

**O. M. Vakulchyk**, Doctor of Economic Sciences,  
Head of the Department of Accounting and Audit,  
Ukrainian Academy of Customs  
**E. V. Protasova**, PhD in Economics, Assistant  
of the Department of Production Planning  
and Organization Prydniprovsk State Academy  
of Construction and Architecture

#### **ASSESSMENT OF THE ENTERPRISE INVESTMENT ATTRACTIVENESS, BASED ON THE DETERMINING OF UNSYSTEMATIC RISK DEGREE**

*The article is devoted to assessment of the enterprise investment attractiveness, based on the determining of degree of unsystematic risk in the part of capitalization rate. On the basis on certain integral indicators of economic performance of Ukrainian mining industry was calculated unsystematic risk premium that can serve as a criterion for investment decisions.*

*Key words: investment attractiveness; enterprise value; capitalization rate; unsystematic risk; integral assessment.*

*Статтю присвячено оцінці інвестиційної привабливості підприємства на основі визначення ступеня несистематичного ризику у складі ставки капіталізації. На основі визначених інтегральних показників економічного стану підприємств розраховано відповідні премії за несистематичний ризик, які можуть слугувати критерієм для прийняття інвестиційних рішень.*

*Ключові слова: інвестиційна привабливість; вартість підприємства; ставка капіталізації; безсистемний ризик; інтегральна оцінка.*

**Problem formulation.** Activity and volume of investment in any country depends on factors macro and micro levels affecting investment attractiveness of enterprises and characterize the risks of investing. Investigation of investment attractiveness at the macro level includes the study of the dynamics of macroeconomic indicators, the legal regulation of investment activity, the development of the stock market. In the role of micro-level factors are the value of the enterprise, the effectiveness of its operations, financial position, prospects of production, and so on.

Investment analysis methodology uses the discounting or capitalization of income for evaluating the effectiveness of investments. One of the key elements of these methods is the discount (capitalization) rate, for future revenues adapted up to present date. As a result, the value of the project depends on the predictability of cash flows and the discount rate (capitalization rate). The quantitative definition of rate is often determined by an expert, that adds some subjective assessment in the calculation process.

Investment analysis based on capitalization approach requires consideration of the risks of income by using capitalization rates that should reflect the required rate of return for the investor.

**Analysis of recent researches and publications.** The concept of the essence and the analysis of the main approaches of investment attraction discussed in several works of famous domestic and foreign researchers, including I. O. Blanc, F. V. Bandurin, S. A. Boutkevitch, F. P. Haidutsky, L. A. Drone, O. I. Pylypenko, D. A. Epshtayna, K. E. Meyera et. The basis of scientific developments regarding calculation of non-systematic risk in the context of determining the

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capitalization rate for business valuation is the practice of the method of the capitalization rate cumulative construction [1–5], based on the account, in addition to the risk-free rate and systematic risk premium for a number of specific risks of a particular company. The degree of such premium often determined by expert on the basis of certain indicators of economic and financial activity, style and quality of management, specific production and so on. Expert approach, in our opinion, is too subjective assessments that require scientific substantiation methodology for calculating the non-systematic risk degree.

Methodological problems of integral estimation of the economy engaged in domestic and foreign scientists [6–8]: V. E. Mnyh, O. O. Bassova, N. A. Hrusch, M. V. Zhelihovska, N. M. Ruschyshyn, A. D. Sheremet, T. P. Basyuk and many others. However, the proposed methodological approaches to the construction of integral indicators, in most cases, require adaptation to current practices to analyze and evaluate economic condition of enterprises; have some methodological flaws, quite difficult in the calculations, making the implementation of scientific research in this area very actual.

**Purpose of the article.** Noting the important role of capitalization rates in the model calculation of the project value and its direct impact on the calculation results, it is reasonable to explore the possibility of quantitative measurement of the respective indicator.

**Main material.** In essence, the cumulative risk can be divided into two basic components: the systematic risk of the company, due to the influence of stock market on share prices of individual companies, and the peculiar unsystematic risk of specific enterprise, that depends on the particular business operation. Capital Asset Pricing Model (CAPM) considers only systematic risk that for Western companies operating in the developed competitive market is sufficient. In Ukraine, the share prices in the stock market are often the subject of speculation and cannot be the only reliable indicator of value, its economic performance, management quality, and, consequently, the degree of risk. In this regard, it is advisable to additionally pay attention to the quantitative evaluation unsystematic risk, which describes the internal specifics of the enterprise and its investment attractiveness.

In practice, to build the business value models used a simplified model, developed by the famous magazine Business Valuation Review [4] specifically for emerging markets, based on the assumption that the government Eurobond yield reflects the risks of investing in equity “ideal company”, that there are no drawbacks and can be considered risk-free.

