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Analysis of Companies' Economic Performance
Using the Profitability Rates

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Abstract:

Studying the economic profitability provides information concerning the efficiency of the patrimony management and the corresponding remuneration of the invested capital. Therefore, the analysis of the economic profitability rates is an instrument of appreciating the economic performance of companies, also of their competitiveness, and it is useful in substantiating the decisions of investors, managers, creditors and of the other user categories. This paper presents and illustrates within a suitable case study, the significance of the economic profitability rate in accordance with its expression under the material aspect or of the patrimony financing sources, also depending on the activity cycle whose efficiency is analysed. Additional information related to the companies' increasing capacities of economic performance can be obtained by studying the factors that influence the level and evolution of the economic profitability rate using some economic-financial analysis models.

Keywords: *profitability, economic profitability rate, influencing factors, financial analysis, analysis model.*

1. Introduction

The productive activities performed by companies at the microeconomic level, are normally profit-oriented, an essential element which in fact, can provide their efficiency and economic viability. The profitability status of one company can be analysed from various perspectives depending by the purpose and who are the information beneficiaries.

The study of profitability in the absolute way using the profit indicator return on turnover highlights the whole earning obtained by the entrepreneur through the trading of the manufactured commodities, resulted by comparing the realised turnover with the total production expenses.

If we express the profitability with relative figures using the profitability rates, we will be able to compare the economic efficiency levels of many

enterprises, irrespective of the sectors they belong to or of any considered period, and so the firm's position as compared to its competitors is better revealed.

In the case in which it is necessary to study the economic effects of the financial policy of the firm using the profitability rates, we analyze the capital structure (own capital/debts) which, due to the generated levier effect, can contribute substantially to increase the activity's profitability.

The profitability analysis based on the breakeven informs of the activity level by which it obtains a total balancing of the expenses by the incomes, level which has to be exceeded in order to ensure profit. At the certain degree of using the available production capacity and for an extent of the turnover which depends on the market, the profitability is influenced by the expenses structure. Therefore, if one acts to diminish the fixed costs, one can reduce the critical point of production management, and increase at the same time the economic safety margin and net income of the firm (Hefert, 2006: 211).

Profitability rates are an usual tool for financial analysis and profitability management because they ensure a complex description of all elements which contribute to performance obtaining (Financial Modelling Guide, 2008).

2. The Economic Profitability Rates

Especially important within the global profitability analysis is the economic profitability rate, an indicator which expresses the efficiency of using the entire patrimony of a firm. Its level reflects the firm's management capacity for an efficient administration of the available economic goods, or the gains obtained by the invested capital.

There are several ways to express the profitability rate *in correlation with the accounting function of the patrimonial elements* taken into consideration (assets/liabilities).

♦ Considering the material aspect of the firm's patrimony, the economic profitability rate (*Rec*) indicates the profit resulted by administration of its entire active. In specific literature it is known like Return on assets rate (*ROA*) and the formula is: (Hefert, 2006: 147)

$$\text{Re}\,c = \frac{\Pr ofit}{Total\ assets} \tag{1}$$

♦ The patrimony considered through the financial sources aspect implies determining the economic profitability, relating the gain with the extend of the invested capital. In this case, the economic profitability rate signifies the profit resulted by the capital that was invested and expresses the firm's efficiency obtained by the use of its own or borrowed money (InvestorsWords, 2008).

$$\text{Re}\,c = \frac{\Pr ofit}{Invested\ capital} \tag{2}$$

$$Invested\ capital = Own\ capital + Debts\ on\ long\ term \qquad (3)$$

The invested capital represents a source to finance the engaged capital which has the form of the total assets without the current debts (fixed assets and working capital). In fact, the engaged capital represents the capital investment the firm needs in order to realize its activity objective within a time period and according to it, it is necessary to adopt the most suitable alternative of financial policy. That means that first and foremost, firm's financial strategy has to consider its own capital to finance its activity and only to complete it with the borrowed capital (on a long term) up to the level demanded by the extent of the used assets. Taking into consideration the amount of the engaged capital, the economic profitability rate expresses the net profit obtained by the capital invested by the shareholders and creditors on the long term and it takes the shape of the engaged capital profitability rate (Armonizarea contabilității cu UE, 2003: 219).

