

THE RETURN RATES ANALYSIS IN THE AGRICULTURE ORGANIZATIONS

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Abstract

The major objective of each organization is carrying out a profitable activity and for this reason the profitability analysis and the factors that can influence it are important elements in funding the strategic options, investment policy. Based on previous studies regarding the entities profitability, in this article is developed a synthetic theoretical framework about the role of the accounting information in profitability determination, the general framework of the profitability, the rate of return analysis and last but not least is presented a case study about the rates of return analysis at an agriculture entity. The developed research leads to two major categories of tangible results; on the one hand it is realised a qualitative theoretical synthesis regarding the way of analysing the profitability using the rates of return and the breakeven, and on the other hand, it is illustrated the calculation of the rates of return at an agriculture entity being highlight the beneficial financial impact of the European funds on the increasing of the organisation profitability.

Key words: *information, result, analysis, european project, agriculture, rate of return.*

JEL Code: *G02, G23, G32*

1. Introduction

The information about the performance of an organization and especially about their profitability are useful for assessing the economic resources that the organization will control in the future and for anticipating the ability to generate cash flows with the existing resources.

The development of a profitable activity is an essential component of every organization, being obtained with certain effort that should be offset with the effects obtained, providing a surplus of results obtained over the expenses involved.

The profitability can be seen as an expression of the economic efficiency, including all financial aspects of the organization, so that is a benchmark for decision making.

The rate of return express the way in which the capital as a whole generates profit. In the profit and in the rate of return are reflected the organization results for all stages of the economic circuit. Compared to the costs per product, which reflects the results from the production stage, the rate of return also summarize the ones for the distribution stage.

The profitability is a key component of economic performance, being the final goal of the economic activity and the main condition of existence and maintenance on the market in a competitive economy.

The research methodology used takes into account both qualitative and quantitative research. In the first four parts there is realised a theoretical overview of the current state of knowledge, identifying the usefulness of accounting information in order to determinate the profitability, the general framework of the profitability and the rates of return. As a main research technique is used the literature review process, the documentation in relevant literature, the identification of the current state of knowledge and of the existing needs. In order to capture the interactions between the various elements and obtaining the information on the studied subject it was used the case study, data analysis (part 5). The aim is to determine and analyze the rates of return to an organization with agriculture profile. The research begun in this article will be developed to all companies from Hunedoara County who received European funds by measure 121, the purpose being to determine the evolution of organisation and their profitability as a result of the European funds received.

The general hypothesis of the research that we intend to prove is that the European funds can contribute significantly to the development of the organizations and implicitly to the profitability increase.

We appreciate that it is important to mention that this research is directly connected to the *current concerns of the authors* for several reasons: in the next period we intended to publish a book that includes elements of the profitability analysis, the realisation of the documentation being already initiated; we intended to expand the research initiated by this article and it will be part of the thesis.

2. The role of accounting information in the profitability determination

In the current context of the market economy in which the business activity is experiencing a rapid and complex development, it requires the proper development of the economic and financial information. This kind of information characterize the patrimonial situation of the company, the results of the financial and economic activity, the way of using the human and material resources [11].

The rapid development of modern society requires the continuous improvement of the economic and financial information, it must meet the requirements of the management for decision making and the information needs of the partner's organization.

The economic information specific to the economic activities can be defined as a communication, story or message that contains new elements of knowledge of some states, situations, conditions for expression certain phenomena or economic processes [8].

The economic information system refers to an organized grouping of complex information, which are obtained by processing the various data that are necessary for the organization, management and development of the economic activity. The importance of such a system consists in the fact that it assures the knowledge of the condition and functioning of the organization providing information about the use of the resources, about the existence of the weaknesses.

The economic information is an essential element for the progress, so the development of market economy and the progress increasing must develop appropriate the economic information, so that it can provide:

- the necessary elements for the decisions making;
- the patrimonial situation of the organization;
- the results of financial and economic activity

The information sources of financial analysis can be summarized as follows [9]:

- financial information: balance sheet, profit and loss account, cash flow, notes, half-yearly and quarterly reports, information on competition, the financial analysis forecasts etc;
- the economic information: the price evolution, the industry evolution, the general economic situation, the economic perspectives, exchange rates evolution
- additional information: credit risk evaluation, mergers and acquisitions, etc

The accounting information provided by synthetic and analytical accounts are the base of the economic and financial analysis in the development of a diagnosis based on the economic and financial reality. In order to make sure that the information provided by the accounting accounts is capitalized to its true value, it is necessary to establish a link between the information generated by the accounts and the financial and economic analysis [2].

