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Taking Risk into Account in the Evaluation of Economic Efficiency of Investment Projects: Traditional Methods

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Abstract

The article discusses traditional methods of evaluating investment projects, which are most frequently used in the corporate practice. There are many deficiencies that are held against those evaluation criteria, but there are also undisputable benefits ascribed to them. This article deals with their relation to risk, with the inclusion of risk in the evaluation of economic efficiency of investment projects.

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Keywords: investment; investment project; uncertainty; risk; value based management; firm value; integrated managerial system; earnings; cash flow; opportunity cost; economic efficiency.

1. Introduction

The global market and consolidating position of Europe on such market place high demands on the level of knowledge and its transfer into new, progressive concepts, methods and tools of the financial management. At the same time, the dynamic economic environment in which firms act increases the level of uncertainty and risk in all business activities, including investment ones. The importance of integrating central principles of such activities, their objectives and stimuli into one system grows.

It concerns in line with the value-based management theory a complex mastering of all essential factors having immediate impact on the value of the firm, with various level of their integration. It means in relation to the investment decision-making that evaluation of investments cannot be made in isolation without any reference or

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relation to the firm as a whole, its value, and general performance position. Risk, earnings and time remain key factors of investor's decision-making in it. Quality of investment action effects estimate is primarily a function of the said three variables, as well as of the ability of the management to express their mutual relations and impact on the firm as subtly as possible.

The creation of value as the integral aim of the firm takes the form by selection and choice of adequate methods and techniques of its estimate. The basic methodological apparatus for value estimation is formed by models of discounted cash flows, which are at the same time a central point of investment decision-making and currently have the widest application area at global level. The real options methodology, taking risk into account and enabling flexible decision-making, has been so far a rare tool of investment projects evaluation and quantification of firm value estimate in the practice of Slovak Republic and surrounding countries.

From the perspective of integration objectives – complexity and mutual interconnection with regard to the basic objective of the firm – it is important to determine the interface between indicators of economic efficiency of investments and methodology for determination a value of the firm, whereby the same reference rate as for other corporate activities will be provided for investment activities and at the same time synergy effects and benefits for the whole will step out of anonymity.

The understanding of risk, traditionally decomposed to individual components according to risk factors and significance of their impact, is under conditions of integrated management system preferentially focused on the creation of value and potential threat to the same.

This article discussed benefits, limits and application problems of individual methods for evaluation of economic efficiency of investment projects with the assessment of risk acceptance rate. Special attention is paid to the methodology of real options as a promising tool of investment decision-making. The aim of this article is to assess current real possibilities of investment decision-making tools and to expand its theoretical-methodological basis with the value criterion.

2. Basic attributes of investment decision making

The basis of investment decision-making, i.e. making decisions about whether a particular investment project should be accepted or not, or which one of proposed variants of the project should be carried out, is the calculation of selected criteria of its economic efficiency. Such criteria usually measure the return or profitability of resources spent for the project implementation. The most frequently used indicators are based either on achieved profit, which is generated in individual years of project operation and determined from the profit and loss statement (indicators of capital return), or, and this is more frequent case, on cash flows constituted by monetary incomes and expenses during the whole life of the project, i.e. during construction of the investment, during its operation and upon its liquidation.

Determination of cash flows of investment projects plays a key role in their evaluation and belongs to the most demanding tasks of capital budgeting. That is due especially to the fact that there is a larger number of quantities transformed into cash flows of projects and usually there are more subjects preparing the project engaged in quantification of such quantities. A risk of incorrect estimate of amount and structure of cash flows is therefore created. Unjustified optimism is a frequent cause of such situation in practice; it appears that managers base their investment decisions oftener on unfeasible scenarios than on rational assessment of costs and expected profits of a project (Lehutová, Krizanova, Kliestik, 2013). Underestimation of the probability of unfavourable development of factors affecting results of the project results in biased determination of values of indicators of such project's economic efficiency.

Correct identification of cash flows represents a preparatory, starting phase of investment evaluation. Quality evaluation of economic efficiency of a project is connected with the requirement to separate investment decision-making from financial decision-making (Fotr, Souček, 2005). The basic approach to evaluation is then based on the assumption of full own funding of the investment and cash flows used for evaluation of its economic efficiency include investment and operating cash flows with the exclusion of financial flows. Those serve for the assessment of financial stability of the project in relation to the chosen form of its funding. It concerns testing the ability of the project to pay from its incomes debit interest, repayment of credits, leasing instalments, etc. In case the assumption