situation" (Smith, 1992). Peculiarities of forming the differential rent are described by Karl Marx and David Ricardo in more detail. Obviousness of some their statements is beyond any doubt, for example, David Ricardo wrote "the most fertile and the most conveniently located land will be cultivated earlier than other lands … " (Ricardo, 1955b), Karl Marx wrote "… differential rent 1, in other words, simultaneous cultivating the land plots that are different in terms of their fertility and in terms of their location… " (Marx, 1989). Karl Marks was the first to introduce the notions of differential rent I and differential II into the economic theory.

The subsoil owner – the state can cultivate the subsoil independently, or to lease the minerals deposits. A need of the society in resources keeps growing, by the resource's quantity is limited, which leads to the use of worse plots. A possibility of leasing the subsoil, even of a deposit, which is the worst in terms of mining-and-geological and geographical-and-economical characteristics, is driven by a reason of limitedness of the resource and the monopoly right for its possession, the absolute mining rent. But a peculiarity of the subsoil, like any natural resource, consists in difference of one limited resource facility (deposit, land plot, forest plot, water body, etc.) from another limited resource facility. Thus, a leaseholder of better plots in terms of the mineral volumes, the mineral content in the rock, the depth of stratification and location of the ore body, remoteness from different kinds of infrastructures, etc, will have a differential rent too. In other words, per the same magnitude of the capital invested in various deposits, different levels of the labor productivity will be created, and various quantity of minerals will be extracted, during virtually the whole period of the deposit development. After having sold the mineral, the subsoil user, whose costs

were lower per piece for the reason of better mining-and-geological and geographical-and-economic characteristics of the deposit, receives an additional rent income (differential rent), and it must be withdrawn by the owner, in this case, by the state from the subsoil user's profits.

As regards the differential mining rent, the determining conditions of the formation are well-marked differences in the mining-and-geological development conditions, natural quality and location of the mineral deposits, limitedness of the best deposits and a necessity to involve in the production the deposits of different quality requiring different labor costs per piece, and an availability of the goods-money relations. Thus, *differential rent I is an additional profit gained by the leaseholders of natural resources, in consequence of the natural resources plots by mining-and-geological and geographical-and-economic characteristics, in other words, an unearned surplus product that must be withdrawn by the resource owner.* Where an additional profit is a difference between the production price on the words plots and an individual production price on average and the best plots of natural resources.

In the mining industry, the principal natural indicator of the deposits productivity is the metal content per a ton of the rock or per a cubic meter of the sand, the metal quantity in the ore. However, even this cannot be a reliable basis for comparing the productivity of various deposits. One of the peculiarities of natural resources, which distinguishes them from other production factors, is their limitedness. In other words, a physical quantity of gold, oil, coal, land does not increase, it their prices rise, and does not decrease, if the lease payment rates decrease. This leads to the fact that not only relatively the best but also the worst plots in terms of productivity and location will be cultivated. As a result, competition appears for better and for worse plots of natural resources.

Thus, the differential rent approach, in terms of its origin, substantially differs from an ordinary additional income that is formed in advanced organizations, whose activities are not related to the land use and the subsoil use. The differential rent income can be received by the subsoil users that use relatively better management conditions in the production, or the organizations participating in creating the agricultural, mining, forest, urban, construction and water rents. The main peculiarity of a rent in the forest management, in the agriculture and in the water management is that here a subject of labor is natural resources that, by their nature, can implement the self-reproduction, and in case of rational exploitation, they make it possible to make the products during unrestricted time, and with additional expenses, they can make additional products.

The land, forest and water rents are not time-limited, as the soil fertility, the forest resources reproduction and the water energy are not limited. But the differential mining rent is limited by the time frame of the deposits use and the quantity of useful things in the subsoil. There are occasions where additional capital investments assure a higher productivity by 1 rule of expenses before investing these funds in the deposit development, and in this case the subsoil user comes to have the differential rent 2. *The differential rent II is a profit arising in consequence of new capital investments in the natural resources' development.* "… The agriculture improvements increase the profits… but the profit is represented by the fund from which any rent is taken. Any rent has always made the profit" (Ricardo, 1955a). This provision by David Ricardo can be regarded as substantiation of applied tax mechanisms of withdrawing the differential rent from mining organizations in the leading mining countries from the profit. But the question is how to determine a degree of influence of the mining industry improvement upon the total rent value as well as upon the rent value in the mining enterprises profit.

"Permanent agriculture improvements could take the lands out of the cultivation for some years… " (Ricardo, 1955a). But the minerals demand in the world exceeds their supply. Therefore, with permanent improvement of ways of extraction and methods of cultivation, new deposits of the minerals with worse mining-and-geological and geographical-end-economic characteristics will be developed, which will lead to increase in the total rent volume in Russia's mining industry. "The rent increase is always a result of the country wealth growth … " (Ricardo, 1955b).

But in the context of concentration of the minerals deposits assuring the main volume of the resource extracted, in the use or in the ownership of the industrial and financial monopolies, the state cannot appropriate the major part of the rent, the monopolies will receive it. In addition, they will be able to set *the monopolistically high raw material prices, a difference between which and the market value will be a monopoly rent*, which gives rise to the government position on the monopoly's fragmentation, non-admission of their formation and compliance with the antimonopoly laws. According to the rent theory, the absolute, monopoly and differential rents must come to the natural resource's owner. "It the taxes were reduced, would the product price decrease? If you say that the price would decrease, it means that the whole rent as well as a part of the profit are collected in the form of taxes. In the future this part is shifted onto the consumer in the higher product price … at first, the advantage will come in favor of the profit, then in favor of the rent" (Ricardo, 1955a).