In order to achieve a superior profitability of the business, an organization needs to maximize the profits and to minimize the costs.

3. General consideration on the profitability

The objective of any organization is to maximize the shareholders' wealth and the achievement of this is possible through the development of a profitable activity, the net profit obtained being able to serve for the shareholders remuneration through dividends or for the term remuneration by increasing the company's value due to its allocation for self-financing.

In terms of patrimony, the profitability can be defined as the measurement of the two components at the year end, on the one hand the volume of production costs incurred for carrying out the basic activities and for others activities, works and services, and on the other hand, the volume of the income received [3].

The profitability can be defined as the ability of an enterprise to make profit through the use of the inputs and capital, regardless of their origin.

The profitability can be seen as a synthetic form of expression the efficiency of economic and financial activities of the organization, the means of production and labor used, for all stages of the economic circuit: supply, production and sale. This is a benchmark for decision making and organizational behavior orientation.

The economic efficiency is an economic category broader than the profitability. The economic efficiency is the most general category that characterizes the results who issue from different expected versions for the using (productive consumption, individual consumption, sale) or the saving of resources (human, material and financial) entered or unreacted in the economic cycle [5].

An organization is considered to be profitable when it has the ability to make profit, which is why the profit analysis is a fundamental element in the profitability analysis.

In order to express the profitability, there are used two categories of indicators: the profit (absolute amount of profitability) and the rates of return (the level to which the capital or the using of the enterprise resource generates profit). The study of the profit evolution is only a preliminary stage of the profitability analysis, for relevance judgment is required to report to other indicators, the resulted rates providing complex economic and financial information. The usefulness of the rate method consists in comparing in an efficient manner three aspects: rules, time, space.

4. The analysis of the return rates

The rate of return as an indicator of efficiency, can take different forms, as is considered the gross profit or net profit, or it changes the reporting base who express the effort or the expense of the production process. The different expression of the rates of return have a various informational value and reflect the many sides of the economic and financial activity of the organization. The indicators build on according to the capital helded express the investors' interests, while the indicators build on consumed resources highlights the managers interests.

The main rate of return used for financial analysis are: [4]

- commercial rate of return;
- economic rate of return;
- financial rate of return ;
- consumed resource rate of return.

Commercial rate of return (C_{RR})

The quality management of a businesses is highlighted by assessing its products on the market, situation highlighted by the turnover. The report between the obtained result and the turnover represent the commercial rate of return.

$$C_{RR} = \frac{\text{Result}}{\text{Turnover}} * 100 \quad (1)$$

In the literature there are several ways of calculating this ratio, the most used being:

$$\text{➤ } C_{RR} = \frac{Pr}{T} * 100 \quad (2)$$

$$\text{➤ } C_{nr} = \frac{Pn}{T} * 100 \quad (3)$$

$$\text{➤ } C_{gm} = \frac{Po}{T} * 100 \quad (4)$$

The factorial analysis of the commercial rate of return can be achieved based on the relation below [10]:

$$Rc = \frac{\sum q_v p - \sum q_v c}{\sum q_v p} * 100 = \left(1 - \frac{\sum q_v c}{\sum q_v p} \right) * 100 \quad (5)$$

C_{RR} - commercial rate of return

C_{nr} - net commercial rate of return

C_{gm} - gross margine rate of sales

T- turnover

Pr- profit afferent to the net tuover

Pn- net profit

Po- operrationa profit

Economic rate of return (E_{RR})

The economic rate of return reflects the correlation between an economic results and the economic resources (capital) nedeed to obtain it. The economic rate of return is independent of the financial structure (leverage), the fiscal policy of income tax, and the exceptional items.