Given the actual company has a number of peculiarities and disadvantages compared with the ideal, for evaluation of the discount rate is need to enter premiums for deviations from the ideal. According to the model developed by Business Valuation Review, to determine these premiums, the following types of risks are used: the quality of business management, size of enterprise, financial structure, product/territorial diversification, diversification of customers, income: predictability and rates, other risks.

Among the views of contemporary scientists, there is no fundamental disagreement on a set of risks and premium range of species risk assessment from 0 to 5 percent for each. Thus, the maximum possible premium for non-systematic risk can be up to 35 %, and to identify the specific value of each type of risk, it is proposed to carry out by an expert, what, in our opinion, gives too subjective evaluations. The approach to the quantitative determination the degree of unsystematic risk on our improved method integral estimation of economic condition is proposed.

Integrated assessment is a popular modern analytical product in evaluation of the financial and economic activity. Rating estimation is a comparative analysis of the units of the target population of objects evaluation, based also on the methods of integrating various kinds of indicators and features and aligning them to a synthesis factor.

Along with such high quality features as “stable financial position” and “high liquidity”, “reliability”, “economic safety” and “impeccable reputation” enterprises need to develop science-based quantitative assessment of generalized economic state of enterprises through the integration of independent indicators that characterize individual properties of the company. It is about finding a summary indicator to rank the individual companies that are in the treatment group, or to determine trends in the economic development of a particular company by dynamics of the integral indicator.

By analyzing the advantages and disadvantages of the methodology of integral indicators calculation developed an improved method of rating economic condition of enterprises.

Indicators used for rating assessment should take into account all the important parameters of financial and economic activity. For the integrated assessment of economic status in order to determine the degree of non-systematic risk was selected 13 indicators: return on equity, return on assets, return on product, suitability ratio of fixed assets, asset turnover ratio, debt ratio, the period of repayment of accounts payable, accounts receivable turnover ratio, maneuvering ratio, ratio of material current assets by own funds, the rate of self-financing, the financial leverage, the operating leverage. Selection and substantiation initial indicators financial activities carried out in accordance with the achievements of economic theory, the theory of finance and to the purpose of evaluation. A significant limitation in selecting indicators is that the indicators are selected on a “positive direction of change is its growth”. It should also be noted that the proposed system of indicators is based on data from public reporting. This requirement makes the assessment of affordable and allows you to monitor changes in the financial condition of the enterprise and regularly update the results of the evaluation.

The essence of the methodological approach to the selection and integration of appropriate coefficients involves next interpretation of the results – the higher the value of the index  $I_{bj}$ , the better the economic position of an entity in the same period of analysis. Its maximum value is 1, what theoretically could indicate that the company has a maximum value of all financial and economic factors that was defined as the etalon among the entire group of companies.

The overall results showed the most successful now for the last 6 years is JSC “Pivnichnyj GZK” (tables 1, 2).

Table 1

**Integrated assessment of the financial condition  
mining and processing enterprises (GZK)**

| № | Companies            | The value of the integral index ( $I_{bj}$ ) |        |        |        |        |        |        | $\overline{I_{bj}}$ |
|---|----------------------|----------------------------------------------|--------|--------|--------|--------|--------|--------|---------------------|
|   |                      | 2007                                         | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   |                     |
| 1 | JSC Pivnichnyj GZK   | 0,5138                                       | 0,5462 | 0,4384 | 0,4897 | 0,5230 | 0,4309 | 0,4802 | 0,4889              |
| 2 | JSC Tsentralnyj GZK  | 0,4422                                       | 0,5708 | 0,3482 | 0,4554 | 0,5153 | 0,3286 | 0,2944 | 0,4221              |
| 3 | JSC Pivdennyj GZK    | 0,4297                                       | 0,5655 | 0,2109 | 0,4653 | 0,5503 | 0,4590 | 0,4766 | 0,4510              |
| 4 | JSC Poltavskyj GZK   | 0,3441                                       | 0,3718 | 0,2915 | 0,3623 | 0,4475 | 0,3977 | 0,3729 | 0,3697              |
| 5 | JSC Marganetskyj GZK | 0,3445                                       | 0,1624 | 0,1202 | 0,1451 | 0,0945 | 0,1731 | 0,0786 | 0,1598              |

Table 2

**Top Companies (GZK) under the integral (rating) evaluation**

| № | Companies            | The enterprises ratio |      |      |      |      |      |      |
|---|----------------------|-----------------------|------|------|------|------|------|------|
|   |                      | 2007                  | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| 1 | JSC Pivnichnyj GZK   | 1                     | 3    | 1    | 1    | 2    | 2    | 1    |
| 2 | JSC Tsentralnyj GZK  | 2                     | 1    | 2    | 3    | 3    | 4    | 4    |
| 3 | JSC Pivdennyj GZK    | 3                     | 2    | 4    | 2    | 1    | 1    | 2    |
| 4 | JSC Poltavskyj GZK   | 5                     | 4    | 3    | 4    | 4    | 3    | 3    |
| 5 | JSC Marganetskyj GZK | 4                     | 5    | 5    | 5    | 5    | 5    | 5    |

Based on the information received in addition to ranking GZK according to their rated among the total group of JSC, it is also possible to summarize quantitatively and to determine the level and dynamics of economic development of individual companies on the base of the integral indicator (fig. 1).

