The Du Pont de Nemours System within the Company Diagnostics

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Abstract: *The rates are extremely useful both in the assessment of the enterprise at a time and in predicting actual and forecasted trends. Findings of the information provided through the method can not be developed unless benchmarks analyst has to have a standard of comparison values based on data obtained from the analyzed enterprise.*
Rates pyramidal analysis method (known as Du Pont de Nemours system) is a direct consequence of the existing relations between the different rates in the global system linking activity rates of the results. The method involves determining the rate considered most characteristic of entrepreneurial activity rate, which is the pyramid (generally rate results), all second floors of the pyramid consisting of instalments directly linked to the first allowing explicit and who, in turn, can be decomposed. Chain of rates thus constituted allows a synthetic vision on the company and emphasizes an integrated financial control of it.
Keywords: *economic return ratio, return on equity ratio, Du Pont chart*

Introduction

In the context of a very dynamic competitive environment, the fundamental problem remains the competitiveness in their company as a means of obtaining competitive advantage. "Creating value means investment. This investment should be enough profitable in order to be financed" [1, 201]. In this way it is necessary to focus efforts to exploit information as a strategic asset, and effective combination of production factors.

An essential role rests with the management company and its main components corresponding main attributes of leadership:
- forecasting component which consists in anticipating the conditions for future activities, resources and strategies adopted;
- operational arm facing in the organization, coordination and involvement of staff in achieving business objectives;
- monitoring and evaluation for future decisions.

Enhanced management complexity derives from both organizations in increasing economic size and increasing complexity of the means of production and the dynamism of factors influencing enterprise operations.

Quality of management decisions and the performance of the company are subject to quality information in the annual financial statements, i.e. the balance sheet, income statement, cash flow statement, statement of changes in equity, accounting policies and explanatory notes, on which are formulated judgments company value of the past and take decisions in accordance with its set objectives.

Romanian accounting system is central objective optical accounting information on the usefulness and relevance in promoting faithfulness in reflecting reality. Thus the characteristic of comparability of accounting information results implicitly in the process of normalization.

International Accounting Standard IAS 1 "Presentation of Financial Statements" aimed at reporting the current model of financial performance.

The information current, complete and relevant information on the financial situation of the firm's managerial department serves both and external partners (banks, holders of securities issued by the company, suppliers, etc.). The aim of the latter is often limited to a particular aspect of the financial

situation in the sense that banks are primarily interested in knowing the refund guarantees provided by the undertaking (for resorting to the study of financial balance), and investors to exchange aimed at quantifying opportunities to increase the value of securities issued by the company and the dividend distribution policy (the analysis of which is oriented towards the study of performance and developments). In this respect, Table no. 1 shows the scope of financial diagnosis categories of users.

Table no. 1 The scope of financial diagnosis categories of users [2, 2]

Users	The scope of financial diagnosis
Managers	Control and monitoring of operations unit; Develop management decisions (investment, financing, operation); Prevention difficulties.
Associates	Decisions by managers control
Employees	Judgment on the evolution and durability of the company
Financial institutions	The decision to grant a loan; Establishing ways of achieving sustainable financial relationships
The statutory audit mission	Information and creditor protection
Potential investors	Financial investment opportunities; Industrial investment opportunities (merger, acquisition, operation ventures)
Customers, suppliers	Decision on the conclusion of a major contract; Establish payment terms
The tax	Establishing the tax base
Public power	The decision to grant a subsidy
The Judiciary	Triggering a recovery or liquidation proceedings

A. Marion says that "the increasing complexity in terms of decision making, financial analysis is increasingly seen as an approach of global diagnosis, aiming at assessing the broader, enterprise" [2, 219], as shown in Figure no. 1 .
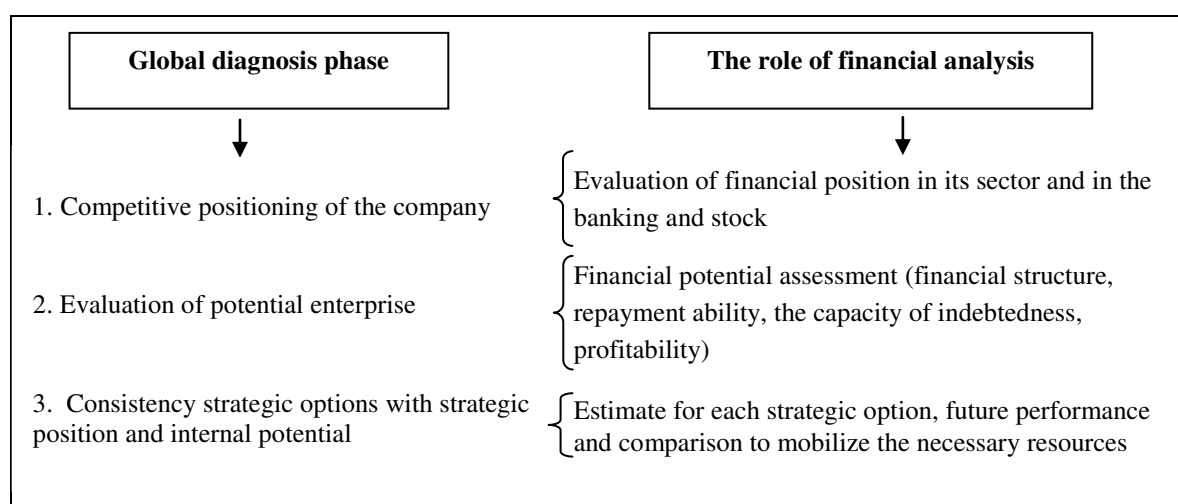

