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PAYMENTS FOR SUBSOIL USE AND ECONOMIC EVALUATION OF MINERAL RESOURCES

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Abstract. This research aims to examine the rent approach to the economic valuation of natural resources, which is most appropriate under market conditions and crucial for their rational use. Primary research methods: historical and logical analysis, analysis and synthesis, induction and deduction, systems approach, and computational and analytical approach. Research Methodology. The essence of the rent approach lies in the reasonable alignment of the interests of the state, which owns the subsoil, and the investor, who exploits it during the implementation of an investment project. Rent is the income received by the owner of a natural resource from its exploitation or leasing. The resource that generates the highest income, i.e., the one with the highest rent, receives the highest economic value. Unlike the cost approach, the rent approach takes into account the quality and availability of a natural resource, which is achieved through a fair and justified division of rent income-differential mining rent. A portion of the rent, determined by the natural properties of the asset, should belong to the state, as it is the owner of the subsoil. The other portion, generated through entrepreneurial activity, should remain with the entrepreneur and investor. The main results of the study are summarised as follows: by stimulating economic development through a favourable tax program, the government can generate significant aggregate revenues from many small,

low-profit fields. A more stringent tax regime could lead to development being concentrated solely on large fields, which could significantly reduce government revenues from subsoil use in the long term. Practical application of the study. The mineral resources sector dominates Kazakhstan's economy. In oil production, the key guideline for the state's economic interests is not the fiscal function, but rather the methods of its use that best serve national interests. This means the efficient distribution of revenues from subsoil exploitation, the use of rents to develop processing industries, while respecting the interests of the population, especially in producing regions, and the environment.

Keywords: Taxation, natural rent, taxes, subsoil use, oil and gas resources

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ЖЕР ҚОЙНАУЫН ПАЙДАЛАНҒАНЫ ҮШІН ТӨЛЕМДЕР ЖӘНЕ МИНЕРАЛДЫ-ШИКІЗАТ РЕСУРСТАРЫН ЭКОНОМИКАЛЫҚ БАҒАЛАУ

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Аннотация. Зерттеудің мақсаты – нарықтық жағдайда табиғи ресурстарды экономикалық бағалаудың неғұрлым әділ және табиғатты ұтымды пайдалануға бағытталған жалдау (рента) тәсілін қарастыру. Зерттеудің негізгі әдістері: тарихи және логикалық талдау мен синтез, индукция және дедукция, жүйелік тәсіл, есептеу-аналитикалық әдістер. Зерттеу әдістемесі. Рента тәсілінің мәні табиғи ресурсты иеленуші ел мен оны инвестициялық жобада пайдаланатын компанияның кірістерінің өзара тиімді үйлесімін қамтамасыз етуде жатыр. Рента дегеніміз – табиғи ресурстың иесі оны өз бетінше пайдаланудан немесе жалға беруден алатын табыс. Ең жоғары экономикалық бағалауды ең көп табыс әкелетін ресурс алады, яғни жалдау

