ECONOMIC EFFICENCY ANALYSIS OF THE INVESTMENT PROJECTS IN AGRICULTURE

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Abstract
The investments represent a factor of economic growth and development on long term, and for this reason, the economic efficiency analysis of the investment projects is an important element in funding the strategic options and decisions. In this article it is realized an overview of the theoretical framework regarding the investments, the relevance of cost-benefit analysis for investment projects, the economic efficiency of investments and ways to increase economic efficiency and it is realized a case study on the determination and analysis of economic efficiency of investment projects within the agriculture entities. The research leads to two major categories of tangible results, on the one hand it realized a qualitative theoretical synthesis on investments and their efficiency and on the other hand, it exemplifies the calculation, analysis and interpretation of the indicators used in the investment projects in entity by agriculture field.
Key wards: investment, efficiency, cost-benefit analysis, projects, agriculture.
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1. Introduction

The investments have a powerful drive effect in the entire national economy, in the relationship between economic agents, their effects being multiple, respective, social, economic, technical, scientifically and culturally.
The investments are the bases for economic growth, producing the revenue growth, resulting an increase of consumption and savings. The investments are an indubitable expense for an uncertain future, the investor is interested in how the

allocated money are spent, by the deadlines start implementation, operation and management of the allocated funds.

The investment decisions are the base of any development strategies. The economic growth is influenced by a large number of factors including productive capital, human capital, knowledge, social and political factors. All these development elements involve decisions which refer to currently spent economic resources in the hope of future benefits, distant and uncertain. Thus we consider that the economic efficiency of investment in agriculture bring benefits after a relatively long period of time, taking into account the specific of the investment.

The investment process is closely linked to development, expansion, the investments volume, and the economic efficiency, the contribution that investments have in the profitability of the organization. The investments are not only a means of increasing production and thus sales, but offers the possibility of increasing production efficiency through better use of machinery, equipment, better use of human potential.

In the investment process a particular interest refers to the propagated drive effect due to the successive action chain that forms between economic phenomena and processes.

The economic efficiency analysis answers the questions: how the resources are used?, Which is the evolution of economic efficiency in time and space?, Which is the maximum possible efficiency level under existing restrictions?.

The research hypotheses which we intend to check consists of:

I1- the analysis of the economic efficiency of the investment project based on several variants in which income and expenses are different and the value of investment is the same leads to an optimal investment decision making;

I2- the analysis of the economic efficiency of the investment project based on several variants in which income and expenses are different and the value of investment is the same creates difficulties in making an optimal investment decision;

I3- the analysis of the economic efficiency of the investment project must be based on a single investment options in which are estimated revenues, expenses and total investment.

2. Literature review

General considerations regarding the investments

In the literature the investments are defined in two ways: broad and narrow. In a broadly way, the investment means any expenditure made in order to gain profit. So in a common sense the investments refers to the use the money to buy shares, a company or buying a house, lands, and even deposition of a sum of money in a bank account for profit. All these economic transactions do not result in increased of a physical capital; they are in fact capital investments that are intended to make a profit or other advantage. In the narrow sense, the investments are expenses that

are reflected in the purchase of machinery, building construction and/or modernization (Cioarna, 2000).

The most general sense of the investment term is the expense; the French author P.Masse considering that the investment is a current indubitable expense and will take effect in the future, often uncertain.

A summary is presented suggestive, conclusive in one of the political economics textbooks, thus: The golden rule of capital endowment of the economy - or by investments is creating the capital- is ensuring accumulation for a stable economic balance, normal for the existing economic conditions, simultaneous with the highest level of consumption in society (Cioarna, Cilan, 2006).

Any investment includes the fallowing elements (Bogdan, 2004):

- a topic, person or entity that invests;
- an object that contains objects or resources in which is invested;
- a cost, representing the funds allocated to investment or effort made by the investor;
- the effect or economic value, resulting from the investment.

The investments can be seen, first as an expense respective an advanced resource, meaning that it is currently used and will result in further effects and second as a process forming the investment process.

There are two categories of investment expenses (Parvu, 2003):

- main expenses - expenses directly related to fixed assets, acquisition expenses, production expenses;
- derived expenses - which are not directly related to fixed assets (expense with field studies).