The economic rate of return can be calculated by the following formula [10].:

$$\text{➤ } E_{RR} = \frac{\text{Operation result}}{\text{Total assets}} * 100 \quad (6)$$

$$\text{➤ } E_{RR} = \frac{\text{Gross operating surplus}}{\text{Total assets}} * 100 \quad (7)$$

$$\text{➤ } E_{RR} = \frac{\text{Gross profit}}{\text{Total assets}} * 100 \quad (8)$$

The factorial analysis of the economic rate of return can be achieved based on the relation below:

$$\text{➤ } E_{RR} = \frac{\text{Turnover}}{\text{Total assets}} * \frac{\text{Operation result}}{\text{Turnover}} * 100 \quad (9)$$

According to this model the system factors who influence the commercial rate of return is as follows:

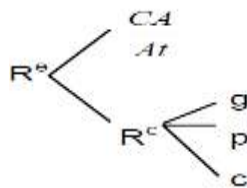


Figure no. 1: The factors that influence the economic rate of return
(Source: Vâlceanu G., Robu V., Georgescu N., 2004:315)

The changing of the economic rate of return is explained through two factors: the rotation speed of the total assets (T / TA) and the commercial rate or the rate of gross margin at 1 leu sales (Crr), whose analysis can be deepened through the three indirect factors (the structure of the production sold, the average selling prices per unit and unit costs).

The analysis of the economic rate of return reveals a number of issues regarding the management of the organization [3].:

- the accordance between the achieved rate of return and the targets in terms of assets;
- the correlation between the investments and the market capacity;
- the position of the achieved rate of return compared to the sector average and other businesses in the same sector;
- the dynamics of this compared with the sector and the key competitors.

The economic rate of return, is an important indicator in assessing the organization's performance, in the evaluation of the capitalization of the invested capital, must be at least at the level of the invested capital. This indicator is a reference in assessing investment destination, it compares with the results generated by the various investment opportunities.

Financial rate of return (F_{RR})

The financial rate of return allows the assessment of the capital investments efficiency and the opportunity to maintain them, it calculates as a report between the net result of the financial year and the equity.

$$F_{RR} = \frac{\text{Net profit}}{\text{Equity}} \cdot 100 \quad (10)$$

The analysis of financial rate of return allows breakdown determinants influence and identifying the significant aspects for the enterprise performance, being used several models of factorial analysis, based on the established objectives [4].:

$$\text{Model 1: } F_R = \frac{R_t}{At} \cdot \frac{At}{E} \cdot \frac{P_n}{R_t} \cdot 100 \quad (11)$$

Using this model of analysis, must be highlight the following aspects:

- accelerating the rotation of the total asset is an essential condition for the increasing of the financial rate of return of the equity;
- if the equity multiplier is higher, the financial return is increasing. In the economic practice, there is a debt limit accepted by the banks. Some banks consider the limit of indebtedness is 70% of total company sources;
- increasing the total revenues net profitability is the main way to increase the net profit and reflects mainly the operating efficiency of the company.

$$\text{Model 2: } F_R = \frac{R_t}{E} \cdot \frac{P_g}{R_t} \cdot \frac{P_n}{P_g} \cdot 100 \quad (12)$$

This analysis model emphasizes the equity efficiency, gross profitability of the total incomes and net profit share in gross profit (reflects the evolution of the tax profit, deductible items in terms of fiscality and fiscal deductions).

R_t – total revenues; At – total assets;

E – equity; P_n – net profit; P_g – gross profit.

This rate is an important indicator in assessing the company's position on the market. A remuneration in increasing the invested capital provides:

- access to financial resources due to the current owners trust to reinvest in the company and to the potential investors - holders of financial resources available for investments;
- developing ability.

Consumed resource rate of return (R_{rc})

Highlighting resource consumption is achieved in the expense accounts. The effectiveness of these consumptions can be appreciated in relation to the obtained results, based on the consumed resource rate of return, known also as the costs rate of return. This reflects the ratio between the result associated to the turnover and the total costs associated to the sales:

$$R_{rc} = \frac{Pr}{E} \cdot 100$$

Pr- profit associated to the turnover

E- expenses associated to the turnover

The factorial analysis of the consumed resource rate of return can be achieved based on the formula [10]:

$$R^{rc} = \frac{Pr}{\sum q_v c} 100 = \frac{\sum q_v p - \sum q_v c}{\sum q_v c} 100 \quad (13)$$

The factors that influence the modification of the consumed resource rate of return are:

- the structure of the turnover on the products;
- the complete unit costs;
- the sales prices.

On this rate of return, the costs have a double action, influencing differently the size of the numerator and denominator. In the literature there are opinions who consider that the optimum consumed resource rate of return is between 9% - 15%.

5. The profitability analysis base on the breakeven

The breakeven called also critic point or equilibrium point refers to that activity in which the revenue from the sale of goods, products, services are equals to the costs (fixed and variable), the profit beeing zero.

