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**ACTUALIZATION DEFINITIONS AND THEORETICAL JUSTIFICATION  
DISTRIBUTION RATIO OF OIL AND GAS ROYALTIES UNDER  
DECENTRALIZATION**

**Abstract.** The need to elaborate the factor of redistribution of rent payments between different levels of budgets has been updated. The purpose of the article is to determine the functional manifestations of rent payments in the modern institutional environment, formed in the context of decentralization, to analyze and evaluate the actual income of rent payments to the budget, taking into account their retrospective, to identify the main directions of improving the redistribution of rent payments between budgets. While writing the article, general scientific methods of cognition were used: the combination of dialectics and historicism - during the study of the evolution of the distribution the rent payments; methods of scientific abstraction, induction and deduction, as well as other methods of knowledge of socio-economic phenomena, objects and processes for formulation scientific regulations and clarification the definitions rent payments; quantitative and qualitative comparison, analysis and synthesis, graphical methods of research, economic and statistical methods of information collection and processing for statistical analysis and estimation of rent receipts to the budget. A complex of researches the functional manifestations of rent payments and a demarcated functional field of rent is conducted. The mechanisms, principles and tools for charging and leasing rent payments in the oil and gas complex in the normative legislative and regulatory documents of Ukraine were analyzed; a vision of the distribution of payments between the state and local budgets is formed based on the nature of their functional manifestations. The retrospective of rent payments to the State Budget was evaluated.. Based on the conducted researches has been developed the economic-mathematical model of the coefficient of redistribution rent payments with the account

of their functional nature. The basic directions of improvement of redistribution improvement of rent payments between budgets are defined. In order to increase the volume of receipts of rent payments to the budgets, proposed the ways and directions of intensification of hydrocarbon production by improving the legislative and normative base of Ukraine for increase the investment attractiveness of the industry. Differentiation of rent payments is made depending on the factors that have the greatest influence on the formation of the cost of oil production to stimulate entrepreneurial activity, the directions of improvement of accounting of geological prospecting and extraction works are formed, the priority conditions for drilling production are formed.

**Keywords:** rent, mineral resources, decentralization, oil and gas, the criterion redistribution of rent payments, budget, oil and gas sector

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## **АКТУАЛІЗАЦІЯ ВИЗНАЧЕННЯ ТА ТЕОРЕТИЧНЕ ОБГРУНТУВАННЯ КОЕФІЦІЄНТУ РОЗПОДІЛУ РЕНТНИХ ПЛАТЕЖІВ ПІДПРИЄМСТВ НАФТОГАЗОВОГО КОМПЛЕКСУ В УМОВАХ ДЕЦЕНТРАЛІЗАЦІЇ**

**Анотація.** Актуалізовано необхідність розроблення коефіцієнту перерозподілу рентних платежів між різнорівнеми бюджетами. Цілями статті є визначення функціональних проявів рентних платежів в сучасному інституційному середовищі, сформованому в умовах децентралізації, аналіз та оцінка фактичних надходжень рентних відрахувань до бюджету з урахуванням їх ретроспективи, визначення основних напрямів вдосконалення перерозподілу рентних платежів між бюджетами. При написанні статті використано загальнонаукові методи пізнання: поєднання діалектики та історизму – під час дослідження еволюції розподілу рентних платежів; методи наукової абстракції, індукції та дедукції, а також інші методи пізнання соціально-економічних явищ, об'єктів та процесів – для формулювання наукових положень і уточнення дефініцій рентних платежів; кількісного і якісного порівняння, аналізу та синтезу, графічні методи дослідження, економіко-статистичні методи збору та обробки інформації для проведення статистичного аналізу та оцінки рентних надходжень до бюджету. Проведено комплекс досліджень функціональних проявів рентних платежів та демарковане функціональне поле ренти. На основі критичного аналізу механізмів, принципів та інструментів