Also in the spending investment category are summarized some expenses who are not investment but by their role are serving the investment process such as:

- expenditures associated with investments: exploration, drilling expenses etc.;
- expenditures for preparation and forecasting investment: licenses, project development;
- forest of land, planting trees, vineyards and animal purchases.

The role and importance of investment in economic and social context are reflected in their functions, starting from the base one, which means to provide financial and material support of the development and economic and social progress and continuing with those derived, increasing production capacity, creating new jobs, improving the material and technical base, development of material science, education, culture, health and other areas of social activity.

The investment stages are as follows (Cioarna, Isac, 2005):

- the investment demand refers to the apparition of a need for whose satisfaction is necessary to create new assets or develop and broaden the existent investment. The investment demand is what triggers the investment process;
- the economic capacity investment refers to the existence of material, financial and currency resource who can be allocated in the investment process;

- the investment decision is taken according to the investment demand and economic capacity investment. The main characteristic of the investment decision is the singularity because the system that creates in order to fulfill the decision cannot be linked only by another investment decision, in all other terms of quantity and quality. The investment decision includes: formulation and problem analysis, documentation and information, establishing criteria, setting goals, determining the outcome and identify alternatives, choosing the optimal solutions and adopt the strategy of action. The investment decision is a long-term strategic decision.
- investment planning refers to the programs development, realization of the investment process and correlation of these programs with other programs of activity;
- the resource allocation refers to setting up effective resources investment and their distribution in time and on objectives;
- effective achievement of the investment objectives refers to the physical aspect of the investment process;
- commissioning of the investment objective;
- achieving the design parameters;
- operating in the designed system during the economic operation of the objective;
- decommissioning.

Relevance of cost-benefit analysis for the investment projects

The cost-benefit analysis has appear in the nineteenth century in the U.S. being seen by the economic-ecological literature as a method of economic assessment of the environmental effects (environmental, social) of the investment projects in construction, industry, transport, tourism or agriculture.

Cost-benefit analysis (CBA) is a tool used to estimate (in terms of benefits and costs) the socio-economic impact of the investment projects, being one of the most used methods in evaluating investment projects. The impact should be assessed against the objectives, the analysis is usually accomplished by taking into account all parties affected by the action, directly or indirectly.

The cost-benefit analysis proves its usefulness for choosing the optimal version (economic, environmental, social, technological) of investment projects. It should not be confused with income-cost analysis which allows choosing the optimal version of project from purely economic considerations. In both cases we are dealing with common indicators (Internal Rate of Return-IRR, Net Present Value-NPV, cost income ratio). The difference between the cost-benefit analysis (CBA) and income-cost analysis is that the CBA takes into account the non-monetary elements derived from environmental impact not only monetary items in a classical sense.

The objective of cost-benefit analysis is to identify and quantify all the action or project impacts in order to determine the related costs and benefits. All the impacts

must be evaluated in terms of financial, economic, social, environmental. The costs and benefits are evaluated by analyzing the difference between the scenario "with project" and scenario "without project" so-called "incremental approach". Then the results are cumulated in order to identify the net benefits and to determine whether the project is appropriate and should be implemented. The CBA is a decision tool used for assessing investment.

The cost-benefit analysis helps the decision maker to identify projects that will maximize the benefits and thus set priorities according to which projects will be implemented.

In the preparation of investment projects, the steps that must be taken in order to achieve the CBA are: identifying the investment and defining the objectives, options analysis, financial analysis, economic analysis, sensitivity analysis, risk analysis, presentation of results.

In the projects financed by the Cohesion Fund (CF) and the European Regional Development Fund (ERDF), is provided by Council Regulation (EC) No. 1083/2006 the realization of the CBA for the projects with a total value of over 50 million euro. In this context, the CBA is required to assess whether a project fits into the objectives of the European Union regional development is appropriate in terms of economic and financing needs to become financially feasible. More specifically, in the development and evaluation of the projects financed by CF and ERDF, using the CBA has the following objectives:

- to prove whether a project deserves to be financed. CBA is used to determine the extent to which the project contributes to economic and social cohesion policy and in particular to the objectives of the program under which funds are requested.
- to determine whether a project needs financing and to what extent.

Economic efficiency of the investments

The notion of efficiency refers to the measurement and comparability of the outcomes and efforts related to the used resource. The essential characteristic is the causal resource-effect relationship; this causality is expressed for each process or economic activity.

