

The Development of Investment Projects Attractiveness Assessment Software

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Abstract

Paper describes the creation of software for automated assessment of projects' investment attractiveness. Research goal is development of software for automated assessment of investment attractiveness of projects using investment criteria. Research methods include algorithms for assessing the investment attractiveness of projects using defined criteria, software development on the BAS ERP platform using finance criteria. To integrate these criteria scoring system for selection of investment projects was implemented. Comparative analysis of the software for assessing the investment effectiveness of projects was carried out, the main criteria of assessing the investment attractiveness of projects were determined, and a software tool for automated analysis of the investment attractiveness of projects was developed to evaluate different projects taking into account definite criteria.

Keywords

Investment attractiveness criteria, software tools, algorithm, scoring method, project assessment.

1. Introduction

Due to the rapid development of the innovative economy and the commercialization of software products, there is a need for software that provides automated analysis of financial indicators of various projects and help investors make decisions on choosing the most investment-attractive projects according to certain equivalent criteria [1].

The variety of opportunities for investors and the availability of projects with different financial key performance indicators according to different criteria makes it necessary to automate the calculation of these indicators to speed up the preliminary analysis of business ideas and start-ups to filter out projects with a high level of risk according to certain evaluation criteria [2]. It gives opportunity for a more in-depth analysis of the most investment-attractive projects based on additional criteria [3].

The implementation of investment goals requires the formation of investment projects that provide the investor and other stakeholders with the necessary key performance indicators for making investment decisions [4]. Investments give enterprises more opportunities for development and growth, and they are necessary due to scarce resources for the enterprise. However, investors are primarily interested in returning the initially invested funds, their capitalization and making a profit, i.e. payback period is very important [5].

To assess the investment attractiveness of projects and determine the effectiveness of expected investments, as a rule, the experts are involved, who have professional competences in the relevant areas of economic and financial analysis, management accounting, marketing research, portfolio investments, tax planning, etc.) [6]. Consulting firms hire such personnel that provide relevant services to enterprises. At the same time, the cost of this service is not available to many firms under economic crisis and recession. Thus the best opportunity to analyse the investment project of the enterprise using

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its financial and economic indicators to reveal project investment attractiveness is training of own specialist in modern IT methods of investment design and the use of special software, which helps to solve the technical tasks [7].

A correctly designed investment project should answer the main question: should firm invests in this project and will firm make a profit from it in the future? An important issue is to design an investment project in accordance with generally accepted requirements and make the necessary calculations. It helps firm to identify KPI of projects in advance and assess whether they can be overcome, as well as understand where you need to insure in order to reduce expected risks [8].

The **purpose** of the paper is to describe creation of software for automated assessment of investment attractiveness of projects.

The remaining part of the paper is structured as follows: section 2 consider related works and software; section 3 describes development of an algorithm for automated assessment of investment attractiveness; section 4 is devoted to the development of software for assessing of project investment attractiveness; section 5 demonstrates cases of automatic assessment of project investment attractiveness; last section concludes.

2. Related Works

2.1. Comparative analysis of software

The concept of an investment project is considered in two aspects [9]:

- 1) as actions for the implementation of a set of specific measures to ensure the goals;
- 2) as a system that includes a set of organizational, legal and settlement and financial documents necessary to perform certain steps in a certain sequence.

In a broad sense, an investment project is a program of investments in order to make a profit in future periods [4]. The investment project is designed to assist entrepreneurs and investors in solving such basic tasks (Fig. 1):