ақысы жоғары ресурс. Шығындық тәсілден ерекшелігі – рента тәсілі табиғи ресурстың сапасы мен қолжетімділігін ескере отырып, табиғи рента мен дифференциалды рента салығын әділ және негізделген түрде бөлуге мүмкіндік береді. Ресурстың табиғи қасиеттеріне байланысты төлемдердің бір бөлігін минералды-шикізат ресурстарына иелік ететін Үкімет алуы тиіс, ал өндірілген өнім мен қызмет негізінде алынған екінші бөлігі инвестор-компанияға тиесілі болады. Зерттеудің негізгі нәтижелері мынадай салдарға әкеледі: салықтық төлемдерді өндіріп алудың жұмсақ жүйесі арқылы экономиканы дамыта отырып, кірістілігі төмен жер қойнауының көптеген шағын көздерінен мемлекеттік бюджетке жоғары жиынтық салық түсімдерін қамтамасыз етуге болады. Керісінше, салықтарды қатаң өндіріп алу тек ірі кен орындарын ғана игеруге әкеледі, бұл болашақта өндіруші өнеркәсіптен түсетін бюджеттік түсімдердің айтарлықтай қысқаруына себеп болады. Зерттеудің практикалық маңыздылығы. Өндіруші өнеркәсіп ел экономикасында үстемдік етеді. Жер қойнауын пайдалану саласындағы мемлекеттің қаржылық басымдықтары тек салықтық міндеттемелермен шектелмеуі тиіс, керісінше ресурстарды пайдаланудың мемлекеттік мүдделерге барынша сай келетін тетіктері болуы қажет. Бұл ресурстардан алынған пайданы тиімді бөлуге, халықтың мүдделерін ескеруге, әсіресе кен орындарына жақын аумақтарда, жер, су және ауа ресурстарын қорғауға бағытталған шараларды күшейтуге және рента табысын өнеркәсіптік қайта өңдеу салаларын дамытуға жұмсауға мүмкіндік береді.

Түйін сөздер: салық салу, табиғи рента, салықтар, жер қойнауын пайдалану, мұнай-газ ресурстары

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ПЛАТЕЖИ ЗА НЕДРОПОЛЬЗОВАНИЕ И ЭКОНОМИЧЕСКАЯ ОЦЕНКА МИНЕРАЛЬНО-СЫРЬЕВЫХ РЕСУРСОВ

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Аннотация. Цель исследования заключается в рассмотрении в статье рентного подхода к экономической оценке природных ресурсов, который

является наиболее адекватным в рыночных условиях и имеет определяющее значение для рационального природопользования.

Основные методы исследования: исторический и логический анализ, анализ и синтез, индукция и дедукция, системный подход, расчетно-аналитический. Методология исследования. Сущность рентного подхода заключается во взаимовыгодном сочетании доходов страны, владеющей ресурсами, и инвестиционной компании, использующей их в процессе эксплуатации проекта капиталовложения. Рента - это доход, получаемый собственником природного ресурса от его эксплуатации или сдачи в аренду. Наибольшую экономическую оценку получает тот ресурс, который приносит больший доход, то есть тот, по которому рента больше. В отличие от затратного подхода, рентный подход позволяет учесть качество и доступность природного ресурса, что осуществляется на основе достоверного и аргументированного разделения природной ренты - дифференциального рентного налога. Долю платежей, которая обуславливается натуральными свойствами ресурса, следует взимать Правительству, владеющему минерально-сырьевыми ресурсами, вторая доля, получаемая на базе недродобывающей деятельности, принадлежит компании-инвестору. Основные результаты исследования сводятся к вытекающим следствиям - развивая экономику на основе более мягкой системы взимания налоговых платежей, с большинства малых источников недр с невысокой доходностью можно достичь высоких суммарных налоговых поступлений в бюджет страны. Увеличение взимания налогов приводит к направлению доминирующей разработки лишь больших залежей ресурсов, вследствие чего в перспективе бюджет страны от добывающей промышленности существенно уменьшится. Практическая значимость исследования. Недродобывающая промышленность является преобладающей в экономике страны. В недропользовании основной направляющей финансовых приоритетов страны является не только налоговая задача, а пути ее приложения, которые предельно отвечают государственным задачам. Это предполагает результативное разделение прибыли, приобретаемой от добычи ресурсов, применение рентного дохода для раскручивания отраслей промышленной переработки, одновременно учитывая интересы народонаселения, в особенности вблизи месторождений недропользования и охрану земельных ресурсов, водной и воздушной среды.