By the economic efficiency of the investments understand the relationship that is established between the quantity and structure of the investment effort, on the one hand as the effects generator and on the other hand the economic results obtained after the investment process development (Cioarna, Cilan, 2006).

The main relationship is: e = E/E' = economic effects/investment effort. In the efforts category are included: the investment value, the value of construction and assembly works, the number of equipment and personnel involved in the investment process.

In the effects category are included: total profit, the value of the realized production or the gain in the case of modernization and retooling.

The economic effects of the investment process can be divided into: brute effects-the production value and net effects-profits.

In order to increase economic efficiency it must be taken the following measurements:

- analysis the proposed alternatives based on a system of indicators of economic efficiency;
- improvement of the production structure while increasing competitiveness;
- commissioning the timeliness of economic objectives;
- recover in a short time the amounts invested and achievement as soon as possible of the proposed results.

We must distinguish between two forms of efficiency (Badea, 2003):

- the activity efficiency reflect the causality relationship between economic and extra economic resources used in a business and the economic and extra economic effects resulted from the activity;
- the economic efficiency of the activity refers to the economic aspects respective economic resource and economic effects. So we can talk about investment efficiency and investments economic efficiency.

The propulsive role of investment in economic growth process is influenced by their social and economic efficiency, which refers to all the results that are obtained in a certain period at each monetary unit invested. The results obtained from investments are varied, they are economic, social, ecological, political, and should be viewed and analyzed in their entirety to get an overview of their rationality. "In this regard, in the analysis of investments efficiency must take into account the existence of the drive effect given by the interdependence of economic and social phenomena, economic and social processes, by their future development. The drive effect can be simple, when the connection relations occur between two elements or group of elements and propagated when these relations are covering a set of economic phenomena and processes" (Parvu, 2003).

In this context, the investments are the main factor of economic growth and socio-economic development. Based on investments are ensured: creating new jobs, modernizing the existing technologies or replacement of this, growth and diversification of the offer.

Assessment and analysis of the economic efficiency of an investment project is realized with the indicators of economic efficiency. The role of those indicators is to measure as exact as possible the actual content of economic efficiency in its many forms in which it manifests. Every economic indicator who quantifies the investment economic efficiency can refer to a single aspect of economic efficiency or to more aspects.

The indicators used to assess the economic efficiency of an investment objective must be to measure as exact as possible the effort from the investment process and the effects obtained from that objective, allowing the investor to take the best decision under the specific conditions. Regarding the indicators that should be calculated in order to determine the efficiency and viability of an investment project, there are different points of views in the literature. Szentesi (2004) consider that the indicators that best reflect the efficiency of an investment project

are: payback period, net present value, the coefficient of economic efficiency, expenses profitability, revenues profitability, cash flow, return on economic investment, total revenue updated, total expenditure updated, the revenue – expenditure ratio, internal rate of return. In the opinion of Parvu (2003) the economic efficiency indicators that must be calculated and analyzed are: income - expenditure ratio, net present value, profitability index, internal rate of return, payback period of capital, repayment capacity of the loan. Our opinion is that the indicators formulated by Szentesi (2004) provides a clearer picture of the viability of the investment project and thus its efficiency, and for this reason in the case study realized will be calculated and analyzed these indicators. With all those, we have to admit that determination of a larger number of indicators can be confusing because the results of various indicators can indicate different things. An identified deficiency in the case of the indicators proposed by Parvu (2003) refers to that is not taking into account the coefficient of economic efficiency, indicator that in our opinion has a particular importance for the determination of efficiency.

Case study: determining the economic efficiency of the investment projects

The case study is performed within an entity in the agriculture, which produces and sells meat products. Taking into account the favorable evolution of the financial situation in the last three years, the entity has decided to develop an investment project resulted in the construction of a retail space and acquisition of modern equipment needed to obtain finished products. In order to achieve the investment project and related work, the organization needs 242000 lei of which 80000 lei came from own sources and 162000 lei from external sources, long term bank loan. The credit repayment is made monthly in six years at a fixed interest rate of 20% calculated on the outstanding amount.

