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RENT COMPONENT OF TAXES AND  
PAYMENTS FOR SUBSOIL USE

*The need for improvement of the subsoil use taxation is grounded taking into account the differential rent. Theoretical and methodological approaches to the concept of natural rent in subsoil management are investigated. The analysis of taxation of subsurface use in Kazakhstan is carried out taking into account the natural rent. Main types of special taxes for subsoil use and their rent orientation are analyzed. Recommendations on the development of the taxation system in subsoil management are given.*

*Keywords:* taxes and payments; natural rent; subsoil use management.

Дінар Р. Сіхімбаєва, Бексултан Т. Ігілік  
РЕНТНА СКЛАДОВА В ПОДАТКАХ І ПЛАТЕЖАХ  
ЗА КОРИСТУВАННЯ НАДРАМИ

*У статті обгрунтовано необхідність вдосконалення оподаткування надрокористування з урахуванням диференціальної ренти. Досліджено теоретико-методологічні підходи до концепції природної ренти в надрокористуванні. Проведено аналіз системи оподаткування надрокористування в Республіці Казахстан з урахуванням природної ренти. Розглянуто основні види спеціальних податків за надрокористування та їх рентну спрямованість. Розроблено рекомендації щодо розвитку системи оподаткування надрокористування та зростання частки справляння природної ренти за надрокористування.*

*Ключові слова:* податки та платежі; природна рента; надрокористування.

*Форм. 2. Літ. 15.*

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РЕНТНАЯ СОСТАВЛЯЮЩАЯ В НАЛОГАХ  
И ПЛАТЕЖАХ ЗА НЕДРОПОЛЬЗОВАНИЕ

*В статье обоснована необходимость совершенствования налогообложения недропользования с учетом дифференциальной ренты. Исследованы теоретико-методологические подходы к концепции природной ренты в недропользовании. Проведен анализ системы налогообложения недропользования в Республике Казахстан с учётом природной ренты. Рассмотрены основные виды специальных налогов за недропользование и их рентная направленность. Разработаны рекомендации по развитию системы налогообложения недропользования и росту доли взимания природной ренты за недропользование.*

*Ключевые слова:* налоги и платежи; природная рента; недропользование.

**Problem statement.** Taxation mechanisms in resource rents are most discussed at the present stage of development in many countries. The problem is important today because the incomes of subsoil users are overestimated due insufficient consideration of differential rent in calculating subsoil use taxes, have a tendency to increase following the oil and other energy sources prices jumps.

The article presents the analysis of Kazakhstani taxation system in consideration of its rental component and specific recommendations on the collection of taxes and payments for subsoil use.

This research as opposed to the existing ones in the world practice takes into account the specific features of the post-Soviet regions resources, and the economic and social situation in the mining regions.

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**Recent publications analysis.** At present there are two concepts of subsoil use rent. The first and the most common is the rental concept according to which the rent formed during the operations with raw materials resources rightfully belongs to the owner of these natural resources, i.e. to the state which should withdraw it in the form of rent taxes and payments or dispose them in public interest. The proponents of this concept believe that practically all of the resources sale income obtained during the subsoil use is the property of the owner of raw materials resources, i.e. of the people, and the company must receive business income as estimated by its contribution. The representatives of the Russian rental concept consider that it is possible and necessary to include the significant portion of nature resources rent, especially oil rent, in state revenues assessing the latest in the tens of billions of dollars (Glazyev, 2011; Lvov, 2002; Petrov, 2004; Razovsky, 2000).

A group of scientists supporting the rental concept of subsoil use (Panskov, 2005; Yazev, 2004; Gusev, 2005; Danilov-Danilian, 2010) notes that complete withdrawal of natural rent is impractical because it will reduce the investment attractiveness of the resources sector and lead to stagnation in the development of this sector and to a decline in production and export of hydrocarbons, and thus to losses of export earnings.

Many scientists lean towards the rental concept of subsoil use. Their criticism of the modern system of subsoil use taxation, especially oil and gas, is that the current system leads to the most cost-effective operation of wells and fields due to the lack of geological, geographical and other conditions recognition during production and their quality during taxation.

In the views of Kazakhstan scientists (Kargazhanov and Baymirzaev, 2000; Tonkopi, 2003), state taxation is based on the principle of taxation of entrepreneurs income and profits, rather than on the rental basis, and therefore until today rent has been privatized by owners of the mining companies, and its value depends on environmental conditions. The priority should be given to the interests of long-term environmental stabilization, also rental payments play important role in solving social, ecological and economic problems. Today the natural resource rent is often the only source of assets accumulation significantly increasing the rate of GDP growth.