нарахування та справляння рентної плати в нафтогазовому комплексі, наведених в нормативних законодавчих та регулятивних документах України, сформовано візію розподілу платежів між Державним та місцевими бюджетами на основі природи їх функціональних проявів. Оцінено ретроспективу рентних надходжень до Державного бюджету. На базі проведених досліджень розроблено економіко-математичну модель коефіцієнту перерозподілу рентних платежів з урахуванням їх функціональної природи. Визначено основні напрями вдосконалення перерозподілу рентних платежів між бюджетами. Для збільшення обсягу надходжень рентних платежів до бюджетів запропоновано шляхи та напрями інтенсифікації видобутку вуглеводнів шляхом удосконалення законодавчо-нормативної бази України з метою підвищення інвестиційної привабливості галузі. Здійснено диференціацію рентних платежів залежно від факторів, що мають найбільший вплив на формування собівартості видобування нафти для стимулювання підприємницької діяльності, запропоновано напрями вдосконалення стану бухгалтерського обліку геологорозвідувальних та видобувних робіт, сформовано першочергові умови проведення бурових робіт задля підвищення рівня видобування вуглеводнів та створення прозорих умов конкуренції.

**Ключові слова:** рента, надрокористування, децентралізація, нафта і газ, критерій перерозподілу рентних платежів, бюджет, нафтогазовий комплекс

**Introduction.** Decentralization reform in Ukraine is focused on increasing financial independence and self-sufficiency areas makes the challenge to society in general and public administration on fair distribution of revenues between the state and local budgets. The basic idea of these reforms is to enhance the development of certain areas, leading to economic growth. The engine of this development is to maximize the use of the resource base areas, ie the use of existing and potential areas and leveling the negative impact of threats and weaknesses in the establishment of regional GDP, which further acts subject redistribution revenues.

Historical milestones show that the economic development of Ukraine until recently based on the extensive exploitation of natural resources has led to a significant depletion of the respective raw potential of specific areas, the deterioration of mining and geological conditions of development of mineral deposits and so on. However, the fee for their use only directed to the state budget target without direction, just to cover state expenses, leaving regions alone with deteriorating environmental state, technological changes in the geological environment. In 2016 year first was formed the draft Law of Ukraine "On Amendments to the Budget Code of Ukraine regarding the inclusion of rent for the use of mineral resources for the extraction of oil, natural gas and gas condensate", and in 2017 it was accepted with the condition that it will come into force on January 1, 2018. According to it, the distribution of rental payments for enterprises in the oil and gas complex proceeds according to the scheme shown in Figure 1.

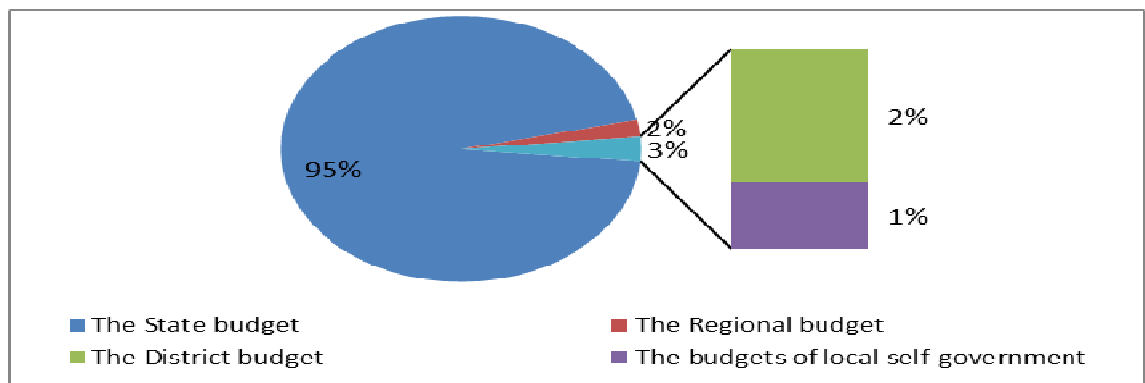


Figure 1 - Distribution of rent payments in Ukraine

Source: formed by the authors on the basis of research data of the budget code of Ukraine [1]

From 2018, 5% of the production from coal mining should be transferred to the place of budgeting at different levels. Of these, 2% will be credited to regional budgets, 2% to district budgets and 1% to budgets of city, village and village councils.

