# THE ANALYSIS OF PROFITABILITY INDICATORS

**SUCIU GHEORGHE**
**PhD in Economics, Lecturer Professor,**
**"Dimitrie Cantemir" Christian University Braşov, Romania,**
ucdc.suciu.g@gmail.com

*Summary*

*The analysis of profitability indicators is an activity that should preoccupy all companies. Profitability does not mean only obtaining profit. A company is competitive if the ownership equity grows (the shareholders' money), the company has a profit that is comparable to that of other companies from the same area of activity, has a positive cash flow and the employees are satisfied with their salaries. Multiple indicators are used to measure performance: profit, commercial, economic, financial, investment rate of return, breakeven point, economic value added, net operating result.*

*Keywords: profit, rate of return, breakeven point, economic value added, net operating result.*

*JEL classification: G32*

## 1. Introduction and context

The purpose of this article is to bring well-documented information about the analysis of a company's profitability indicators. The objective of the research is to analyze the company's financial performance according to the data from the balance sheet and to compare the company's rates with that of other companies from the same sector of activity. This analysis does not offer guarantees concerning future performance, but it portrays accurately the company's past and present financial statements, being very useful for the investors. Many of the bankruptcies during the crisis happened because of an inadequate handling of aspects related to financial performance.

This paper was written after a thorough analysis of the literature referring to a company's financial performance.

## 2. The analysis of the rate of return

**Profitability** is linked directly to a company's value. This is determined by many internal and external factors. Some of the internal factors are: the turnover, profit, structure of costs (fixed and non-fixed), total assets, ownership equity, long and short term debts, the company's policy regarding dividends. The external factors that have an important impact on the company are: international, national and branch economic growth, interest rate, inflation, the state's fiscal policy, competition in the area in which the company operates.

As profit has a static character, many specialists believe that the analysis of a company's profitability must take into account other indicators as well: the economic value added (EVA), shareholders' value added (SVA), cash-flow value added (CVA).

**The economic value added (EVA)** became in the decade of 1990-2000 one of the most important indicators for evaluation of a company's performance. To become valuable, a company must obtain enough incomes to cover the cost of financial debt, but also the opportunity cost of ownership equity. According to Stern-Stewart, EVA is established as follows [5]:

$$\text{EVA} = \text{Net operating result} - \text{Cost of invested capital} \qquad (1)$$

The net operating result is calculated as:

$$\text{Net operating result} = \text{Operating result} - \text{Profit tax} \qquad (2)$$

In many analyses, profit is replaced with the surplus (OGS). As a result, operating incomes will be compared to operating expenses, which do not include amortization, provision, financial and extraordinary expenses. Thus the company's total expenses can be divided into two categories: monetary (payments or monetary outflow) and nonmonetary (amortization, provisions, which do not represent monetary outflows). In this case, managers will pay more attention to those expenses which involve actual payments.

Profit, as an indicator of profitability, represents:
 ➢ A synthetic appreciation indicator of the company's economic and social performance;
 ➢ A self-financing source for the company's growth;
 ➢ A way of controlling the financial and economic management;
 ➢ A source of payment for the loaned capitals;
 ➢ An incentive for the shareholders, employees, managers and owners;
 ➢ A source for the state's budget.

**Factorial profitability analysis** is known as the **Du Pont ratio system**. It implies that rates of return are taken apart into their influence factors.

Rates of return are the most known and used in practice. These rates are meant to show how efficiently the company uses its assets and manages its opportunities. The main rates used in profitability diagnosis are: commercial rate of return, economic rate of return, return on consumed resources, return on equity and investment's rate of return.

**a) Commercial rate of return (CRR)** expresses the correlations between the gross profit related to the turnover ($P_{GT}$) and the turnover, being tightly related to the company's commercial policy.

The commercial rate of return is determined as follows:

$$CRR = \frac{P_{GT}}{T} \times 100 \qquad (3)$$

A decrease in the selling price will usually lead to an increase of the volume of sales, but it will reduce the margin of unitary gains. Nevertheless, the total profit can increase or decrease and a unitary gain margin is not necessarily a bad thing. Rates of return can differ from one industry to another. In case of retail sales, the profit rate is 6-19%. However, in the pharmaceutical industry it is between 15 and 20%.