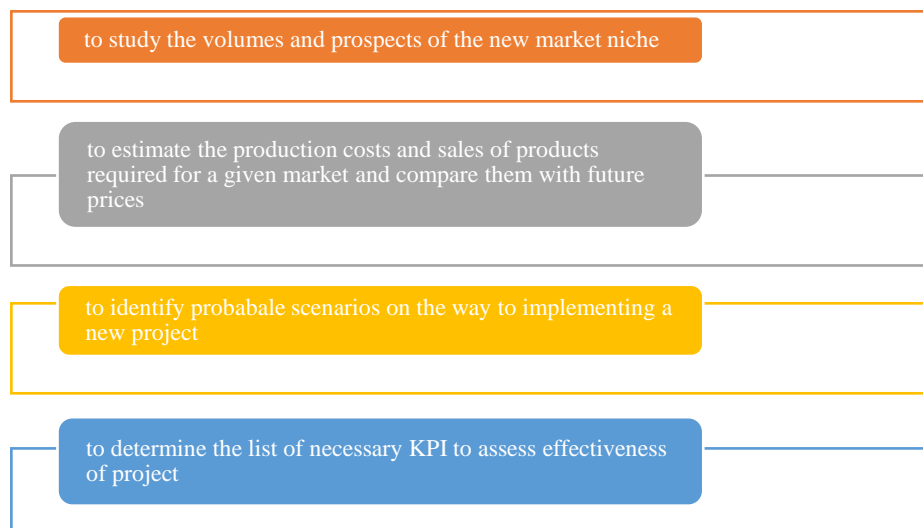


Figure 1: Tasks of an investment project

The main requirements for investment projects assessment software include following measures (Fig. 2) [4]:

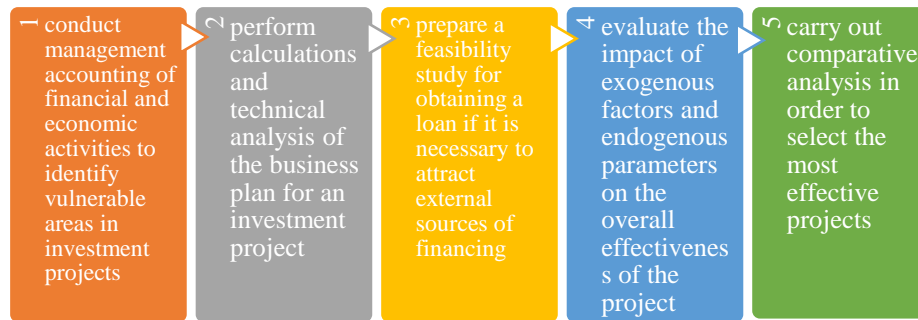


Figure 2: Basic requirements for investment projects assessment software

Our investment projects assessment software was created using the built-in BAS ERP, a high-level subject-oriented programming language. The environment for using the language is the BAS ERP software platform.

After analysing of efficiency of existing investment projects assessment software (Table 1), we have defined the advantages of BAS ERP software [10]:

- familiar interface of the BAS accounting software package;
- "open" configuration that allows users to edit algorithms and processes;
- own subject-oriented programming language;
- ability to connect external data sources.

Table 1
Comparison of investment projects assessment software

Criteria	BAS ERP	PROJECT EXPERT 6	ALT-INVEST	INVESTOR 1.0
Need for additional training to use	No, because the same software package is used in maintaining accounting records	Yes, the software comes with a user manual	No, because the software uses the MS Excel interface	Yes, the training has to be carried out separately
Availability of modification	Full	None	Partial	None
Fill-in automation	Automatic data upload using external data sources	Need to enter data manually	Ability to use MS Excel spreadsheets	Ability to use external financial information
Price	\$100	\$1700	\$1000	\$960

2.2. Criteria for assessing investment attractiveness

To develop software aimed at identifying investment-attractive projects, the requirements for ensuring investment criteria have to be met. The investment attractiveness of the project reflects a trade-off between the investment potential (the level of expected income, payback period, profitability index) and risks (the probability of non-return of capital, decreasing benefit-cost ratio). Calculating the attractiveness of investment project answers the question of what benefits, at what level of risk and what payback period of the project will be implemented [11], and the opportunity cost of the project.

The methodology for assessing the investment attractiveness of projects in most cases is based on the algorithms and recommendations of UNIDO (International Trade Organization), adopted to assess the attractiveness of investment projects in almost all business areas. According to these

recommendations, the following evaluation criteria are proposed:

- net present value of the project (*NPV*);
- profitability index (*PI*);
- benefit/cost ratio (*B/Cr*);
- internal rate of return (*IRR*);
- payback period (*PP*).