For administrative-territorial units directly subordinate to the regional, bypassing the district link (i.e., it is a question of united territorial communities and cities of regional significance), the distribution will be as follows: 2% are counted towards oblast budgets and 3% to the budgets of the united territorial communities or cities.

An important point in the study of the efficiency of distribution and redistribution of rent payments by oil and gas companies is the assessment of the increase in the volume of rent receipts to local budgets in accordance with the reform. Table 1 shows the volume of revenues from rent payments to the State Budget within 2015-2018 years.

Table 1 - Revenue rent payments for the use of subsoil from the oil and gas complex to the State Budget of Ukraine within 2015-2018 years

Name in accordance with the classification of budget revenues	2015	2016	2017	2018
Rent payment for the use of subsoil	42 049 033,8	58 020 659,0	44 072 311,1	40973528,6
Rent payment for the use of mineral resources for the extraction of minerals of national importance	3 151 409,2	3 397 200,0	3 626 560,2	4022100
Rent payment for using subsoil for oil extraction	5 904 986,3	7 796 037,2	4 521 165,9	4876319,9
Rent payment for the use of mineral resources for the extraction of natural gas	30766 130,8	42 927 789,3	33 276 624,7	29051509,4
Rent payment for the use of subsoil for the extraction of gas condensate	2 226 507,5	2 399 632,5	2 647 960,3	3023599,3
Rents for transportation	1 260 855,1	1 260 855,1	1 368 177,3	1487596,1
Rent payment for transportation of oil and oil products by main oil pipelines and petroleum product pipelines through the territory of Ukraine	225 549,9	261 032,9	239 747,2	272044,6
Rent charge for hydrocarbons accrued before January 1, 2013 and rent for transportation	3 774 436,5	-	-	-
Rent payment for transit transportation of natural gas pipelines through Ukraine	2 985 732,5	-	-	-
Collection in the form of a target surcharge to the current tariff for natural gas for consumers of all forms of ownership	2 817 092,2	-	-	-

Source: formed by the authors on the studies statistical data on revenues to the state budget during 2015-2018 years [2]

Consequently, according to the classification of budget revenues, rent is made up of two large groups: rent for the use of subsoil and rent for transportation. Moreover, it should be noted that the rent for the use of subsoil significantly exceeds the rental charge for transportation (almost 50 times). Also, in all rental payments to the budget, there is a clear tendency towards growth, which is mainly due to the activation of the oil and gas complex, but with the significant pace of inflationary processes. According to the results of 2018, PJSC "Ukrnafta", the largest payer of rental payments, has actually paid 7.8 billion UAH of rent to the budgets of all levels, which is 36.7% more than the same indicator in 2017. To local budgets, in accordance with the mechanism of distribution of rental payment for oil, gas and condensate, which began operating in 2018, in accordance with the legislation, 389.3 million UAH were received from them. During the last month of 2018, the company paid to the state and local budgets of various levels 623.6 million UAH of rent for the use of subsoil obligations. Of these, UAH 31.2 million came to local budgets of different levels. The largest revenue from the Ukrnafta rents for 2018 was received by Sumy (165.0 million), Ivano-Frankivsk (87.4 million UAH) and Poltava (62.5 million UAH) oblasts. Revenues from rent to local budgets depend on the volume of hydrocarbon production in one region or another. According to information from community-recipients of company rent, the majority of funds are spent on financing social and infrastructure projects on the ground [3]. The distribution of rent payments between local and state budgets in 2018 brought positive changes in the quality of the budget capacity of the territories and ensured the development of the infrastructure of the regions. However, in terms of blur institutional environment of economic development of Ukraine, the mechanism of formation of rent is not transparent, the ownership of land resources and the right to use them - uncertain redistribution of rent payments for use of subsoil for the extraction of oil and gas for transportation of oil and oil products pipelines justifying the share allocations of these payments to the budgets of the local level does not exist.

