THEORETICAL AND APPLIED APPROACHES ON THE CORRELATION BETWEEN THE RATES OF SYNTHESIS OF THE BALANCE SHEET AND FINANCING RATIOS

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Abstract

The rates of synthesis of the balance sheet correlate with the financing ratios determined on the basis of the balance sheet and indirectly reflect the company's financial structure. The rates of synthesis, also called financial balance coefficients, are calculated based on the information and correlations between asset and liability positions. In calculating these coefficients there have been made a clear distinction between stable resources and stable usage, on the one hand, and current assets and short-term debt, on the other hand. In order to achieve the objective in this paper, we specifically endorsed the release of information in the financial balance regarding a Romanian textile company, for a five-year analysis period, which is from 2009 to 2013. Thus, in order to exploit the information covered in the balance sheet, we conducted a diagnosis regarding the rates of synthesis calculated on the basis of information and correlations between asset and liability positions; the financing ratios, which analyzes the relative importance and the time evolution of different sources of financing used by the company.

Keyword: rate of synthesis, financing ratio, financial balance

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I.   Introduction

Businesses benefit from a range of financing short term or long term instruments. Financial short-term instruments include trade credit, loans from financial institutions, loan consisting of monthly or half-yearly accrued liabilities (wages and payable taxes), bankers' acceptances and commercial bill of exchange, the availability of each source depending on the size, the degree of risk and the profitability of the company, as short-term financing costs and the types of funds raised on the monetary markets are different from one company to another.

In deciding on the source and manner of obtaining long-term financing is important how you choose between private and public markets. Thus, direct financing or private financial securities resort to funds obtained directly from one person or a small number of individuals or financial institutions such as banks, insurance companies or pension funds; while the public financing resort to investment banks to sell securities to a large number of investors - both individuals and financial institutions.

Businesses use three main sources of funds (Halpern,Westonm, Brigham, 1998), such as:

- internal cash flows, which are mainly long-term cash flows and consist primarily of capital expenditure shares and unallocated profit;
- long-term foreign funds;
- short-term foreign funds.

An important aspect of the enterprise management is the management of the direct costs of financing process, which are represented by the cost of attracted capital such as interest rate payable on the loans or the profitability that should be offered to shareholders for their contribution to the capital of the company.

The financial structure is a fundamental concept in financial management of the company, as it determines the cost of capital and has a major influence on the investment policy, affecting its profitability.

II.   The diagnosis of the structure ratios of the balance sheet

The diagnosis of the structure ratios of balance sheet allows to study the financial structure of the company by examining how the sources of financing the assets from equity to external inputs are distributed, resulting thus the financial autonomy (independence) of the company. In this manner, the financial equilibrium is indirectly

reflected through the combined analysis of the following rates of synthesis:

2. 1. Stable financing ratio of property (SFRp) is calculated as follows:

$$SFRp = \frac{Long\ term\ capital}{Net\ property\ assets}$$

$SFRp \geq 1$, this measures the stability of the resources of financing sustainable assets, which is:

a) Stable financing ratio covered by internal sources (SFRis):

$$SFRis = \frac{Company's\ equity}{Net\ property\ assets} \geq 1$$

b) Stable financing ratio covered by external sources (SFRes):

$$SFRes = \frac{Long\ and\ Medium\ Term\ Debts}{Net\ property\ assets} \geq 1$$

Expresses the degree of financial insecurity of the company.

2. 2. General liquidity ratio (Glr) is calculated as follows:

$$Glr = \frac{Current\ assets}{Short\ Term\ Debts} \geq 1$$

Glr ≥ 1, expresses the degree of potential liquidity (short-term financial equilibrium), which is:

a) Relative liquidity ratio (diminished) (Rlr):

$$Rlr = \frac{Current\ assets - Inventory}{Short\ Term\ Debts} \geq 1$$

Expresses the capacity of reimbursement of the short-term debts;

b) Current liquidity (treasury) ratio (Clr):

$$Cr = \frac{Cash}{Short\ Term\ Debts} \geq 1,$$

Expresses the ability of reimbursement of the debts payable in 1 year.