Figure no. 1 The contribution of the financial analysis of the company's global diagnosis [2, 225]

As a "set of tools and methods that allow data processing of accounting and other management information in order to assess the financial situation and performance of the company, financial analysis is a management tool that helps corporate governance in understanding the past and present to base future strategic objectives maintaining and developing the company in a competitive environment" [3, 9].

Financial analysis is geared towards making a diagnosis on the financial situation of the company and assessment of financial equilibrium, profitability and its autonomy.

A financial analysis and a skilled diagnosis is not only the correct calculation of indicators and a presentation suggestive of tables and diagrams analysis, but must identify financial characteristics most significant undertaking and rank them before appreciation pertinent economic and financial

situation of the company and its activities. It also aims at a correct diagnosis and anticipation of lucid outlook for the company.

1. The Du Pont de Nemours

The relationship between active ROI, turnover and profit margin assets is known in economic literature as the modified diagram Du Pont.

The Du Pont de Nemours is used to analyze the performance possibilities of the company, due to the fact that highlights how the profit margin, asset turnover rate debt and using credit interact to determine the rate of return on equity.

On the right side appear listing all categories of assets, their total value and number of annual rotation of assets. The left emphasizes profit margins relative to sales figures (the interest rate) and listing expenses by category, and then summed to determine the total cost to the company. The difference leads to determine the net income of the company that based on the sales figures show that 4.67% of every dollar sales gain is obtained from shareholders. Low levels require examination of the rate of profit to locate the categories of expenditure because of distortions and take corrective action.

2. Du Pont Equation (Rate of Return on Assets) ROA
ROA = Profit margin x Rate of rotation of total assets [4,658]

In Table no. 2 are systematized data taken from the balance sheet and income statement of the company studied.

Table no. 2 Data from the balance sheet and income statement of the company studied

Indicators	Values (RON)
Total assets	8626024
Personal capital	5611253
Sales turnover	4695751
Total costs	4476493
Fixed assets	4197022
Current assets	4429002
Stocks	3109421
Amortization	184543
Taxes	265748
Cash	428540
Trade bills receivable	891041
Interest	1340832

Based on the data in Table no. 2 we calculated ROA for the company analyzed:

$$\frac{Net\ income}{Total\ assets} = \frac{Net\ income}{Sales\ turnover} \times \frac{Sales\ turnover}{Total\ assets} \quad (1)$$

$$ROA = 4{,}67\ x\ 0{,}54 = 2{,}54$$

Given that the company would use the loan to finance assets, the return on assets would equal the rate of return on equity (ROE=ROA).

How 48% of assets are financed through borrowed capital, the return on assets (ROA 2.54%) shareholders flows entirely financed 52% of assets, leading to the conclusion that the rate of return on equity (ROE = 3.9%) is higher than the rate of return on assets, such as:

$$R_f = ROE = \frac{Net\ income}{Personal\ capital} = \frac{Net\ income}{Total\ assets} \cdot \frac{Total\ assets}{Personal\ capital}$$

$$R_f = ROA \cdot \frac{Total\ assets}{Personal\ capital}$$

In case of analyzed company:

$$R_f = ROE = 2,54 \cdot \frac{8626024}{5611253} = 3,9\% \; (2)$$

where, $\dfrac{Total\; assets}{Personal\; capital} = \dfrac{1}{1 - \dfrac{Liability}{Total\; assets}}$

is *the multiplication factor of equity*.

From (1) and (2) gives:

$$Rf = \frac{Net\; income}{Sales\; turnover} \times \frac{Sales\; turnover}{Total\; assets} \times \frac{Total\; assets}{Personal\; capital}$$

Rf = Profit margin x rotation rate of the total assets x Equity multiplier

Prepared commercial rate:
Rf = 4,67 x 0,54 x 1,53 = 3,9 %

Du Pont Diagram modified, referring to the company considered is shown in Figure no. 2. Based on her study can reduce the incidence of the sale price on sales volumes, the impact of introduction to manufacturing new products with a high profit margin. Analysis of different categories of expenditure is likely to reveal ways to cut costs.