$$\mathrm{Re}\,c = \frac{\mathrm{Pr}\,ofit\ before\ payment\ of\ \mathrm{int}\,erest\ and\ profit\ tax}{Engaged\ capital} \qquad (4)$$

$$Engaged\ capital = Fixed\ assets + Working\ capital \qquad (5)$$

$$Engaged\ capital = Total\ assets - Current\ debts \qquad (6)$$

$$Engaged\ capital = Invested\ capital \qquad (7)$$

The level of the economic profitability rate is very important for investors. It indicates how many money units can the business produce for one money unit invested. A higher rate indicates an increased level of efficiency, as through a smaller capital investment, the same profit level can be obtained, which is proof of a quality management.

Information concerning the managerial performance provided by the economic profitability rate makes it a real instrument of appreciating the financial position of companies. If the analysis of the financial situation of an enterprise indicates a good level of the economic profitability rate, its creditors have guarantee of the firm's solvency, of the debts recovering, and of some profit.

Also, a high economic profitability indicates to shareholders the capitalization degree resulted from patrimony administration. Comparing the economic profitability rates of the firms that are active in the same economic branch, we can find out information about their capacity to deal with the competition and on their performance and competitiveness level.

The economic profitability rate could also be expressed in other manners, *depending on the activity cycle* whose efficiency we analyze. In this situation, the profit is calculated on sorts of activities: operation activity, investment activity, current activity.

♦ At the operation level it calculates the gross result of the operation cycle which is the earning obtained before tax, interest, depreciations and amortization deductions (*EBITDA*). It is determined as a gross excess of operation activity (Stancu, 2002:.849):

$$EBE = CA - Cm\exp \tag{8}$$

where: *CA* represent the turnover (incomes from commodity sales);
   Cmexp   -   operation monetary expenses (external materials consumptions, labour force expenses, taxes, instalments etc).
   The economic profitability rate calculated based on the operation gross result (*RRexp*) can inform about the entire efficiency level with which the operation activity performs, and that means that it is not influenced in any way by the financial activity, the depreciation policy or by the financial and fiscal policy.

$$R\operatorname{Re}xp = \frac{EBE}{AT} \tag{9}$$

where: *AT* represent total assets.

♦ For analysing the efficiency of the investment cycle, we can calculate an economic profitability rate depending on the obtained result of this cycle (*RBinv*):

$$RRcinv = \frac{EBE - DA}{AT} = \frac{RBcinv}{AT} \tag{10}$$

where:
   DA mean depreciations;
   RBcinv   - profit resulted by the investment activity before deducing interest
   and taxes (*EBIT*).

♦ The current activity of an enterprise can be studied by the efficiency point of view using the indicator profitability rate of the current activity (*RRacr*). The level of this rate will depend on the developed policy within the financial domain and will reflect its quality.

$$RRacr = \frac{RBcinv + RF}{AT} = \frac{RC}{AT} \tag{11}$$

where:
   RF represents the profit of the financial activity;
   RC - current profit.

3. Factors Influence on the Economic Profitability Rate

For the capital suppliers, both the economic profitability rate evolution and the action of the various influencing factors which determine the administration efficiency of the patrimonial elements which a firm has at its disposal are important.