Ключевые слова: Налогообложение, природная рента, налоги, недропользование, нефтегазовые ресурсы

Introduction. The development of the extractive industries has strategic significance for Kazakhstan and makes a substantial contribution to all aspects of economic and social development. The oil industry is one of the primary engines of Kazakhstan's economic growth. Oil extraction and exports generate substantial revenue for the country and attract foreign investment. Economic growth is driven

by the oil industry, which supports the development of other sectors, creates jobs and advances infrastructure projects. The development of the oil industry has attracted foreign investment and advanced technologies to Kazakhstan. Foreign oil companies have made significant investments in oil development and extraction, as well as in infrastructure and logistics, thereby facilitating technology transfer and knowledge sharing and promoting the development of research and innovation centres in the country. Oil is the most important export commodity for Kazakhstan. The development of the oil industry has enabled the country to increase oil exports, establish new trading partnerships and diversify the economy. High oil export returns affect the trade balance and international capital flows. The development of the oil sector has created numerous employment opportunities and contributed to social development. The oil industry requires a large number of professionals and employees, including engineers, geologists, and technicians, helping to reduce unemployment, raise living standards, and develop human capital. The growth of the oil industry promotes the development of particular regions of Kazakhstan. This requires the construction of infrastructure, housing, social facilities, and educational institutions to improve living conditions across regions, ensure a more even distribution of economic growth, and strengthen social stability. Despite the substantial contribution of the oil industry to Kazakhstan's economy, the sector faces challenges and risks, including environmental problems, oil price volatility, and economic dependence on oil.

Thus, there is a clear direct correlation between the economic valuation of subsoil resources and payments for subsoil use from the perspective of the state and national welfare. Strategic management and multifaceted economic development in the oil industry are important tasks for Kazakhstan.

Literature review. Problems of the economic evaluation of mineral resources and, accordingly, the levying of charges for subsoil use in Kazakhstan have been studied in the works of Russian, Kazakh, and other scholars, which revealed specific features of economic development and problems of state governance. A large number of domestic and foreign scholars have devoted research to these issues. Despite their considerable contributions, some questions concerning the economic evaluation of mineral resources and the levying of charges for subsoil use in Kazakhstan under current conditions remain insufficiently examined. The theoretical and methodological approaches to researching the economic evaluation of Kazakhstan's mineral resources in modern conditions require further development in the context of the global financial and economic crisis associated with the coronavirus pandemic and the subsequent post-crisis period. In the context of contemporary crises, oil price volatility and stagnation, and issues related to the economic evaluation of mineral resources and the levying of payments for subsoil use, of methodological and practical nature, are highly topical.

A significant contribution to theoretical approaches to resolving problems of resource reproduction has been made by well-known foreign scholars such as

Tom Tietenberg, Lynne Lewis (2024), Heinberg Richard (2021), David Johnston, Daniel Johnston & Tony Rogers (2008), Hotelling, H. (1931) and others.

Manley et al. (2022) examined the implications of the global energy transition for resource-dependent economies, while Bradley and Ouyang (2023) emphasised the role of institutional quality and governance in achieving sustainable development outcomes. Bridge (2024) highlighted the growing importance of critical minerals and the transformation of mineral resource governance under global decarbonization policies. International organisations, including OECD (2023), UNCTAD (2023), the World Bank (2024), and the International Energy Agency (2024), emphasise the need to balance fiscal efficiency, environmental sustainability, and long-term economic development.

Works by Kazakh scholars have been devoted to the comprehensive study of subsoil management economics, sustainable and innovative development, and the rational use of subsoil resources, including those by Kargazanov et al. (2000), Karabalin (2015), Sikhimbayev et al. (2022), and others.

Problems of state governance mechanisms, innovation in subsoil use, regional development, and the extractive industries have been addressed by prominent Russian and Soviet scholars, including Glazyev, Petrov (2002), Kimelman, S., and Andryushin, S. (2005), among others.

Despite the significant scholarly contributions and a series of global and national transformations, the topic's development in domestic literature has not been fully comprehensive.