On the whole, the deposit is recognized as industrial, if the economic profitability is a standard profitability or higher. But the most important thing is that there are no profitability standards for the industry, the subsoil users expenses standards, which are calculated on the basis of the approved standards and the feasibility study, with account taken of an optimal technology of the deposits development, which assure the reserves recoverability completeness, the introduction of results of the scientific and technical progress, the application of the resource-saving technologies, the ecological safety of the mineral deposit development, etc. Availability of the standard expenses per unit of the extracted mineral is on each deposit, although it will lead to significant growth of the state transaction expenses, which are related to monitoring and control, but also it will assure principles of equality of the management conditions through increase in completeness of the rent expenses withdrawal.

At present, absence of standards does not make it possible to objectively assess the profitability of mineral deposits, the rent value, and to single out the rent amount with the current taxation system. A method of calculating the marginal costs, which was formed in the domestic economy, corresponds to the market conditions poorly. There are practically no macroeconomic standards of determining the normal profit, the average interest bank rate, etc. The differential mining rent is withdrawn, in the main, according to the absolute rent scheme (via the mineral extraction tax). Apart from that, it is understood as differential rent 1, while it also contains the differential rent 2, which is an earned surplus product of the subsoil user, and, according to the rent theory, it must be only partially owned by the mineral deposits leaseholder. Today, the differential mining rent value is hypothetic. Absence of standards on each deposit leads to the fact that an objective mechanism of determining the sizes of the mining rent shares, which the subsoil user continues to possess, and which is needed for withdrawal by the state, does not exist.

This problem, in its turn, does not make it possible to establish the differential rates of resource taxes and payments, since there are no standards, according to which it is necessary to establish the rates and to correct the taxes and payments for the reason

of changing significant objective parameters of the deposits development. An indispensable conditioned indicator for assessing deposits at early stages is a minimum metal content for the deposits in the whole, which assures the reimbursement of all expenses per 1 ton of the ore and the receiving of the standard profit. Apart from this criterion, there are many other factors that are typical of each deposit, which influence a value of prime cost, profit, rent, and which are possible to take into account now, which is confirmed by the work experience of fiscal and mining institutions in the countries with the developed subsoil use economy. A geological-economic assessment of the deposits, as complicated natural-social systems, is a multi-criterion task. As the basis for developing the criteria of the rent determination for each deposit, the principles and the criteria can be used (Prokudina, Zhironkina, Kalinina et al., 2017). Each deposit has peculiarities that are inherent only in it, which gives rise to an individual integral effect of its development. Thus, the differential rent should be calculated only for a specific deposit.

Table 2. Composition of differential rent 1 and differential rent 2 in developing the ore deposits of a mineral

Kinds of composite rents	Kinds of rents	Differentiation characteristics
Differential rent 1 (in geological-prospecting, mining and processing branches)	By productivity	Mineral reserves volume
	geological	Characteristics of side rocks, ore body stratification depth, ore body slope angle, thickness, water-cut of a deposit, physical-chemical characteristics of a mineral, and host rocks, complexity and passing of the mineral extraction, etc.
	By location	Distance to the transport, production, energy and other infrastructures
	By raw-materials quality	Content of chemical impurities in a mineral, a metal content in the rock, coarseness, sulfidity, etc
	Consumer preferences replacement	Product uniqueness, replaceability in the market with analogous products
Differential rent 2 (in geological-prospecting, mining and processing branches)	By production technology	Technological level of an enterprise, methods of the prospecting, extraction, processing of a metal, forms and methods of labor organization, level of work-force skills, etc

For the time being, a mechanism of withdrawing the differential income is far from perfect. Imperfection of methods of the rent withdrawal leads to aggravation of economic and social problems in distributing and withdrawing the rent incomes. Justice of distributing the rent incomes during political elections is discussed in the most active way. All kinds of rents, which are stated in the table, influence the labor productivity level, prime cost and profit of an economic entity in the long term. In addition, differences in natural conditions are unremovable, and quantity of subjects of the use is limited.

In most cases, in practice, it is possible to determine the rent value only theoretically, but Norway reached the greatest success in withdrawing the rent incomes

with preserving the branch investment attractiveness, during taxation of the oil producing organizations. In the gold mining branch, a system of withdrawing the rent incomes in Canada and the Republic of South Africa is of interest. In practice, the profit level in developing each deposit is influenced simultaneously, frequently in reverse directions, by various and numerous natural, technical, intellectual, political-lawmaking and other factors, and an impact of each factor is changing permanently. It is difficult, and sometimes it is impossible to separate influence of the mining-and-geological factors from technical ones, and natural quality of a mineral from quality related to application of technical innovations, etc.