The right side of the chart Du Pont is used to analyze ways of minimizing the investment in different asset classes and the effect of different financing strategies on the rate of return on equity.

The weaknesses of studied companies can be considered the rates used in asset management, lower than the industry average, something which requires rationalization in fixed assets investment firm, due to the fact that it uses its under-capacity.

In terms of liquidity, it can be appreciated that there are difficulties. Liquid assets included in the calculation of the liquidity present a particular generates a rate of return after tax low (commercial paper received).

Liquidity ratios attest to the company considered that short-term solvency is good. Borrowing rates and interest rates to cover fixed costs and confirms that the company is funded adequately by credit.

Profitability ratios are likely to confirm that the company studied is able to efficiently use available resources to achieve a proper distribution of fixed costs and increasing sales figures.
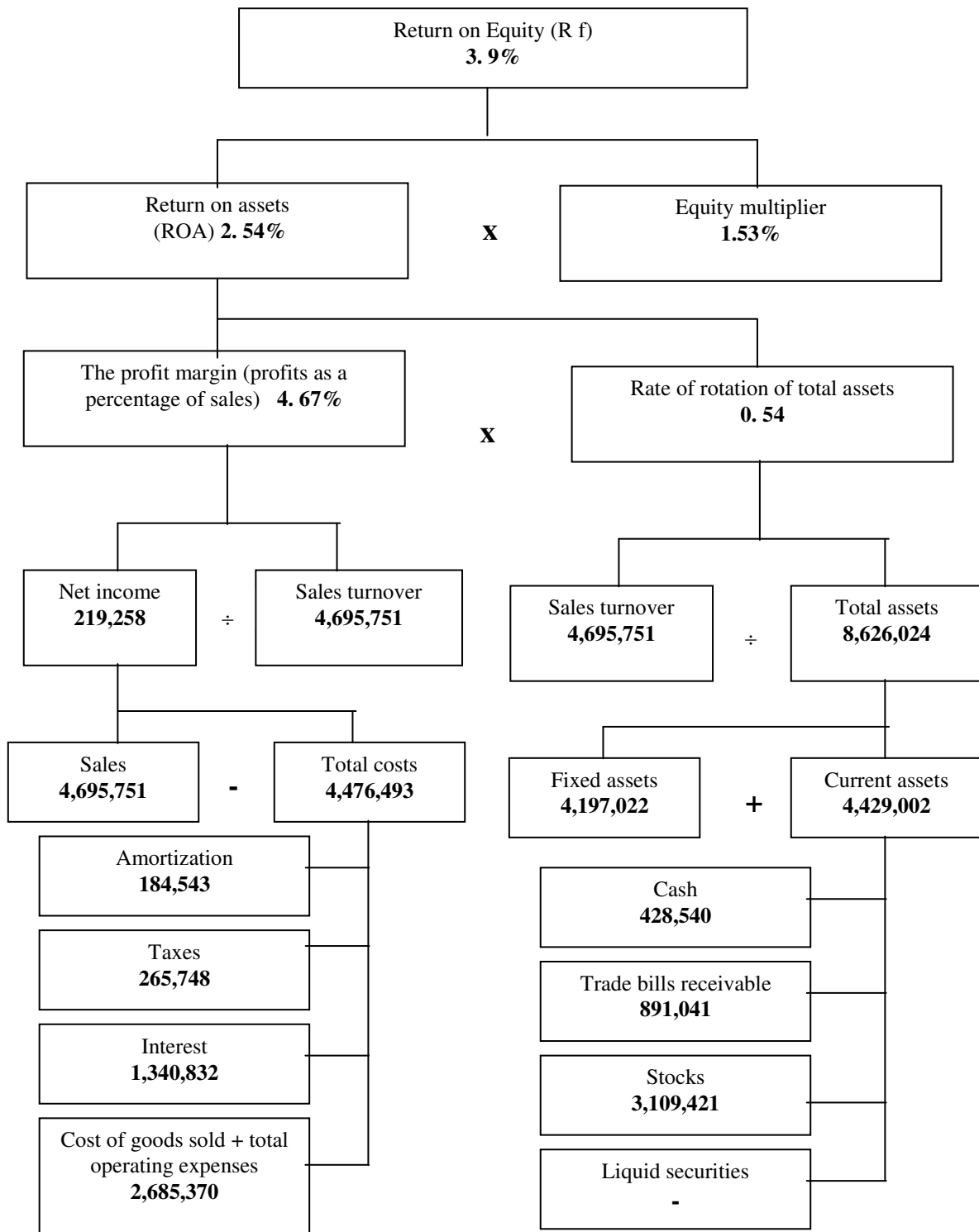
Return on Equity (R f)
3. 9%