A. A first analysis possibility is due to the interaction model between the commercial profitability (Rcom) and the rotation of the total assets (advanced resources) (Vâlceanu et al., 2004).

$$\text{Re}\,c = \frac{\text{Pr}}{AT} = \frac{\text{Pr}}{CA} \cdot \frac{CA}{AT} = Rcom \cdot NrAT \tag{12}$$

where: *Pr* represents the profit;

    AT   -   total assets;

    CA   -   turnover;

    NrAT -   rotation number of the total assets through the turnover

The analysis relation highlights the fact that the efficiency of using the firm's patrimony within the economic activity depends on the efficiency of commodity trading (influence factor of quality type) and on the rotation speed of the patrimony (quantity influence factor). The model can be developed in this way:

1. Variation of the economic profitability:

$$\Delta \text{Re}\,c = \frac{\text{Pr}_1}{AT_1} - \frac{\text{Pr}_0}{AT_0} = Rcom_1 \cdot NrAT_1 - Rcom_0 \cdot NrAT_0 \tag{13}$$

2. Influence of modifying the rotation speed of the patrimonial assets

$$\Delta \text{Re}\,c(NrAT) = Rcom_0 \cdot NrAT_1 - Rcom_0 \cdot NrAT_0 \tag{14}$$

3. Influence of modifying the commercial profitability

$$\Delta \text{Re}\,c(Rcom) = Rcom_1 \cdot NrAT_1 - Rcom_0 \cdot NrAT_1 \tag{15}$$

B. The analysis model of the profitability rate which illustrates the influence of the commercial profitability and of the invested capital rotation is the following:

$$\text{Re}\,c = \frac{\text{Pr}}{CI} = \frac{\text{Pr}}{CA} \cdot \frac{CA}{CI} = Rcom \cdot NrCI \tag{16}$$

in which: *CI* represents the capital invested in the business;

$NrCI$ -   rotation number of invested capital through the turnover indicator.

1. Modification of the economic profitability rate:

$$\Delta \mathrm{Re}\, c = \frac{\mathrm{Pr}_1}{CI_1} - \frac{\mathrm{Pr}_0}{CI_0} = Rcom_1 \cdot NrCI_1 - Rcom_0 \cdot NrCI_0 \qquad (17)$$

2. Influence of the invested capital rotation:

$$\Delta \mathrm{Re}\, c(NrCI) = Rcom_0 \cdot NrCI_1 - Rcom_0 \cdot NrCI_0 \qquad (18)$$

3. Influence of the commercial profitability:

$$\Delta \mathrm{Re}\, c(Rcom) = Rcom_1 \cdot NrCI_1 - Rcom_0 \cdot NrCI_1 \qquad (19)$$

C. Due to the fact that the business capital purposes to finance the operation activity and the investment activity, the analysis of profitability resulted by the factors action at the level of the various managed elements groups is of interest (Gheorghiu, 2004).

Breaking down the total assets into fixed assets (*AI*) and circulating assets (*AC*), the evolution of the economic profitability will depend on the quality of trading, through the commercial profitability rate, and on the quality of the firm's assets administration in a permanent or temporary way, expressed by their rotation speed.

$$\mathrm{Re}\, c = \frac{\mathrm{Pr}}{AT} = \frac{\dfrac{\mathrm{Pr}}{CA} \cdot T}{\dfrac{AT}{CA} \cdot T} = \frac{\dfrac{\mathrm{Pr}}{CA} \cdot T}{\dfrac{AI + AC}{CA} \cdot T} = \frac{Rcom}{DzAT} \cdot T = \frac{Rcom}{DzAI + DzAC} \cdot T \qquad (20)$$

where: $DzAT$ is duration in days of the total assets rotation through the turnover;
   $DzAI$ - period in days of the fixed assets rotation;
   $DzAC$ - period in days of the circulating assets rotation;
   T - period of analysis (days).