"No rent is paid for an additional capital invested in the old land" (Ricardo, 1955a). David Ricardo supports a position when the differential rent II is not allocated, as a matter of fact he rejects it. According to this approach, there is only a rent related to the content and quantity of the metal. If a high degree of the mineral extraction from the subsoil is reached due to the capital investment, then the mining rent does not exist, only the mining enterprises profit is created. But according to another approach, whose obviousness is confirmed by the tax mechanisms of rent withdrawal from gold-mining enterprises, which are effective in the Republic of South Africa, the USA, Canada and Australia. It is evident that "if an additional capital… yields only average profit, yielding… no additional profit, then the influence, which it exerts upon the rent, is equal to zero", but after that "the rent increases… due to increase in the capital invested in the land… such increase in a product and a rent, which is a consequence of increase in the capital invested… does not differ, neither in the product quantity, nor in the rent value from the case when a cultivated area of the quality-equal land plots bringing the rent, increases … " (Marx, 1989).

Thus, if the invested capital yields average profit, then the first approach is correct. If the additional capital brings an income above the income in deposits regulating the price, it is necessary to believe that this income is a product of the subsoil and, in this case, it makes up the differential rent II. Therefore, statements on the first approach can be considered to be correct only if the additional capital investments bring an income that is not more than the ordinary normal profit. In the Russian Federation, the resource tax rates are established before a mining organization reaches the design capacity. A rate of the principal regular rent tax – the mineral extraction tax is stable practically during the whole extraction period. Thus, the additional profit, which is received from additional capital investments, and which can be high during the whole period of the best deposit's development, cannot be withdrawn in full, since the legal framework of applying the single payments for the right to the subsoil use, must be improved significantly, in terms of their application after the mining organizations reach the design capacity (for withdrawal of differential rent II). "… The second way (additional profit formation) entails difficulties during turning of the additional profit into the rent … which implies an additional profit transfer… by the leaseholder to the owner… " (Marx, 1989). What is difficult? "… With the differential rent in the form II, a difference in fertility is joined by differences in the capital distribution (and creditability) … " (Marx, 1989). "A part of the thing, which will become a rent in the future, forms the capital profit now. I believe that it is incorrect to say that a rent has ever made up a part of the capital profit: the rent is formed from the capital profit. When it was a profit, it was not the rent" (Marx, 1989).

Really, with differential rent I , the results differences can be seen in themselves, since they are obtained on various mineral deposits. When determining the differential rent II, it is necessary to distinguish the additional profit and the capital profit. The

author believes that additional capitals, which are invested in developing the best deposit, according to the differential rent theory, will increase only the absolute rent value, but so long as the additional capital yields the average profit, without yielding the additional profit. In addition, the rent value, which is paid from a gram of the metal recovered from this deposit, will not change, the quantity of the metal extracted will increase and, therefore, the rent value paid to the federal, regional and local levels of the budget system, will increase. For the time being, according to the differential rent theory, as many minerals are extracted from the additional capital as the same capital produces, which is invested in deposits with the worst mining-and-geological and geographical-economic characteristics. The rent can be withdrawn only by means of transferring the absolute rent in the amount of percent (%) of the cost of the handed in metal. With the existing system of rent withdrawal via a stable rate of the mineral extraction tax from the mining organizations from a gram of metal received from using the additional investments of the capital yielding the average profit, apart from transferring the rent with worsening the mining-and-geological and the geographic-and-economical characteristics of deposits, these rent payments will be made through the mining organization profit.

"… The rent is never withdrawn from another source, except the fund that made up the profit in former times … after the profit surplus is formed, it can be transferred to the rent with further society development" (Ricardo, 1955a).

Conclusions:

1. The rent relations theory in the sphere of nature management was mainly formed. However, it continues to develop with improving the methods and ways of the mineral extraction, with introducing advanced achievements of the scientific and technical progress.

2. The main conditions of the rent formation are as follows: resource limitedness in its value; monopoly on a specific resource; availability of a commodity-resource that is ready for selling; availability of goods-money relations; for forming the differential rent – availability of well-marked unresolvable differences in the context of receiving the resource in the long term.

3. According to the rent theory, the subsoil owner, in Russia – the state, must withdraw the absolute, differential rent 1 and differential rent 2.

4. When analyzing the papers by the domestic scientists in the sphere of rent relations, the papers by Adam Smith, David Ricardo, Karl Marx, a number of non-conformities to the basic positions of the differential rent theory of the existing mechanism, withdrawal of rent incomes from the Russian Federation mining organizations, were revealed.

The main divergences of a theory of forming and withdrawing the rent with the existing system of the resource taxation consist in the following: withdrawal of the rent from the gross income rather than from the mining organization profit; absence of the criteria of establishing the rates of rent taxes and payments calculated by the scientifically-substantiated methods according to the feasibility study data, the industry average standards; establishing the non-differentiated (ad valorem) rates on resource taxes and payments for a specific deposit.

This is a reason for developing and introducing new tax methods of withdrawing the rent incomes from the Russian Federation mining organizations, which are based on the basic provisions of the differential rent theory.

DISCUSSION

Article 75 of the Russian Federation Constitution establishes that a system of taxes levied to the federal budget, and the general taxation principles are enshrined by the federal law, or the Tax Code of the Russian Federation (Constitution of the Russian Federation… n.d.). The contents of Article 3 of the Russian Federation Tax Code "Paragraph 1. The tax and levy laws are based on acknowledgement of the taxation generality and equality…", "Paragraph 2. The taxes and levies cannot have a discriminatory nature …", "Paragraph 3. The taxes and levies must have the economic basis and cannot be arbitrary…", "Paragraph 7. All the unresolvable doubts… shall be interpreted in favor of the taxpayer…" enshrines some generally accepted taxation principles (Tax Code of the Russian Federation, 1998, 2000). Definitely, a process of reforming the Russian Federation tax system must be continued, including the resource taxation system. The Russian mining organizations pay, apart from the generally accepted taxes and payments, the resource taxes including the mineral extraction tax.

