

REFLECTION OF THE ECONOMIC RATE OF RETURN IN THE EFFICIENCY USE OF THE FIXED AND CURRENT ASSETS WITH STUDY CASE IN METTALURGY

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The companies from the metallurgical industry had had and have the capacity of contributing to the economic development of a country, and one of the most important aspects that have a crucial importance over the evolution and development of these companies is the representation of the economic profitability of these companies in the performance of the assets they own. The economic profitability rate is one of the most important indicators that reflect the economic efficiency of a company, this having the advantage of being independent of the financial structure of the company. The aim of this article is that of presenting the analysis methodology of the economic profitability rate through the performance of total assets.

Key words: metallurgy, economic profitability, gross profit, turnover, total assets

INTRODUCTION

The metallurgical industry is a traditional activity with certain disadvantages given by the great consumption of energy, but also by the necessary raised by raw materials from import- representing an important activity for the present and future of the Romanian industry. In the same time, from a macroeconomic perspective, the metallurgical industry presents certain particularities which offer it sustainability on the long term, but also a limitation of the growth potential, respectively: [1]

- the metallurgical industry has a sufficient production – as value and structure- for covering, in principle, the internal necessities;
- this branch is oriented mainly towards export, which leads to the situation that an important amount from the internal demand is covered by import;
- the metallurgical industry has a high degree of integrating the production, fact illustrated by the increased weight of own consumption of metallurgical products;
- it is characterized by a certain pronounced degree of concentration;
- this industry is based on a high volume of raw and semi finished goods from import;
 - with all of this, the metallurgical industry is one of the few activities with trade surplus.

The National Prognosis Commission has presented the projection of the main macroeconomic indicators for the period 2013 - 2016, and we have stopped at the

industrial production (according to CAEN Rev.2) and respectively on the metallurgical industry, Table 1.

Table 1 **The metallurgical industry (gross series) – percentage modification in comparison with the previous year / %**

| | 2010 | 2011 | 2012** | 2013 | 2014 | 2015 | 2016 |
|---|-------|------|--------|-------|------|-------|-------|
| Industry - total, from which: | 5,6 | 5,6 | 0,0 | 0,7 | 1,5 | 2,5 | 2,8 |
| a) Mining industry | - 6,9 | 4,5 | 1,5 | - 0,2 | 0,1 | 0,4 | 0,9 |
| b) Processing industry | 6,0 | 5,6 | - 0,7 | 0,5 | 1,2 | 2,3 | 2,8 |
| ... | | ... | ... | ... | ... | | |
| The metallurgical industry | 27,4 | 7,2 | - 2,4 | 1,0 | 1,3 | 1,7 | 2,0 |
| c) The production and supply of electric and thermal energy | 8,1 | 6,3 | 4,5 | 3,0 | 4,2 | 4,0 | 3,8 |

Source: Data obtained from the Projection of the main macroeconomic indicators from the period 2013-2016

**Achievements

From these data we can notice that the value of the metallurgical industry from 2011, 2012 and 2013 in comparison with 2010 has decreased, from 27,4 % at 1,0 %, according to the data given by the National Prognosis Commission it will record a slight increase in the following years.

Development of the industry is an important factor with major influences on economy. In this context, any component of industry can contribute at the economic growth and can be influenced by it. [2]

Diagnosis of the financial state that aims to highlight the strengths and weaknesses of liquidity and solvency, debts; activity indicators, profitability, rate of return, stock performance, cash flows, risks. [3]

The use of the total asset represents the degree in which an asset is involved in a profitable activity. The profitability rate is the rate between a results indicator (profit or loss) and an indicator which reflects an activity flow (net turnover, consumed resources) or stock (owner's equity, total assets). The economic profitability rate assumes simple calculus manner and the disposal of everybody, easily using the data from the annual financial situations of the company. Once the calculus is done it is obtained a percentage result which shows how much has earned the company as a consequence of the financial effort invested initially.

In what regards the methods used, we have decided for the method of the unit between analysis and synthesis, the method of the unit of the quantitative and qualitative methods, as well as the economic and mathematical modeling.