In relation to the volume of activity, the expences are grouped into fixed and variable. The variable costs are constant as size per product unit (their amount increases proportional with the volume of activity) and the fixed costs are variable per unit of product (their total sum is constant which mean that they reduced when the volume of activity is increasing by intensifying the use of production capacity) . The link between the operating costs and the volume of activity who must be achieved, so that the sales revenue to cover the expenses, is highlighted by the breakeven [6].

The method of calculation and analysis of the breakeven is different depending on how the analysis is carried out: per product or on the whole enterprise. A graphical representation of the breakeven in the case of an uniform activity (a single product) is shown in figure no. 2.

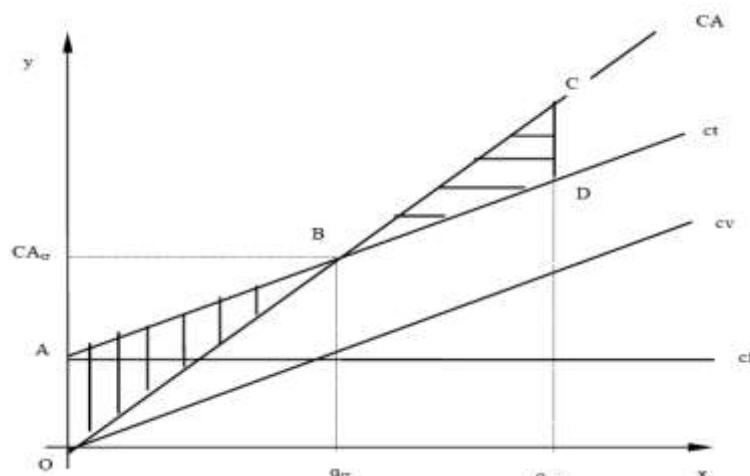


Figure no. 2: The breakeven in the case of an uniforme activity
(Source: Vâlceanu G., Robu V., Georgescu N., 2004:326)

OX- represent the physical volume of production

OY-value indicators (turnover, expenses, etc.)

ct-total expenditure on the product

cv variable costs on the product

cf- fixed costs on the product

ΔOAB- losses area

Δ BCD-profit area

The maxim profit ($P_{\max}$) who can be obtained under the circumstances is the side CD from the triangle BCD, and can be determined as follows:

$$P_{\max} = q_{\max}(p - cv) - cf = q_{\max}mbv - cf \quad (14)$$

The measuring indicators of the breakeven in the case of a single product are [1]:

$$\text{➤ Critical physical volume of the production; } q_{cr} = cf / p - cv; \quad (15)$$

$$\text{➤ Critical turnover; } CA_{cr} = q_{cr}p \text{ (refers to sales volume over which the profit is zero);} \quad (16)$$

$$\text{➤ Critic grade of the production capacity used; } G_{cr} = \frac{q_{cr}}{q_{\max}} 100; \quad (17)$$

$$\text{➤ Critical period: } p_{cr} = \frac{CA_{cr}}{CA/T} \quad (18)$$

cf-product fixed expenses

cv- variable costs per product

p-unit selling price

$q_{\max}$ - maximum production capacity in physical expression

CA/T- average sales per unit of time (day, month, year).

The measuring indicators of the breakeven in the case in which the organization produces and sells a wide range of products are [9]:

$$\text{➤ Critical turnover; } CA_{cr} = \frac{cf}{1 - cv} \quad (19)$$

$$\text{➤ Critical grade of the production capacity used; } G_{cr} = \frac{CA_{cr}}{Q_{\max}} 100 \quad (20)$$

Cf- fixed costs of the enterprise

cv - medium variable cost sat 1 leu turnover

$Q_{\max}$ –maximum production capacity in value expression

The main advantages of applying the profitability method based on the critical point, can be summarized as follows:

- Determinates the production size for which the activity becomes profitable;
- Indicates the volume of production who must be achieved in order to realize a certain profit;
- Allows determining the production capacity utilization corresponding to the critical point;
- Indicates the time in which the organization may recover the expenses incurred;
- Highlights the correlation between the production and cost dynamics;
- Provides the possibility to determine the maximum profit who can be obtained under certain given conditions.

