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FAIR VALUE ASSESSMENT OF INVESTMENT CAPITAL WHEN ENSURING COHERENCE OF MANAGERIAL DECISION-MAKING PROCESSES

Timely determination of loan capital price under current economic conditions becomes an important stage in company's development. It is impossible to ignore these calculations for clear understanding of investment process efficiency. The paper considers various latest calculation methods of the real cost of capital and the author's method of calculation is offered.
Keywords: *investment; fair value; borrowed funds; share capital.*

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ОЦІНЮВАННЯ СПРАВЕДЛИВОЇ ВАРТОСТІ ІНВЕСТИЦІЙНОГО КАПІТАЛУ ПРИ ЗАБЕЗПЕЧЕННІ УЗГОДЖУВАНОСТІ ПРОЦЕСІВ ПРИЙНЯТТЯ УПРАВЛІНСЬКИХ РІШЕНЬ

У статті продемонстровано, що визначення ціни боргового капіталу у сучасних економічних умовах стає важливим етапом розвитку компанії. Обґрунтовано, що для чіткого розуміння ефективності інвестиційного процесу неможливо ігнорувати дані розрахунки. Розглянуто різні сучасні методики розрахунку актуальної вартості капіталу та запропоновано авторський метод калькуляції.
Ключові слова: *інвестиції; справедлива вартість; боргові засоби; акціонерний капітал.*
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ОЦЕНКА СПРАВЕДЛИВОЙ СТОИМОСТИ ИНВЕСТИЦИОННОГО КАПИТАЛА ПРИ ОБЕСПЕЧЕНИИ СОГЛАСОВАННОСТИ ПРОЦЕССОВ ПРИНЯТИЯ УПРАВЛЕНЧЕСКИХ РЕШЕНИЙ

В статье показано, что своевременное определение цены заемного капитала в современных экономических условиях становится важным этапом в развитии компании. Обосновано, что для четкого понимания эффективности инвестиционного процесса невозможно игнорировать данные расчеты. Рассмотрены различные современные методики расчета актуальной стоимости капитала и предложен авторский метод калькуляции.
Ключевые слова: *инвестиции; справедливая стоимость; заемные средства; акционерный капитал.*

Problem statement. Any organization functioning in the real production sector represents an interconnected system of various areas of business, such as production, marketing, finance which the main objective to receive profit and to implement company development plans as a whole. Thus one of the most important company business focus is its investment activity. At the expense of investment and only with its help a company has opportunities for progress at the market, entering new perspective spheres of business, launching modern types of products and services, and also competitiveness strengthening in comparison with similar companies. By means of investments companies modernize fixed assets, develop new technologies, acquire other companies and diversify their business.

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Latest research and publications analysis. This topic was discussed by A.N. Apcherch (2002), A.N. Horin (2006), A.S. Kiyatkin (2006), A.P. Kovalyov and V.V. Ryzhova (2007), V.V. Kovalyov and V.V. Kovalyov (2004), J. Van Horn (1996). Nevertheless, a number of issues needs further attention and development.

Formulation of the research objectives. The issue of company investment process is rather receptive. It is not a secret that significant funds are required for implementation of any investment task. Therefore, the main task is finding the sources of funds for investment in this regard. While making decisions on financing it is necessary to provide compliance on urgency of assets source. In other words, short-term sources should not be used for financing long-term investment, as the payback period of assets in this case is likely to exceed financing term, then the new source of funds, will probably be more expensive (Apcherch, 2002).

Key research findings. Investment activity is not an isolated business sphere of a manufacturing company. Moreover, company efficiency depends on its opportunities and of investment process management quality. Real investments define many functions and decisions within a company, and also correspond to the processes taking place in its environment.

Investment management represents a complex process, with a meaningful structure and consecutive approach to situation analysis, a choice of potential alternatives and risk management throughout all investment stages. Such statement of a question gives real possibility of scientifically reasonable economic activity planning, investment efficiency enhancement and thus improvement of market position and financial condition of a corporate investor.

Company investment activity is directly interconnected with the processes of financial analysis and investment decisions' efficiency assessment. The investor carries out the analysis of considered investment alternatives and chooses the best ones which in the maximum degree improve its financial state to the most extent.

The condition of the investment market is characterized by such elements, as demand, supply, price and competition. The ratio of these elements at the market constantly changes under the influence of various factors set of both general economic and intra-market character.