Materials and methods. The study employs a combination of qualitative and quantitative research methods. The methodological framework is based on the approaches and theoretical concepts developed by leading scholars in the field. The research methods include statistical data analysis, an in-depth review of previous studies, economic and mathematical modelling, forecasting techniques, scientific abstraction, critical analysis, and factor analysis.

The empirical basis of the study consists of data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, the Ministry of Energy of the Republic of Kazakhstan, mineral resource databases and specialised websites, monographs, peer-reviewed scientific publications, and the findings of the authors' previous research.

Results. The study of the potential of Kazakhstan's oil fields is considered based on several main factors, which include determining the forecasted reserves of resources (oil) at various oil fields in Kazakhstan (reviewing known fields and potential extraction zones to determine the total amount of resources and their importance for the country), taking into account the field's geographic location and accessibility for exploration and production (infrastructure, availability of transport routes and export possibilities, assessment of potential problems and costs associated with oil production in particular areas), assessment of the quality of oil produced at each field (considering composition, sulphur content, density,

viscosity and other parameters that affect price and demand), determination of potential profitability (analysis of current oil prices and forecasts of changes on the world market, calculating potential income from oil production based on quantity and quality of resources, taking into account the effects of taxes and other factors that may affect final income from oil activities), evaluating the economic benefit of developing a field (considering investment cost, payback period, risk and expected return, comparing different fields and determining their potential with regard to economic goals and constraints), analysis of strategic contribution to Kazakhstan's oil industry development (considering contribution to the economy, employment, exports and technological development, assessing development opportunities, technological potential and regional development of local companies).

State revenues from subsoil use occupy a significant place in the government's revenue structure and are recorded in the state budget as taxes and payments; as shown in Figure 1, a portion of these revenues is annually channelled into the National Fund.

When considering the development of the national subsoil management system, it is essential to analyse state revenues in relation to the economic situation in the extractive sector, the sector's growth potential, and ways to increase their efficient use.

Taxation of subsoil use includes general taxes and payments provided for in the Republic of Kazakhstan, as well as special payments and taxes for subsoil users.

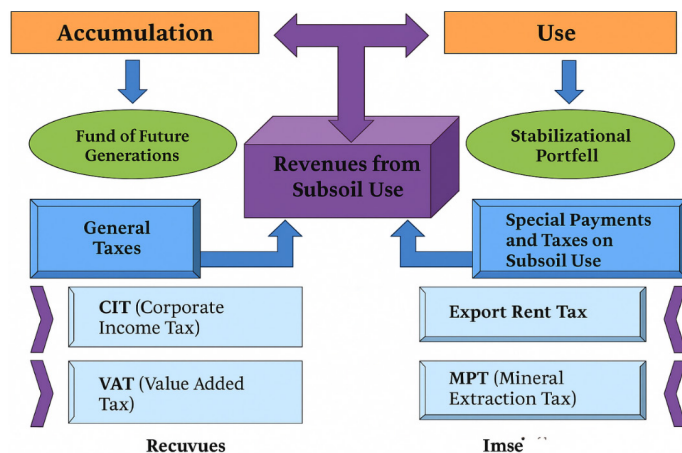


Figure 1 — Revenues from subsoil use and main directions of their utilisation

Note: Compiled by the author based on Sikhimbayev, M. et al. (2019, 2024).

The histogram in Figure 2 illustrates changes in the revenue structure of the National Fund for 2018–2024.

The receipts curve presented in Figure 2 displays changes in revenues by main tax types and their share in the National Fund's total receipts for 2018–2024.

Of all tax types, corporate income tax ranks first in terms of receipts, calculated as 20% of the gross volume of production and sale of crude oil; second in importance is the rent tax on exports of crude oil and oil products, which depends directly on world market prices and thus shows substantial increase, except in 2020 when production across almost all economic activities declined due to the coronavirus pandemic.

Major changes in the histogram are primarily driven by oil price fluctuations, which have experienced significant rises and falls in recent decades due to successive global economic, political, and social crises, beginning with the decline since 2018.