6. Case study on the rates of return analysis

The case study is realised at an economic entity who is operating in the agriculture field and the main activity is "Raising of dairy cattle". The organization started its activity based on equity, then it extended the activity due to the implementation of a European project financed by FEADR (European Fond for Agriculture and Rural Development), measure 121 " Modernisation of agricultural holdings" , in the period 2008-2010, the total value of the investment was 448 940 lei. Through this project, the company has expanded and modernize the material elements and bought a total of 30 milk cows; later this investment had a favorable impact on the evolution of the company. Currently the finance business is mainly from own sources, the organization consolidated its position on the target market. In the financial year 2014-2020, the company plans to move to other European funds, the objective being to open a milk processing plant, thus providing to the consumers finished products (yogurt, cheese, other dairy products). We appreciate it is important to mention that the accounting data used to determine the profitability are hypothetical.

Tabel no. 1: Commercial rate of return on gross margin rate

No.	Indicator	UM	Period	
			2011	2012
1	Gross profit	RON	46802	69950
2	Turnover (T)	RON	715269	757182
3	Gross margin rate (G_{mr})	%	6.54	9.24
4	Growth index of G_{mr}	%	-	141.28

The commercial profitability measure the efficiency of the activity in a financial year through the capitalization of the bases activity.

The gross margin rate expresses the percentage of gross profit in the turnover. There is a tendency to increase of this rate from 6.54% in 2011 to 9.24% in 2012, an increase of 41.28%. This occurs because the increases of the turnover is lower than the increase of the gross profit (5.86% < 49.46%).

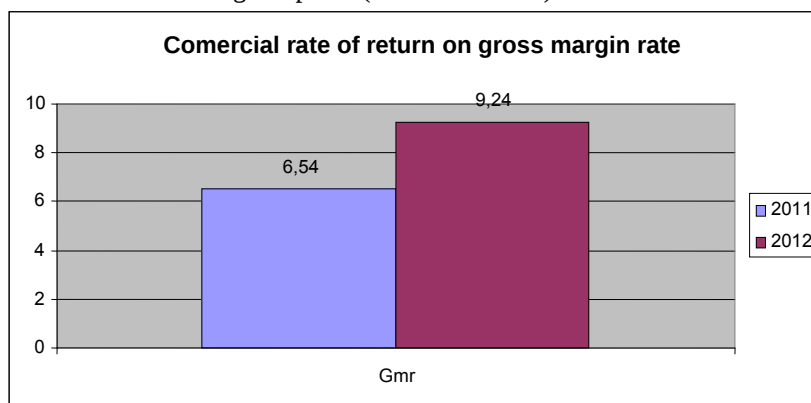


Chart no. 1: Comercial rate of return on gross margin rate

Tabel no. 2: Net comercial rate of retrun

No.	Indicator	UM	Period	
			2011	2012
1	Net profit	RON	34015	58577
2	Turnover	RON	715269	757182
3	Net comercial rate of retrun (C_{rr})	%	4.76	7.74
4	Growth index of C_{rr}	%	-	162.61

The net commercial rate of return expresses the percentage of net profit in the turnover, the rate increased from 4.76% to 7.74% which means a increasing of 62.61%. This occurs because the value of the net profit is higher in 2012 (because it was reduced the tax profit) increasing with 72.21% and the turnover increase only with 5.86%.

Analyzing the commercial profitability through the two rates is found that the net rate provides a much clearer image of the commercial profitability, and also leading to a more accelerate growth of the rate- 62.61% due to the diminishing of the profit tax.

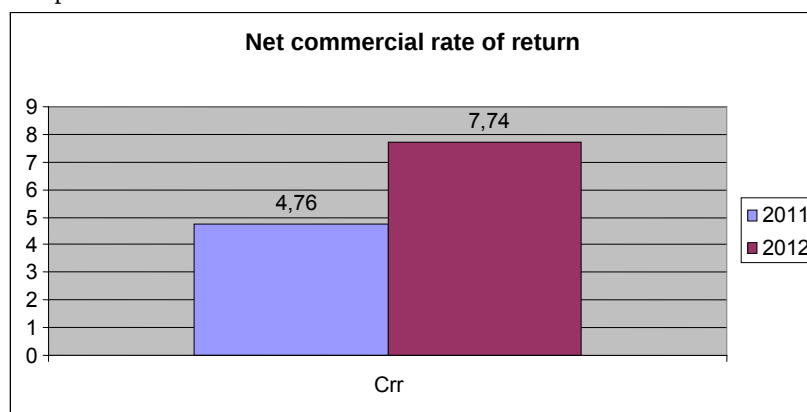


Chart no.2: Net comercial rate of retrun

Tabel no. 3: Economic rate of return

No.	Indicator	UM	Period	
			2011	2012
1	Gross profit	RON	46802	69950
2	Total assets	RON	256206	336788
3	Economic rate of return (E_{rr})	%	18.27	20.77
4	Growth index of E_{rr}	%	-	113.68