2.3. Global solvency ratio (Gsr) measures the degree to which the company in study meet

its debt, indicating the extent to which total liabilities are covered by the company's total assets (fixed assets and current assets). This ratio is determined according to the following relation:

$$Gsr = \frac{Net\ Assets}{Debts}$$

The rates of synthesis of the balance sheet are correlated with financing ratios, determined on the basis of the balance sheet, indirectly reflects the company's financial structure.
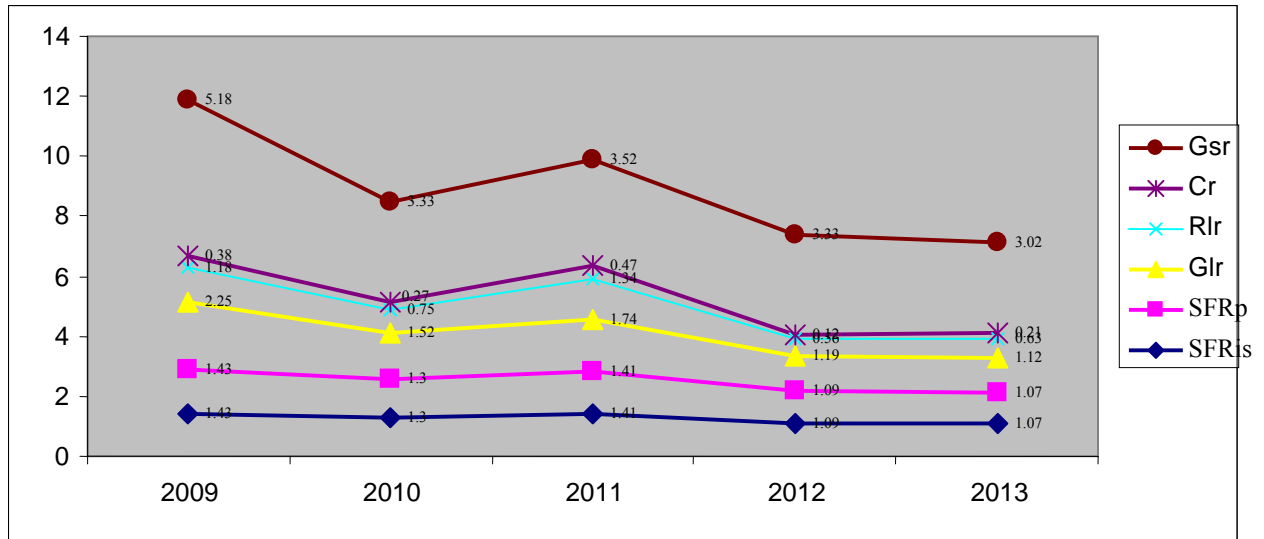
Table 1- The rates of synthesis based on the balance sheet

No. crt	Indicators	UM	Period under review				
			2009	**2010**	**2011**	**2012**	**2013**
1.	Stable financing ratio of property (SFRp)	Lei	1,43	1,30	1,41	1,09	1,07
2.	Chain index	%	100 %	91 %	108%	77%	98%
3.	Stable financing ratio covered by internal resources (SFRir)	Lei	1,43	1,30	1,41	1,09	1,07
4.	Chain index	%	100 %	91 %	108%	77%	98%
5.	Stable financing ratio covered by external resources (SFRer)	Lei	-	-	-	-	-
6.	Chain index	%	-	-	-	-	-
7.	General liquidity ratio (Glr)	Lei	2,25	1,52	1,74	1,19	1,12
8.	Chain index	%	100 %	68 %	114%	68%	94%
9.	Relative liquidity ratio (Rlr)	Lei	1,18	0,75	1,34	0,56	0,63
10.	Chain index	%	100 %	64 %	179%	42%	113%
11.	Current liquidity (treasury) ratio (Clr)	Lei	0,38	0,27	0,47	0,12	0,21
12.	Chain index	%	100 %	71 %	174%	26%	175%
13.	Global solvency ratio (Gsr)	Lei	5,18	3,33	3,52	3,33	3,02
14.	Chain index	%	100%	64%	106%	95%	91%

The rates of synthesis based on the balance sheet of the company S.C. ALFA S.A. lead to the results in Table no. 1, and the evolution of these rates is shown graphically in Chart no. 1.