**Theoretical and methodological background.** The theoretical basis of rent relations contain a significant amount of essentially different perspectives and approaches to understanding the problem. The scale and depth of research areas in the field of rent relations due to the variety of forms and types of rents (natural, environmental, institutional, kvazirenta etc.). Basic tenets of the theory of rent revealed in the works of classical economic theory F. Kene, David Mill, T. Malthus, K. Marx, A. Marshall, V. Pareto, W. Petty, D. Rikardo, I. Rotbertusa A. Smith and al. In Ukraine on improving theoretical-methodological and practical aspects of the formation and distribution of rent payments, clarifying their nature, manifestations, sources involved in domestic researchers, including: Y. S Vytvytsky, M. O. Danyluk [4] I. M. Metoshop , [5], I. P. Bulyeyev, B. M. Danylyshyn, B. E. Kvasnyuk, V. Mishchenko, S. V. Mocherny, G.I. Rudko [6], I. Andriyevskiy [7] L. Gorbach [8] T.S. Osadcha [9] S. Maydukova [10] V. Matyukha [11] T. P. Pecherska [12] R. S. Dinard [13] and others. However, the requirements set modern manifestations of decentralization reform necessitated problems of low financial security and investment unattractiveness of individual regions and areas, due to insufficient revenues to local budgets. This task can be done by forming and establishing scientifically based redistribution of revenues between the state and local budgets.

An important resource for financial security area is to promote efficient use of natural resources: land, minerals, water, forests, etc., Located within the territory, and fair charging fees for their use. Therefore it is important to note that a significant share of government revenue are royalties (10% of total revenues), and their structure is 95% - rent for use of subsoil and rents for transportation and rent for use of subsoil for the extraction of just the oil and gas is 95% in the structure of rent payments for subsoil use for mining and it should be noted that about 85% of the rent payments for subsoil use for oil and gas account for the rental fee for the extraction of gas and gas th condensate [14]. In this case, it is logical and fair a share of revenue left on the territory where cope appropriate royalties, as residents of the area have "wealth" that is in demand and must generate revenues to the local budget to improve living conditions and social

status the territory. It is necessary to emphasize fiscal decentralization that significantly increase the level of autonomy and responsibility for their areas of socio-economic development.

A large number of scientific papers relating to the theoretical and methodological aspects rents, mainly aimed at establishing fair rates of rent payments, their differentiation depending on various criteria [6], comparison and opportunities for implementation and application of international experience formation rent payments [7] study functional manifestations rent [8]. Of course, all these studies have a huge and invaluable scientific and practical value, but along with research issues such as fair charging and collecting rent payments in the circumstances of decentralization and the implementation of its main conditions must also develop science-based mechanism for the redistribution of payments, therefore, requires the formation of new approaches, methods, tools, instruments such redistribution. So important is not simply establish interest payments of rent payments to local budgets, and scientific and practical study of the mechanism of data distribution percentage deductions from subsequent identification of areas of their intended use.

Given the urgency, importance and urgency of solving this problem is the main purpose of the theoretical and methodological support development mechanism equitable redistribution of rent payments between the state and local budgets under decentralization. For the purpose should be to solve the following problem:

determine the functional manifestations of rent payments in today's institutional environment, formed under decentralization;

simulate the coefficient of redistribution of rent payments between budgets of different levels;

identify key areas of improvement redistribution of rent payments between budgets to intensify the intensification of hydrocarbon extraction.

**The statement of basic materials.** Justification of functional manifestations of rent payments. According to Art.13 of the Constitution of Ukraine [16] The owner of the land, its mineral resources, air, water and other natural resources within the territory of Ukraine, is the people of Ukraine. The right holder assigned to state and local authorities, including the formation, determining the rates of fees for use of natural resources, the proceeds of which use the created nature and are part of the income of enterprises located in specific areas that are not related to the level of technology and the efficiency of the production process.

Reforming the economy of Ukraine towards decentralization necessitates an adequate solution to the problem of income distribution of natural resource areas between the State and local budgets and the corresponding impact on rental income socio-economic development of territories and living standards. Implicitly rents from natural resources should be directed to the formation of joints subsoil negative impact on environmental and social condition of the territory on which the deposits of hydrocarbons.