1. Dynamic modification of the economic profitability:

$$\Delta \mathrm{Re}\, c = \frac{\mathrm{Pr}_1}{AT_1} - \frac{\mathrm{Pr}_0}{AT_0} = \frac{Rcom_1}{DzAI_1 + DzAC_1} \cdot T - \frac{Rcom_0}{DzAI_0 + DzAC_0} \cdot T \qquad (21)$$

2. Influence of the fixed assets rotation:

$$\Delta \operatorname{Re} c(DzAI) = \frac{Rcom_0}{DzAI_1 + DzAC_0} \cdot T - \frac{Rcom_0}{DzAI_0 + DzAC_0} \cdot T \qquad (22)$$

3. Influence of the circulating assets rotation:

$$\Delta \operatorname{Re} c(DzAC) = \frac{Rcom_0}{DzAI_1 + DzAC_1} \cdot T - \frac{Rcom_0}{DzAI_1 + DzAC_0} \cdot T \qquad (23)$$

4. Influence of the commercial profitability:

$$\Delta \operatorname{Re} c(Rcom) = \frac{Rcom_1}{DzAI_1 + DzAC_1} \cdot T - \frac{Rcom_0}{DzAI_1 + DzAC_1} \cdot T \qquad (24)$$

D. Studying the economic profitability depending on the main elements of invested capital gives an image on the influences resulted from the financial options adopted by a company and from the adequacy of financial strategies concerning a specific correlation between the own capitals (*Kp*) and the borrowed capitals (*Kimpr*).

$$\operatorname{Re} c = \frac{Pr}{CI} = \frac{\frac{Pr}{CA} \cdot T}{\frac{CI}{CA} \cdot T} = \frac{\frac{Pr}{CA} \cdot T}{\frac{Kp + Kimpr}{CA} \cdot T} = \frac{Rcom}{DzCI} \cdot T = \frac{Rcom}{DzKp + DzKimpr} \cdot T \qquad (25)$$

in which: *DzCI* represents the rotation speed of the invested capital, in days;

     DzKp   -   rotation speed of the own capitals;

     DzKîmpr -   rotation speed of the borrowed capital on the long term.

1. Modification of the economic profitability:

$$\Delta \operatorname{Re} c = \frac{Pr_1}{CI_1} - \frac{Pr_0}{CI_0} = \frac{Rcom_1}{DzKp_1 + DzKimpr_1} \cdot T - \frac{Rcom_0}{DzKp_0 + DzKimpr_0} \cdot T \qquad (26)$$

2. Influence of the rotation speed of the own capitals:

$$\Delta \operatorname{Re} c(DzKp) = \frac{Rcom_0}{DzKp_1 + DzKimpr_0} \cdot T - \frac{Rcom_0}{DzKp_0 + DzKimpr_0} \cdot T \qquad (27)$$

3. Influence of the rotation speed of the capitals borrowed by the firm:

$$\Delta \operatorname{Re} c(DzDat) = \frac{Rcom_0}{DzKp_1 + DzKimpr_1} \cdot T - \frac{Rcom_0}{DzKp_1 + DzKimpr_0} \cdot T \qquad (28)$$

4. Influence of the commercial profitability:

$$\Delta \operatorname{Re} c(Rcom) = \frac{Rcom_1}{DzKp_1 + DzKimpr_1} \cdot T - \frac{Rcom_0}{DzKp_1 + DzKimpr_1} \cdot T \qquad (29)$$

For a thorough study of the effects that an efficient management has on the whole enterprise's patrimony, the analysis of the economic profitability rate can be extended to the level of the patrimonial elements (assets/liabilities) within the synthetically presented groups. In this way, for the patrimonial assets, the analysis can be detailed on the factors influences introduced by the rotation of the tangible assets, intangible assets, financial assets, stocks, claims etc. and for the liabilities can have in view the rotation speed of the own capitals and borrowed capitals (Burja, 2005).

4. Case Study

The economic profitableness situation concerning the activity of a trading company from the industrial sector can be analyzed based on some information provided by its balance sheet and its profit and loss account (table 1).

The selected financial indicators highlight the main patrimonial elements that can influence the commercial profitability rate of the company.

Accomplishing the factors analysis demands the determination of the rotation speed indicators for the patrimonial elements and of the commercial profitability rate (table 2).