Chart no. 1.- The evolution of the rates of synthesis based on the balance sheet

III. The diagnosis of financing ratios

In the financial management process appears the notion of financial structure and the concept of capital structure, financial structure designates the composition of the balance sheet liabilities (equity, debt), while the capital structure shows the composition of long-term financing company: shares (ordinary, privileged) bonds (ordinary, convertible) bank loans.

In terms of *ideal* or *acceptable* financial structures, there are a few key principles, namely (Petrescu, 2006): stable assets (cyclic or acyclic) should not be financed by short-term debt (Treasury); only occasional assets (unstable) can be transitory financed from this kind of debt; stable asset financed through medium and long-term debt is allowed provided that this does not represent more than 50% of long-term capital and is to be repaid progressively through self-financing until the enterprise will reach financial autonomy (equity financing).

Structure rates of the financing sources of the company analyze the relative importance and time evolution of different financing sources as used by the enterprise.

Financial autonomy is threatened by the existence of inadequate financial structures that can lead to cessation of payments or loss of control by shareholders, and it

can be estimated by several installments as follows:

3.1. Global borrowing ratio (Gbr):

$$Gbr = \frac{Debts}{Liabilities} \leq 0,5$$

Expresses the company's dependance on varios creditors and the chances of reimbursement of the debts.

a)   *Financial leverage:*

$$LF = \frac{Debts}{Company's\ equity}$$

FL depends on the structure of the financing process and has effects on the profitability ratio of the company's equity (financial risk indicator).

b)   *Financial authonomy ratio:*

$$Far = \frac{Company's\ equity}{Debts} > 1$$

(Far= 1/FL).

c)   *Fixed-term borrowing ratio:*

$$Ftbr = \frac{Short\ term\ Debts}{Company's\ equity}$$

Ftbr expresses the company's dependance on creditors and it is affected by inflation.

3.2. Borrowing capacity:

$$Bc = \frac{Company's\ equity}{Long\ term\ capital} \geq 0,5$$

Bc expresses the possibilities of company of borrowing.

3.3. Reimbursement capacity:

$$Rc = \frac{CAF}{Debts} \geq 0,25$$

Rc expresses the company's capacity of reimbursing its entire amount of debts.

The financial autonomy expressed by the above ratios can be determined based on the balance sheet of SC ALFA S.A. Company, according to Table no. 2.

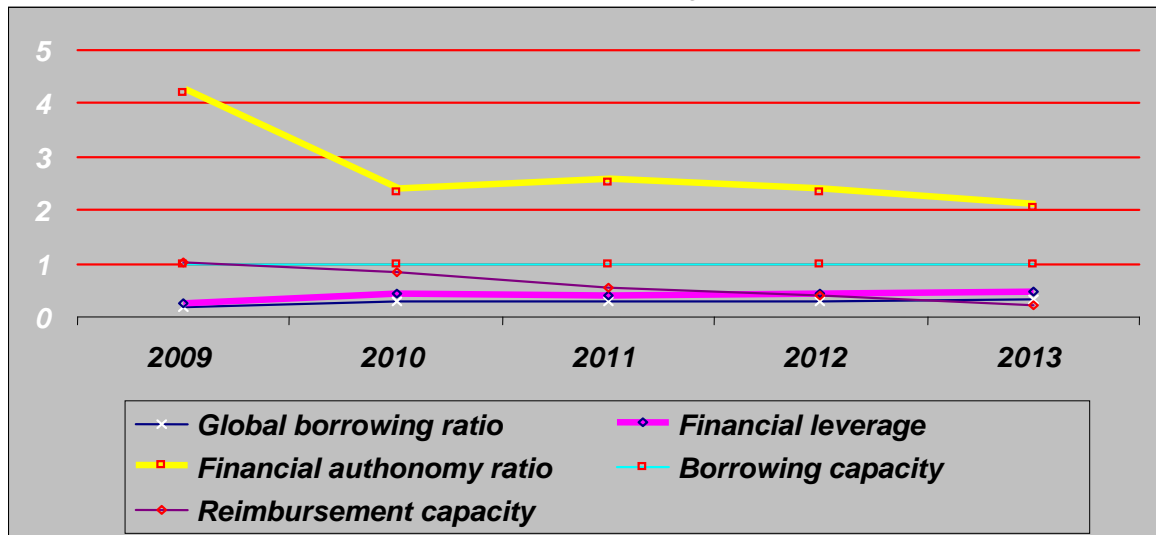The graphic illustrations of these ratios for the period under review can be seen in Chart no. 2**)**