In foreign countries (Canada, the USA, Kuwait, Norway, Russia, Nigeria, etc.) revenues from natural resources is usually removed through the tax system aimed at extracting rents from the user of natural resources, particularly in the Canadian model of decentralization intergovernmental relations ownership most of the natural resources transferred to the provinces (Canada's Constitution act of 1867 as amended), which have their own laws on subsoil use and flexible formula for determining rent. For example, in Alberta the formula for calculating the royalty rate is sensitive to the price of hydrocarbons, productivity wells, oil category discounts specific programs (benefits) and holidays. This approach provides financial independence, there is no need for a transfer, and in some cases regions are donors (Alberta, Ontario, British Columbia, etc.).

Exploring the problem of redistribution of payments for mineral resources in the world, it can be argued that countries with a federal paradigm as Canada, the US, ownership of most of the natural resources transferred to the provinces and states that are empowered to resolve issues relating to exploration, use and protection of natural renewable resources in the territory subject [17]. The budget of the province receives royalties and contributions to the protection and

recovery of mineral resources, the fee for subsoil and spent at their discretion, contributing to the welfare of the population. In addition, Canadian provinces such as Alberta, Ontario, British Columbia, rich in natural resources, does not need federal transfers, but rather are donor regions [19]. A striking example of just redistribution of payments for subsoil use and efficient management of its revenues are Alaska Permanent Fund, which accumulates to 50% of rental income and the state is not controlled by regional executive. The capital of the fund can not be spent without the consent of the voters. Income from capital directed at protecting the fund against inflation and recalculated as annual dividends Native. The fund is part of the hundred largest investment funds in the world.

In Norway Norwegian Oil Fund belongs to all Norwegians, its funds are allocated for social development, as living standards in these countries is very high. The law of Saudi Arabia, Sudan and some other Muslim countries reflects that "the state should not only have minerals, but also responsible to all members of society for their proper development" [20]. A completely different situation in Nigeria, the sixth largest oil-producing countries. Here poor people with increased production is only growing. One of the reasons - the minimum the role of government in regulating the processes of mineral resources with the full privatization of the oil sector. Revenues from production of private companies is about 150 billion dollars. year to 10 bln. dollars. state. In countries where citizen's right to hold revenues from natural resources, the government will invest accumulated capital in the welfare of its people, there is a general rise in living standards and economic development is faster [21].

Rent ratio (defined pairs of interests "society-state", "center region", "present-future", "official-business structure") is an element of social and economic relations and property relations. Use of natural resources in Ukraine on a reimbursable basis, which is set for economic environmental management, promotion management and integrated use of various types of natural resources and environment, the formation of material resources. Instead, the adequacy of its calculation, especially for oil and gas companies, raise serious doubts about the direction of this board. According to the Tax Code of Ukraine, rent is recognized nationwide tax levied for use of subsoil for mining; for use of subsoil for purposes not related to mining; for the use of radio frequency resource of Ukraine; for special use of water; for special use forest resources; for transporting oil and oil trunk pipelines and oil pipelines, transit pipeline through Ukraine [22].

The problem of formation of effective taxation of fuel and energy sector in Ukraine the situation with energy that has developed over the last decade, is extremely important. This system should ensure, on the one hand, the extraction of the resource rents generated in the extraction of hydrocarbons in the state, and therefore a significant and stable government revenue, and preserve adequate incentives for investment in this sector (in terms of market liberalization hydrocarbon ), the other in the context of fiscal equalization and fiscal decentralization - defined direction of its share of local budgets for the activation of the financial capacity of local communities.

According to a study conducted in Ukraine in modern practice of state and economic management had not yet integrated, generalizing scientific ideas that reveal objective energy efficient basis, comparative strategic gain / loss trends in the formation of spatial structures and rental can establish no clear scientific concept on rent relations hydrocarbon production under Phase transformation mechanism of governance.