The sharply expressed fiscal direction of a stable rate of the mineral extraction tax consists in a mechanism of determining the rate. The rate takes into account neither averaged nor any other data on the mining-and-geological and geographical-and-economic characteristics of deposits, the rate does not take into account individual peculiarities of the deposit. Each deposit is unique, has its own individual mining-and-geological and geographical-and-economic characteristics. With stability of a rate of the mineral extraction tax, which is established for the whole development period until the mining organizations reach the design capacity, observance of the management equal conditions principle is controversial, since the deposit characteristics are changing during the whole period of its development. The mineral content cannot be equal in the whole processed rock mass, it is subject to oscillations that are sometimes significant. The deposits are developed for the period of from several years to several decades of years. The metal content value in the rock is established, upon the average, for the whole rock volume. Therefore, if the rocks, which are richer in minerals, are located below the metal-containing rock groundmass in the deposit, then the mining organization will also pay its profit via the mineral extraction tax until it reaches the best rock in terms of its content. But for a number of reasons, a process of movement to the best rock can continue for several years, which undoubtedly, will adversely affect the organization financial standing.

Table 3. Assessment of the rent essence of resource taxes and payments, which are paid during developing the primary metal deposits

Taxes and payments	Rate differentiation factors	Withdrawal of a kind of rent	Rent income recipient
Mineral extraction tax	Absent	Absolute mining rent – is withdrawn	State
		Differential mining rent on metal content in the ore – is not withdrawn by the state	Subsoil user
		Differential mining rent on metal volume in	Subsoil user

		the deposit – is not withdrawn by the State	
		Differential mining rent on location – is not withdrawn by the state	Subsoil user
		Differential mining rent on raw materials quality – is not withdrawn by the state	Subsoil user
		Differential mining rent of consumer preferences replacement (state of the market) – is not withdrawn by the state	Subsoil user
Land tax	Cadastral value of the land	Absolute land rent – is withdrawn	State
		Land rent on the plot size – is withdrawn	State
		Land rent on fertility – is withdrawn	State
		Land rent on location – is withdrawn	State
		Land rent on ecological state – is withdrawn	State
Single payments for the subsoil use when a specific event is raised, which is stipulated in the license including the single payments effected during change of the subsoil block boundaries, which are provided for use;		Absolute geological-prospecting rent – is withdrawn	State
		Differential geological-prospecting rent on metal content in the ore – is withdrawn	State
		Differential geological-prospecting rent on metal volume in the deposit – is withdrawn	State
		Differential geological-prospecting rent on location – is withdrawn	State
		Differential geological-prospecting rent on the raw materials quality – is withdrawn	State
		Differential geological-prospecting rent of the consumer preferences replacement (state of the market) – is withdrawn	State
		Differential mining rent depending on a situation – is withdrawn partially	State
Regular payments	Depending on	Absolute geological-	State

for the subsoil use;	the economic-and-geographical conditions, subsoil block size, a kind of the mineral, work duration, a state of geological exploration of territories, a degree of risk	prospecting rent – is withdrawn	
		Differential geological-prospecting rent on the metal content in the ore – is withdrawn	State
		Differential geological-prospecting rent on the metal volume in the deposit– is withdrawn	State
		Differential geological-prospecting rent on location – is withdrawn	State
		Differential geological-prospecting rent on the raw materials quality – is withdrawn	State
		Differential geological-prospecting rent of the consumer preferences replacement (state of the market) – is withdrawn	State
Charge for participation in the competition (auction)	Expresses the state right	Absolute geological-prospecting rent – is withdrawn	State
		Absolute mining rent – is withdrawn	State
Charge for license issuance	Expresses the state right	Absolute geological-prospecting rent and absolute mining rent – are withdrawn	State

The main reason, which assures impossibility of the differential mining rent withdrawal, is a stable rate of the principal resource tax – the mineral extraction tax, an absence of differentiation of the resource taxes and payments rate value on mining-and-geological and geographical-and-economic characteristics of the deposits.

SUBSTANTIATION

The first scenario. Let's consider three kinds of the capital investment, let's suppose that the same capitals, which are invested in the metal extraction, assured, from the first kind of deposits, the extraction of 2.5 grams from a ton (gr/t) of the rock, from the second kind of deposits - 3 gr/t, from the third kind of deposits – 3.5 gr/t, and this is driven only by various mining-and-geological and geographical-and-economic characteristics of deposits. Let's assume that in this case, the mineral extraction tax is charged in the amount of 6% from the first kind of deposits, where the metal content in 1 ton of the rock makes up 2.5-3 gr/t, the mineral extraction tax for the second kind of deposits, a rate, under the laws, does not depend on the metal content in the rock and will make up 6% (the metal content is 3-3.5 gr/t), the mineral extraction tax for the third kind of deposits, where the metal content in the rock is higher than 3.5 gr/t – and the

same 6% rate is applied. The author believes that the first kind of deposits is the worst in terms of characteristics for the mining industry. The second scenario. Let's assume that the Russian taxation system changed and let's suppose that the mineral extraction tax rates became differentiated from the characteristics of deposits. The minimum threshold value of the mineral extraction tax rate was established at the 6% level, let's assume that the maximum value is 10%, but it is a stable rate for the whole development period. In this case, with a differential rate, the mineral extraction tax is charged in the amount of 6% from the first kind of deposits, where the metal content in 1 ton of the rock makes up 2.5-3 gr/t, the mineral extraction tax for the second kind of deposits is 7% (the metal content is 3-3.5 gr/t), the mineral extraction tax for the third kind of deposits, where the metal content in the rock is higher than 3,5 gr/t, is 8%.