Table 2 - Financing Ratios (of financial autonomy)

No. crt	Rate of synthesis/financial equilibrium	UM	Period under review				
			2009	2010	2011	2012	2013
1.	Global borrowing ratio (Debts/Liabilities)	Lei	0,19	0,29	0,28	0,30	0,33
2.	Chain index	%	100 %	153 %	97%	107%	110%
3.	Financial Leverage (D/C)	Lei	0,24	0,43	0,40	0,43	0,49
4.	Chain index	%	100 %	179%	93%	108%	114%
5.	Financial authonomy ratio (C/D)	Lei	4,19	2,34	2,52	2,33	2,03
6.	Chain index	%	100 %	56 %	108%	92%	87%
7.	Fixed-term borrowing ratio (Dtlg/C)	Lei	-	-	-	-	-
8.	Chain index	%	-	-	-	-	-
9.	Borrowing capacity (C/Cp)	Lei	1	1	1	1	1
10.	Chain index	%	100 %	100 %	100 %	100 %	100 %
11.	Reimbursement capacity (CAF*/D)	Lei	0,96	0,79	0,56	0,40	0,22
12.	Chain index	%	100 %	82 %	71%	71%	55%

The CAF values were calculated based on the profit and loss account.

Chart 2 - The evolution of financing ratios

IV.   Conclusions

Sub unitary and decreasing values of the Stable financing ratio of assets and the Financing ratio from internal sources during the period under review confirms the uncertain decreasing consecutive margin of working capital, but with a lower dynamic of the net property assets. The above unit value of General liquidity ratio for the period under review confirms the short-term financial equilibrium.

Sub unitary values of the Relative liquidity ratio (diminished) in the period under review reflect the poor capacity to cope with short-term debts. According to international standards, the Relative liquidity ratio (current) is considered normal if it is counted between 0.8 and 1. For the period under review, it notes that in 2009 this rate gets an optimal value, reflecting a good capacity to pay and a very low risk. In the next period of analysis, the Relative liquidity ratio is reduced even below the corresponding values obtained. The relative liquidity shows a higher satisfying concern because certifies that the company is able to cover short-term liabilities on account of receivables and cash and cash equivalents. For Current liquidity, it is considered a normal level, as values range between 0.2 and 0.3. During the period of analysis for the company under review, we observed that in 2009, 2010 and 2011 the indicator value is within normal limits, and in other periods the level of current liquidity is not satisfying, meaning that the organization is unable to satisfactorily cover short-term   debts in terms of cash reserves, so the