This ratio expresses the capitalization grade of the gross profit in the total assets, it increase from 18.27% in 2011 to 20.77% in 2012 which was due to faster growth of the gross profit (49.46%) compared to the total assets (31.45%).

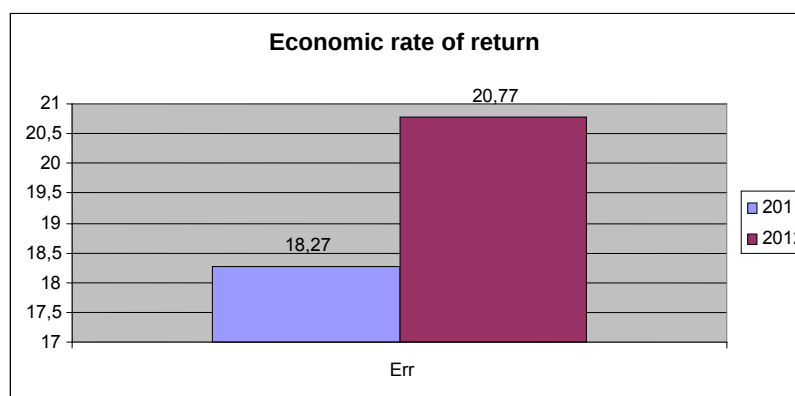


Chart no.3: Economic rate of return

Tabel no. 4: Financial rate of return

No.	Indicator	UM	Period	
			2011	2012
1	Net profit	RON	34015	58577
2	Equity	RON	71700	130276
3	Financial rate of return (F_{rr})	%	47.44	44.96
4	Growth index of F_{rr}	%	-	94.77

The financial rate of return expresses the capitalization grade of the net profit in the equity. There is a decrease of the rate from 47.44% to 44.96%, so a reduction of 5.23% of the financial profitability. This change occurred because net profit grows only with 72.21% while the own sources are increasing with 81.7%.

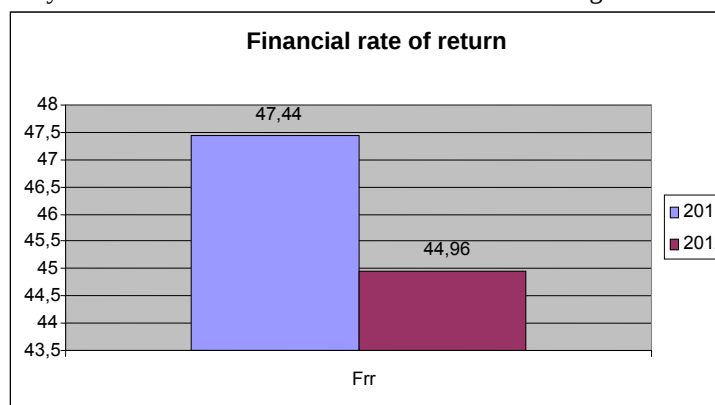


Chart no.4: Financial rate of return

Tabel no. 5: Consumed resource rate of return

Nr. crt	Indicatori	UM	Perioada	
			2011	2012
1	Gross profit	RON	46802	69950
2	Total expenses	RON	667018	704755
3	Consumed resource rate of return (R_{rc})	%	7.02	9.93
4	Growth index of R_{rc}	%	-	141.45

The consumed resource rate of return shows the gross profit per unit of total expenditures. There is a higher significant increase in the value of the gross profit compared to the total expenditure (49.46% > 5.66%), which leads to the increasing of the consumed resource rate of return with 41.45%, from 7.02% in 2011 to 9.93% in 2012.