The economic profitability rate measures the performances of the total assets of the company, without keeping into account the way the capital is obtained (owned or borrowed) and allocated for the existence of the assets. From this reason, it is said that the economic profitability rate is independent of the financing policy promoted by the company. [4]

The **gross profit** or the result of the exercise before the taxation is the gross profit or loss at the end of the reporting period. This result corresponds to three activities performed by the society: the operational activity, the financial activity, the extraordinary activity. As a consequence, the result of the exercise before taxation can be determined in two ways: [5]

- as a difference between total revenues and total expenses $R_b = V_t - C_t$
- by summing up the results of categories of activities (operational, financial, extraordinary) $R_b = R_e \pm R_f \pm R_{extr}$

The turnover is the sum of the total revenues obtained by a company from current trade activities. Is one of the most important indicators for measuring the economic performances of the company. Practically, the turnover allows the determination of the market position of a company, offers information about the dynamic of the activity, indicating the extension chances of the company or the importance of the company in the sector. [6]

Fixed assets are that part of the assets that the company intends to obtain on a certain period (usually more than a year) and which are not consumed at their first use. The fixed assets are structured as: intangible assets, tangible assets and financial assets. [7]

Short-term assets represent the patrimonial elements which fulfill one of the following characteristics: are bought or produced for own consumption or with the purpose of sale; are expected to be realized in not more than a year from the date of the balance sheet; are receivables afferent to the operational cycle; are found as cash or other equivalent of cash.

The general model of the economic profitability rate is given by the relationship: [8]

$$RRE = \frac{\text{PROFIT}}{\text{TOTAL ASSETS}} \cdot 100 \quad (1)$$

The specialists sustain that the global profitability of a company measures the capacity of the assets used by a company for obtaining profit, in a certain period of time. [9, 10]

In our case, for highlighting the representation of the economic profitability rate in the performance of the total asset, we shall use the following analysis models:

$$RRE = \left(\frac{\text{PB}}{\text{CA}} \cdot \frac{\text{CA}}{\text{AT}} \right) \cdot 100 \quad (2)$$

$$RRE = \frac{\text{PB}}{\text{AT}} \cdot 100 = \frac{\text{PB}}{A_i + A_c} \cdot 100 = \frac{\frac{\text{PB}}{\text{CA}}}{\frac{1}{\text{CA}_i} + \frac{1}{\text{CA}_c}} \cdot 100 \quad (3)$$

where: PB – gross profit; CA - turnover; AT – total assets; A_i – fixed assets; A_c - active current assets.

Both models of analysis will be applied in the analysis of the economic profitability rate at the three companies taken into account in our study, highlighting the main influence factors over this rate, but also on the evolution of this on a certain period of time.

The factorial diagnosis analysis of the economic profitability rate with the representation of the yield of the use of fixed assets and of current assets

Before starting to discuss concretely about the factorial diagnosis of the economic profitability rate, we have presented the main indicators which is included in this rate, respectively: turnover, fixed assets, current assets, the efficiency of the current assets and the gross profit. In applying this methodology of analysis we have used a company from the metallurgical industry and that is S.C. FIVEX PETROL S.A.. This is a part of the category of middle companies with an average number of 60 employees, which has the headquarters in the Gorj county, city Targu-Jiu and has as main object of activity the molding of other non-ferrous metals, Table 2.

During the 2008-2012 economic profitability rate register the following values: 2008 = 16,58 %, 2009 = 1,60 %, 2010 = 1,02 %, 2011 = 1,00 %, 2012 = 1,05 %.

Taking into consideration the two models of analysis presented in the methodology, we shall realize the diagnosis analysis of factorial type of the economic profitability rate by taking into consideration the last two years, respectively 2012 and 2011.