Activity degree of investment market, ratio of its separate elements are defined by means of studying market environment. Investment market environment is the set of factors defining the developed ratio of demand, supply, price level, competition and sales at investment market or its segment.

Investment market environment is cyclic. This cycle includes 4 main stages: takeoff, momentary boom, weakening and environment recession (Kovalyov and Ryzhova, 2007).

Environment takeoff is connected with an economy revival as a whole: demand volume growth for investment objects, price level increase, competition development among investment intermediaries are characteristic of it.

Environment boom is characterized by a sharp increase of demand for all investment objects. Thus, demand cannot be completely satisfied any more with the offer, available at the market. At the same time prices for objects of investment grow, investors' and investment intermediaries' returns raise.

Environment weakening refers to an investment activity decrease as the result of general economic downturn. There is almost full saturation of demand for investment objects and some surplus of their supply is observed. At first, prices for majority of investment objects are stabilized, then, there is their slow decrease. At the same time investors' and investment intermediaries' returns decrease.

The sign of investment market environment recession is critically low level of investment activity, the lowest level of demand and sharp volume reduction of investment objects supply, though the supply level exceeds the demand. Thus, prices for investment objects fall significantly, market participants' returns fall to the lowest level; losses in certain spheres of investment activity are possible.

Cyclic development and constant variability of investment market cause the need for continuous studying and identification of the key trends of the current environment development, and also future environment forecasting. Each investor has to know the market condition, to estimate it correctly, to be able to forecast situation change in order to survive and develop in the conditions of the market. Without knowledge of development extent and activity of the investment market it is impossible to take competent, economically feasible investment decisions. This knowledge forms the basis for an effective business investment strategy development. Investor's mistakes and miscalculations in an investment market assessment can cause decrease in income level, risk increase in total loss of not only returns, but also invested capital.

Studying the investment market environment includes: environment monitoring, analysis and forecasting.

Monitoring provides the current supervision over investment activity: indicators system change, characterizing demand, supply, prices and competition level. The main attention is paid to those market segments in which investment activity is conducted or supposed to be. The monitoring results are reflected in the environment change graphs, are represented in the form of tables, charts and other forms.

The analysis of the current investment market environment is intended for the identification of its development trends on the basis of the research of separate segments features of the investment market and those changes which happen in the market in comparison with the previous period. First of all, the analysis assumes performing calculations of analytical indicators system characterizing the current environment on the basis of information, collected in the course of monitoring, and then definition of prerequisites to current investment market cycle change.

Investment market environment forecasting is necessary for choosing the key directions of investment activity strategy and investment portfolio formation. The main purpose of the forecast is the identification of factors development trends, defining market environment in the long term. For drawing up forecast it is necessary to define the forecasting horizon, to choose methods and to make the related calculations.

The horizon of forecasting can be long-term, mid- and short-term. Long-term forecast relates to the investment strategy making and formation of investment portfolio including large-scale capital-intensive objects of real investment. It can be developed for the term of over 3 years. Medium-term forecast is necessary for company investment strategy correction; investment portfolio formation at the expense of

separate not too real capital-intensive investment projects, long-term financial tools; capital reinvestment, invested in inefficient projects. It is developed for the term from 1 year to 3 years. Short-term forecast is necessary for working out tactics of investing and investment portfolio formation at the expense of various short-term financial instruments. Such forecast is formed on the basis of taking into consideration the influence on investment market environment factors having short-term, casual character. The period of drawing up short-term forecast does not exceed one year.

Investment market forecasting is carried out by two main methods: fundamental and technical. The fundamental method is based on studying general economic and intramarket factors influencing demand, supply, prices and competition level, and on the definition of possible change of these factors during the predicted period. The technical method is based on the distribution of the revealed market environment tendency in the course of the analysis for the predicted period. The fundamental method is more used for long- and medium-term forecasting, technical is for short-term forecasts. In practice, these methods are often supplemented with the method of expert evaluations.

Alongside with the financial analysis of investments an investor makes decisions on financing. Within investment process a corporate investor carries out a complex of works on a choice of financing sources and attraction of borrowed funds for projects. These financing sources have to cover company's needs for financial resources; however, they should not become serious encumbrance in terms of their service costs and payment. While making financial decisions it has to be taken into consideration that both owned and borrowed financing cost should not exceed profitability of an investment project.