I. The economic profitability dynamic of the trading company established based on the patrimonial assets, is following:

$$\Delta \operatorname{Re} c = \frac{Rcom_1}{DzAT_1} \cdot T - \frac{Rcom_0}{DzAT_0} \cdot T = \left(\frac{10,4}{190} - \frac{7,2}{205} \right) \cdot 365 = 7,2 \%$$

1. Influence of the total assets rotation used within the trading company activity:

$$\Delta \operatorname{Re} c(DzAT) = \left(\frac{Rcom_0}{DzAT_1} - \frac{Rcom_0}{DzAT_0} \right) \cdot T = \left(\frac{7,2}{190} - \frac{7,2}{205} \right) \cdot 365 = 1,0 \%$$

of which:
1.1. Influence of the fixed assets rotation:

$$\Delta \operatorname{Re}c(DzAI) = \frac{Rcom_0}{DzAI_1 + DzAC_0} \cdot T - \frac{Rcom_0}{DzAI_0 + DzAC_0} \cdot T =$$

$$= \left(\frac{7,2}{112+89} - \frac{7,2}{116+89} \right) \cdot 365 = 0,3\ \%$$

1.2. Influence of the circulating assets rotation:

$$\Delta \operatorname{Re}c(DzAC) = \frac{Rcom_0}{DzAI_1 + DzAC_1} \cdot T - \frac{Rcom_0}{DzAI_1 + DzAC_0} \cdot T =$$

$$= \left(\frac{7,2}{112+78} - \frac{7,2}{112+89} \right) \cdot 365 = 0,7\ \%$$

2. Influence of the commercial profitability rate:

$$\Delta \operatorname{Re}c(Rcom) = \frac{Rcom_1}{DzAI_1 + DzAC_1} \cdot T - \frac{Rcom_0}{DzAI_1 + DzAC_1} \cdot T =$$

$$= \left(\frac{10,4}{112+76} - \frac{7,2}{112+76} \right) \cdot 365 = 6,2\ \%$$

II. The contribution analysis of the invested capital elements to realizing the economic profitability needs the determination of the influences due to the speed rotation of the own capitals and debts.

The modification in dynamics of the economic profitability calculated based on the invested capital is:

$$\Delta \operatorname{Re}c = \left(\frac{Rcom_1}{DzCI_1} - \frac{Rcom_0}{DzCI_0} \right) \cdot T = \left(\frac{10,4}{159} - \frac{7,2}{173} \right) \cdot 365 = 8,7\ \%$$

1. Influence of the company's invested capital rotation:

$$\Delta \operatorname{Re}c(DzCI) = \left(\frac{Rcom_0}{DzCI_1} - \frac{Rcom_0}{DzCI_0} \right) \cdot T = \left(\frac{7,2}{159} - \frac{7,2}{173} \right) \cdot 365 = 1,3\ \%$$

1.1. Influence of the own capitals rotation:

$$\Delta \operatorname{Re}c(DzKp) = \frac{Rcom_0}{DzKp_1 + DzKimpr_0} \cdot T - \frac{Rcom_0}{DzKp_0 + DzKimpr_0} \cdot T =$$

$$= \left(\frac{7,2}{156+12} - \frac{7,2}{161+12} \right) \cdot 365 = 0,4\ \%$$

1.2. Influence of the borrowed capitals:

$$\Delta \operatorname{Re} c(DzKimpr) = \frac{Rcom_0}{DzKp_1 + DzKimpr_1} \cdot T - \frac{Rcom_0}{DzKp_1 + DzKimpr_0} \cdot T =$$

$$= \left(\frac{7,2}{156+3} - \frac{7,2}{156+12} \right) \cdot 365 = 1 \ \%$$

2. Influence of the commercial profitability:

$$\Delta \operatorname{Re} c(Rcom) = \frac{Rcom_1}{DzKp_1 + DzKimpr_1} \cdot T - \frac{Rcom_0}{DzKp_1 + DzKimpr_1} \cdot T =$$

$$= \left(\frac{10,4}{156+3} - \frac{7,2}{156+3} \right) \cdot 365 = 7,4 \ \%$$

The information offered by the analysis of the economic profitability dynamics and of factors contribution to its modification allow formulating some useful *interpretations* for the trading company's management, being of interest also for the other beneficiaries of the economic information like capital suppliers, financial institutes, competition:

-   every year, the firm registered efficiency in using its assets, and in time, the economic profitability situation has improved, increasing by 7,2 % both due to the speed acceleration of the entire patrimony by 15 days and especially due to the increase of the commercial profitability;
-   the administration of the fixed assets has been satisfying; they have accelerated their rotation speed with 4 days, meaning that the profitability rate has increased, however poorly (0,3 %);
-   at the current activity level, the efficiency degree of the assets management has increased and so, they have reduced their circulation time with 11 days. The fact that the circulating assets participate more times within the same period to the production activity leads to their greater contribution to creating revenues and so, the profit, meaning that at the profitability rate level the indicator has increased with 0,7 %;
-   the company has a growing efficiency within the commercialization activity, the increase of commercial profitability (3,2 %) has produced the very important influence on the economic profitability (6,2 %) and has had a main contribution to obtain the performance regarding the enterprise's patrimony administration;
-   at the financial level sources, the efficiency resulted from the invested capitals administration has increased but only with 1,3 %;
-   in the analyzed period, the efficiency level of using the own capitals of the company has improved. The acceleration of own capitals rotation with 5 days ensures a better financing of the permanent or current productive demands and generated a gain of the economic profitability by 0,4 %;

- the financing strategy of the company, namely the decrease of the debts degree over 50 % meant an improvement of the financial autonomy and security which influenced the economic profitability increasing with 1 %.

The factors analysis of the economic profitability has allowed highlighting some positive aspects concerning the resources administration. The acceleration of the patrimonial elements rotation although moderate but especially the high efficiency of the production commercialization, were factors with positive influence which contributed to improving the economical-financial performance of the trading company.

Conclusions

The economic profitability rates are an important instrument of financial analysis and they reflect the degree of economic viability of an enterprise. The informative value of the economic profitability rates results from the specific content of their functions:

- they measure the profitability of a firm, being a real means of controlling the patrimony capacity to generate profit;
- instrument of appreciating the managerial performance as the manager's skills for organization, synchronization and carry away all the company's resources finally, contribute to a certain dimension of the economic profitability;
- they ensure comparisons between the financial situations of enterprises, ranking them accordingly with their performance level and their position as compared to the competitors;
- offer the possibility of evaluating the investment alternatives;
- allow anticipating returns on the invested capitals depending on the kinds of the financial strategies which they had adopted;
- means of appreciating the risk degree of the economical-financial actions.

The economic-financial analysis models presented and developed in the paper have permitted us to appreciate the efficiency of the patrimony management of one trading company. Identifying the influence factors we can measure their action on the companies' performance in order to substantiate the actions of decisional factors and improving the business situation.

Generally, the economic profitability rates can be considered a barometer of the quality of the economic and financial environment and at the microeconomic level, they have features of an internal instrument very necessary for highlighting, planning and controlling the performance status and the competitiveness of companies.

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Table 1.The financial indicators

INDICATORS (THOUSAND RON)	BASIC PERIOD	CURRENT PERIOD
Fixed assets	7603	11648
Circulating assets	5824	8145
Debts to pay in a period less than 1 year	2110	3170
Net circulating assets, net current debts	3714	4795
Total assets minus current debts	11317	16623
Debs to pay in a period more than 1 year	796	335
Total own capitals	10521	16288
Claims - total	1648	799
Net turnover	23909	38042
Gross profit	2241	3387
Net profit	1732	2920

(*Source*: Financial statements of enterprise)

Table 2. Influence factors of the economic profitability

INDICATORS	BASIC PERIOD	CURRENT PERIOD
Commercial profitability rate, %	7,2	10,4
Total assets rotation speed, days	205	190
Fixed assets rotation, days	116	112
Circulate assets rotation, days	89	78
Invested capital rotation, days	173	159
Own capitals rotation, days	161	156
Borrowed capitals rotation, days	12	3