Foreign experience in subsoil use taxation (Norway, USA, Canada), in the first place, should be noted as flexible, with constant adjustments of its economic and legal framework depending on the conditions of production, depletion of stocks and other factors.

**Unresolved issues.** Noting the legitimacy of state regulation of the tax system, scientists are constantly discussing the ways of natural resource rents collection and the necessity for a differentiated and balanced approach to various economic, geological and social conditions of subsoil use (Steiner, 2004; Johnston, 2000).

The research work is based on the postulate that the rental approach should prevail in taxation of extractive industries. It is necessary to introduce the concept of differential rent in taxation of fields that operated in different conditions, which will reflect the rental peculiarities of mineral deposits, and thus broadening the tax base for rent taxation. This will allow the objective assessment of resources in certain deposits and the cost of their development, redistributing incomes from subsoil use in the interest of national economy.

**The purpose of the research** is to develop the mechanisms for justification of subsoil use taxation in Kazakhstan concerning the companies specializing in production and processing of mineral resources. The proposed evidence-based approach to the development of taxation mechanisms of subsoil use will lead to the increase of state income from the resource sector, socioeconomic development of the mining regions, and growth of processing industries in Kazakhstan.

**Key research findings.** The decline in efficiency of subsoil use taxation system in regulating the exploitation of subsoil resources has led to the fact that many governments have introduced specific subsoil use taxes in their extractive industries.

The state objectives here are the following:

- collection of the planned level of taxes at early stages of field development;
- reduction of taxes depending on the level of costs for enterprises;
- distribution of risks between all investors and stakeholders;
- deeper fields development and prevention of their premature liquidation;
- smart combination of subsoil taxation users and the overall state tax system.

The existing practice of subsoil use has shown that flexible and reasonable balance of interests of the mining industry and the state in today's conditions is not always effective. Using own subsoil provides economic prosperity of oil-rich countries of the Middle East countries such as Kuwait, the United Arab Emirates and Saudi Arabia (Glazeyev, 2003).

In our opinion, for minerals of strategic importance, such as oil and gas resources, uranium etc. the introduction of differential rent for subsoil use, depending on the conditions of production, is appropriate and necessary.

The elements of taxation system for subsoil users, which may be related to the collection of rent, are:

- bonuses;
- mineral extraction tax (MET);
- corporate income tax;
- excess profits tax;
- share of the Republic of Kazakhstan in production;
- rent tax on exported crude oil.

The following are the main types of taxes and payments that effect the value of natural resource rents in the subsoil use, which can be represented by the following relationship:

$$R = F(B, N_{dpi}, N_{kp}, N_{sp}), \quad (1)$$

where  $R$  – nature resources rent in the subsoil use;  $B$  – bonuses;  $N_{dpi}$  – mineral extraction tax (MET);  $N_{kp}$  – corporate income tax;  $N_{sp}$  – excess profits tax.

The calculations show the following correlation dependence:

$$R = 0.02B + 0.02N_{dpi} + 0.28N_{kp} + 0.5N_{sp}. \quad (2)$$

**Bonuses ( $B$ ).** In the world practice of subsoil use there are 3 types of bonuses: subscription bonus, commercial discovery bonus and production bonus. In Kazakhstan only two bonuses are used: subscription and commercial discovery. The state tends to the appropriation of natural resource rents as a subscription bonus payable at the time of signing a license agreement (Plenkina, 1999). For the state the economic importance of bonus as a special payment for mineral resources use is that

all mining companies assume full investment risk under this payment, and the state in its turn bears no risk during the conclusion of agreements and the transfer of rights for subsoil use. Despite the fact that the rate of subscription bonuses are determined by the economic value of deposits, these bonuses have a weak focus on collecting differential rent so that they cannot be considered as rent payments, although they bring the first installment to the state for sale value of the deposit.

*MET* ( $N_{dpi}$ ) are charged on a sliding scale with rates rising according to the increase of resources extraction. Due to the fact that differential rent depends directly on the extension of fields, such a system is more efficient because it has flexibility which provides the increase of tax rates upon the growth of resources extraction volume. The rent also depends on oil prices and production costs, so the scheme on the basis of payment for the right to develop mineral resources upon the sliding scale cannot always respond with greater sensitivity to significant changes in these variables.