These criteria are supplemented by reports with a general assessment of the investment attractiveness of projects and the external data sources.

Net present value

The content of the criteria is that the current value of all incoming cash flows B_t is compared with the current value of all outgoing flows C_t discounted over time at the interest rate r (corresponds to inflation rate). The difference between these discounted flows is a net present value or long-run profit:

$$NPV = -C_0 + \sum_{t=1}^n \frac{B_t - C_t}{(1+r)^t} \quad (1)$$

If $NPV > 0$, the project is attractive for investment, if $NPV = 0$, it is break-even point, and if $NPV < 0$, the project is unattractive for investment.

Profitability index

PI is defined as the result of the ratio of discounted long-run profit and discounted costs. The index shows how much profit brings each monetary unit spent on project implementation. This criteria characterizes the return on investment costs and demonstrates the difference in the efficiency of the projects with approximately same net present value:

$$I = \frac{NPV}{C}, \text{ where } C = C_0 + \sum_{t=1}^n \frac{C_t}{(1+r)^t} \quad (2)$$

When $PI > 0$, the project is accepted and the higher PI value the greater investment attractiveness. If $PI \leq 0$, then project is rejected.

Benefit-cost ratio

This indicator is used to demonstrate marginal increase (decrease) of project costs (benefits) to save investment attractiveness of project. Thus, the value of this indicator, equal to 1.05, shows that if costs increase by 5%, the value index will fall break-even point, which is equal to 1.00. Thus, it gives quick evaluation the impact of economic and financial risks on the project results [12].

$$B/Cr = \frac{B}{C}, \quad (3)$$

$$\text{where } B = \sum_{t=1}^n \frac{B_t}{(1+r)^t}, \quad C = C_0 + \sum_{t=1}^n \frac{C_t}{(1+r)^t}$$

If $B/Cr > 1$, the project is accepted, the higher the B/Cr the less risks of project.

Internal rate of return

This is the value of the discount rate r^* , which demonstrates condition, when the current value of project costs equal to the current value of project benefits. So, the internal rate of return is the interest rate at which the net present value of the project is zero:

$$IRR = r^*, \text{ where } NPV = 0 \quad (4)$$

If the interest rate is lower than the *IRR*, then credit resources are preferable. If the interest rate is equal or higher than the *IRR*, then more profitable to implement the project at your own expense.

Payback period

The return on investment period is the time is required to return the invested amount of money to the investor.

$$PP = \min t, \text{ where } B > C \quad (5)$$

The lower period the greater investment attractiveness, since the project starts to make a profit faster.

In a broad sense, investment projects differ significantly not only in economic indicators, but also in their goals and tasks that they solve. Therefore, when making the final choice of a project, it is necessary to take into account its social efficiency (including the number of jobs created), budget efficiency (tax revenue), and sometimes geopolitical significance.

3. Development of an algorithm for automated assessment of project investment attractiveness

There are different approaches to assessing the investment attractiveness of projects [13]. You can evaluate the absolute and relative investment attractiveness. Absolute investment attractiveness is considered for particular investment project if the net profit for the entire project cycle is greater than zero. Relative investment attractiveness implies a comparison considered project with the industry average investment attractiveness of projects, with other firms in the industry, or with certain benchmarks values.

Most often, the following methods are used to assess the investment attractiveness of a project [14]:

1) scoring method

Author of this method is Bill Payne, who suggested analysing several start-ups in the same area according to the following criteria:

- composition of the management team (the share is up to 30%)
- market niche size (up to 25%)
- product / service / technology (up to 15%)
- analysis of the competitive environment (up to 10%)
- marketing and sales analysis (up to 10%)
- need for additional investments (up to 5%)
- other factors (up to 5%).

Based on these data, the investment attractiveness of the firm that implement the project is calculated.