company's situation can be regarded as unfavorable. The Global solvency ratio, expressing the security of long and short-term creditors, as well as the company's lending margin during the period under review obtained values above unit, reflects a sufficient solvency and a favorable situation, given that a value greater than 1.5 of this rate means that the company is able to pay its financial obligations to third parties. In the period under review, the Global borrowing ratio below 0.5 indicates an increase of the share of debts, while reducing the share of equity in the financing structure. The increasing financial leverage reflects the increase in indebtedness due to rising debt against company's equity, thus resulting into a reduction of financial autonomy. Fixed-term borrowing ratio is 0, since the company has no medium and long term debts. Indebtedness has a unitary value due to the fact that the company has no long-term debt, the company's equity having the same value as the long-term capital. The Global autonomy ratio shows the proportion of the business assets funded on the basis of its own sources, which expresses the degree of financial independence of the company. The studied company had a great global financial autonomy throughout the period under review, with a decreasing trend. The Reimbursement capacity shows the extent to which potential sources of cash flow of the business can cover the entire debt. In order to pay the debt within a period of 3 years, it is considered an acceptable minimum level of 0.33, below this level, the company being in danger of insolvency, and the optimal level is considered to be 1.Reducing the reimbursement capacity of debts coming from self-financing capacity is a consequence of faster growth of debt compared with CAF.

References

Books
1.   Halpern, P., Westonm, J., F., Brigham, E., F. (1998) - *Finance management*. The Canadian Pattern., The Economic Publishing House, Bucharest
   2.   Mihalciuc Camelia Cătălina, (2009), *Recovery of financial and accounting information in enterprise diagnosis,* Sedcom libris Publishing House, Iaşi
   3.   Petrescu, S., (2006) - *Analysis and financial accounting diagnosis. Theoretical and applicative   Guide*,   CECCAR   Publishing   House,   Bucharest.

Tabel 3 **Financial balance sheet structure (liquidity - chargeability) to S.C. ALFA S.A.**

Assets = Net requisitions Means longer than 1 year	Analyzed period					Liabilities = Resources Resources with a term greater than 1 year	Analyzed period				
	2009	2010	2011	2012	2013		2009	2010	2011	2012	2013
A. FIXED ASSETS	**4.970.533**	**5.797.019**	**5.436.163**	**7.183.780**	**8.888.157**	**J. CAPITAL AND RESERVES**					
I. Intangible assets	28.055	17.550	3.796	37.620	27.273	I. Capital	716.977	682.930	682.930	682.930	682.930
II Tangible assets	4.603.198	5.776.243	5.430.256	7.137.538	8.854.176	II. Share premium	-	-	-	-	-
III. Financial assets	339.280	3.226	2.111	8.622	6.708	III. Revaluation reserves	-	-	-	-	1.643931
Means lasting more than 1 year						IV. Reserves	6.359.402	6.437.475	6.623.152	6.794.218	7.064.260
B. CURRENT ASSETS	**3.794.788**	**4.874.223**	**5.292.105**	**3.983.972**	**5.258.927**	V. Profit or loss carried forward C Balance	-	-	-	-	-
I. Stocks	1.809.732	2.487.077	1.218.236	2.109.995	2.291.692	D Balance					
II. Accounts Payable	1.356.381	1.548.002	2.629.885	1.459.342	1.891.806	VI. PROFIT OR LOSS OF THE YEAR C Balance	1.101.178	449.427	380.145	337.554	91.847
III. Short-term investments	-	-	-	-	98.612	D Balance					
IV. Cash and bank saccounts	628.675	839.144	1.443.984	414.635	976.817	Distribution of profit	1.101.178	78.073	-	-	-
C. EXPENSES IN ADVANCE	**1.748**	**28.866.**	**2.404**	**626**	**16.165**	**TOTAL EQUITY**	**7.076.379**	**7.491.759**	**7.686.227**	**7.814.702**	**9.482.968**
						H. PROVISIONS					
						G. DEBTS TO BE PAID WITHIN A PERIOD OF MORE THAN 1 YEAR					
						D. DEBTS TO BE PAID WITHIN A PERIOD OF UP TO 1 YEAR	**1.690.690**	**3.208.349**	**3.044.445**	**3.353676**	**4.680.281**
						I. Income in advance					
TOTAL NET ASSETS	**8.767.069**	**10.700.108**	**10.730.672**	**11.168.378**	**14.163.249**	**TOTAL CAPITAL**	**8.767.069**	**10.700.108**	**10.730.672**	**11.168.378**	**14.163.249**