As a result, fiscal decentralization as part of the concept of reforming the tax system of Ukraine was transforming payments for subsoil use, the fee for the use of radio frequency resource of Ukraine, the fee for special use of water in the rent fee.

Subsection 9.1.8 Article 9 of the Tax Code of Ukraine to state taxes and fees charged rent for oil, natural gas and gas condensate produced in Ukraine (hereinafter - the rental fee).

The form of tax calculation royalties for oil, natural gas and gas condensate produced in Ukraine, according to paragraph 46.5 of Article 46 of the Tax Code of Ukraine adopted by the central authority of the State Tax Service in coordination with the Ministry of Finance of Ukraine.

Exploring research sources regarding rent payments and their institutional environment We found that state that usually is the owner of inputs of natural origin, while possessing fiscal sovereignty can use any combination of means at its disposal to remove fiscal instruments and redistribution of natural resource rents. [23] However, decentralization reform slightly modified the institutional framework and introduced additional subject of rent relations - local governments, which are absolute owners of natural resources and compensation for their use should require fair contributions to local budgets. The right to dispose of mineral resources, primarily local significance, is to get rid of excessive centralization. Currents is the question of forming a regional "ownership" on the part of certain mineral resources, meaning thereby transferring powers to the local level to manage them Etc ..

The need for evidence-based approach to determining the distribution coefficient of rent payments, which focused on the consideration of all material terms of increased financial independence and self-sufficiency areas determines the need for demarcation of the functional fields of natural rent. The idea of redistribution of rent payments between the state and local budgets should be based on quality performance features of rent payments. Exploring the nature of rent payments can determine that they carry out fiscal, regulatory, recovery, social, stimulating (motivating) and redistributive function.

Unfortunately, in today's environment is clearly traced rent fiscal function, which is to build a stable revenue sources (content) budget. If fiscal function interprets uniquely - payments for resources is a source of filling the budget, so the task of the state to maximize their income, depending on the volume of resources used, the regulatory function, in turn, reflects the specific economic nature of payments for resources - a mechanism for collecting payments for resources has ensure rational nature management and increased efficiency with minimal negative load on the environment, which leads to the unity of resource and environmental studies payments [21].

The size of the rent should, on the one hand , to promote the effective removal of excess profits of firms that carry out such activities in the territory of Ukraine, on the other hand - to stimulate investments of private companies in this area.

The essence of the rental payments is the removal of excess profits (surplus - the difference between the received medium and normal profit). Such an appointment with rent payments worldwide and set depending on the rental income. They perform a regulatory function to ensure the economic feasibility of developing subsoil deposits regardless of geological conditions. The regulatory function is the impact of rent payments for various activities and directly to their payers. After royalties, in fact, the state regulates the processes of production and consumption in society. Regulatory function being part of fiscal, can exercise influence on the socio-economic development of territories. Therefore, the position of scientists on its application also differ.

In addition to economic benefits, it should be noted environmental (renewable) function rent payments. Thus, the latter, along with environmental taxes should be attributed to the so-called "green payments" that should stimulate the rational use, providing protection and reproduction of natural resources.

An important and significant role in determining share allocations rent payments to local budgets are renewable or ecological function, which is a comprehensive set of indicators and the factors it must determine the maximum facilitate the restoration of the natural environment and should take into account the amount of compensation for environmental damage.

The social function is to rent distribution income from its use among all members of society, which is expressed through reasonable distribution of rents between all members of society in the territory. Performance of the social function of rent should be based on the direction of these funds for territorial development and welfare of people living in the area, namely: infrastructure development, security and so on.

Fiscal rent function provides the necessary conditions for the establishment of the financial framework of the society. That is, using rent state mobilizes funds for the formation of funds that provide performance of its functions. As noted above, this function is the basis for the implementation of all remaining functions of rent.



Distribution function rents manifested in redistribution of income between different social groups of the population. With rent rates the state sets the proportion of the cost of redistribution is a transfer of assets in favor of the weak and vulnerable citizens by laying the tax burden on the more powerful categories of taxpayers. As a result, there is some exemption of income and transfer it to others.