To calculate the economic efficiency indicators, we estimate the revenues, expenditures and the total investment in the six years of bank loan repayment. We will consider three options:

Option 1: Total revenues=850000 lei, Total expenditures=480000 lei, Total Investment=242000 lei;

Option 2: Total revenues = 85000 lei, Total expenditures= 485000 lei, Total Investment= 242000 lei;

Option 3: Total revenues 860000 lei, Total expenditures=470000 lei, Total Investment= 242000 lei.

Payback term (T_i)

The payback period is the number of years that a company recovers its initial investment from the net cash flows. The payback period is the oldest method used in the projects evaluation. From a practical point of view, it is assumed that investments whose recovery is made in more than 3 or 4 years have a high degree of uncertainty. However, it is possible that some investments to reach climax after 8 or 10 years, especially when it comes to new products, advanced technology industries.

The payback period method is used by organizations that are running out of cash and want to give importance to the recovery rapid of the invested funds. So, the payback period method provides a good indication for estimating the degree of project liquidity.

$Ti=Ii/Phi$ (1)

Ii= investment in option i Phi= profit in option i

It result that Ti is equal:

- in option 1, T_i = 0,65 year
- in option 2, T_i = 0,66 year
- in option 3, T_i= 0,63 year

Net present value method (NPV)

The net present value method involves finding the present value of each cash flow, including in the analysis both inflows and outflows of cash. The update should be made with an update rate equal to the capital cost rate for the project. If the net present value of the project is positive, the project ispted: if two or more projects are mutually exclusive, the one with higher NPV will be accepted (Szentesi, Cureteanu, 2004).

$$NPV=\sum_{h=1}^{d+D} [V_h-(I_h+Ch_h)/(1+a)^h] \quad (2)$$

V_h - revenues; I_h - investment; Ch_h - expenses; a= update rate.

- for option 1

$NPV=[850000-(242000+480000)/(1+0.20)+[850000-(242000+480000)/(1+0.20)^2+[850000-(242000+4800000)/(1+0,20)^3 + [850000-(242000+480000)/(1+0.20)^4] + [850000-(242000+480000)/(1+0.20)^5] + [850000-(242000+480000)/(1+0.20)^6] =425.665.3$

- for option 2

$NPV =[850000-(242000+485000)/(1+0.20)+[850000-(242000+485000)/(1+0.20)^2+[850000-(242000+4850000)/(1+0,20)^3 + [850000-(242000+485000)/(1+0.20)^4] + [850000-(242000+485000)/(1+0.20)^5] + [850000-(242000+485000)/(1+0.20)^6] = 409.037.7$

- for option 3

$NPV =[860000-(242000+470000)/(1+0.20)+[860000-(242000+470000)/(1+0.20)^2+[860000-(242000+4700000)/(1+0,20)^3 + [860000-(242000+470000)/(1+0.20)^4] + [860000-(242000+470000)/(1+0.20)^5] + [860000-(242000+470000)/(1+0.20)^6] = 491.656$

Interpretation:

NPV > 0, the project is accepted

NPV < 0, the project is rejected

The economic efficiency coefficient (e_i)

This coefficient represents the annual profit that is obtained from a leu invested. It is calculated according to the formula (Szentesi, Cureteanu: 2004):

$e_i=P_{hi}/I_{ti}=1/T_i$ (3)

I_{ti} = total investment P_{hi} = annual profit= V_{hi} - C_{hi}

T_i = the investment payback period from the profit

- for option 1: e_i=1.53 lei profit/1 leu invested
- for option 2: e_i = 1.51 lei profit/1 leu invested
- for option 3: e_i = 1.61 lei profit/1 leu invested

Costs profitability (r_{chi})

It this given by the formula (Szentesi, Cureteanu: 2004):

$r_{chi} = (P_{hi}/C_{hi})/ \times 100$ (4)

C_{hi} = total expenses P_{hi} = net profit

- for option 1: r_{chi} = (370000/480000) x 100 = 77.08%
- for option 2: r_{chi} = (365000/485000) x 100 = 75. 26%
- for option 3 : r_{chi} = (390000/470000) x 100 = 82.98%

Revenues profitability (r_{vi})

It this given by the formula (Szentesi, Cureteanu, 2004):

$r_{vi} = (P_{hi}/V_{hi}) \times 100$ (5)

P_{hi} = net profit V_{hi} = total revenues

- for option 1: r_{vi} = (370000/850000) x 100 = 43.53%
- for option 2: r_{vi} = (365000/850000) x 100 = 42.94 %
- for option 3: r_{vi} = (390000/860000) x 100 = 45.35 %