The third scenario, when the mineral extraction tax, is differentiated, and a flexible taxation rate is applied, which is varied during the development conditions change. The tax rate value is confirmed once a quarter when quarterly reports are drawn up. Then, with a differentiated rate and a floating rate, the mineral extraction tax is charged in the amount of 6% from the first kind of deposits, the mineral extraction tax for the second kind of deposits is 7%, for the third kind of deposits, where the metal content in the rock is higher than 3.5 gr/t, is 8%. Let's assume that the above-mentioned equal capital shares, which were invested in various kinds of the metal deposits, yielded, from 1 ton of the rock, 500 roubles, 600 roubles, 700 roubles. The rent, which was received from these three capital shares, was equal, according to the differential rent theory, to 300 roubles (or to an amount of differences between 500 roubles and 700 roubles= 200 roubles; 500 roubles and 600 roubles= 100 roubles). The product made up 1800 roubles (500 roubles + 600 roubles + 700 roubles). The rent, which was withdrawn by the state via the mineral extraction tax, with the same rates, is equal to 108 roubles (6% out of 500 roubles = 30 roubles; 6% out of 600 roubles = 36 roubles; 6% out of 700 roubles = 42 roubles). With a differentiated date of 128 roubles (6% out of 500 roubles = 30 roubles; 7% out of 600 roubles = 42 roubles; 8% out of 700 roubles = 56 roubles).

Let's assume that in both cases, the mineral extraction tax rate remains constant during the whole extraction period. Let's suppose that the mining organizations, which develop the second kind deposit, increased the extraction volume or held the events reducing the extracted metal prime cost on the second kind deposit. Then the same capital amount would yield, from 1 ton of the rock of the second kind deposit, 650 roubles, while the rent from these three deposits would make up 350 roubles (700 roubles – 500 roubles = 200 roubles, 650 roubles – 500 roubles = 150 roubles), the product cost would be equal to 1850 roubles (500 roubles + 650 roubles + 700 roubles), the mineral extraction tax amount with the same rate is 111 roubles (6% out of 500 roubles = 30 roubles; 6% out of 650 roubles = 39 roubles; 6% out of 700 roubles = 42 roubles). With a differentiated rate, the tax amount would make up 131.5 roubles (6% out of 500 roubles = 30 roubles; 7% out of 650 roubles = 45.5 roubles; 8% out of 700 roubles = 56 roubles). Therefore, from the second deposit, the state received, with the same rates, the absolute rent – 30 roubles and the differential rent I – 6 roubles, as well as the differential rent II – 3 roubles; with differential rates, the state also withdraws the absolute rent – 30 roubles and the differential rent I – 12 roubles, as well as the differential rent II – 3.5 roubles. Thus, the state, via a stable rate of the mineral extraction tax, is able to withdraw the absolute mining rent, the differential mining rent I, the differential mining rent II. As the example shows, and with the same rate, and with the differenced tax rate, unless it is changed from the development conditions, then the

mining organization income is withdrawn, which does not favor the stimulation of application of the scientific and technical progress results.

Let's assume that the extracted metal prime cost increased and extraction on the third kind deposit decreased trough worsening of the mining-and-geological and geographical-and-economic characteristics: lower metal content in the rock, more complicated geological structure, deeper processing, harder side rocks, more complicated hydrogeological conditions, closing of roads or worsening of transportation lines, etc. In addition, a prime cost of the metal extracted from the second kind deposit decreased through processing of rocks with higher metal content, which is driven by the organization management policy, improvement of technological properties of the deposit, geological structure, mining-technical and hydrogeological conditions, etc. Then the capital, which is invested in the metal mining, will yield, from 1 ton of the rock, 500 roubles from the first kind of deposits, 710 roubles – from the second kind of deposits, 620 roubles – from the third kind of deposits; the rent will make up 330 roubles (710 roubles – 500 roubles = 210 roubles; 620 roubles – 500 roubles = 120 roubles). Proceeds of amounts from the mineral extraction tax to the federal level of the budget system, with a stable and equal rate, will make up 109.8 roubles (6% out of 500 roubles = 30 roubles; 6% out of 710 roubles = 42.6 roubles; 6% out of 620 roubles = 37.2 roubles); with a stable and differentiated rate – 129.3 roubles (6% out of 500 roubles = 30 roubles; 7% out of 710 roubles = 49,7 roubles; 8% out of 620 roubles = 49,6 roubles). And with the existing mechanism of calculating the mineral extraction tax, the budged revenues will make up 109.8 roubles, which is reflected in the following table.

