Therefore, it should be marked that on the level of the state it is required to develop and accept the effective mechanisms of financing and stimulation of scientific activity. First of all it is needed to increase the share of the expenses on the development of science and technology. At the same time it is necessary to improve the state grant system, drawing on the experience of the world leaders. It is also required to develop and implement the local stimulation of scientists for the scientific activity within the framework of Higher Education Institute

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METHODOLOGY OF CONCESSION OBJECTS ANALYSIS FOR THE CONCESSIONAIRE

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The paper presents a methodology of analysis of the concession objects for the concessionaire. Proposed four stages of analysis, examples on the calculation of the net present value of the concession, the index of profitability, internal rate of return (internal rate of return) and payback period of the concession agreement.

An essential condition for the normal functioning of the economy has been always the interaction between public and private sectors. This is due to the fact that the state is never free from their critical functions related to public interest, and the business, there is always a source of economic development. The economy in the last decade has developed a special quality of interaction between the public and private sector, known as public-private partnerships. Progressive world practice shows the increasingly widespread different models of public-private partnerships, which are the most important form of concession. Development of this type of interaction in the Republic of Belarus received increased attention. However, now in economic science is not resolved a number of methodological problems of accounting for concession agreements, there are no methods of analysis concession objects, which adversely affect the formation of an information base for decision-making.

The study propose a methodology for analyzing concession objects, including 4 stages.

Stage 1. We calculate the net present value of the concession.

Consider for example.

Investment in the project is 60 mln. USD. "Price" is equal to 10% of capital. The concession period is 5 years. Rents for years concession period are equal to 35; eleven; 16; 18; 17 million. USD. To determine the net present value of the project.

Decision:

$$NVP = \frac{35}{(1+0,1)^1} + \frac{11}{(1+0,1)^2} + \frac{16}{(1+0,1)^3} + \frac{18}{(1+0,1)^4} + \frac{17}{(1+0,1)^5} - 60 = 75,778 - 60 = 15,778 \, \text{mil. USD} \quad (1)$$

Thus, using the method of net present value (net present effect) can be quite a realistic assessment of the projects profitability. This method is used as the core in the analysis of the effectiveness of the concession activity, although this does not preclude the use of other methods [1, p. 20].

Stage 2. We calculate the net profit for each year until the object of the concession will be located in the concession agreement.

Formation of the company's net profit is essential for the prospects of its development. Net earnings (*NP*) – is the profit remaining at the disposal of the company after payment of taxes and fees from the profit, as well as economic sanctions:

$$NP = P - N, \tag{2}$$

Where *P* – profit for the period;

N – taxes from the income and economic sanctions to the budget.

From the profits of the enterprise in the Republic of Belarus is currently paid by the following taxes: property tax, tax on income and profits, local taxes and fees.

Imagine factor models for the study of changes in the amounts of income tax.

Factor model for the study of changes in the quarterly amount of real estate tax:

$$Im \text{ (Immovables)} = (F - R) \cdot Cm / 4, \tag{3}$$

Where *F* – the residual value of fixed assets;

R – net book value of fixed assets subject to preferences;

Cm – tax rate on real estate.

Factor model for the study of income tax can be represented as follows:

$$N = (NB - Im - LP) \cdot Cm, \tag{4}$$

Where: *NB* – the tax base for income tax;

Im – the amount of property tax;

LP – profit subject to preferences.

Taxable income – income that is received for the purpose of calculating income tax. The procedure for determining taxable profits is governed by the applicable national law. In Belarus, the definition of taxable income is based on the Law "On Taxes on income and profits". For the purpose of determining the taxable profits for tax purposes are calculated revenues from sales, cost of production and sales of manufactured goods, works, services, purchased products, the purchase price of purchased goods, taxes and fees, paid from the proceeds, non-operating income and expense, income derived from -this abroad and the cost of such proceeds. The calculation of these indicators is carried out through the implementation of tax adjustments which are specified by different approaches of the management of financial and tax accounting. Thus, taxable profits depends on accounting profit, the value of tax adjustments and the amount of property tax. Stage 3. Calculated for each year, the index of profitability, internal rate of return (internal rate of return) and payback period of the concession agreement. Let`s take the look at the example of the profitability index. For the project discussed in the previous issue profitability index will be equal to

$$PI = \frac{75,778}{60} = 1,263. \tag{5}$$

Consider the internal rate of return (internal rate of return) as an example.

We define the internal rate of return for this project.

$$r_1 = 15\%$$

$$NPV_1 = \frac{35}{1,15^1} + \frac{11}{1,15^2} + \frac{16}{1,15^3} + \frac{18}{1,15^4} + \frac{17}{1,15^5} - 60 = -0,219 \; USD; \tag{6}$$

$$r_2 = 12\%$$

$$NPV_2 = \frac{35}{1,12^1} + \frac{11}{1,12^2} + \frac{16}{1,12^3} + \frac{18}{1,12^4} + \frac{17}{1,12^5} - 60 = 20,414 \; USD; \tag{7}$$

$$IRR = 15 - \frac{-0,219(12-15)}{20,414 - (-0,219)} = 14,97\%. \tag{8}$$

A number of foreign authors offer to follow some rules in using the method of internal rate of return, in particular:

– Concession projects in which the difference between income and expenses is positive or the ratio of income to expenses is greater than one have to be analyzed;

– For further evaluation are usually selected projects which IRR is not less than 15–20%;

– In the justification of the rate of return should be taken into account: risk adjustment, taxes, inflation.

Accounting for the effects of uncertainty (risk) in the concession processes is one of the important sections of the feasibility studies of concession projects [1, p. 23].

Consider the dynamic payback example.

We define the dynamic payback period for this project:

$$NPV_1 = \frac{35}{1.1^1} - 60 = -28.182; \qquad (9)$$

$$NPV_2 = \frac{11}{1.1^2} - 28.182 = -19.092; \qquad (10)$$

$$NPV_3 = \frac{16}{1.1^3} - 19.092 = -7.071; \qquad (11)$$

$$NPV_4 = \frac{18}{1.1^4} - 7.071 = 5.223; \qquad (12)$$

$$PP = t - \frac{NPV_T}{NPV_{(t+1)} - NPV_t}. \qquad (13)$$

$$PP = 3 - \frac{-7.071}{5.223 - (-7.071)} = 3.575 \text{ y.} \qquad (14)$$

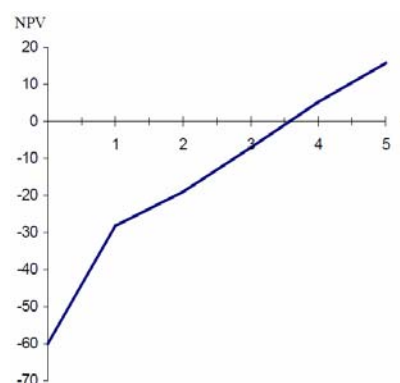Construct a financial profile of the project (Fig.).

Fig. Financial profile of the project

Stage 4. Analyze the risks of the concession contract.

From these steps on the part of the concessionaire we can ensure that the conclusion of the concession agreement is a promising and profitable [1, p. 25].

This study will allow a realistic assessment of the profitability of the projects, allows to calculate the net profit on the project concession for each year, to calculate for each year the profitability index, internal rate of return (internal rate of return), the payback period of the concession agreement, as well as to analyze the risks of the concession contract.

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