

CONTEMPORARY PRACTICES OF INVESTMENT PROJECT JUSTIFICATION

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Justification of investment projects is a set of methodological and practical techniques for developing, justifying and assessing the feasibility of project implementation. Only a small proportion of investments turn out to be unsuccessful, that is, they do not give the expected result for reasons beyond the investor's control. Most projects that turned out to be unprofitable could not have been allowed to be implemented if a qualitative preliminary analysis had been carried out taking into account external conditions and internal qualities of the project [4].

Key methods of justification of investment projects are described in table 1.

Table 1

Key methods of justification of investment projects [2; 4; 5]

Method	Advantages	Disadvantages
Payback period	Simple to calculate and understand; emphasizes liquidity and risk recovery; useful for preliminary screening	Ignores time value of money (in basic form); ignores cash flows after payback; may favor short-term projects
Discounted payback period	Considers time value of money; better risk awareness than simple PP	Still ignores cash flows after payback; cutoff period is arbitrary
Net present value	Considers time value of money; measures absolute value creation; consistent with shareholder wealth maximization	Requires reliable discount rate; less intuitive for non-financial managers; sensitive to forecast errors
Internal rate of return	Provides percentage return easy to interpret; considers time value of money; useful for comparing projects	Multiple IRRs possible with unconventional cash flows; may give misleading rankings vs. NPV; assumes reinvestment at IRR
Profitability index	Useful when capital is rationed; considers time value of money; enables project ranking	May conflict with NPV ranking; less intuitive; depends on accurate discount rate
Accounting rate of return	Easy to compute from accounting data; widely understood	Ignores time value of money; based on accounting profit, not cash flows; ignores project timing

Decision-making regarding investments under conditions of risk and uncertainty is a process in which the values of several different criteria characterizing each investment option are forecast under the known probability of practical implementation of each option.

Among the most common methods for assessing the financial viability of investment projects are the payback period method, the average accounting rate of return on invested capital method, the net present value method, and the internal rate of return method [10, p. 29].

Using the payback period method, a company can determine the length of time required to recover the costs associated with the initial investment [2]. In the same work, G. Motta states that simplicity is the main advantage of this method, since it determines the number of years during which the costs associated with the initial investment are expected to be recovered. According to D. Watson and E. Head [12, p. 115], the advantages of this method are: ease of application and the fact that the method provides company management with the ability to choose certain financial accounting principles; the possibility of partially accounting for risk based on the assumption that a shorter payback period is preferable to a longer one. But, in turn, it does not take into account the change in

the value of money over time; it favors projects with shorter payback periods compared to projects with longer payback periods. In addition, during decision-making, cash inflows arising during the payback period are considered, while cash inflows beyond this period are ignored [8, p. 68].

The discounted payback method allows the duration of the payback period to be determined while maintaining the current dollar value. The highest priority is given to the project with the shortest discounted payback period. The discounted payback method has an advantage over the simple payback method because it takes into account the time value of money. However, the drawback of the previous method remains, namely that cash flows generated beyond the payback period are not considered.

Another attractive method (though not without drawbacks) for decision-making in long-term capital budgeting is the average accounting rate of return on invested capital (ARR) method [11, p. 61]. Some authors [6, p. 231; 12, p. 117] believe that this indicator is essentially the same as the return on capital employed (ROCE) or return on investment (ROI), but under a different name. There are various definitions of the average accounting rate of return on invested capital, but in any case it is defined as the ratio of average accounting profit to the average accounting value of investment [9, p. 245].

Moreover, like the payback period method, the ARR method does not take into account the time value of money. As noted by F. Hill and F. Fee [2], the main weakness of the method is due to the peculiarities of selecting definitions that characterize profits and assets [7, p. 1723].

Net present value (NPV) is an indicator that directly reflects value creation and enables decision-making, showing whether the required minimum return (for example, the cost of capital) can be achieved over the economically justified project horizon. However, D. Watson and E. Head [12, p. 189] note that under the NPV method the target rate of return or cost of capital is used to discount all cash inflows and outflows to present values, and the present value of inflows is compared with the present value of outflows; therefore, NPV represents the discounted inflows minus the discounted outflows.

