

THE SYNTHETIC ANALYSIS OF THE EFFICIENCY RATIO OF TOTAL EXPENSES AND THE EFFECT OF ITS CHANGE IN METALLURGICAL COMPANIES

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Reducing costs and increasing the efficiency of their use should be a primary goal in order to increase the performance of the firm's activity. Any firm for obtaining usage values using an array of resources, human and financial materials whose use is materialized by spending. Structure, volume and their dynamics in a synthetic manner reflects the use and management of resources.

The article highlights how the tracking of the evolution of total revenue expenses using the efficiency ratio total expenditure, and the results of this research will highlight: the evolution and structure of revenues and expenses, the factorial analysis of the efficiency ratio of total expenses and the analysis of the effect of the modification of the level of the efficiency ratio.

Key words: metallurgical companies, total expenses, total revenues, efficiency ratio, Romania

INTRODUCTION

Due to the economic and financial crisis, but also due to the international conjunction, the main companies from the iron and steel industry have been restructured from the technological, financial and social point of view. All these aspects have been surrounded by a series of aspects as: the stagnation or decrease of the construction market from the European Union, the increase of the energy tariffs, the increase of the price of raw materials, etc., aspects which have affected directly the financial and economic results and implicitly the reduction of revenues.

The companies from the metallurgical industry had and have the capacity of contributing to the economic development of a country. [1]

The iron and steel industry from Romania is privatized in proportion of 100 %, and the weight of the foreign capital is almost 80 %. The metallurgical industry is an industrial branch mainly important for the national economy, because this is multiplying the: gross value added, the industrial production, jobs, generating taxes, etc.

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]

The non-ferrous metallurgical industry is represented, mainly, by the biggest aluminum company from the Central and Eastern Europe (excepting Russia). Over 80 % from the production obtained by these is traded on

the international market through the Metal Exchange from London by having direct contracts on long term with clients from 25 countries of the world, representing about 30 % from the export realized by the metallurgical industry. [3]

PRESENTATION OF S.C. DAN STEEL GROUP BECLEAN S.A. AND OF THE MAIN INDICATORS WHICH CHARACTERIZE THE PERFORMANCE OF THE COMPANY

The diagnosis activity of the company is extremely useful in any sector of the economy especially in priority sectors of the economy such as the metallurgical industry in Romania [4].

The object of activity of the company is the production and trade of agricultural industrial products, performing services and any legal activity with the view of obtaining profit. The main domain of activity declared is “241- production of ferrous metals under primary forms”.

For a better performance of the company's activity and a diversification of the production, the tangible assets have increased with 4 142 316,14 € as a consequence of the planned investments and of the retechnologisation and modernization programs used, afferent to the year 2013, also of the reevaluation of the fixed assets with the nature of buildings. [5]

The main elements of general assessment are: profit: 801 525 € turnover: 57 212 768,50 € export: 15 377 169,27 € costs: 55 699 465,49 € percentage from the market: 49 % and liquidity (accounts at the bank): 1 384 973,75 €

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According to the data supplied by the Finance Ministry and the Bucharest Value Exchange the structure of the revenues and expenses at S.C. Dan Steel Group Beclean is the following Tables 1, 2:

Table 1 Expenses structure / €

Type of activity	Absolute Value			Change (±)	
	2011	2012	2013	2012/2011	2013/2012
Operations	67 628 219	58 170 130	56 153 494	- 9 458 089	- 2 016 636
Financial	3 489 337	4 805 978	2 837 183	+ 1 316 641	- 1 968 795
Extraordinary	0	0	0	0	0
Total	71 117 556	62 976 108	58 990 678	- 8 141 448	- 3 985 430

Source: data used from www.mfinante.ro and www.bvb.ro

Table 2 Revenues structure / €

Type of activity	Absolute value			Deviation (±)	
	2011	2012	2013	2012/2011	2013/2012
Operating	70 478 810	60 976 159	58 873 255	- 9 502 651	- 2 102 904
Financial	2 238 980	2 422 712	1 178 279	+ 183 732	- 1 244 433
Extraordinary	0	0	0	0	0
Total	72 717 790	63 398 871	60 051 534	- 9 318 919	- 3 347 337