Table 4. Scenario calculation of an amount of the mineral extraction tax

Taxable base	1st scenario – with a stable and non-differentiated tax rate	2nd scenario – with a stable, but differential tax rate	3rd scenario – with a varying and differentiated rate
1st kind of deposits -500 roubles 2nd kind of deposits – 600 3rd kind of deposits – 700	6% - 30 6% - 36 6% - 42 TOTAL-108	6% - 30 7% - 42 8% - 56 TOTAL-128	6% - 30 7% - 42 8% - 56 TOTAL-128
1st kind of deposits -500 roubles 2nd kind of deposits – 650 3rd kind of deposits – 700	6% - 30 6% - 39 6% - 42 TOTAL-111	6% - 30 7% - 45.5 8% - 56 TOTAL-131.5	6% - 30 7% - 45.5 8% - 56 TOTAL-131.5
1st kind of deposits -500 roubles 2nd kind of deposits – 710 3rd kind of deposits – 620	6% - 30 6% - 42.6 6% - 37.2 TOTAL-109.8	6% - 30 7% - 49.7 8% - 49.6 TOTAL-129.3	6% - 30 8% - 56.8 7% - 43.4 TOTAL-130.2

It is concluded that stability and equality of the 6% mineral extraction tax rate, for the second kind deposits, allow the organizations to appropriate the rent income, while stability of the 6% mineral extraction tax rate for the third kind of deposits allows the state to withdraw a part of the mining organizations profit to the federal budget. If

the rates are stable, but differentiated, then the 7% stable rate for the second kind deposits, as in the first case, allows the organizations to appropriate the rent income. Stability of the 8% mineral extraction tax rate for the third kind of deposits allows withdrawing a part of the mining organizations profit to the federal budget, since in this case the second kind deposit falls within the scope of the 8% mineral extraction tax rate, while the third kind deposit falls within the scope of the 7% mineral extraction tax rate. In this case the mineral extraction tax value would make up 130.2 roubles for the federal budget (6% out of 500 roubles = 30 roubles; 8% out of 710 roubles=56.8; 7% out of 620 roubles=43.4), which is 0.9 roubles higher than the amount paid to the budget with a stable differentiated rate and 20.4 roubles with a stable and non-differentiated tax rate. It is necessary to note that the majority of mining organizations developing the primary deposits, and many organizations developing the placer deposits, extract more than 100 kilograms (100000 grams) of metal, so these changes do heavy damage to the tax incomes of Russia's consolidated budget.

Thus, with a stable rate of the mineral extraction tax, a rate, which does not take into account the mining-and-geological and geographical-and-economical characteristics of deposits, the mining organizations, which develop the deposits with the best characteristics, receive the super incomes and appropriate the mining differential rent I, or the surplus product, which is received not through the employees' labor, the use of advanced achievements of the scientific and technical progress, but through changing the mining-and-geological and geographical-and-economical characteristics of deposits for the better. A contradiction between the order of determination and functioning of the mineral extraction tax and the differential rent theory consists in a choice of the taxable base subject for this kind of tax. According to the existing mechanism, a mining organization, irrespective of whether it received a surplus income on the capital invested in the deposit development, or not, must pay the mineral extraction tax. "… The profit is represented by the fund from which any rent is taken. Any rent has always made the profit" (Ricardo, 1955a). With an existing system of the resource taxation in the Russian Federation mining industry, all kinds of rents are shifted onto the consumer. Although, according to the rent theory and the world tax practice, it is the society, represented by the government, who must receive the rent income. The applied system of the resource taxation of Russia's mining industry leads to increase in the prime cost of the domestic extracted product and to decrease in its compatibility in the world market.

The Russian Federation's existing taxation system is aimed at performing the fiscal functions, while one of the state's principal tasks – to make Russia's organizations more competitive, can be implemented only if active policy is pursued to create necessary conditions for the industry development (Zhironkin, Gasanov, Barysheva, 2017), whose main segment must become the evolution reforming of the tax system. The existing system of the resource taxation of mining organizations does not assure the rational use of natural resources, does not favor the development of production facilities of the mining industry, the use of advanced results of the scientific and technical progress, the investments attraction. At the same time, the functioning taxation system is forming the state budget revenues, it fulfills one of its major tasks. According to Article 340 of the Russian Federation Tax Code, the taxable base of the mineral extraction tax, which is paid by the Russian Federation mining organizations, is the cost of minerals extracted, which is calculated, as a rule, proceeding from prices of the extracted mineral selling, which the taxpayer has formed for appropriate tax period – in other words, the gain (Tax Code of the Russian Federation, 1998, 2000). It is interesting that, according to the Russian Federation Tax Code, the mineral extraction tax (a rate

for gold-mining organizations is 6%), with clause-by-clause consideration of its taxable base, charges 6% from the taxable base of payments to the state non-budgetary funds (now the insurance payments), charges 6% from 30.2% of the amount calculated for making the insurance payments, charges 6% from the amount of a transportation tax calculated for payment to the budget, charges 6% from the profit amount and 6% from the most part of the taxable base of the profit tax of the gold-mining organizations.