I. The change in the economic profitability rat:

$$\Delta RRE = \left[\left(\frac{\text{PB}_{2012}}{\text{CA}_{2012}} \cdot \frac{\text{CA}_{2012}}{\text{AT}_{2012}} \right) - \left(\frac{\text{PB}_{2011}}{\text{CA}_{2011}} \cdot \frac{\text{CA}_{2011}}{\text{AT}_{2011}} \right) \right] \cdot 100 = \quad (4)$$

$$= 1,05 \% - 1,00 \% = + 0,05 \%$$

Table 2 Data indicators S.C. FIVEX PETROL S.A. / €

| Indicators | Symbol / Formula | 2008 | 2009 | 2010 | 2011 | 2012 |
|--------------------------|-----------------------------|-----------|-----------|-----------|-----------|-----------|
| Turnover | CA | 1 897 837 | 1 098 805 | 1 097 964 | 939 229 | 1 278 389 |
| Fixed Assets | Ai | 559 449 | 449 042 | 396 270 | 739 256 | 851 728 |
| Current Assets | Ac | 1 191 448 | 724 806 | 789 536 | 1 105 047 | 892 406 |
| Return on current assets | $\eta_{Ac} = \frac{CA}{Ac}$ | 1,593 | 1,516 | 1,391 | 0,850 | 1,43 |
| Total assets | $AT = Ai+Ac$ | 1 750 897 | 1 173 848 | 1 185 806 | 1 844 304 | 1 744 135 |
| Gross profit | PB | 290 356 | 18 769 | 12 041 | 18 493 | 18 252 |

Source: data used from www.mfinante.ro and www.curs-valutar.efin.ro/curs-mediu-bnr

II. The influence of the elements included:

1. The influence of the gross profit at 1 € turnover:

$$\Delta \frac{RRE}{CA} = \left[\left(\frac{PB_{2012}}{CA_{2012}} - \frac{PB_{2011}}{CA_{2011}} \right) \cdot \frac{CA_{2011}}{AT_{2011}} \right] \cdot 100 = \left[\left(\frac{18\,252}{1\,278\,389} - \frac{18\,493}{939\,229} \right) \cdot \frac{939\,229}{1\,844\,304} \right] \cdot 100 = -0,27\% \tag{5}$$

2. The influence of turnover at 1 € total assets:

$$\Delta \frac{RRE}{AT} = \left[\frac{PB_{2012}}{CA_{2012}} \cdot \left(\frac{CA_{2012}}{AT_{2012}} - \frac{CA_{2011}}{AT_{2011}} \right) \right] \cdot 100 = \left[\frac{18\,252}{1\,278\,389} \cdot \left(\frac{1\,278\,389}{1\,744\,135} - \frac{939\,229}{1\,844\,304} \right) \right] \cdot 100 = +0,32\% \tag{6}$$

From the calculus presented above it can be noticed the modification of the economic profitability rate afferent to the year 2012 in comparison with that recorded in the year 2011 (regarding its growth at the year 2012) with + 0,05 % has been influenced by the following factors as:

- the variation of the gross profit at 1 € turnover in sense of decreasing its value in 2012 in comparison with 2011 with 0,005412 € has determined a modification of the economic profitability rate with - 0,27 %;
- the variation of the efficiency of the total assets in 2012 in comparison with 2011 with + 0,223705 € has determined a positive modification of the economic profitability rate with 0,32 %.

As a scheme these influences can be presented Figure 1.

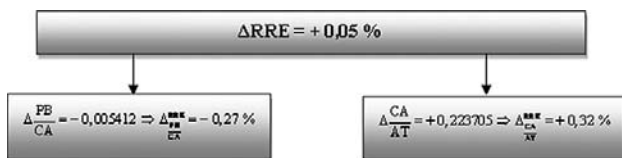


Figure 1 The influence of the factors on the economic profitability rate at S.C. FIVEX PETROL S.A.

For highlighting the efficiency of total assets, respectively of the fixed assets and of the current assets in the economic profitability rate we shall use the following model of analysis, respectively the second model of analysis presented in the methodology.