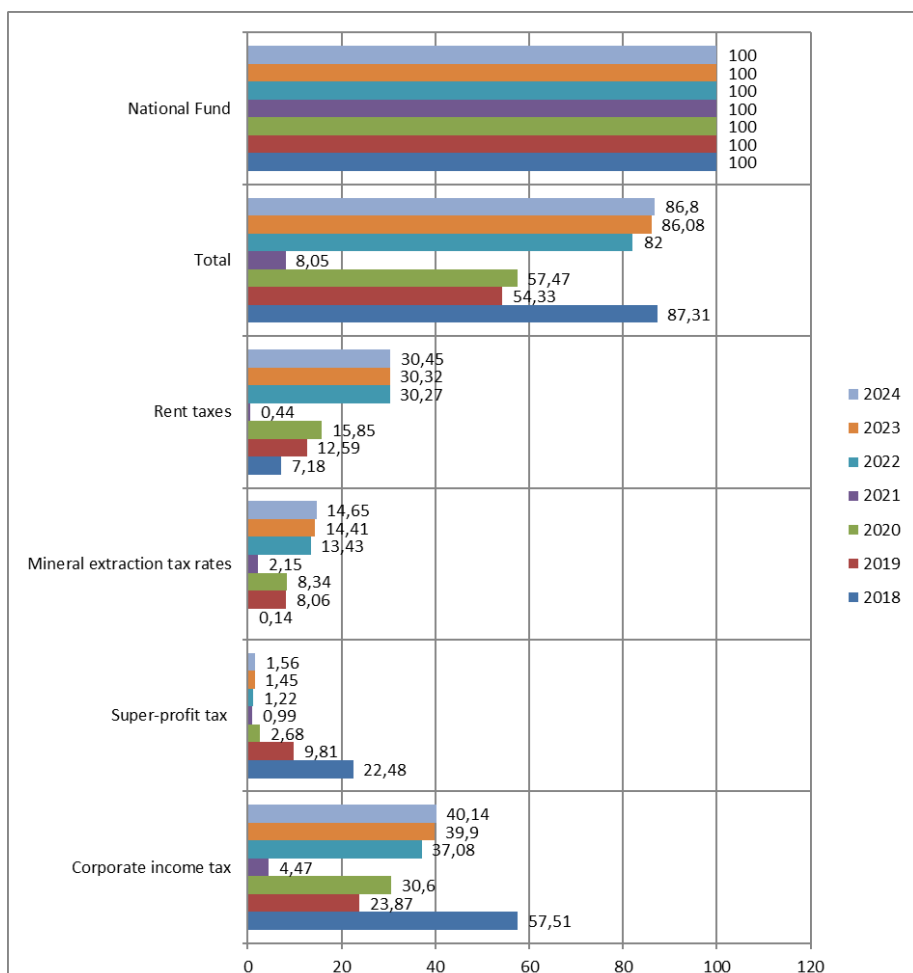


Figure 2 — Dynamics of changes in the National Fund's revenues for 2018–2024, %

Note: Compiled by the author based on the Official website of the National Bank of the Republic of Kazakhstan. <https://www.nationalbank.kz>

Taxes such as corporate income tax, super-profit tax, and other payments that depend on oil production volumes were constrained by OPEC decisions to limit oil production by member states, which resulted from the significant fall in oil prices during 2014–2017 and in 2020.

Compared with 2022, the Kazakh oil market experienced the following changes in 2023–2024:

- Volume of oil production. For January–November 2023, it amounted to 82.2 million tons, which is 8% higher than the corresponding period in 2022.
- Oil exports. 64.3 million tons of oil were exported, 10% more than in 2022.
- Investment in geological exploration. In 2023, the total investment under contracts for the exploration and/or production of hydrocarbons amounted to 7.4 trillion tenge, with exploration expenditures increasing by 11.9% compared with 2022.
- Structure of oil production. In 2024, the structure of oil production was dominated by three major fields: Tengiz, Kashagan, and Karachaganak. They accounted for 67.6% of the country's total oil production.