2) venture capital method

An investment project is evaluated before and after investment process. The post-investment value of project is calculated based on the current sales growth rate of other projects in this field. The received amount is divided by the expected profit based on the investments. Pre-investment value is the difference between the post-investment value and the amount of investment.

3) Berkus method

This method propose to compare an investment project with similar projects based on 5 main indicators:

- product/service idea;
- analysis of prototypes;
- quality of the management team;
- development strategy;
- sales analysis.

The development of a scoring indicator will meet the requirements of integral assessment and usability of the investment attractiveness methodology.

We propose to use scoring model, which includes combination of financial criteria, to selecting projects. The basis of scoring models for evaluating investment projects is the theory of 'key success factors' by R. Cooper and E. Kleinschmidt [15-18]. The scoring method is based on the procedure shown in Fig. 3.

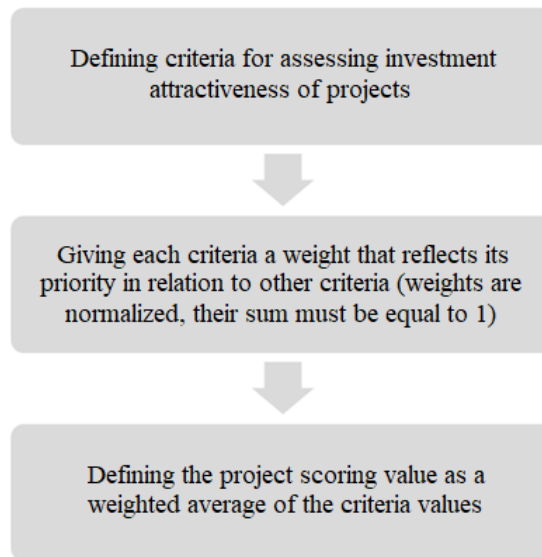


Figure 3: Project scoring procedure

For the described approach to project selection, we propose the following evaluation system (Table 2).

Table 2
Scoring system for selection of investment projects

No	Criteria	Weight	Value
1	Net present value (NPV)	0.25	1 – negative; 2 – negative, but can become positive if option apply; 3 – positive; 4 – positive, can be increased if option implement
2	Profitability index (PI)	0.2	1 – less than -1; 2 – between 0 and -1; 3 – between 0 and 1; 4 – more than 1
3	Benefit/cost ratio (B/Cr)	0.15	1 – less than 1.0; 2 – equals 1.0; 3 – more than 1.0; 4 – more than 1.0 and can be increased if option implement
4	Internal rate of return (IRR)	0.2	0 – there is no satisfactory interest rate 1 – less than the interest rate; 2 – slightly more than the interest rate; 3 – considerably more than the interest rate; 4 – significantly more than the interest rate taking into account pessimistic scenario
5	Payback period (PP)	0.2	0 – infinite period 1 – more than 10 years; 2 – 7-10 years; 3 – 3-7 years; 4 – less than 3 years

It is easy to see that the criteria $B/Cr = \frac{B}{C}$ and $PI = \frac{NPV}{C}$ are linearly dependent, i.e. $PI = B/Cr - 1$. Formally, these criteria duplicate each other. At the same time, profitability index measures economic efficiency of project, while benefit/cost ratio estimates the impact of economic and financial risks on

the project results (as indicated above). It means that intrinsic value of these indicators are different, because they both have positive weights.

In this assessment system, we have identified 5 most important criteria for the investment attractiveness of the projects. Calculated value of each criteria in accordance with Table 2 can score from 1 to 4 points. Depending on the weight of each criterion, the overall investment attractiveness of the project is estimated by the formula:

$$Z_k = \sum_j w_j * S_{jk}, \text{ where } w_j \text{ is weight of criteria } j, \quad (6)$$

S_{jk} – value of project S by criteria j

from 1 to 4 points, where 4 points is the maximum value of the scoring indicator of investment attractiveness of the project.