I. The change of the economic profitability rate:

$$\Delta RRE = \left(\frac{\frac{PB_{2012}}{CA_{2012}}}{\frac{1}{CA_{2012}} + \frac{1}{CA_{2012}}} - \frac{\frac{PB_{2011}}{CA_{2011}}}{\frac{1}{CA_{2011}} + \frac{1}{CA_{2011}}} \right) \cdot 100 = \left(\frac{1}{\frac{CA_{2012}}{Ai_{2012}} + \frac{CA_{2012}}{Ac_{2012}}} - \frac{1}{\frac{CA_{2011}}{Ai_{2011}} + \frac{CA_{2011}}{Ac_{2011}}} \right) \cdot 100 = 1,05\% - 1,00\% = +0,05\% \tag{7}$$

II. The influence of the elements included:

1. The influence of the efficiency of the total assets:

$$\Delta \frac{RRE}{AT} = \left(\frac{\frac{PB_{2011}}{CA_{2011}}}{1} - \frac{\frac{PB_{2011}}{CA_{2011}}}{\frac{CA_{2012}}{AT_{2012}} - \frac{CA_{2011}}{AT_{2011}}} \right) \cdot 100 = \left(\frac{0,019689}{1} - \frac{0,019689}{0,732964 - 0,509259} \right) \cdot 100 = +0,44\% \tag{8}$$

1.1. The influence of the efficiency of the fixed assets:

$$\Delta \frac{RRE}{Ai} = \left(\frac{\frac{PB_{2011}}{CA_{2011}}}{\frac{1}{CA_{2012}} + \frac{1}{CA_{2011}}} - \frac{\frac{PB_{2011}}{CA_{2011}}}{\frac{1}{CA_{2011}} + \frac{1}{CA_{2011}}} \right) \cdot 100 = \left(\frac{0,019689}{\frac{1}{1\,278\,389} + \frac{1}{939\,229}} - \frac{0,019689}{\frac{1}{939\,229} + \frac{1}{939\,229}} \right) \cdot 100 = \left(\frac{0,019689}{\frac{851\,728}{851\,728} + \frac{1\,105\,047}{1\,105\,047}} - \frac{0,019689}{\frac{739\,256}{739\,256} + \frac{1\,105\,047}{1\,105\,047}} \right) \cdot 100 = 1,07\% - 1,00\% = +0,07\% \tag{9}$$

1.2. The influence of the efficiency or yield of the use of current assets:

$$\Delta \frac{RRE}{Ac} = \left(\frac{\frac{PB_{2011}}{CA_{2011}}}{\frac{1}{CA_{2012}} + \frac{1}{CA_{2012}}} - \frac{\frac{PB_{2011}}{CA_{2011}}}{\frac{1}{CA_{2012}} + \frac{1}{CA_{2011}}} \right) \cdot 100 = \left(\frac{0,019689}{\frac{1}{1\,500\,934} + \frac{1}{1\,432\,518}} - \frac{0,019689}{\frac{1}{1\,500\,934} + \frac{1}{0,849944}} \right) \cdot 100 = 1,44\% - 1,07\% = +0,37\% \tag{10}$$

2. The influence of the gross profit at 1 € turnover, respectively the trade profitability rate:

$$\Delta_{\frac{PB}{CA}}^{RRE} = \left(\frac{\frac{PB_{2012}}{CA_{2012}} - \frac{PB_{2011}}{CA_{2011}}}{\frac{1}{CA_{2012}} + \frac{1}{CA_{2011}}} \right) \cdot 100 = \left(\frac{\frac{81329}{5696500} - \frac{78373}{3980358}}{\frac{1}{1,500934} + \frac{1}{1,432518}} \right) \cdot 100 = (11)$$

$$= \left(\frac{0,014277 - 0,019690}{0,666251 + 0,698071} \right) \cdot 100 = -0,39 \%$$

By using this model of analysis we highlighted the influence of the structure of asset efficiency and based on the calculations determined we stated the factors that influenced the economic rate of return as follows:

- the change in the total asset efficiency resulted in an increase in the economic rate of return of 0,44 %; in the case of total assets was taken into account also the influence of its structure, namely: the influence of the efficiency of fixed assets and the influence of the current assets efficiency, namely:
 - the deviation in the fixed assets efficiency resulted in an increase of the economic rate of return of 0,07 %;
 - the deviation in the current assets efficiency resulted in an increase in the economic rate of return of 0,37 %;
 - the second factor of influence, the change in the gross profit at 1 € turnover, determined a decrease in the economic rate of return of 0,39 %;
- Schematically, these influences appear in Figure 2.