Rent tax on exports of subsoil resources. Subsoil companies exporting crude oil and oil products pay an export rent tax calculated according to the rates shown in Table 1.

Table 1 — Scale of rent taxes on exports of crude oil and oil products

No.	World price, USD per barrel	Rate, %
1	From 40 to 100	7–19
2	From 100 to 150	21–26
3	From 150 to 190	27–32
4	From 200 and above	32
5	From 190 to 200 and above	32

Note: Compiled by the author based on the Tax Code of the Republic of Kazakhstan dated 25 December 2017 No. 120-VI ZRK "On Taxes and Other Mandatory Payments to the Budget". <https://adilet.zan.kz/rus/docs/K1700000120/> with additions and amendments as of 2025.

From Table 1, it is evident that the rent tax scale requires greater flexibility in response to rising oil prices, since the current scale does not levy the full tax when oil prices are high — a point that is especially relevant today, as global events are driving energy prices upward. Mineral extraction tax rates are listed in Table 2.

Table 2 — Mineral extraction tax rates

No.	Annual production and sale of oil, million tonnes	Tax rates, %
1	0 to 0.25	5
2	0.25–0.5	7
3	0.5–1	8
4	1–2	9
5	2–3	10
6	3–4	11
7	4–5	12
8	5–7	13
9	7–10	15
10	From 10 and above	18

Note: Compiled by the author based on the Tax Code of the Republic of Kazakhstan dated 25 December 2017 No. 120-VI ZRK "On Taxes and Other Mandatory Payments to the Budget". <https://adilet.zan.kz/rus/docs/K1700000120/> with additions and amendments as of 2025.

Companies in the extractive industries pay a sliding-scale surcharge on super-profits, calculated according to the rates shown in Table 3.

Table 3 — Scale of super-profit tax in subsoil use

Level	Scale of distribution of net income by levels for calculating super-profit tax, % of the deduction sum	Percentage for calculating the marginal sum of net income distribution for super-profit purposes	Rate (%)
1	Up to 25% inclusive	25	0
2	25%–30% inclusive	5	10
3	30%–40% inclusive	10	20
4	40%–50% inclusive	10	30
5	50%–60% inclusive	10	40
6	60%–70% inclusive	10	50
7	Above 70%	in accordance with subparagraph 2 of paragraph 2 of Article 761 of this Code	60

Note: Compiled by the author based on the Tax Code of the Republic of Kazakhstan dated 25 December 2017 No. 120-VI ZRK "On Taxes and Other Mandatory Payments to the Budget". <https://adilet.zan.kz/rus/docs/K1700000120/> with additions and amendments as of 2025.

In addition to primary taxes and payments such as licence fees, mineral extraction tax and rent tax, Kazakhstan levies additional charges and duties related to oil extraction, including payments for subsoil use, environmental fees and others that form part of the rent payment system and are intended to ensure fair levying of natural rent and certain national interests. Subsoil companies must pay for the use of subsoil. The amount of this fee depends on production volumes and other factors established by relevant legislation. Environmental fees are levied to protect the environment and compensate for negative environmental impacts of subsoil use. Relevant normative acts determine the amounts and conditions of environmental fees and may be linked to production volumes and environmental impact. Oil-producing companies face import duties on equipment, materials, and other goods used in oil extraction. In some cases, a special tax regime can be

established for oil companies, and they may be subject to additional levies or receive concessions depending on the terms of their operations.