**b) The economic rate of return** (ERR) is calculated as:

$$\textbf{ERR} = \frac{OR}{\text{Economic asset}} \qquad (4)$$

OR = operating results

For a better management of a company's activities, the economic rate of return can be taken apart into multiple reports, in order to see each factor's influence. Thus, this rate can be divided **into two models** of factorial analysis:

$$ERR = \frac{OR}{T} \, x \, \frac{T}{NWC} \, x \, \frac{NWC}{EA} \qquad (5)$$

NWC= need for working capital

The first report, OR/T represents the company's operating margin, being influenced by the size of the operating expenses. When the values of this report are high, the management is good.

The second report T/NWC represents a rotation rate of NWC in the turnover and reflects the number of times the necessary working capital can be covered by turnover. A good management means that the value of this indicator is low.

The last term (NWC/EA) is structural rate of the economic asset and depends on the characteristics of the company's activities. This report registers the management effects of the second factor.

**In English terminology,** the economic rate of return has 3 variants: ROA (return on assets), ROIC (return on invested capital) or RONA (return on net assets).

$$ROA = ROIC = RONA = \frac{EBIT\,(1 - \tau)}{Oe + FIN_{Db}} \qquad (6)$$

where:  EBIT = Earnings Before Interest and Taxes
  $\tau$ = profit tax rate
  Oe = ownership equity
  $FIN_{Db}$ = financial debts
  Oe + $FIN_{Db}$ = Economic assets (EA)

**c) The return on consumed resources** ($Rcr$), or the return on costs, represents the report between the operating results related to the turnover and the total operating costs, related to the sales, calculated as follows:

$$Rcr = \frac{Pr}{Operating\,expenses} \times 100 \tag{7}$$

Pr= profit

**d) The return on equity** (*ROE*) is a measure of the shareholders' satisfaction with the company's investments. ROE is determined as follows:

$$ROE = \frac{OR}{Oe} \tag{8}$$

$$ROE = \frac{(EBIT - interest)(1-\tau)}{Oe} = ROIC + \left[ ROIC - R_{interest}\,(1-\tau)\frac{FIN_{Db}}{Oe} \right] \tag{9}$$

When comparing the return on equity (ROE) with the return on invested capital (ROIC), we notice that ROE is higher than ROIC if the profitability of the used capital is higher than the cost of attracted resources (interest rate).

Also, the fiscal economies due to indebtness influence the economic rate of return:

$$ERR\,(indebted\,firm) = ERR\,(un\text{-}indebted\,firm) + \frac{\tau \times interest\,rate}{EA} \tag{10}$$

If one compares the return on equity for two companies that have a similar invested capital (same economic asset) and the operating performance (same EBIT), but with different indebtness levels, one can observe that return on equity is higher in case of the more indebted company, through the fiscal economy effect generated by the interest rate expenses.

The return on equity can be divided into 3 factors: the net margin rate, the capital's rotation rate and the capitals' structural rate:

$$ROE = \frac{OR}{T}\,x\,\frac{T}{EA}\,x\,\frac{EA}{Oe} \tag{11}$$

The first report (OR/T) represents the commercial rate of return (net margin rate), the second report (T/EA) signifies the rotation rate of the economic asset through the turnover, and the last report (EA/Oe) represents the capital's structure rate.

The return on equity can also be calculated as a report between the distributed dividends (Div) and the subscribed and collected social capital (CSSC):

$$ROE = \frac{Div}{CSSC} \tag{12}$$

If the company is listed in the stock market, instead of CSSC one can use the company's capitalization. This rate is useful for the minority investors who cannot influence the company's decisions, and the main form of recovery of investments are the received dividends.

Modigliani and Miller showed in 1958 the relationship between the economic rate of return and return on equity:

$$ROE = ERR + \underbrace{( ERR - R_{int\,erest} )\frac{FIN_{Db}}{Oe}}_{Leverage-effect} \tag{13}$$

If the economic rate of return is superior to the interest rate, the return on equity will increase, meaning the company can take credits, thus increasing the shareholder's financial profitability. However, if the economic rate of return is lower than the interest rate, then the company cannot take new loans, because its performance would decrease.

**The return on capitals invested by shareholders** represents the profit reported to the capital that they invested and it is in fact the **return on equity**:

$$ROE = \frac{Shareholders'\,profit}{Shareholders'\,invested\,capital} \tag{14}$$

**The shareholder's invested capitals** should include besides the ownership equity some regulated provisions (for litigations, guarantees given to clients, reorganizations), because these funds will decrease the net result, by considering them as expenses. It can be calculated as:

$$\text{Shareholders' invested capitals = Ownership equity + Regulated provisions} \tag{15}$$

If these corrections are not done, the rate of return of the shareholders' invested capitals will be overvalued.