4. Development of software for assessing investment attractiveness

Constants

Constants are necessary to store a single value in the database. Constants usually store information that is rarely changed, such as the name of the organization, the main currency, configuration parameters in general, and so on (Fig. 4).



Figure 4: Constant window

For each constant, you have to specify its name, data type and synonym (if necessary). The "allowed length" property is used for string-type constants that can be specified as a fixed or variable length of the constant. For a fixed length, the constant will store the specified number of characters, and if the real value contains fewer characters, then spaces will be added to the specified length at the end of the string. If the string length is variable, only the actual number of characters is stored in the database. We create the constant "inflation" with the data type Number (Fig. 5).

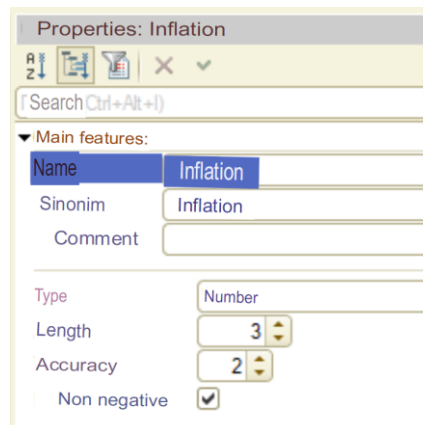


Figure 5: Constant properties window

Directories

To work with constant information with a definite set of values, the BAS ERP system uses objects of the "Directory" type. Directories are usually lists of materials, products, organizations, currencies, employees, and so on (Fig. 6.).



Figure 6: Directory window

Configurable properties include, for example, the length and type of code, the number of levels, and a set of directory details. In addition to the code and name, the mechanism for working with reference books allows us to create a set of banking details for storing any additional information about the reference element. The created Projects directory contains the Name requisite.

Documents

A document is one of the main concepts of the BAS ERP system. Working with documents, we can enter, view and edit information about performed business operations into the system (Fig. 7.).

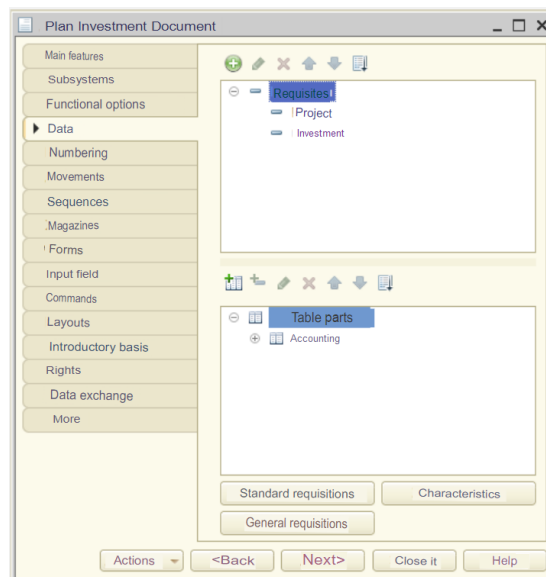


Figure 7: Document properties window

As a rule, created documents are electronic analogues of standard paper documents, which are the basis for certain accounting actions or calculations. The structure of each specific document type is determined when it is created in the configurator. In any type of document, there are banking details that are created automatically. These are "date" and "number". Other document details are defined in the configurator separately for each created document type [19].

A document can have two main parts: a header and a tabular part. The header includes banking details that are common to the document. The tabular part of the document is a list of data of the same type that can occur more than once in the document (for example, a list of products with the nomenclature and number of products).

Next, the document "Investment plan" is created. The document has requisites Project and Initial investment and takes the date of the document as the date of accrual. The project details are filled in by the user from the Projects directory. The tabular part of the document keeps records of income and

expenses for the project. After processing the document, it creates an record in the Register of investment attractiveness of projects and calculates the main criteria for investment attractiveness and the value of the scoring parameter of project.