If NPV is positive, it is possible to obtain income exceeding the required level and thus create economic value. Moreover, when choosing among mutually exclusive investment projects, the decision rule is simple: calculate the NPV for each alternative and select the project with the highest positive NPV [12, p. 125]. When selecting among alternative projects, the NPV criterion is the only non-contradictory indicator that enables reliable ranking according to the objective of maximizing investment benefits [3, p. 94–95].

Although NPV is widely used, it does not answer all questions related to the economic attractiveness of capital expenditures [12, p. 129]: there are difficulties in estimating project cash flows; it assumes the company's cost of capital is known and constant over the project life.

The internal rate of return (IRR) is the discount rate at which the project's NPV equals zero. The term IRR represents another definition of the return on capital invested in a project. Under the IRR method, all independent investment projects with an IRR exceeding the company's cost of capital or required return are acceptable [12, p. 131]. Projects with higher IRR are considered more attractive. Only projects with IRR above the company's cost of capital or the required hurdle rate are acceptable [8, p. 79].

Decisions obtained using the considered methods are based on forecast conservative cash-flow scenarios. All methods assume that cash flows are known. For any investment option, simple financial models can be developed to estimate annual cash inflows and outflows [1]. An investment is effective if it generates income exceeding the invested amount. Most authors conclude that only the NPV method ensures decisions that maximize shareholder wealth.

However, many enterprise problems related to financial management, including investment management, remain unresolved due to uncertainty caused by insufficient prior information needed for decision-making. The inability to forecast future events significantly affects the accuracy of investment project evaluation and reduces the likelihood of making correct investment decisions.

Conflicts between dynamic performance indicators may arise when comparing alternative projects. In some cases, certain indicators justify choosing one project, while others favor another. In

such situations, additional analysis of project characteristics and the nature of the conflict is required. Thus, selection of investment projects is rather possible with the use of several criteria.

References:

1. Жуков В. В. Особливості сучасних методів оцінки інвестиційних проектів. *Перспективні напрями та сучасні тенденції сталого розвитку економіки країни: матеріали Всеукр-ої науково-практ. конф., 13-14 жовт. 2017 р. : тези доповід.* Одеса: Центр економічних досліджень та розвитку, 2017. С. 45-48.
2. Жуков В. В. Особливості урахування ризиків та невизначеності при оцінці інвестиційних проектів. *Науковий вісник Херсонського державного університету.* 2018. № 28. С. 58-62.
3. Жуков В. В. Оцінка інвестиційного проекту як спосіб відбору найбільш привабливих проектів. *Науково-виробничий журнал «Бізнес-навігатор».* 2018. №1-2(44). С. 94-97.
4. Салига С. Я., Яришко О. В., Ткаченко Є. Ю. Теоретичні аспекти аналізу інвестиційних проектів. *Інвестиції: практика та досвід.* 2009. № 5. URL: <http://www.investplan.com.ua/?op=1&z=62&i=2>.
5. Сатир Л. М. Методичні підходи до оцінки інвестиційної діяльності підприємства. *Всеукраїнський науково-виробничий журнал.* 2012. № 3 (13). С. 82 - 86.
6. Arnold G. *Corporate Financial Management* 3 ed. Harlow, Essex: FT Prentice Hal, 2005. 351 p.
7. Boute R., Demeulemeester E., Herroelen W. A real options approach to project management. *International Journal of Production Research.* 2004. Vol. 42 (9). P. 1715-1725.
8. Crouhy M., Galai D., Mark R. Prototype risk rating system. *Journal of Banking and Finance.* 2020. Vol. 25. P. 47-95.
9. Hespos R. F., Strassmann P. A. Stochastic decision trees for the analysis of investment decisions. *Management Science.* 2005. Vol. 11 (10). P. 244-259.
10. Hoffman E. *Psychological Testing at Work: How to Use, Interpret, and Get the Most Out of the Newest Tests in Personality, Learning Style, Aptitudes, Interests, and More.* 2 ed. Blacklick, OH: McGraw-Hill Education Group, 2001. 129 p.
11. Lumbert E. The role of financial manager. *Finance for Managerial Decision Making.* 2006. Vol. 41(5). P. 57-79.
12. Watson D., Head A. *Corporate Finance, Principles & Practice.* 2 ed. London: Pearson education limited, 2001. 285 p.