If ownership equities have different values at the beginning and at the end of each financial year, it is advisable to take into consideration the arithmetic average of ownership equities.

**The creditors' rate of return of invested capitals (Rcrric)** represents the report between the amounts paid by the creditors and loans (financial debts) taken by them. Financial debts contain only the loans that have a date of payment of more than one year, contacts from banks or other financial institutions.

$$\text{Rcrric} = \frac{\text{Debt related expenses}}{\text{Financial debts}} \tag{16}$$

This report represents the medium rate of interest paid by the company for the contracted credits. Expenses related to interests are fiscally deductible if the degree of indebtness is lower than 3. The tax paid by the company will decrease with the report between the deductible expenses and share of profit tax (16%).

In these cases, the cost of loaned capital (Clc) will be given by the formula:

$$\text{Clc} = \frac{\text{Interest expenses-} \tau \text{ x Deductible interest expenses}}{\text{Financial debts}} \tag{17}$$

Clc = cost of loaned capital

$\tau$ = profit tax rate

$\tau$ x deductible interest expenses = the company's tax savings.

e) **Return on investments (*ROI*)** is established as a ratio between the net result and capital investments (the total of assets). Because the return on investments is a type of return on capital, this report measures the company's ability to repay those who provide long term funds and the ability to attract providers of future funds [1].

## 3. The analysis of the breakeven point

**The turnover-related breakeven point (TBP)** is the point in which the turnover covers the operating expenses, and the result is null. After this point, the company becomes profitable, meaning it makes profit. One can determine the breakeven point in physical or value units, for a single product or for the company's entire activity. The breakeven point depends on the structure of the expenses, meaning they must be separated into fixed and variable. In the **variable expenses** category are included:

✓ Expenses with raw and other materials;
✓ Other material expenses;
✓ Other external expenses;
✓ Merchandize-related expenses;
✓ External services related expenses;
✓ Other operating expenses.

**Fixed expenses** have the following components:

➢ Salary expenses (unless the contracts specify that salaries are given according to achievements) and the related social contributions;
➢ Amortization expenses;
➢ Expenses with the direct taxes and charges;
➢ Expenses with the insurance premium;
➢ Rent expenses;
➢ Interest expenses.

The turnover-related breakeven point (TBP) is established according to the formula:

$$\text{TBP} = \frac{\text{FE}}{1 - \dfrac{VE}{T}} \tag{18}$$

FE – the company's total of fixed expenses;

VE – total variable expenses;

T – turnover;

If a company has **interest related expenses**, these are considered as being **fixed** and the **global breakeven point (GBP)** will be given by the formula:

$$GBP = \frac{FE + INT}{1 - \dfrac{VE}{T}} \qquad (19)$$

where: INT = interest related expenses.

**In addition to the theoretical part,** I will present an analysis model SC TOHAN SA, a company that activates in the industrial domain. Tables 1 and 2 present the company's data:

**Table 1 Financial balance sheet**

| NEEDS (ASSETS) | 31,12,2011 | 31,12,2012 |
|---|---|---|
| **I. FIXED ASSETS (PERMANENT NEEDS)** | **67,406,586** | **67,421,860** |
| 1. Intangible fixed assets | 800,000 | 846,859 |
| 2. Tangible fixed assets | 65,532,434 | 65,939,949 |
| 3. Financial fixed assets | 1,074,152 | 635,052 |
| **II. CURRENT ASSETS (TEMPORARY NEEDS)** | **16,010,938** | **11,390,244** |
| 1. Stock | 5,569,475 | 4,211,755 |
| 2. Receivables, including upfront expenses | 7,227,631 | 2,360,948 |
| 3. Cash and bank accounts | 3,213,832 | 4,817,541 |
| **TOTAL ASSETS (NEEDS)** | **83,417,524** | **78,812,104** |
| **RESOURCES (LIABILITIES)** | | |
| **III. PERMANENT CAPITALS (PERMANENT RESOURCES)** | **63,981,264** | **62,513,104** |
| 1. Ownership equity | 59,655,764 | 58,578,104 |
| 2. Financial debts (debts > 1 year) | 4,325,500 | 3,935,000 |
| **IV. CURRENT DEBTS (TEMPORARY RESOURCES)** | **19,436,260** | **16,299,000** |
| 1. Operating debts | 18,885,360 | 15,878,700 |
| 2. Treasury loans | 550,900 | 420,300 |
| **TOTAL LIABILITIES (RESOURCES)** | **83,417,524** | **78,812,104** |