Registers

Applied objects in the working configuration of the BAS ERP software package are called "accumulation registers" (Fig. 8.). They are utilized to calculate and record up-to-date information about the availability and intermediate movement of property, cash, and other assets. Accumulation registers are generated by data that the users enters into the system. The main task of registers is to provide data for reports.

Project description	NPV	PI	B/Cr	IRR	PP
Project 1 is an investment attractive project	1 757 654,91	0.88	1.88	0.55	2.32
Project 2 is an investment unattractive project	-3 537 214,26	-0.50	0.50		

Figure 8: Register window

Information in the accumulation register is stored as records that contain measurements and their corresponding resources. Registry dimensions are sections that store information, and registry resources accumulate numerical data (Fig. 9.).

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Процедура ОбработкаПроведения(Отказ, РежимПроведения)
НомерСтроки = 0;
НПВ = 0;
Ц = 0;
Е = 0;
ПП = 0;
ТекстЗапрос = "ВНЕРАТЬ
| Инфляция.Значение КАК Инфляция,
| ПланИнвестиций.Проект КАК Проект,
| ПланИнвестиций.СтартовоеВложение КАК СтартовоеВложение,
| ПланИнвестицийОборот.НомерСтроки КАК Период,
| ПланИнвестицийОборот.Доход КАК Доход,
| ПланИнвестицийОборот.Расход КАК Расход
| ИЗ
| Константа.Инфляция КАК Инфляция,
| Документ.ПланИнвестиций.Оборот КАК ПланИнвестицийОборот
| ЛЕВОЕ СОЕДИНЕНИЕ Документ.ПланИнвестиций КАК ПланИнвестиций
| ПО ПланИнвестицийОборот.Ссылка = ПланИнвестиций.Ссылка
| ГДЕ
| ПланИнвестицийОборот.Ссылка.Ссылка = &Ссылка";
Запрос = Новый Запрос(ТекстЗапрос);
Запрос.УстановитьПараметр("Ссылка", Ссылка);

Движения.Регистр.Записывать = Истина;

Выборка = Запрос.Выполнить().Выбрать();
Движение = Движения.Регистр.Добавить();
Пока Выборка.Следующий() цикл
    Движение.Период = Дата;
    Движение.Проект = Выборка.Проект;
    Если НомерСтроки = 0 тогда
        НПВ = -1 * Выборка.СтартовоеВложение;
        Ц = Выборка.СтартовоеВложение;
    КонецЕсли;
    НомерСтроки = НомерСтроки + 1;
    НПВ = НПВ + ((Выборка.Доход - Выборка.Расход)/row(Выборка.Инфляция, НомерСтроки));
    Ц = Ц + Выборка.Расход/row(Выборка.Инфляция, НомерСтроки);
    Е = Е + Выборка.Доход/row(Выборка.Инфляция, НомерСтроки);
    Если Е >= Ц и ПП = 0 тогда
        ПП = НомерСтроки;
    КонецЕсли;
КонецЦикла;
Движение.NPV = НПВ;
Если НПВ > 0 тогда
    Движение.Расшифровка = "Инвестиционно привабливый проект";
ИначеЕсли НПВ = 0 тогда
    Движение.Расшифровка = "Самоокупный проект";
Иначе
    Движение.Расшифровка = "Инвестиционно непривабливый проект";
КонецЕсли;
Движение.PI = НПВ/Ц;
Движение.ВСт = Е/Ц;
Движение.РР = ПП;

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Figure 9: Calculation of investment attractiveness of projects

Created register of investment attractiveness of projects has a Project requisite, which is filled from

the Projects directory and calculated estimators of *NPV*, *PI*, *B/Cr*, *IRR* and *PP*. The registrar is the Investment Plan document.

Reports

In BAS ERP, analytics and statistics are implemented using reports. Reports are designed to process of accumulated information and data reduction in an easy-to-view and analyse form.

The configurator allows us to create a set of different reports that are sufficient to meet the needs of system users for reliable and detailed source information. As a rule, the report uses a data layout scheme to generate source data.