Strategic planning is also an integral part of investment process management. Investments have to be aimed at the projects and the investment programs corresponding to company strategic objectives and interests in long-term prospect. Lack of accurate strategic development objectives in many cases leads to inefficient use of investment resources, that reduces their appeal and does not allow maximizing their effect within company core activity. In other words, strategic objectives along with efficiency have to be the main criteria on the choice of investment directions.

Planning and attraction process of investment resources causes the need for general structure definition of company investment capital for a long term. Investment sources definition and their general structure have to be accompanied also by cost estimation of this capital taking into account all sources of financial resources attraction. It is carried out by means of weighted average company capital cost calculation which shows the total cost of resources, and is also used for discounting of cash flows and general investment efficiency calculation.

The capital cost represents the rates of return which an investor expects to receive on the investment taking into account the related risks (Kovalyov and Ryzhova, 2007). Each type of the capital invested in a company has its own cost. As a starting point in risks assessment of the share capital minimum cost there is often used profit, which a shareholder can count on, having invested money in any alternative project with a similar risk level. Cost estimation of borrowed funds is carried out at the percent rate which an investor/creditor expects to receive, providing a company with funds. For a company into which a shareholder invested money, this poten-

tial profit of a shareholder is called alternative capital cost. Due to the fact that a company may have a lot of similar (alternative) projects, it is necessary to calculate alternative profitability cost for each of them separately.

According to V.V. Kovalyov, "there is no certain and unambiguous algorithm of fair value calculation and therefore refusal in accounting and reporting depending on cost estimates is not involved in subjectivity, but also has possibility of misleading users and, therefore, having risk level increase concerning this business entity" (Kovalyov and Ryzhova, 2007).

In various situations there are different types of fair value estimations: initial, market, comparable, recovery, replacements, realizable, capitalized, or rent, expert, conditional. The interrelation of fair value with other types of estimates is given in Figure 1.

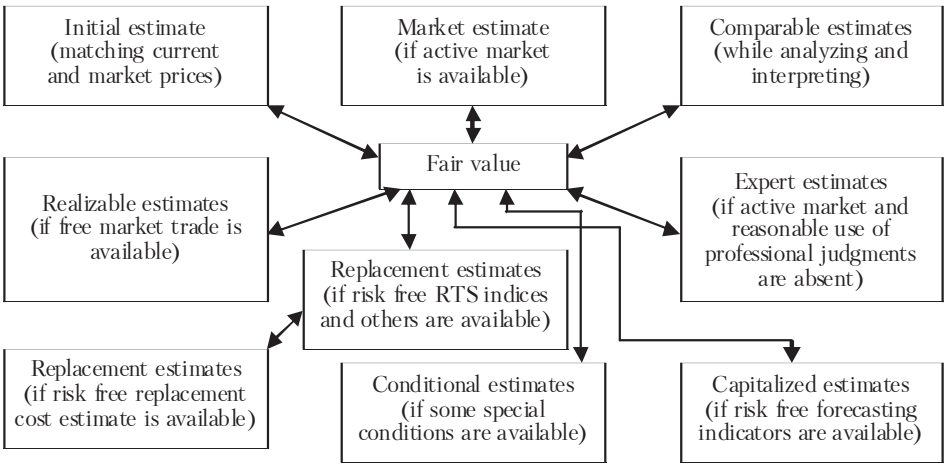

Figure 1. **Interrelation of fair value with other types of estimates** (Horin, 2006)

Hence, the term of weighted average capital cost is used and it is interpreted as alternative cost of company interest debt and its shareholders' funds taking into account the specific weight of each of these components in capital's general structure.

A.N. Horin (2006) and V.E. Kerimov (2006) offer the following calculation of share capital cost: The cost of share capital = Risk-free assets profitability + Market risk premium x Factor B for a company.

The weighted average capital cost represents a combination of various company financing sources cost in proportion to their share in the general company capital structure. Generally, the formula of weighted average capital cost, in the opinion of S.S. Karapetyan (2010), is described as follows:

$$C = (E/K) \times y + (D/K) \times b(1 - X_c), \quad (1)$$

where K – the total amount of invested capital; E – the volume of company share capital; D – the volume of company borrowed capital; y – the expected cost of share capital; b – the cost of borrowed capital; X_c – company rate tax.