Source: Processing according to SC TOHAN SA's balance sheet

**Table 2 Analysis of the structure of the turnover related expenses**

| Elements of the turnover related expenses | 2011 | | 2012 | |
|---|---|---|---|---|
| | value | % | value | % |
| Net turnover | 12,354,450 | 100 | 17,878,372 | 100 |
| Raw materials and direct materials expenses | 1,979,614 | 16.02 | 2,936,347 | 16.42 |
| Other material expenses | 131,884 | 1.07 | 362,784 | 2.03 |
| Other external expenses (energy, water) | 671,480 | 5.44 | 1,021,386 | 5.71 |
| Merchandize-related expenses | 22,102 | 0.18 | 67,815 | 0.38 |
| Employee related expenses | 6,762,267 | 54.74 | 10,250,248 | 57.33 |
| Amortization expenses | 702,202 | 5.68 | 1,201,339 | 6.72 |
| External services related expenses | 1,272,575 | 10.30 | 1,166,600 | 6.53 |
| Expenses with other taxes and charges | 205,655 | 1.66 | 355,680 | 1.99 |
| Other operating expenses | 408,846 | 3.31 | 475,471 | 2.66 |
| Total operating expenses related to the turnover | 12,156,625 | 98.4 | 17,837,670 | 99.77 |
| Gross profit related to the turnover | 197,825 | 1.60 | 40,702 | 0.23 |

Source: Processing according to SC TOHAN SA's profit and loss account

The rates of return are presented in table 3:

**Table 3 Rates of return**

| Rates of return | Formula | 2011 | 2012 | Normal values for the area of activity |
|---|---|---|---|---|
| Commercial rate of return | Gross turnover related profit/ turnover | 1.60% | 0.23% | 8 – 10% |
| Economic rate of return | Gross turnover related profit/Economic asset | 0.31% | 0.07 | 12 – 15% |
| Return on consumed resources | Gross turnover related profit/ turnover related expenses | 1.63% | 0.22% | 10 – 12% |
| Return on ownership equity | Net profit/ownership equity | 0.28% | 0.06% | 9 – 11% |

Source: own calculations

**Observations:**

All rates of return decreased in 2012, compared to 2011, and their values are dozens of times smaller than the normal values for the area of activity. These poor results are due to the decrease of selling prices in 2012 and also the increase of operating expenses, especially the salary expenses, which represented over 55% of the total operating expenses. The company has too many fixed assets which should be exploited (sold or rented).

In order to survive, the company must diminish the salary expenses, especially the ones for the indirectly productive employees, who represent about 30% of the total number of employees.

The breakeven point for the 2 years in presented in table 4:

**Table 4 Breakeven point**

| Elements | 2011 | 2012 |
|---|---|---|
| Turnover | 12,354,450 | 17,878,372 |
| Turnover related expenses | 12,156,625 | 17,837,670 |
| Turnover related variable expenses | 4,486,501 | 6,030,403 |
| Turnover related fixed expenses | 7,670,124 | 11,807,267 |
| Share of variable expenses in the turnover | 36.31% | 33.73% |
| Breakeven point | 12,042,902 | 17,816,911 |

Source: own calculations

**Observations:**

The share of variable expenses, from the total amount of expenses, is low and as a result the company has a high operational risk in case of a decrease of the turnover. Salary expenses should not be more than 20% of the total operating expenses.

The rate of return in 2011 is 12,042,902 lei, close to the turnover (12,354,450 lei), which means that the company, in order to have a zero profit, must have sales that are close to the achievable turnover (97.48%).

In 2012, as a result of a decrease in the variable expenses, the rate of return increased to 99.66%, meaning a negative aspect for the company.

## 4. Conclusions

Knowing a company's performance results and comparing them to that of other companies which operate in the same area, is an essential part of a company's activity. Several categories are interested in the company's performance: the firm's management, shareholders, employees, investors, creditors, clients, state, each having their own interest in mind. High performance cannot be obtained without a good management, competitive tangible assets and qualified human resources. It is necessary to convey to the management all the information that reflects the company's financial performance.

Exceeding this barrier would mean poor productivity. Shareholders will not be satisfied as long as they do not receive dividends, and the rate on equity is lower than the interest rate of bank deposits. When talking about performance, one must compare the effects with the efforts. One can talk of performance only if the effects are superior to the efforts.

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