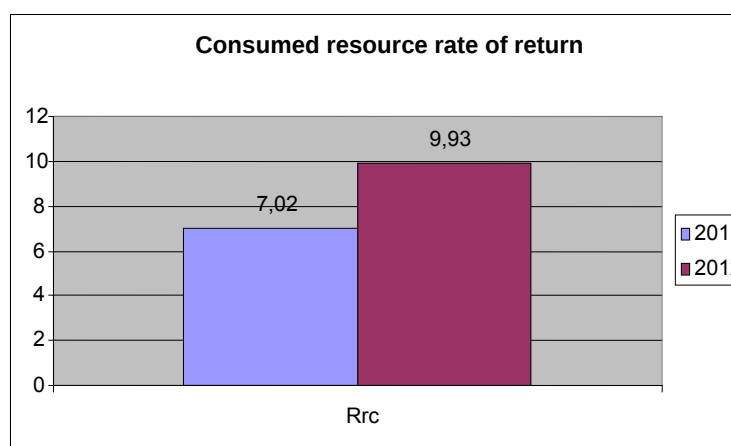


Chart no.5: Consumed resource rate of return

7. Conclusions

In the current context of economic development, we consider as relevant and appropriate realising an overview regarding the importance of determining the organizations profitability. Regardless of the industry in which the organization operates, the determination of the profitability is an important and useful piece for future management decisions.

The rapid evolution of the society requires the continuous improvement of the economic and financial information, it must meet both management requirements for decision making and the information needs of the organization partner. In this context, it is important for the management to know the profitability situation of the organization and the causes who determinate its modification in order to act accordingly, the development of a profitable activity being the responsibility of the organization management.

For having an overview of the rates of return evolution we will centralize their values in the graphical representation below.

The commercial rate of return rate determined based on gross margin and net margin increases in the analised years, which is due to the faster growth of the gross and net profit compared to the turnover, which underlines the efficiency of the organization activity.

Regarding the economic profitability, it has an increase of 2.5 % in 2012 compared to 2011 which highlights the increasing of the capitalization grade of the gross profit in the total assets.

If we refer to the financial rate of return, it has a slight decrease of 2.48% because the net profit growth is inferior to the equity, however the organization has a medium rate of return.

The consumed resource rate of return is increasing with 2.91% in 2012 compared to 2011, which underline a rational use of the gross profit per unit cost. The optimal level of this ratio is between 9% -15%, in this case the rate being situated close to the minimum acceptable value.

From analysis the organization rates of return for two years, 2011 and 2012, there was an increase of the majority of rates, which shows that in general the organization activity can be considered as profitable.

The established research hypothesis proved to be true so that the European project implemented by the organization had a benefic impact, the rates of return increased in a quite significant way.

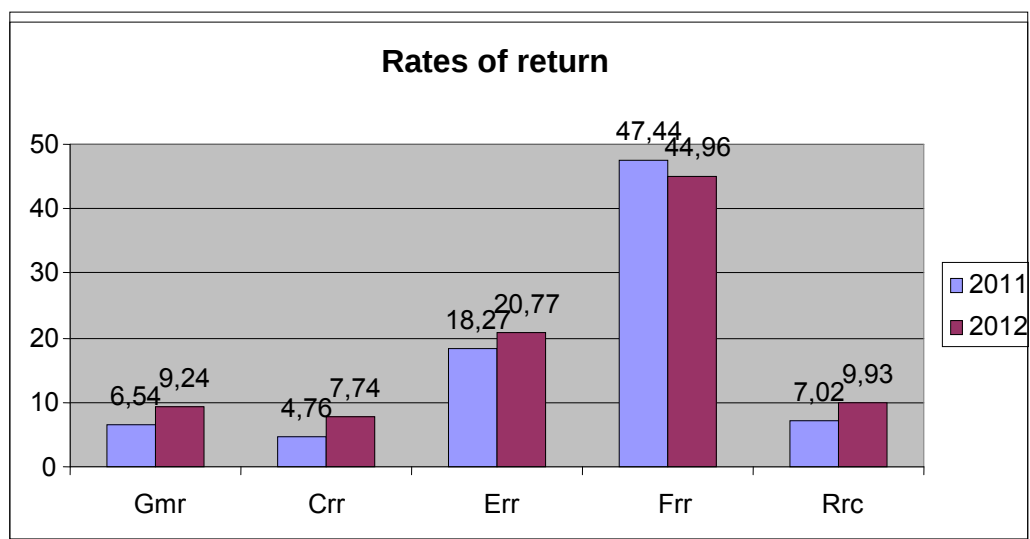


Chart no.6: Rates of return

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