Stimulatory function provides motivation rent payers of rent for the intensification of production with the installation state incentives in the form of return of such payments to the enterprise for use in the direction of innovation, cost optimization, implementation of energy saving measures in these businesses and others. That direction is determined using these means alone entity. The main directions of realization of functions enabling conditions for improving the situation in the oil and gas sector, to enhance the investment process, promotion of enterprise development.

The social function of rents expressed through reasonable distribution of rents between all members of society in the territory. Performance of the social function of rent should be based on the direction of these funds for territorial development and welfare of people living in the area, namely: infrastructure development, security and so on.

Simulation of the redistribution factor of rent payments. Thus, the rate of redistribution of rent payments between budget should compensate the limitations and threats encountered in the production activities of oil and gas and ensure that all specified functions.

We believe that the rate of rent redistribution of payments between the state and local budgets should be defined as the ratio of:

$$K_{redistribution} = \frac{Q_{redistribution}}{Q_{total}} \quad (1)$$

where

$Q_{total}$  - the total amount of rent determined in accordance with Art. Item 18 TCU 252 UAH.

$Q_{redistribution}$  - the amount of rent to be transferred to local budgets to ensure its functional manifestations USD.

It should be noted that the rate of redistribution of rent payments for each of the areas is individual and depends on many factors peculiar to the area. Mathematical modeling of the coefficient is formed by determining the amount of rent required for maximum performance defined functions, so this criterion will change to a multifunctional dependence:

$$K_{redistribution} = \frac{f(u_1, u_2, u_3, u_4, u_5, u_6)}{Q_{total}} \quad (2)$$

where

$u_1$  - share, providing social function rents

$u_2$  - share that will provide renewable (ecological) function rents

$u_3$  - share that will provide fiscal function rents

$u_4$  - share that will provide adjusting function rents

$u_5$  - share that will provide distribution and redistributive function rents

$u_6$  - share that will provide stimulating function rents.

Each argument  $u_1 - u_6$  - a functional dependence expressed special set of factors that  $u_1 = F(x_j)$ , and  $u_2 = F(x_j)$ ,  $u_3 = F(x_k)$ ,  $u_4 = F(x_n)$ ,  $u_5 = F(x_l)$ ,  $u_6 = F(x_m)$ . So the amount of rent required for its functional manifestations in the territory, expressed system:

$$(u_s) = \begin{cases} u_1 = F(x_i, x_{i+1} \dots \dots x_{i+n}), \\ u_2 = F(x_j, x_{j+1} \dots \dots x_{j+f}), \\ u_3 = F(x_k, x_{k+1} \dots \dots x_{k+s}), \\ u_4 = F(x_p, x_{p+1} \dots \dots x_{p+s}), \\ u_5 = F(x_l, x_{l+1} \dots \dots x_{l+q}), \\ u_6 = F(x_m, x_{m+1} \dots \dots x_{m+v}), \end{cases} \quad x_i \dots x_{m+v} \in R, \quad (3)$$

where

$u_1, u_2, u_3, u_4, u_5, u_6$  - functional manifestations of rent;  
 $s$  - parameters of functional dependencies.

Solving this system needs to perform parameterization function displays by the exposure variable and constant arguments that needs research statistics conditions of production activity and form factor adaptive model definition redistribution.