Thus, the gold prime cost does not increase through the economically feasible expenses. The same situation is with the mineral extraction tax charged during developing the deposits of other metals. *This situation in the resource taxation system definitely makes the products of domestic subsoil users less competitive. Thus, it is necessary to transform the resource taxation system, including through changing the taxable base of the mineral extraction tax from the gain for the mining organizations profit.* Therefore, a differential rent is an income that is not created by the mining organization itself, but it is formed through the best conditions of the deposit development. This income remains at the mining organization's disposal, it is not withdrawn in favor of the state, the civil society. It is possible to find out a value of the differential rent 1 in the organization gain value only when comparing the gain with the organization expenses for the deposit development with a minimum expenses level assuring the absolute rent value. The existing tax mechanism of calculating the mineral extraction tax weakly stimulates the mining organizations for developing the hard-extracted depletable minerals, for starting to use new equipment and for using new technologies.

Thus, the mining organizations are not interested in decreasing their expenses through developing and introducing the sometimes-risky innovation solutions, since, when determining the taxable base, the profit level is not taken into account, the gain is not compared with the expenses, in other words, the profit is not the taxable base. The gain, which is recognized as the taxable base of the mineral extraction tax, is undoubtedly significant, since the mining is energy-consuming, labor-intensive, resource-intensive production and requires great financial investments. This fact provides the state with a stable and practically systematic level of the budget revenues. It is necessary to note that the state keeps from forming, in the subsoil use, the principles of creating the equal management conditions via leveling a factor of the best deposit in terms of characteristics and location through withdrawal of incomes that were not created by the economic entity, but that were formed through external factors that were not formed under influence of the activities results of this economic entity. As a result, why should a commercial organization increase its prime cost through growth of expenses during developing less profitable deposits, if the taxable base of the mineral extraction tax is formed from the gain rather than from the profit? Thus, with the existing taxation system, it is economically reasonable for the subsoil users to develop the deposit plots having only with the best characteristics with the minimum investment of funds in the metal extraction from the deposits plots with complicated mining-and-geological and geographical-and-economic characteristics.

When developing the mineral deposits, it is necessary to take into account that a burden of extra ecological and social loads, when the subsoil is developed, is born by the territories. As a rule, the subsoil users' economic activities have irreversible consequences for the environmental state, conditions of the economy and social sphere development. Thus, at late stages of the deposit development, the regions are to receive a part of the rent incomes and to take an active part in regulating the subsoil use processes. Therefore, a problem of delegating some functions and powers from a federal

level to a regional level should be solved (RF Law dated, n.d.). The licence (competition) system of access to the subsoil, which is practiced in Russia today, and the tax system can solve this problem only partially, since the marginal standards of resource taxes and payments are approved at a federal level according to a flat scale with no account taken of a specificity of mining-and-geological and geographical-and-economic characteristics of a deposit.

Table 5. Generalization of the main areas of improving the instruments of the rational use of the natural-resource base of the mining industry

Indicators	Development areas
1.Legal groundwork	1. adoption of the scientifically substantiated standards and rules regulating technical and geological aspects of developing the mineral deposits. 2. adjustment of legal provisions towards delegating several the federal center powers to a region. 3. creation of equal management conditions in developing the subsoil by means of leveling differences of the deposit characteristics, through differentiating rates of the resource taxes and payments.
2.process of control over the subsoil use	Strengthening of the state control and monitoring over the deposits development, by means of observance of the standards on technical, geological, ecological regulation of the development conditions, the state expenses will grow inevitably, which can be compensated, including through complete and rational deposit development, and through the rent incomes withdrawal.
3.resource taxation system	1. rent tax imposition . 2. the use of profit as a source of the rent derivation, and the use of the subsoil user profit as a taxable base of rent tax. 3. the use of a differentiated system of the resource taxation, which takes into account the mining-and-geological and geographical-and-economic characteristics of deposits. 4. when tightening the institutional conditions of developing the deposits and the measures on observance of the standards and rules, it is possible to introduce a flexible system of the resource taxation (from giving the decreasing coefficients in connection with the subsoil depletion, to giving the tax holidays before the organizations reach the design capacity).
4.Demarcation of powers between the federal center and regions	Delegation to the regions of the control functions over performance of the environmental measures, ecological standards, and the social obligations accepted by the subsoil user.

(Myasoedov, 2010)

On several minerals, upper limits of the resource taxes and payments rates must be introduced (namely, they are intended to encourage or, in the contrary, to discourage the subsoil users' business activity), which must be determined by the regions themselves (this does not concern the nationally significant resources – oil and gas, radioactive materials, rare and precious metals, diamonds and other precious stones of the first group). A gap between the economical efficiency of the mining complex and social development of a territory, a degree of load upon the ecological system resulting from the mineral extraction – all these characteristics are, as a rule, differentiated by

regions. The financial and natural compensation must be provided for territories for all the kinds of negative consequences related to the mining: disfigurement of the natural and geological landscape (alienation of forest areas, natural pastures, hunting lands, ruptures of utility lines as a result of the soil settling in the areas of mine workings and others), increase in polluting emissions, short payments of taxes and other earnings from lands alienated for mining allotments, etc. As a result, this is sustainable development of all the territories, on which the minerals are being developed (Kowasch, 2018). If the subsoil users compensate the above-mentioned factors completely, many deposits can be closed. In order to improve the economic activities of the subsoil users, some specialists offer the tax allowances for the subsoil assets depletion as well as for expenses for deposits construction in the initial period of their development (for 5-7 years), for investments and accelerated depreciation of the equipment, for selling the commercial elements, which are simultaneously recovered from the subsoil, and products obtained during processing the overburden rocks and the metallurgical cycle waste, the mining waste (Zhironkin, Demchenko, Kayachev et al., 2018; Hicham, Benzaazoua, Edahbi et al., 2020).