Cash-flow (CF)

The cost of capital is 20%. The cash flow is calculated by the following equation (Szentesi, Cureteanu, 2004):

$CF_h = V_h - I_h - Ch_h$ (6)

- for option 1 : CF_h = 128 000
- for option 2 : CF_h = 123 000
- for option 3 : CF_h = 148 000

To calculate the cash flow in the six years, we need the revenues, expenses, total investment for each year from the six years analyzed. Thus, we have the following tables for the three options considered:

Table no. 1 Cash flow forecast for option 1

Year / Specification	2014	2015	2016	2017	2018	2019	Total
Total revenues	120000	130000	130000	136000	147000	147000	810000
Total expenses	280000	35000	35000	4000	45000	45000	480000
Total investment	242000	-	-	-	-	-	242000

Source: authors' view

Table no. 2 Cash flow forecast for option 2

Year / Specification	2014	2015	2016	2017	2018	2019	Total
Total revenues	120000	130000	130000	136000	147000	147000	850000
Total expenses	282000	36000	36000	4100	45000	45000	485000
Total investment	242000	-	-	-	-	-	242000

Source: authors' view

Table no. 3 Cash flow forecast for option 3

Year / Specification	2014	2015	2016	2017	2018	2019	Total
Total revenues	120000	125000	125000	150000	170000	170000	860000
Total expenses	280000	34000	34000	3800	42000	42000	470000
Total investment	242000	-	-	-	-	-	242000

Source: authors' view

Economic efficiency of the investment (R_i)

It is given by the formula (Szentesi, Cureteanu, 2004):

$$R_i = P_{ni} / I_{ti} = (P_{ti} - I_{ti}) / I_{ti} = (P_{ti} / I_{ti}) - 1 \quad (7)$$

P_{ti} = total profit I_{ti} = annual total investment

- for option 1: R_i =(370000/242000) –1 = 0.53 lei net profit/1 leu invested
- for option 2: R_i = (365000/242000) –1=0.51 lei net profit/1 leu invested
- for option 3: R_i =(375000/242000) –1= 0.62 lei net profit/1 leu invested

Updated total revenues (VTA)

In order to calculate the VTA, it is used the relation:

$$VTA = \sum_{h=1}^{d+D} [V_h / (1+a)^h] \quad (8)$$

- For option 1

VTA= [850000/(1+0.20)]+[850000/(1+0,20)^2]+[850000/(1+0.20)^3]+[850000/(1+0.20)^4] + [850000/(1+0.20)^5] + [850000/(1+0.20)^6] = 2826215

- For option 2

VTA = 2826215

It is found that VTA calculated in option 2 equals with VTA in option 1, because the total revenues are the same in both options.

- For option 3

VTA=[860000/(1+0.20)]+[860000/(1+0.20)^2]+[860000/(1+0.20)^3]+[860000/(1+0.20)^4] + [860000/(1+0.20)^5] + [860000/(1+0.20)^6] = 2859465

Updated total expenses (CTA)

In order to calculate the CTA, it is used the above relation: (Szentesi, Cureteanu, 2004):

$$CTA = \sum_{h=1}^{d+D} [(I_h + C_h) / (1+a)^h] \quad (9)$$

- For option 1

CTA=722000/1.15 + 722000/1,442 + 722000 /1.73+ 722000/2.07+ 722000/2.49 +722000/2.99 = 2400620

- For option 2

CTA=727000/1.15 + 727000/1.442 + 727000 /1.73+ 727000/2.07+727000/2.49 +727000/2.99 = 2417245

- For option 3

CTA=712000/1.15 + 712000/1.442 + 712000 /1.73+ 712000/2.07+712000/2.49 +712000/2.99 = 2367371

Revenues-expenses report ($R_{v/c}$)

In order to calculate the revenues-expenses report, it is used the relation (Szentesi, Cureteanu, 2004):

$$R_{v/c} = VTA/CTA \quad (10)$$

- For option 1: $R_{v/c}$ = 2826215/ 2400620 =1.18
- For option 2: $R_{v/c}$ = 2826215/2417245 = 1.17
- For option 3: $R_{v/c}$ = 2859465/2367371 = 1.21

For the investment to be profitable, this ratio must be greater than one. This condition is fulfilled by all three variants although the recorded values are quite close to the value 1.