We create reports Scoring indicators of investment attractiveness of projects and Criteria for investment attractiveness of projects (Fig. 10.) Reports automate the necessary data processing, which is difficult to obtain by working directly with directories, documents, and registers.

Project	Scoring system indicator
Project 1	3,2
Project 2	0,8

Figure 10: Report window

5. Results of automated investment projects assessment attractiveness

As part of the experiment, two projects were considered (table 3 and table 4 accordingly):

1) Project 1

Table 3

Excepted financial flows of project 1

Period	Initial investment, UAH	1 308 000
	Income, UAH	Expenses, UAH
1	907 200	174 286
2	907 200	174 286
3	907 200	174 286
4	1 026 981	174 286
5	1 026 981	182 619
6	1 026 981	182 619
7	1 026 981	182 619

According to the calculation results, the main criteria for investment attractiveness of this project are (assuming that the inflation rate is 17%):

$NPV = 1\,757\,654,91$;

$PI = 0,88$;

$B/Cr = 1,88$;

$IRR = 0,55$ (5%);

$PP = 2$ year 4 months;

The scoring indicator of investment attractiveness of the project is 3.2 out of 4 points. Conclusion: the project is an investment-attractive, medium-run, low-risk project and is recommended for investment.

2) Project 2

Table 4

Excepted financial flows of project 2

Period	Initial investment, UAH	6 400 485
	Income	Expenses
1	779 821	157 619
2	779 821	157 619
3	779 821	157 619
4	1 043 648	165 952
5	1 083 968	165 952
6	1 083 968	165 952
7	963 008	165 952

According to the calculation results of, the main criteria for investment attractiveness of this project are (assuming that the inflation rate is 17%):

$$NPV = -3\,537\,214,26;$$

$$PI = -0,50;$$

$$B/Cr = 0,50;$$

$$IRR = \emptyset \text{ (there is no credit rate } > 0, \text{ which meets } NPV=0);$$

$$PP = \emptyset \text{ (project does not pay off);}$$

The scoring indicator of investment attractiveness of the project is 0.8 out of 4 points. Conclusion: the project is unattractive to investors, unprofitable, high-risk project and is not recommended for investments.

6. Conclusions

Availability of projects with different financial key performance indicators according to different criteria makes it necessary to automate the calculation of these indicators to speed up the preliminary analysis of business ideas and start-ups to filter out projects with a high level of risk according to certain evaluation criteria. It gives opportunity for a more in-depth analysis of the most investment-attractive projects based on additional criteria.

Comparison of investment projects assessment software revealed preferable investment projects assessment attractiveness software to develop module that can evaluate different projects taking into account definite criteria. To integrate these criteria scoring system for selection of investment projects was implemented.

In our software module a configuration of the BAS ERP program was created and constants containing current inflation were used; a reference book with a list of projects; a document containing an investment plan for the selected project; registers for calculating investment attractiveness criteria; reports with criteria and a scoring parameter of investment attractiveness.

A software product has been developed that allows evaluating the investment attractiveness of projects based on a scoring model, taking into account discounted criteria for the investment attractiveness of projects.

7. References

- [1] D. Kilinich, V. Kobets, Support of investors' decision making in economic experiments using software tools, in: Proceedings of the 15th International Conference on ICT in Education, Research and Industrial Applications. Integration, Harmonization and Knowledge Transfer, ICTERI 2019, CEUR-WS, volume 2393, Kherson Ukraine, 2019, pp. 277–288. URL: http://ceur-ws.org/Vol-2393/paper_273.pdf.