At the same time, for territories, where the mining organizations are forming company towns, the deposits depletion raises the question about creating alternative spheres of employment for the population in the local economy, and, therefore, about extra financial receipts, so the initial payments for the right of the subsoil use must provide for the territories expenses for the future reprofiling of the local economy, like in Southern Spain (Martínez, Llamas, Miguel et al., 2007). For this purpose, the USA, Canada, Saudi Arabia use the trust fund institution (Kazantseva, Chistyakova, 2018; Zhironkin, Khloptsov, Skrylnikova et al. 2018). The application of a soft system of the subsoil use conditions allows the state to save the expenses for control and monitoring of the deposits development processes. However, the use of such conditions leads to violation of standards and rules of the deposit development, non-observance of the environmental measures, and to appropriation of a significant part of the mining rent by the subsoil leaseholder. A liberal system of the subsoil use, with a weak governmental control, is unable to assure implementation of the state strategic tasks and creation of relatively equal management conditions in the subsoil use. The main controversial points of the subsoil use are as follows: absence of interconnection between the existing taxation system with provisions of a theory of forming the absolute and differential rents; inability of the state to implement the control or the monitoring in the whole period of the deposit development, because of absence of a clear detailed code of standards and rules regulating the main aspects of developing the minerals.

CONCLUSION

The adopted legal standards of the subsoil use, with detailed consideration, form a potential of tenseness in the subsoil use system, the state practically kept from managing the process of withdrawal and re-distribution of the rent incomes, created and preserved a contradiction in a status of the titles to subsoil and in the national security issues for many years in advance, which pose risks to sustainable development of the mining branches in the Russian Federation. The existing subsoil use system in the Russian Federation is characterized by contradictoriness of fundamentals of the subsoil use system functioning. The principal law of the country, the Russian Federation Constitution, permits the private ownership of subsoil. The said fact differs from the special legal provisions, in other words, the RF Federal Law “On Subsoil” comes into

conflict with the RF Constitution provisions. The Law "On Subsoil" definitely enshrines only state ownership of subsoil. Change of only one regulatory enactment, namely the FZ "On Subsoil" in an issue of permitting the private ownership of the Russian Federation subsoil, brings all the existing positions of other regulatory enactments into a clear-cut logical system on the use, the disposal, the possession. And if to take into account the supremacy of the Russian Federation Constitution, the private ownership of subsoil can appear in various situations including the change of a political formation of the Russian authorities and society.

The second aspect of subsoil use, which have a potential of high uncertainty, is disagreement of strategic documents provisions with an actual state of the management system while developing the mineral deposits. The irony is that overwhelming majority of strategic mineral raw materials, which the Russian Federation attributes to scarce mineral raw materials, which are insufficient to be supplied for the country's economy, are exported out of the Russian Federation!!! They are exported on various excuses, in various commodity groups from ferro-alloys and raw products to pellets. In other words, practically primary commodities or products of the first and second processing are exported. As a result, the buyers of the Russian primary commodities receive the whole surplus income, then selling this commodity within the high-technology import goods. Thus, qualitative and honest performance of standards and documents on issues of the national security in the sphere of subsoil use will lead to practically complete stopping of processes of the raw materials export from the country. The question of time of the beginning of observation of provisions of the concepts, the strategies of the national security remain open. The third significant point, which have a potential of instability for the subsoil use subjects, is a system of distributing the rent incomes from the mineral extraction. The existing system of withdrawing the rent incomes assures appropriation of super incomes by the raw materials giants, the raw materials monopolies, which move the received incomes out of the country and place them in foreign countries. According to the rent relations theory, the rent incomes must be received by the owner of non-renewable minerals, namely the Russian Federation, the Russian Federation citizens.

A source of withdrawing the rent incomes must be the mining organizations profit, rather than the gain that is a taxable base of the principal rent tax – the mineral extraction tax. The said tax does not take into account mechanisms of forming and, what is more, of withdrawing the absolute, monopoly rents, differential rents 1 and 2. These rents and super incomes are appropriated by the subsoil users developing the deposits with the best mining-and-geological and geographical-and-economic characteristics, and the state kept from a system of regulating and withdrawing the rent, while citizens of Saudi Arabia, United Arab Emirates, Kuwait, Canada, Australia and some other countries receive life rent incomes via trust funds, community funds and other instruments. As a result, the author notes that a potential risk to the existing management fundamentals in the subsoil use system is posed by: 1. contradictoriness of the laws in issues of title to the subsoil; 2. disagreements of provisions of the country strategic documents, concepts, the state security strategies with the existing practice in the subsoil use system; 3. non-compliance with fundamentals of the rent relations theory of the applied system of withdrawing the rent incomes, which leads to the further society stratification and the branch disproportions in the country economy.

HIGHLIGHTS

1. Uncertainty of titles to the subsoil is forming the instability potential.
2. Complete performance of the laws will cease the strategic mineral raw materials export.
3. A system of withdrawing the rent incomes weekly assures their appropriation by the state.

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