Source: data used from www.mfinante.ro and www.bvb.ro

THE ANALYSIS OF THE WEIGHT OF EXPENSES AND REVENUES WITH THE HELP OF THE RELATIVE SIZE OF THE STRUCTURE

In the analysis it is necessary to be studied also the structure of total expenses and revenues on the three categories, and in order to obtain this scope it is useful to determine the weight of each category of expenses and revenues in the total expenses and revenues, as also the modification of these weights after the relations:

$$G = \frac{Oe, Fe, Ee}{Te} \times 100 \quad (1)$$

$$G = \frac{Or, Fr, Er}{Tr} \times 100 \quad (2)$$

where: *Oe* - Operations expenses; *Fe* - Financial expenses; *Ee* - Extraordinary expenses; *Or* - Operations revenues; *Fr* - Financial revenues; *Er* - Extraordinary revenues; *Te* - total expenses; *Tr* - total revenues.

The data obtained after the performance of the calculus relationships are presented in Tables 3, 4:

Table 3 The weight of expenses on categories / € / %

Type of activity	Absolute Value			The weight of expenses in total		
	2011	2012	2013	2011	2012	2013
Operating	67 628 219	58 170 130	56 153 494	95,09	92,37	95,19
Financial	3 489 337	4 805 978	2 837 183	4,91	7,63	4,81
Extraordinary	0	0	0	0	0	0
Total	71 117 556	62 976 108	58 990 678	100	100	100

Source: data used from www.mfinante.ro and www.bvb.ro

Graphically, the data are presented Figure 1:

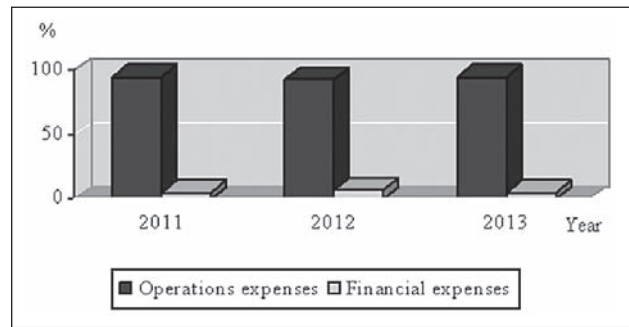


Figure 1 The evolution of the expenses weight on categories in total expenses

Table 4 The weight of revenues per categories / € / %

Type of activity	Absolute value			Weight of revenues in total		
	2011	2012	2013	2011	2012	2013
Operations	70 478 810	60 976 159	58 873 255	96,92	96,18	98,04
Financial	2 238 980	2 422 712	1 178 279	3,08	3,82	1,96
Extraordinary	0	0	0	0	0	0
Total	72 717 790	63 398 871	60 051 534	100	100	100

Source: data used from www.mfinante.ro and www.bvb.ro

Graphically, the data are presented Figure 2:

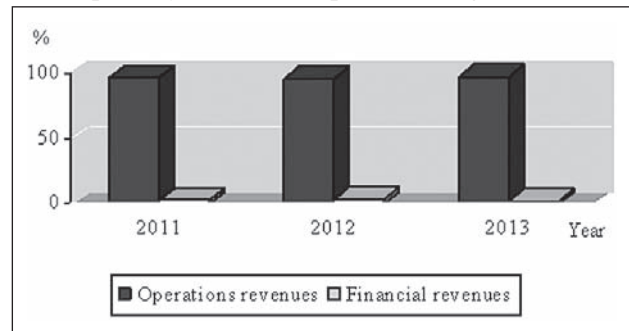


Figure 2 The evolution of the weight of revenues per categories in total revenues

From the above calculus we can notice that the highest weight of the expenses in total expenses is that of the operation expenses, whose weight has decreased in 2012 in comparison with 2011 and has increased in 2013 in comparison with 2012 and 2011. The financial expenses, although they have a small weight, have increased also in 2012 in comparison with 2011 and have decreased considerable in 2013 in comparison with 2012 and 2011.

The general indicator used in factorial analysis is named „expenses for 1 000 €revenues” an is determined as a report between expenses and revenues multiplied with 1 000 €[6]

Concerning the contribution of expenses at 1 000 € revenues per categories on what regards the modification of expenses at 1 000 €total revenues, in the analysis process, S.C. Dan Steel Group Beclean S.A. must take into account the following aspects:

- the expenses at 1 000 € revenues from operation have the highest influence on the modification of ex-

penses at 1 000 € total revenues, because in total revenues, the operation revenues have the highest weight;

- in general, the expenses at 1 000 € financial revenues reflect the indirect degree of indebtedness of the company, in our case these have a relatively reduced weight;
- the expenses at 1 000 € extraordinary revenues reflect the results obtained from the operations with similar character, and in the case of the company Dan Steel Group they are zero.