On the example of the manifestation of the environmental function of rent payments, let us explain the practical definition of the parameters in formulas 2 and 3. The process of mining has a negative impact on the environment, so there is a need to offset this impact. The procedure of elimination of the consequences of negative impact is partly carried out by the enterprises themselves, such as the reclamation of land in the territory where the extraction process took place. However, often the usage oft those procedures is not enough to restore the previous condition of the land. Therefore, there is a need to determine the amount of funding needed for recovery processes. In this case, we can talk about the environmental function of rent, in formulas (2) and (3) it is the interpretation of this function through the indicator (u), which is to determine the required adequate amount of funding for environmental restoration. The determination of the necessary amount of financing for the reconstruction of territories is influenced by many factors, among which can be distinguished: soil re-compaction; reducing the humus content in the topsoil; reduction of mineral nitrogen and mobile phosphorus and potassium compounds; change in soil acidity due to dispersion of mud components; abnormal local accumulation of heavy metals (Pb, Ba, Zn, Mo and others); local soil salinization due to leakage of drilling fluids, etc. The stronger the negative impact of each factor on the soil, the greater the amount of funds needed to be allocated for the reconstruction of the territories, so that each factor will determine the amount of funding in formula (3), these are indicators.  $x_i$ . This scheme for determining the amount of financing for the reconstruction of territories will allow to determine more adequately the coefficient of redistribution of rent payments between budgets of different levels and enterprises of the oil and gas sector. Further studies will demonstrate the scheme of rent payments redistribution using up-to-date activity data of oil and gas companies. To intensify oil and gas in Ukraine, and also for building equitable redistribution of rent payments between the state and local budgets should:

1. Improve the legal and regulatory framework of Ukraine to improve the investment climate in part:

harmonization of legal norms p.252.21 "rent for use of subsoil for mining" CLE rules to Cabinet Resolution №838 from 11.07.2013 g. "Some issues of implementation of existing and new investment projects (programs, contracts), which provides for increasing production hydrocarbons "in the application of the 2 percent of the additional production of hydrocarbons appropriate for businesses of all types and forms of ownership, increase the investment attractiveness of the industry:

return the rent extractive enterprises for subsoil use during the performance of production sharing agreements at 2% for oil and gas condensate and 1.25% for natural gas; the renewal of the reduction factor 0,55 rental payments for new hydrocarbon wells to bringing them to the level of commercial operation;

distribution of royalties for hydrocarbon production between the state and local budgets (amendments to the Budget Code of Ukraine century .. 29, 64, 66, 69) in the context of decentralization reform;

differentiation rent payments depending on factors that have the greatest influence on the formation of the cost of oil, namely the depth of the productive deposits, etc to stimulate business activity;

improving the state accounting of exploration and mining operations (including drilling costs) (P (S) 7 "Fixed Assets", P (S) 33 "Expenses for exploration of mineral resources," CMU from 2.4 .1998r. number 118 "on approval of the list of expenses for prospecting (additional prospecting) and equipment of any reserves (deposits) of minerals with respective costs of development, which included a separate group of taxpayer costs subject to amortization" using IFRS 6 "Exploration and evaluation of mineral resources" IFRS 8 "Accounting Policies, Changes in Accounting Estimates and Errors" US GAAP)

the formation of the primary conditions for drilling operations for improving the extraction of hydrocarbons and create transparent conditions of competition (in terms of VAT and income tax oil and gas companies (differentiated rates of special tax regime) while searching joints to prevent reduction of revenue);

Implicitly, rents from natural resources should be directed to the formation of joints negative impact of mineral resources, socio-economic development of the country and the region, which is situated field of hydrocarbons. Given the subsidiarity principle of the budget system, important in leveling implement decentralization of negative factors of hydrocarbon extraction through rent payments from local budgets. From this share allocations to local budgets should be made of funding:

compensation for environmental damage caused by the surrounding environment by implementation of mining activities ;

activities of oil and gas companies in the form of additional grants as incentives for production activities;

achieving social development areas: formation of infrastructure, social structures, the development of culture and traditions, and others.

**Conclusions.** Determined and the necessity of redistribution of rent payments imposed oil and gas companies among the budgets of different levels, based on modern demands decentralization reforms. Functional nature of rent payments in terms of institutional environment prevailing in terms of reforms and mechanisms and algorithms for forming, calculating and collecting rent payments in accordance with regulations and regulatory documents. On the basis of the studies developed mathematical model coefficient redistribution of rent payments based on their functional nature. The main areas of improvement redistribution of rent payments between budgets. Methodical and practical principles of redistribution of rent payments will be the basis for the formation mechanism of redistribution of rent payments between the different levels and adapting criteria redistribution to the actual production process in these scientific studies.

In further studies we will be given continued economic and mathematical modeling factor of redistribution and rent payments made adaptation to the conditions of the proposed model specific territory.

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