The benefits of using *MET* as a fiscal instrument of subsoil use taxation for the owner of natural resources are as follows:

- *MET* are charged almost from the moment of production, the beginning of field development upon the achievement of certain production volumes specified in the agreement;
- *MET* calculation is simpler than the taxation based on income;
- the possibility for more accurate prediction of earnings under levying of *MET* in comparison with taxation based on company's profit.

This tax instrument disadvantage for the government is that *MET* does not include all the differential rent fully due to the fact that its rate except for production volumes and past costs does not include other types of subsoil conditions differentiation. Fluctuations in a number of factors significantly affecting profits excess volume derived by mining companies do not affect the fee for raw material resources production. These factors include the raw material resource production cost level, possible price differences at the world market and product strike prices, as increase in windfall profits at a developed site associated with cost reduction and price increase.

The downside of this taxation form for potential investors is that investment and operating costs are not subject to payment before taxation. Consequently, when exempting rent income only by *MET*, the state does not receive the full amount of natural resource rents when raw material prices are significantly higher at the world market than sales prices, and (or) production costs are very low. Many inefficient deposits may be disadvantageous after paying the *MET* when the produced resource prices fall significantly, while costs are very high. This situation can lead to premature liquidation of small and medium-sized fields that are in more severe production conditions.

It should be noted that *MET* as a tool of the fiscal policy is not conducive to obtaining significant income by the state at an early stage, when production rump up is still insignificant, does not include the differential rent full amount and therefore can not be used as the main or the only way to obtain it.

*The corporate income tax* ( $N_{kp}$ ). In current practice, all activities of mining companies, including mineral deposit fields exploitation bare the income tax. This type of taxation is usually charged by a flat rate, usually 30–40%, with an indirect focus on the differential rent and cannot be used as a means of its collection due to the fact that the focus is indirect, and this tax does not strongly respond to changes in profitabili-

ty depending on production conditions, the depth and overlying strata inaccessibility in the fields.

*The excess profits tax ( $N_{sp}$ ).* This tax mechanism is that the tax levy increases with a profitability increase regardless of its cause, and decreases with a mining company's industrial activity indicator decrease. Therefore, this type of taxation promotes marginal mineral deposits. From the investor's perspective, tax has the advantage that the risk associated with capital investment is divided with the government to a greater extent than in conventional taxation: tax is not paid, until it reaches the lower limit of profitability, and it does not happen in ordinary taxation. Accordingly, for investors risk reduction is the increase in government revenues, and a delay is possible in receiving these revenues, while the subsoil profitability reaches the set limit. The excess profits tax is extremely sensitive to price fluctuations at the world market, and also depends on production costs and deposit size.

Obtaining full share of resource rents requires the subsoil use taxation system development, taking into account extraction differentiation conditions. For the considered elements of the subsoil user tax system bearing the rental orientation, differentiated flexible rates should be established, taking into account various fields development specifics features. This will encourage the development of small and medium-sized fields, and will also contribute to deeper and more complete recovery of mining sites.

The Republic's subsoil use tax system should be competitive in comparison with the taxation systems in other major mining regions of the world.

The authors (Muravyeva and Nikitina, 2005) suggest that "rent should be at least 90% of the raw materials extraction and finished product sales". The tax charge levied by 90% or more of differential rent, or pre-tax profit is not competitive. Stiffening the tax regime can lead to the prevailing development of only large deposits, whereby long-term government revenues from subsoil use would be significantly reduced.

The realistic option is the total amount of state's natural resource rents being up to 70% of excess profits. The tax system in which the total collection reaches 65–75% of the differential rent at highly profitable production is competitive compared to other opportunities available for international investments. If potential developments are less attractive to investors due to high costs and lower prices for manufactured products, the overall tax burden should be reduced to the level of 50–65% of the differential rent. Developed countries such as the UK and Norway allow changes in the subsoil user taxation in the oil and gas industry in the case of large world oil prices fluctuations (Danilov-Danilian, 2010), and in the case of ultra-high prices, the taxation level may be reduced to 80–82%. Many small and low-profit fields can bring significant revenues for the government, as a result the state will receive the full amount of differential rent.

#### **Conclusions and prospects for future developments in this direction.**

- the character of the natural rent formation has been studied as a differential income received in mining by the government;
- on the basis of the analysis of subsoil use taxes and charges imposed by the current tax system and the natural rent composition, recommendations are given on improvements in the current system of subsoil use taxation emphasizing the importance of the rent component.

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Стаття надійшла до редакції 11.02.2015.