As the formula given above indicates, the expected cost of each of company's invested capital types is multiplied by its share in total capital, then findings are sum-

marized. Thus, borrowed capital cost decreases by tax profit tax interest, which is linked to the fact that taxation system allows making tax deduction from paid interest that reduces company total costs on loan financing, making that attractive in terms of investment financing.

The determination of its cost represents rather simple task for borrowed capital because a company can determine the size of interest rates proceeding from the following factors in advance:

- *Credit history.* As a rule, it is a starting point while determining borrowed capital cost. However, the actual cost of credits can often differ from cost of previous periods in connection with general change of interest rates at the market, and also the actual risk of the project under which borrowed funds are raised.

- *Examples of company debt financing.* This approach is used in cases of lack of sufficient history in attracting credits at the expense of that experience of other companies can be used. Thus, it is necessary to remember that each company is unique, therefore, exact determination of borrowed capital cost by means of similar companies' analysis can not provide accurate results. Here it is recommended to make a correction for actual difference in financial and market positions of an unknown and the analyzed company.

- *Expert estimation*. In this case it is recommended to analyze the developed sizes of interest rates corresponding to credit rating at a market, and by means of this research to determine borrowed capital cost for an analyzed company. There can be difficulties as not all companies, especially at emerging markets, have credit scores which are, as a rule, assigned, to large, well diversifiable corporations.

- *Crediting terms*. As a rule, there is feedback between the size of credit interest and its payment period that is connected with default risk increase because of increase in credit service term.

- *Security for credit resources*. As a result, borrowings cost can differ from average indicators and previous experience with borrowers. Less secured credit (project financing with regress lack is the most efficient option) demands higher interest rates because of high risks of invested funds non-return.

As for the determination of share capital cost, the task becomes complicated due to the lack of preliminary arrangement with investors on the size of future payments because a shareholder can count only on net profit distribution which size is capable to fluctuate year by year.

The model of own capital assessment belongs to the main method of determination of share capital cost (capital assets pricing model – CAPM) (Treynor, 1965). This method assumes that the cost of share capital attraction is proportional to its risk, being expressed in the form of beta coefficient. This coefficient shows how far profitability on a required share is more or less risky. The beta is defined mathematically with the help of comparison by means of share profitability regression analysis during the certain period with market profitability for the same period. If coefficient is more than 1, this share is considered more risky, than the market as a whole.

Determination of beta coefficient allows calculating expected share profitability further. This calculation is made by the following formula:

$$E(r_i) = r_f + \beta_{im}(E(r_m) - r_f), \quad (2)$$

where $E(r_i)$ – the share expected profitability (cost); r_f – risk-free rate of investment; β_{im} – beta coefficient; $E(r_m)$ – expected market profitability as a whole.

In this regard it is worth paying attention to one source of company raising capital from owners – shareholders. Before giving preference to one of share types, a shareholder takes a decision with the share capital price at the bottom of it. According to J. Van Horn, "capital cost in the form of shares is the most hard-to-measure one" (Van Horn, 1996). Therefore, Western experts pay great attention to share capital price calculations. They developed various models for capital price determination.

The coefficient B reflects the risk level relation of capital investment in this enterprise or branch and investment average market level. Calculation of share capital price by means of this formula is based on expert estimates and data on the latest share profitability and other firms. That, in turn, can result in inaccuracies in calculations, however for created securities market and capitals error probability is insignificant.

Conclusions. We believe that under the conditions of environment instability and the world financial crisis there is an objective necessity for capital fair value calculation through current assets cost. Market cost determination is not always possible, but under market economy it is impossible to do without it. The market factors projection on monetary assessment formation of assets and obligations is necessary.

Companies of public sector and noncommercial establishments have no investors in that sense that commercial companies have and therefore WACC (Tennent, 2014) and CAPM techniques in this case are not acceptable. Additional complexity arises causing many expenses and benefits connected with implementation of this or that noncommercial project, are intangible complicating the assessment of "demanded rate of return". To solve this problem "test discounting rate" is applied in some countries that reflects economic and social factors which should be taken into account while assessing civil facilities. It is also possible to resort to the method of alternative expenses definition (missed benefits), and to use a return rate as the capital cost which could be received as the best alternative option of capital investment.

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