- [2] O. Snihovyi, V. Kobets, O. Ivanov, Implementation of Robo-Advisor Services for Different Risk Attitude Investment Decisions Using Machine Learning Techniques, volume 1007 of Communications in Computer and Information Science, Springer-Verlag, 2019, pp. 298–321. doi: 10.1007/978-3-030-13929-2_15.
- [3] R. L. Keeney, H. Raiffa, Decisions with multiple objectives – preferences and value tradeoffs, Cambridge University Press, Cambridge & New York, 1993.
- [4] K. Levišauskait, Investment Analysis and Portfolio Management. Development and Approbation of Applied Courses, Vytautas Magnus University, Kaunas, 2010.
- [5] W. Y. Kuo, T. C. Lin, J. Zhao, Cognitive limitation and investment performance: Evidence from limit order clustering, Review of Financial Studies 28(3) (2015) 838-875. URL: <https://ideas.repec.org/a/oup/rfinst/v28y2015i3p838-875.html>.
- [6] Kobets, V., Poltoratskiy, M. Using an evolutionary algorithm to improve investment strategies for industries in an economic system, in: Proceedings of the 12th International Conference on ICT in Education, Research and Industrial Applications. Integration, Harmonization and Knowledge Transfer, ICTERI 2016, CEUR-WS, volume 1614, Kyiv Ukraine, 2016, pp. 485–501. URL: http://ceur-ws.org/Vol-1614/paper_102.pdf.
- [7] V. Kobets, V. Yatsenko, A. Mazur, M. Zubrii, Data analysis of private investment decision making using tools of Robo-advisers in long-run period, in: Proceedings of the 14th International Conference on ICT in Education, Research and Industrial Applications. Integration, Harmonization and Knowledge Transfer, ICTERI 2018, CEUR-WS, volume 2104, Kyiv Ukraine, 2018, pp. 144–159. URL: http://ceur-ws.org/Vol-2104/paper_162.pdf.
- [8] W. Hyll, M. Irrek, The Impact of Risk Attitudes on Financial Investments, IWH Discussion Papers 10 (2015). URL: <http://nbn-resolving.de/urn:nbn:de:gbv:3:2-48596>.
- [9] L.M. Tesliyk, A.V. Rumyantseva, Evaluating the effectiveness of an investment project, 2014. URL: https://elar.urfu.ru/bitstream/10995/27977/1/tesliyk_rymaynceva_2014.pdf.
- [10] M. Kozlov. Overview of software products for calculating of investment projects, 1999. URL: <https://www.cfin.ru/software/invest/kozlov.shtml>.
- [11] V. Khrapkina, V. Kobets, V. Stratonov, Market Dynamics of Ensuring Financial Security and Sustainable Development of Enterprise, Studies in Microeconomics 9 (2021). doi: 10.1177/23210222211024382.
- [12] A. Hayes, Benefit-Cost Ratio (BCR) Definition, 2020. URL: <https://www.investopedia.com/terms/b/bcr.asp>.
- [13] E. A. Ilyina Factors affecting investment attractiveness of enterprise, Vestnik NSUEM 1 (2013) 105-111. URL: https://nsuem.ru/science/publications/herald/archive/2013_1_105.pdf.
- [14] How to invest profitably and correctly in a startup, 2020. URL: <https://gerchik.ru/stati/kak-vygodno-i-pravilno-investirovat-v-startap>.
- [15] A.O. Demchenko, E.M. Rogova, Methodological approach to the selection of projects in the portfolio of an innovatively active enterprise 6(79) (2011) 153-159. URL: <http://ecsocman.hse.ru/data/2012/07/11/1263208443/31.pdf>.
- [16] L. O. Petrushina, Economic Analysis and assessment of the investment attractiveness of a commercial organization (Accounting), Ph.D. thesis, Plekhanov Russian University of Economics, Moscow, 2018. URL: <http://ords.rea.ru/wp-content/uploads/2018/10/Petrushina.pdf>.
- [17] N. Zaitseva, How to assess investment attractiveness, 2007. URL: https://www.cfin.ru/finanalysis/invest/investment_appeal.shtml.
- [18] E. Smirnov, Internal rate of return (IRR) of investment project, 2020. URL: <https://delen.ru/investicii/vnutrennjaja-norma-dohodnosti-irr-investicionnogo-proekta.html>.
- [19] V. Milkin, Documents in 1C language, 2014. URL: <https://helpme1c.ru/dokumenty-v-yazyke-1s-8-v-primerax>.