The internal rate of return of the investment (IRR)

The internal rate of return method involves calculating a specific rate of return on a particular investment project, i.e. an updated rate which size leads to a totally updated cash flow equal to zero.

In other words, the internal rate of return is defined as the update rate that makes the present value of net cash inflows to be equal with the present value of costs (i.e. cash outflows), estimated for a particular project (Szentesi, Cureteanu, 2004).

RIR is calculated according to the following relation:

$$IRR = \sum_{h=1}^{d+D} [(V_h - I - C_h) / (1+a)^h] = 0 \quad (11)$$

$$IRR = \sum_{h=1}^{d+D} [F_h / (1+a)^h] = 0 \quad (12)$$

a = IRR = 0

It result that : $\sum_{h=1}^{d+D} [F_h / (1+IRR)^h] = 0$

$$IRR = a_{min} + (a_{max} - a_{min}) \times [NPV^+ / (NPV^+ + |NPV^-|] \quad (13)$$

A project is financially acceptable if the IRR is greater or equal to the replacement cost of capital (marginal profitability).
If the net present value is positive, the project itself should be accepted. If the net present value is negative, the project should be rejected. If projects are mutually exclusive, the one who has the highest net present value should be chosen.
In order to calculate the IRR for the variants in this project, we need the following table:

Table no.4 Calculation of the updated cash flow

	Cash flow			Cash flow			Cash flow		
	Option 1	updated		Option 2	updated		Option 3	updated	
		a=50%	a=55%		a=50%	a=55%		a=50%	a=55%
1	-160000	-105600	-102400	-162000	-106920	-103680	-160000	-105600	-102400
2	95000	41800	38950	94000	41360	38540	91000	40040	37310
3	95000	27550	24700	94000	27260	24440	91000	26390	23660
4	96000	18240	16320	95000	18050	16150	112000	21280	19040
5	102000	13260	11220	102000	13260	11220	112000	14560	12320
6	102000	8160	7140	102000	8160	7140	128000	10240	8960
NPV		**3410**	**- 4070**	**NPV**	**1170**	**-6190**	**NPV**	**6910**	**-1110**

Source: authors' view

- option 1 $NPV^{+} = 3410$ $NPV^{-} = -4070$

$a_{min} = 50\%$ $a_{max} = 55\%$

IRR = 50 + (55-50) x [3410/(3410+4070)]
IRR = 52.724%

- option 2 $NPV^{+} = 1170$ $NPV^{-} = -6190$

$a_{min} = 50\%$ $a_{max} = 55\%$

IRR = 50 + (55-50) x [1170/(1170+6190)]
IRR = 50.794%

- option 3 $NPV^{+} = 6910$ $NPV^{-} = -1110$

$a_{min} = 50\%$ $a_{max} = 55\%$

IRR = 50 + (55-50) x [6910/(6910+1110)]
IRR = 54.31%

3. Research methodology

The research methodology used in this article combines qualitative research (Part 1-3) with the quantitative (Part 4). In the first three parts, it is provided a theoretical overview of the current state of knowledge, identifying the general investments framework, the elements and stages of the investment process, the relevance of cost-benefit analysis of investment projects and the importance of determining economic efficiency, measures of increasing the economic efficiency, the role of the investments. As a main research technique is used the literature review process, documenting in the relevant literature, the study of existing relevant works.

In order to capture the interactions between the various elements and obtaining information on the subjects it is used the case study, analysis and interpretation of data (part 4). It aims to determine and analyze the economic efficiency of investment projects within the agriculture organizations.

4. Results and discussion

In order to determine the economic efficiency of the investment project there were considered three alternatives in which the income and expenses for the investment project are different and the amount of investment is the same, i.e. 242000 lei. Based on the revenues, expenditures and investment there were calculated a series of indicators in order to highlight which of the three options is most effective investment option. The indicator values for each option are shown in Table no. 5.