THE ANALYSIS OF THE EFFICIENCY RATIO OF TOTAL EXPENSES AT S.C. DAN STEEL GROUP BECLEAN S.A

The modification of the level of expenses at 1 000 € revenues can be explained through the analysis of the level of expenses at 1 000 € revenues according to the structure or the weight of revenues of the company Dan Steel Group Beclean S.A., on the three categories of revenues (gi) and on the level of expenses at 1 000 € revenues on the three categories of revenues and expenses (ci^{1000vt}). For this we shall use the following relationships:

$$Ct^{1000vt} = \frac{\sum(gi \times ci^{1000})}{100} \times 1000 \quad (3)$$

where:

$$gi = \frac{Or, Fr, Er}{Tr} \times 100 \quad (4)$$

$$ci^{1000} = \frac{Oe}{Or} \times 1000; \quad \frac{Fe}{Fr} \times 1000; \quad \frac{Ee}{Er} \times 1000 \quad (5)$$

The influence of the two factors over the modification Ct^{1000vt} is calculated with the help of the chain substitution method. For exemplification we shall use the data from the Table 5:

Table 5 Structure of revenues / % / €

Type of activity	Weight of revenues in total - gi/Gx100		ci^{1000}	
	2012	2013	2012	2013
Operations	96,18	98,04	953,98	953,80
Financial	3,82	1,96	1 983,72	2 407,90
Extraordinary	0	0	0	0
Total	100	100	-	-

Source: own elaboration of data

The absolute change of total expenses at 1 000 € total revenues is of:

$$\Delta_{gi}^{ci^{1000vt}} = \left(\frac{\sum(gi_{2013} \times ci_{2013}^{1000})}{100} - \frac{\sum(gi_{2012} \times ci_{2012}^{1000})}{100} \right) \times 1000 = \left(\frac{(98,04 \times 953,80) + (1,96 \times 2407,90)}{100} - \frac{(96,18 \times 953,98) + (3,82 \times 1983,72)}{100} \right) \times 1000 = -98230,036 - 99331,61 = -1101,57 \text{ €} \quad (6)$$

The decrease of the total expenses at 1 000 € total revenues with – 1 101,57 € in comparison with the base period is explained through:

1. The modification of the structure of revenues:

$$\Delta_{gi}^{ci^{1000vt}} = \left(\frac{\sum(gi_{2013} \times ci_{2013}^{1000})}{100} - \frac{\sum(gi_{2012} \times ci_{2012}^{1000})}{100} \right) \times 1000 = \left(\frac{(98,04 \times 953,98) + (1,96 \times 1983,72)}{100} - \frac{(96,18 \times 953,98) + (3,82 \times 1983,72)}{100} \right) \times 1000 = 97416,29 - 99331,61 = -1915,32 \text{ €} \quad (7)$$

2. The modification of the expenses at 1 000 € per categories:

$$\Delta_{ci}^{ci^{1000vt}} = \left(\frac{\sum(gi_{2013} \cdot ci_{2013}^{1000})}{100} - \frac{\sum(gi_{2012} \cdot ci_{2012}^{1000})}{100} \right) \times 1000 = \left(\frac{(98,04 \cdot 953,80) + (1,96 \cdot 2407,90)}{100} - \frac{(98,04 \cdot 953,98) + (1,96 \cdot 1983,72)}{100} \right) \times 1000 = 98230,036 - 97416,29 = +813,75 \text{ €} \quad (8)$$

After the performance of the analysis, we can notice a decrease of the level of total expenses at 1 000 € total revenues with 1 101,57 € situation due to both influence factors.

The modification of the structure revenues has led to the decrease of the level of expenses at 1 000 € total revenues with 1 915,32 € as a consequence of the decrease of weight of revenues with expenses at 1 000 € higher than the average on the company (in our example the operations revenues).