Recent changes in Kazakhstan's socio-economic policy and deepening social crises require a radical review of tax policy in the subsoil sector, among other areas. Foreign subsoil users, largely enriching themselves at the expense of the country's mineral resources, do not make an adequate contribution to reproducing the mineral base of the country. On the contrary, they often increase environmental degradation, deplete fields, degrade soils and disturb historical lands. The amounts they pay in taxes and charges do not correspond to the damage they cause to subsoil reserves and territories of the republic, nor do they sufficiently replenish the Future Generations Fund. By contrast, international experience shows that one of the main objectives of leading extractive countries is to replenish sovereign wealth funds for future generations, address many social problems, support processing and non-raw sectors of the economy, and even pay dividends to the entire population.

Based on proposals to increase taxation of subsoil users by roughly one-third above existing rates, we attempted to forecast the resulting rate increases.

The total amount of production and extraction taxes:

$$N_{SUM} = N_P + N_D + N_R, \quad (1)$$

Where

N_{SUM} is the total tax on subsoil use;

N_P is the corporate income tax for subsoil users;

N_D is the mineral extraction tax;

N_R is the rent tax on oil.

The formula can then determine the forecast total tax:

$$N_{FORECAST} = N_P + (N_D + N_R) \cdot (K_{FORECAST}), \quad (2)$$

Where

N_{SUM} is the total subsoil use tax;

N_P is the corporate income tax for subsoil users;

N_D is the mineral extraction tax;

N_R is the oil rent tax.

Then the projected tax amount can be determined using the formula:

$$sum N_{FORECAST} = N_P + (N_D + N_R) \cdot (K_{FORECAST}). \quad (3)$$

where $sum N_{FORECAST}$ is the total projected subsoil use tax

The $K_{FORECAST}$ coefficient is derived based on the following methodological recommendations, according to which

$$K_{FORECAST} = K_1 \cdot K_2 \cdot K_3 \cdot K_4 \cdot K_5, \quad (4)$$

Where

- K_1 is the oil price forecast;
- K_2 is the gas price forecast;
- K_3 is the oil production volume forecast;
- K_4 is the gas production volume forecast;
- K_5 is the hydrocarbon resource processing forecast.

Thus, to increase the total revenues from subsoil use by thirty per cent, adjustment of the scale of tax rates on mineral extraction tax (which depends on production volumes of mineral raw materials) and the rent tax, which depends directly on world energy prices, is required.

The primary focus should be placed on the rent tax, which is directly dependent on global energy price dynamics.

The corporate income tax for subsoil users, in our view, should not be changed, as its alteration would contradict the principle of fairness and universality in taxation generally.

As regards the mineral extraction tax, production volumes for OPEC member countries depend largely on OPEC decisions to limit production quotas to curb supply dumping and stabilise or prevent falls in oil prices.

Thus, by complying with quota measures, Kazakhstan cannot increase the volume of crude oil exported.

Based on the transformation of the available data and the analysis conducted, we propose the following tax rates for the export rent tax, mineral extraction tax, and super-profit tax in Tables 4–6.

Table 4 — Proposed rent tax rates for exports of crude oil and oil products

No.	Exchange price, USD per barrel	Taxation rates, %
1	From 0 to 39	—
2	From 39 to 49	8
3	From 49 to 59	15
4	From 59 to 69	17
5	From 69 to 79	18
6	From 79 to 89	19
7	From 89 to 99	20
8	From 99 to 109	21
9	From 109 to 119	24
10	From 119 to 129	25
11	From 129 to 139	27
12	From 139 to 149	27
13	From 149 to 159	30
14	From 159 to 169	32
15	From 169 to 179	33
16	From 179 to 189	34
17	From 189 to 199 and above	35

Note: Compiled by the authors based on Sikhimbayev, M. et al. (2019, 2024).

Table 5 — Proposed mineral extraction tax rates on oil

No.	Annual production and sale of oil, million tonnes	Tax rate, %
1	0 to 0.19	6
2	0.19–0.39	7.5
3	0.4–0.99	9
4	1–1.99	11.5
5	2–2.99	13
6	3–3.99	14.5
7	4–4.99	16
8	5–5.99	17.5
9	5.9–9.99	19
10	From 9.99 and above	20

Note: Compiled by the authors based on Sikhimbayev, M. et al. (2019, 2024).