Universality and adequacy of the proposed improved model integral assessment economic performance also allows to put it on the basis of the results of scientific studies and to determine the non-systematic risk degree. Thus, to calculate the premium for non-systematic risk for Ukrainian mining enterprises was taken as a basis the maximum possible size of the interval premiums for all types of non-systematic risk from 0 to 30 % (except the factor of enterprise size).

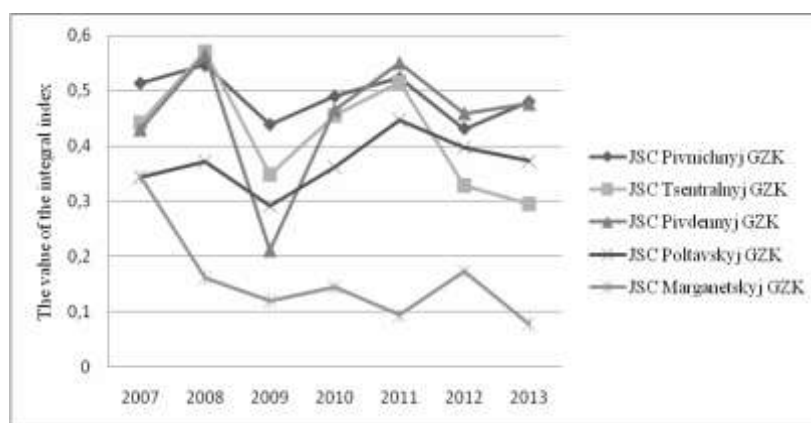


Fig. 1. The dynamics of economic position of enterprises in terms of integral estimation (2007–2013)

Premium for unsystematic risk of the enterprise is based on the following model:

$$R_b^{unsyst} = R_{\max} - I_b \times R_{\max}, \quad (1.1)$$

where  $R_b^{unsyst}$  – the amount of unsystematic risk premium for b-th company;

$I_b$  – the integral indicator of the economic condition for b-th company;

$R_{\max}$  – the amount of the maximum possible premium for unsystematic risk.

Results of calculation of premium for unsystematic risk and aggregated capitalization rate, that takes into account both systematic and unsystematic risks are presented in table 3.

Table 3

**Results of calculation of unsystematic risk premium**

| Indicators                   | Value of indicator |       |       |       |       |       |        |
|------------------------------|--------------------|-------|-------|-------|-------|-------|--------|
|                              | 2007               | 2008  | 2009  | 2010  | 2011  | 2012  | 2013   |
| JSC Pivnichnyi GZK           |                    |       |       |       |       |       |        |
| Integral indicator, $I_b$    | 0,514              | 0,546 | 0,438 | 0,49  | 0,523 | 0,431 | 0,4802 |
| Unsystematic risk premium, % | 14,59              | 13,61 | 16,85 | 15,31 | 14,31 | 17,07 | 15,59  |
| JSC Tsentralnyi GZK          |                    |       |       |       |       |       |        |
| Integral indicator, $I_b$    | 0,43               | 0,566 | 0,211 | 0,465 | 0,55  | 0,459 | 0,2944 |
| Unsystematic risk premium, % | 17,11              | 13,03 | 23,67 | 16,04 | 13,49 | 16,23 | 21,17  |
| JSC Pivdennyi GZK            |                    |       |       |       |       |       |        |
| Integral indicator, $I_b$    | 0,442              | 0,571 | 0,348 | 0,455 | 0,515 | 0,329 | 0,4766 |
| Unsystematic risk premium, % | 16,73              | 12,87 | 19,55 | 16,34 | 14,54 | 20,14 | 15,70  |
| JSC Poltavskyi GZK           |                    |       |       |       |       |       |        |
| Integral indicator, $I_b$    | 0,344              | 0,372 | 0,291 | 0,362 | 0,448 | 0,398 | 0,3729 |
| Unsystematic risk premium, % | 19,68              | 18,85 | 21,26 | 19,13 | 16,57 | 18,07 | 18,81  |
| JSC Marganetskyi GZK         |                    |       |       |       |       |       |        |
| Integral indicator, $I_b$    | 0,344              | 0,162 | 0,12  | 0,145 | 0,094 | 0,159 | 0,0786 |
| Unsystematic risk premium, % | 19,67              | 25,13 | 26,39 | 25,65 | 27,17 | 25,23 | 27,64  |

**Conclusions and further researches directions.** Improved model of integral assessment economic performance allows using these results in a scientific determination the enterprise unsystematic risk degree and to assess the level of investment attractiveness of a particular company among a group of companies.

**Refereces:**

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