The modification of expenses at 1 000 € revenues on the three categories has led to the decrease of the level of expenses at 1 000 € total revenues with 813,75 €, the influences appeared due to: the significant decrease of the expenses at 1 000 € revenues from operations, the increase of expenses at 1 000 € financial revenues, and the lack of expenses at 1 000 € extraordinary revenues, these being equal to zero.

THE ANALYSIS OF THE EFFECT OF THE MODIFICATION OF THE EFFICIENCY RATIO OF TOTAL EXPENSES

The modification of the efficiency ratio of total expenses (ERTE) influences positively or negatively the exercise result before the taxation (gross profit).

These can be high lighted through the following relationship:

$$\text{Effect}_{\text{ERTE}} = - \frac{Tr_1}{1000} \times (RTE_1 - RTE_0) \quad (9)$$

In the case of S.C. Dan Steel Group Beclean S.A. the effect is the following:

$$\text{Effect}_{\text{RETE}} = \frac{Tr_{2013}}{1000} \times (RTE_{2013} - RTE_{2012}) = \frac{60051534}{1000} \times (98230,036 - 99331,61) = \frac{60051534}{1000} \times (-1101,57) = +66150968,31 \text{ €} \quad (10)$$

In conclusion, the decrease of the efficiency ratio of total expenses in 2013 compared to 2012 with -1 101,57 € increased the amount of earnings before tax (gross profit) with 66 150 968,31 €

CONCLUSIONS, RESULTS AND DISCUSSIONS

The expenses analysis is very important in the enterprise management because the use of the production

factors (nature, work, capital) depends on the enterprise concurrenial level on the market. [7] Synthetically, the evolution in the last five years of the efficiency ratio of total expenses is as follow Table 6:

Table 6 **The evolution of the efficiency ratio of total expenses / €**

Company	ERTe (value)		Deviation (+/-)	
	Year	Value	Year/Year	Value
S.C. DAN STEEL GROUP BECLEAN S.A.	2013	98 230,036	2013/2012	- 1 101,57
	2012	99 331,61	2012/2011	+98 353,61
	2011	977,996	2011/2010	-0,19
	2010	978,19	2010/2009	-0,76
	2009	978,95	-	-

Source: own contribution based on the data from the accounting documents displayed on www.mfinante.ro and www.bvb.ro

Graphically, the data appear Figure 3:

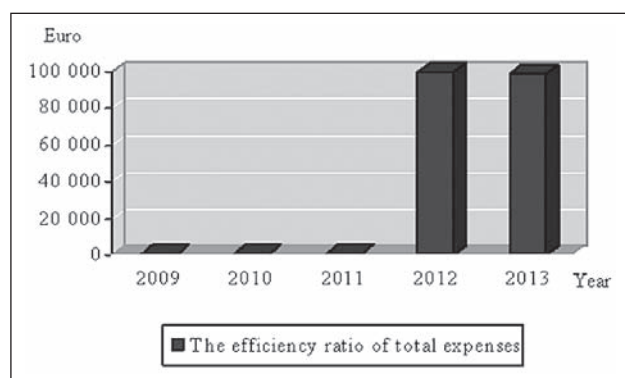


Figure 3 The evolution of the efficiency ratio of total expenses at S.C. Dan Steel Group Beclean S.A.

From these results it can be seen a relatively steady evolution in 2009, 2010 and 2011, followed in 2012 and 2013 by a significant increase. These issues are due to shifting of total expenses.

In order to reduce total expenses, at 1 000 € total revenues S.C. Dan Steel Group Beclean S.A. must consider the following measures:

- compliance with the economic efficiency criterion in the activity, based on which the
- revenues of each activity must cover the expenses;
- changing the income structure by increasing the share of those categories of income which record a

- level of total expenditure at 1 000 € total income lower than the medium level of the base period;
- reducing total costs at 1 000 € total revenues by category of income.

In current economic conditions effective management plays an increasingly important role in metallurgical enterprise [8].

To consolidate the financial statements, to reduce the recorded losses, the management team at SC Dan Steel Group Beclean S. A. must implement restructuring measures such as stopping the production capacity with low load factor, shifting to conservation or decommissioning of some flows, selling some not essential assets for the basic technological flows, applying the mobility schemes of the staff, reducing working hours, reducing the staff by applying voluntary departure schemes / redundancy etc.

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Note: The responsible translator for English language is S.C. PURTRAD S.R.L., Targu Jiu, Romania