Table no. 5 Indicators of economic efficiency

Indicator	UM	Option 1	Option 2	Option 3
Payback term	Years	0.65	0.66	0.63
Net present value	lei	425665.3	409037.7	491656
Economic efficiency coefficient	lei	1.53	1.51	1.61
Costs profitability	%	77.08	75.26	82.98
Revenues profitability	%	43.53	42.94	45.35
Cash-flow	lei	128000	123000	148000
Economic efficiency of the investment	lei	0.53	0.51	0.62
Updated total revenues	lei	2826215	2826215	2859465
Updated total expenses	lei	2400620	2417265	2367371
Revenues-expenses report	lei	1.18	1.17	1.21
The internal rate of return of the investment	%	52.724	50.794	54.31

Source: authors' view

The table no. 5 shows clearly that the indicators calculated in the three variants have close values which means that all three variants of investment projects can be considered. However was chosen *option three* because the values of the calculated indicators give the highest efficiency for the project.

It was found that the research hypothesis I1 is true because considering the three options in order to determinate the economic efficiency, gives the opportunity to make an optimal decision.

Regarding the *investment payback period* is observed that it is very low in all three versions but in option three is the smallest value, i.e. 0.63 years. This indicator reflects the fact that the investment project has a low degree of uncertainty. The payback period is often used in practice because is easy to calculate, but it is not the best indicator of estimation the economic efficiency, having many deficiencies.

Net present value is one of the most important indicators used to determine the viability of a project. Calculated NPV has positive values in three variants but the highest value is in version three, which means that the project is viable. Net present value is a good indicator for assessing the effectiveness of an investment, but it is

not enough because it measures only the net effects, not efforts that yielded these effects.

Analyzing the *economic efficiency coefficient*, it result that the company will get 1.61 lei profit at 1 leu invested (in version three), which means that the investment is effective, the effects are superior to the efforts.

Any organization aims is to increase the profitability of both income and expenditure. The *revenues profitability* expresses the share of profits in total revenues. So that after the payment of all debts, the company remains with 45.35% profit from all the revenue, 54.65% representing debts (in version three). In terms of *costs profitability*, this expresses the share of profit in the total of expenditure incurred by the company. The costs profitability is almost double comparing with the revenue because the amount of costs is much lower than the revenues when the profit is the same.

The cash flow has the highest value in version three, i.e. 148000 lei. In order to see which is the evolution of the cash flow in the six years analyzed (the investment loan was contracted for six years) there were estimated revenues and expenses for this period. It appears that in the first two years the cumulated cash-flow have negative values which means that the company will recover its investment since the third year.

The economic efficiency of the investment compares the net final results achieved with the consumed resources (investment funds) and shows how many currencies (lei) by net profit are obtained per invested monetary unit after recovering the leu invested. In this project it found out that it is obtained 0.62 lei net profit after recovering a leu invested (version 3).

The updated efficiency of the revenues and expenditure is highlighted base on the report of them. *The revenues-expenses report* has values bigger than 1 in all the variants which means that the project is effective. Aiming the increasing of the economic efficiency of the project we chose the version three because it leads to maximizing the efficiency of investment.

The internal rate of return it is an important method for analyzing the economic efficiency of an investment project because it shows which is the profitability that a project will bring to the organizations etc. In all three versions, the internal rate of return is higher than the cost of capital which means that any of the three variants of the project may be accepted but aiming to achieve an internal rate of return as high as possible we chose version three.

Based on the above, we can say that the investment project is appropriate and even necessary because the organization needs an additional retail space, considering the ascending sales trend in the last two years prior to development of the investment project. The favorable evolution of the organization requires a change, diversification and an active market presence, which is why was implemented the investment project that will lead the organization to increase the competitiveness and efficiency what emerges from the indicators calculated.

5. Conclusions

The investments are a factor of growth and economic development, are a key element of progress. In the current context of economic development of Romania we consider that the investment projects are a key point in economic development. We believe that should be paid attention to the investment projects financed from European funds.

It is known that agriculture is an important factor of economic growth and therefore require more investment in this area.

This article presents in a clear manner how to analyze the economic efficiency of investment projects and the importance of choosing the optimal investment choices. The authors emphasize the importance of having multiple investment options in order to choose the one who leads to maximum results.

The research conducted is part of a forthcoming research that will realize the authors and aimed at analyzing the costs incurred investment projects, forecast revenue and results following the implementation of investment projects, investment impact on the national economy.

Another research direction concerns the realization of an econometric model to analyze the relationship between the costs of an investment project and economic efficiency of the investment.

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