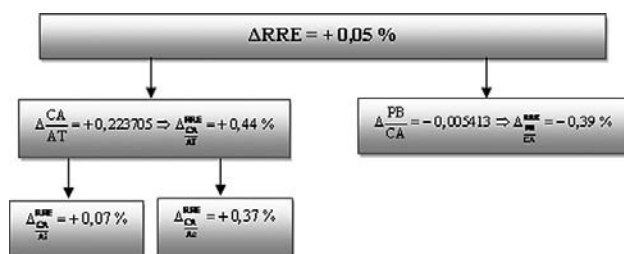


Figure 2 The influence of factors on the economic rate of return at S.C. FIVEX PETROL S.R.L. based on the explanatory model

CONCLUSIONS, RESULTS AND DISCUSSIONS

Synthetically, the evolution of the economic rate of return at S.C. FIVEX PETROL S.A. during 2008-2012 presents as follows – Table 3.

Table 3 The evolution of the economic rate of return / %

| Company | Year | | | | | Deviation 2012/2011 |
|------------------------|-------|------|------|------|------|---------------------|
| | 2008 | 2009 | 2010 | 2011 | 2012 | |
| S.C. FIVEX PETROL S.A. | 16,58 | 1,60 | 1,02 | 1,00 | 1,05 | + 0,05 |

Graphically, the evolution of the economic rate of return during last 5 years at: S.C. FIVEX PETROL S.A. is as follows – Figure 3.

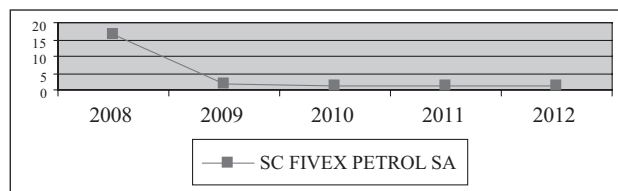


Figure 3 The economic rate of return evolution

The graph shows that S.C. FIVEX PETROL S.A. in 2008 recorded the highest economic return rate value and the lowest value in 2011. From the calculations and the factorial diagnosis analysis of the economic rate of return we deduce the following important aspects:

- the gross profit at 1 € turnover influenced the economic rate of return with - 0,27 % in the case of the first analysis model and with - 0,39 % in the case of the second model analysis;
- the efficiency of the total asset influenced the economic rate of return with + 0,32 % in the case of the first analysis model and + 0,44 % in the case of the second analysis model.

Based on these findings, we propose several measures to increase the economic rate of return:

- a) increasing the speed of rotation of the operating assets by: optimizing the structure of assets, increasing the share of fixed assets and active fixed assets, reducing the investments in course duration and costs, reducing stocks of current assets and the duration in days of their rotation, increasing the turnover;
- b) increasing the trade margin rate by: increasing the share of products with higher commercial profitability, increasing the delivery prices due to improving the product quality, reducing the supply, mining and marketing costs, increasing the physical volume of production which will have the effect of reducing the unit costs due to the influence of fixed costs.

The increase of the economic rate of return can be obtained in the following conditions: [4]

- $I_{Af} > I_{Ai}$ - improving the fixed assets structure by increasing the share of tangible assets, in particular the intangible assets;
- $I_{CA} > I_{Af}$ - the change in turnover to overtake the change in fixed assets, it has to occur the increase in turnover at a unit value of fixed assets;
- $I_{St} < I_{Ac}$ - improvement of the structure of current assets in relation to the increased usage degree of the production capacities;
- $I_{CA} > I_{St}$ - accelerating the inventory turnover, the turnover increase at a unit value of stocks;
- $I_{RE} > I_{CA}$ - increasing the share of the operating result in turnover.

In conclusion, we believe that the management of any company must give particular importance to the economic rate of return of at least for the following reasons:

- favors the orientation of the product structure in order to find those that offer the highest advantage;
- stimulates the efficient management by rational use of resources;

- its size can determine the company's interest in making decisions to improve the technical and economic parameters, to modernize the design and to improve the working and the selling products conditions;
- allows comparisons over time and space, but also in relation to certain standards developed and accepted by the international experts;
- helps to assess the past and present situation of the company to establish the strengths and weaknesses of its work, can be considered as a synthetic variable of expressing the profit.

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