Table 6 — Proposed super-profit tax rates, levels and percentages of the marginal distribution of net profit (for calculating super-profit tax)

Level	Scale of distribution of net income by levels, % (for calculation)	Percentages of marginal distribution of net profit (for calculation)	Rate (%)
1	0%–22% inclusive	27	0–6
2	22%–32% inclusive	7.5	12
3	32%–42% inclusive	12	22
4	42%–52% inclusive	12	32
5	52%–62% inclusive	12	42
6	57%–67%	12	52
7	Above 62%	12	62

Note: Compiled by the authors based on Sikhimbayev, M. et al. (2019, 2024).

As a result, at current oil prices fluctuating around USD 60 per barrel in recent years, a significant increase in state budget receipts can be forecast, enabling the resolution of numerous social and environmental problems in the country, including those in extractive regions.

Discussion. Ecological assessment in the mining industry, in its classical understanding, is based on the theory of rational subsoil use. According to this theory, the main objective is to increase the socio-economic efficiency of subsoil resource utilisation. The relationship between economic assessment and environmental protection was highlighted by researchers as early as the last century. Kazakh scientists have described this process as the rational use of subsoil resources (Kargajanov, 2000; Beisembekova & Sikhimbayev, 2022, among others). They consider that rational subsoil use is based first on the comprehensive utilisation of mineral resources and second on measures to improve environmental conditions in mining regions.

The relationship between environmental and economic assessment in the extractive industries has also been emphasised by international scholars, including Tietenberg (2024) and Heinberg (2021). American economists Hotelling and

Tietenberg studied the economic aspects of subsoil resource utilisation, including the valuation of mineral resources and the sustainability of their exploitation. Hotelling developed a principle, known as Hotelling's Rule, which determines the optimal rate of extraction of non-renewable resources and their economic value.

Despite the considerable attention these scholars have paid to the economic assessment of subsoil use, many methodological and practical issues remain unresolved in modern economic science and require further research and refinement.

Conclusion. To promote the development of the payment system for subsoil use in the Republic of Kazakhstan, the following methods are proposed:

- Analyse the potential of various mineral resources including oil, natural gas, coal and others to determine conditions for taxation and rent rates.
- Determine optimal rent rates to ensure fair levying of natural rent, taking into account economic, environmental and social factors as well as the interests of the state and society. The rent rate may be established as a percentage of the total value of extracted resources or as a fixed amount per unit of production.
- Develop effective tax instruments for levying natural rent, including licence fees, mineral extraction tax, payments for use of mineral resources and other additional charges, ensuring system flexibility to adapt to market changes and economic conditions.
- Ensure transparency in fiscal and economic relations and the tax system for subsoil use by publishing information on licensing procedures, revenues and expenditures of the National Fund, tax rates and tax conditions, providing access to information to stakeholders and the public.
- Create a monitoring system to ensure compliance with licence agreements, timely payment of rent and adherence to environmental standards to prevent malpractice and ensure legal compliance.
- Involve industrial enterprises and experts in the process of developing and improving the system of rent relations through research, analysis, consultations and discussions with relevant parties to obtain comprehensive and high-quality feedback.
- Regularly review the tax system, taking into account changes in the world economy, national strategic objectives and commodity prices, adjusting the system so that it corresponds to current realities and development goals.

These recommendations should be adapted to the specific conditions and needs of the Republic of Kazakhstan. The development and improvement of Kazakhstan's system of state management of subsoil use, based on rent relations, is a long-term process requiring constant refinement and adaptation to changing conditions. The government is committed to establishing an effective management mechanism to ensure the fair distribution of natural rent and the sustainable development of the subsoil sector.

Conflicts of Interest. *The authors declare no conflicts of interest.*

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