Return on assets (ROA) **2. 54%** **X** Equity multiplier **1.53%**

The profit margin (profits as a percentage of sales) **4. 67%** **X** Rate of rotation of total assets **0. 54**

Net income **219,258** ÷ Sales turnover **4,695,751**

Sales turnover **4,695,751** ÷ Total assets **8,626,024**

Sales **4,695,751** **-** Total costs **4,476,493**

Fixed assets **4,197,022** **+** Current assets **4,429,002**

Amortization **184,543**

Taxes **265,748**

Interest **1,340,832**

Cost of goods sold + total operating expenses **2,685,370**

Cash **428,540**

Trade bills receivable **891,041**

Stocks **3,109,421**

Liquid securities **-**

Figure no. 2   Du Pont de Nemours chart (RON)

Conclusions

A particularly important for financial analysis is appreciation, interpretation and correlation of economic and financial indicators compiled during the course of diagnosis. Thus, the purpose of diagnosis aimed synthesis Company's financial status (Table no. 3).

Table no. 3   Diagnosis economic and financial situation of the company studied

Field	Indicator	Period N-N+2	Status	Evolution	Causes	Consequences and measures
Allocation capital - fixed assets	The share of fixed assets in the amount of capital invested	70 %	Good	Ameliorate	The decrease in capital employed	Increased total activity
	The share of value added assets	160 %	Good	Damaged	Investment policy	The fall of the material expenditures
	The share of depreciation in value of fixed assets	8 %	Good	Damaged	Investment policy	Replacing obsolete equipment
- working capital needs (NFR)	NFR share in the value of invested capital	32 %	Good	Ameliorate	Management policy	NFR declining due to reduced activity
	NFR in days	95 days	Bad NFR>90days	Ameliorate	Duration stocks: 12 days finished goods, raw materials 35 days Duration reviews: 64 days Duration suppliers: 55 days	The financial balance by lowering NFR; Treasury surplus harvest increases
- Rotation on capital	The share of capital invested in added value	2,4 %	Good	Ameliorate	Labour productivity	Improving economic return
Indebtedness Total Maturity Repayment capacity	The share of total debt in the amount of capital invested	39 %	Good (level of indebtedness <50%)	Ameliorate	Economic profitability increase Poor investment policy Coverage investments from own resources	Financial expenses, cash surplus existence of exploitation, the possibility of increasing indebtedness
	Leverage (the share of interest-bearing liabilities in the amount of own resources)	0,18	Good (leverage<1)	Ameliorate	The decrease in financial expenses	Maintaining financial autonomy
	The term of repayment of borrowed capital	1,87 %	Good (repayment term < 3years)	Favourable evolution	Decreased borrowing rate Favourable development of economic profitability	Increased self-financing capacity

Field	Indicator	Period N-N+2	Status	Evolution	Causes	Consequences and measures
Equity Financial return	The share of equity in the amount of capital invested	80 %	Good (equity share > 50%)	Favourable evolution	Decreased borrowing rate Favourable development of economic profitability	Financial autonomy Risk for the enterprise
	Return on equity		Bad (financial profitability < interest rate)	Unfavourable development	Leverage Profit distribution policy	Measures to increase the share of equity
	Share dividend equity value	2 %	Bad	Unfavourable development	-	-
Financial balance dynamic static	The rate of fixed asset financing	0,9	Danger (<0,85)	Fragile financial balance	Good economic returns; reduced cash flow due to downturn	The improvement in cash The company is in difficulty
	Financing rate NFR	1,04	Good (>1)	Fragile financial balance	Increase in the cost of borrowed capital	The improvement in cash The company is in difficulty
	Permanent working capital	>0	Good	Fragile financial balance	Decrease NFR	There are possibilities to increase the activity
Economic profitability - activity - capital invested	Gross margin rate of exploitation Net margin rate of exploitation	0,18 0,13	Good (>0,5) Good (>0)	Ameliorate	Decreased activity The increase in added value Labour productivity growth Divestiture	Maintaining economic rate of return at the expense of increasing the share of value added in turnover
	Economic rate of return Return on invested capital	0,22 0,32	Bad (<0,77) Good (>0,25)	Ameliorate	Decrease in capital efficiency	Failure for a high degree of indebtedness
Financial expenses	Sampling rate financial expenses	0,3	Good (<0,6 that duty to support)	Damaged	Indebtedness incurred in relation with economic profitability	Lack risk
Treasury exploitation	Treasury surplus harvest (ETE)	121,548 RON	Covering expenditure financed by ETE	Ameliorate	Decrease NFR	ETE creates enterprise development premises

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