

ANALYSIS OF FINANCIAL BALANCE USING RATES

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Summary

The analysis of the financial balance is based on the data from the balance sheet and is related to the correlation between financial resources and financing needs, the company's liquidity and solvency, and also to the rotation speed of assets and liabilities from the balance sheet. If the balance between financial resources and financing needs show a static balance, the analysis of rotation rates of fixed assets, stocks, receivables, long term debts and short term debts signifies a dynamic balance and offers more relevant data than the static one. Consequently, an adequate financial diagnosis will refer to both forms of balance.

Keywords: financial balance, liquidity, solvency, current assets, current debts, operating debts, rotations rates.

JEL classification: G32

1. Introduction and context

The purpose of this article is to bring well-documented information about the company's financial balance through the assets and liabilities' rotations rates in the balance sheet. Companies from the production sector have higher values in case of the assets' rotation rates, expressed in days, because the operating cycle has a longer duration than in case of services and commerce. Longer operating cycles mean that the financing is longer and the working capital is positive. A company in the commerce sector can do well without permanent financing sources, if it cashes in from the customers faster than it pays the suppliers.

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

2. Analysis of financial balance using rates

Financial rates represent only one of the instruments used in financial analysis and relying only on these rates could lead to wrong results. The size of financial rates differs from one domain to another, depending on the nature of the activity, the location of the company, which generates differences in the wage cost, supply and transportation [1].

The following rates can be used for an in-depth analysis of the financial balance: stocks' financing rate, current liquidities, immediate liquidities, at sight liquidity, the general solvency rate, rate of financial autonomy, rate of debts, receivables' rate of rotation, suppliers' rate of rotation.

The stock financing rate (SF) is calculated as the ratio between the working capital (WC) and stocks' level:

$$SF = \frac{WC}{Stocks} \quad (1)$$

A high level of this indicator can be found in a company with a careful financing policy. If the level of this indicator is lower, the stocks are financed through the operating debts, implying an aggressive financing policy and a higher risk than in the first case.

The current liquidity (Lc) is established as a ratio between the current assets and current debts:

$$Lc = \frac{\text{Current assets}}{\text{Current debts}} \quad (2)$$

According to Order PFM no. 3055 from 2009, the recommended and acceptable value of this indicator should be around 2. This indicator signifies a general liquidity because some of the stocks taken into account are in the “hard to sell” category, and they will be cashed in (or not) during a longer time frame.

It is important to compare the level of this indicator (and usually all financial indicators) with the medium levels of the branch or competition, to see the company's capacity to pay current debts.

Immediate liquidity (Li) or the acid test, can signal a liquidity state closest to the significance of the term “liquidity” (the ability to convert assets into cash):

$$Li = \frac{\text{Current assets} - \text{Stocks}}{\text{Current debts}} \quad (3)$$

The recommended value for this indicator is 0.8. Any value, lower than 0.5, shows problems in the immediate payment of debts.

At sight liquidity (Ls) is established as a report between the treasury assets and current debts:

$$Ls = \frac{\text{Treasury assets}}{\text{Current debts}} \quad (4)$$

A level of 0.2 of this indicator signifies a normal situation for the company.

The general solvency rate (Rgs) measures the risk of inability to pay current debts; it is calculated as a ratio between the total assets and total debts:

$$Rgs = \frac{\text{Total assets}}{\text{Total debts}} \quad (5)$$

The value of this indicator must be improper, which means that the company will be able to pay its debts. If the value is proper, the company is in bankruptcy.

Financial autonomy rate (Rfa) is established by reporting the ownership equity to the capitals in use (permanent):

$$Rfa = \frac{\text{Ownership equity}}{\text{Permanent capital}} \quad (6)$$

A value higher than 0.5 signifies that the company has a normal activity, because it is considered that there are reimbursement possibilities for the long term debts from the ownership equity.

The following indicators can be used for the capitals’ management:

A) Number of rotations of the permanent capitals (NRPC):

$$NRPC = \frac{\text{Total income}}{\text{Permanent capitals}} \quad (7)$$

This indicator shows the total income, reported to the invested capitals. The values should be as high as possible.

B) Rotation lifetime of permanent capitals (RLPC):

$$RLPC = \frac{\text{Permanent capitals} \times 360}{\text{Total income}} \quad (8)$$

If the rotation lifetime of permanent capitals is low, the company is efficient in handling its financing sources.

For the **assets’ diagnosis**, one can analyze the following rotation rate:

A) The number of rotations of the total asset (NRTA):

$$NRTA = \frac{\text{Total income}}{\text{Total assets}} \quad (9)$$

B) The rotation lifetime of current assets (RLCA):

$$RLCA = \frac{\text{Total assets} \times 360}{\text{Total income}} \quad (10)$$

To manage the fixed assets one can use the following indicators:

A) Number of rotations of fixed assets (NRFA):

$$NRFA = \frac{\text{Total income}}{\text{Fixed assets}} \quad (11)$$

For industrial units, the reference values are the following:

- Under a rotation signifies an a poor activity;
- Between 1 and 1.4 it is a satisfactory activity;
- Over 1.4 is a good activity.

B) Rotation lifetime of fixed assets (RLFA):

$$RLFA = \frac{\text{Fixed assets} \times 360}{\text{Total income}} \quad (12)$$

The rotation lifetime of fixed assets must be as low as possible, in order to signify a positive activity. Fixed assets represent financing needs, meaning efforts, and the incomes represent the effects obtained by the company.

Assets include current assets (stocks, receivables, cash and bank accounts, short term financial investments) and upfront expenses. To manage current assets we can use the following indicators:

A) Number of rotations of current assets (NRCA):

$$NRCA = \frac{\text{Total income}}{\text{Current assets}} \quad (13)$$

B) Rotation duration of current assets (RDCA):

$$RDCA = \frac{\text{Current assets} \times 360}{\text{Total income}} \quad (14)$$

It is considered that current assets have a minimum efficiency at 6 rotations, which corresponds to an average rotation term of 60 days.

Stocks include the following elements: raw materials and consumable materials, production in progress, finished goods and goods, cash advance to buy stocks.

In order to manage stocks, one uses the following indicators:

A) Number of stock rotations (NSR):

$$NSR = \frac{\text{Turnover}}{\text{Medium stocks}} \quad (15)$$

B) Rotation duration of stocks (RDS):

$$RDS = \frac{\text{Stocks} \times 360}{\text{Turnover}} \quad (16)$$

It is believed that a company has a minimum efficiency of stocks at 8 rotations, which correspond to an average rotation term of 45 days.

Receivables represent the amounts that will be cashed in and can be classified in the following elements:

- ✓ Commercial receivables;
- ✓ Amounts to be cashed in from affiliated entities;
- ✓ Amounts to be cashed in from entities with which the company shares participating interests;
- ✓ Other receivables;
- ✓ Subscribed and unpaid capital.

Current receivables include also the upfront expenses.

To manage the current receivables one uses the following indicators:

A) Number of rotations of receivables (NRR):

$$NRR = \frac{\text{Total income}}{\text{Current receivables}} \quad (17)$$

B) Rotation duration of receivables (RDR):

$$RDR = \frac{\text{Current receivables} \times 360}{\text{Total income}} \quad (18)$$

It is believed that there is a minimum efficiency of receivables at 4 rotations, which correspond to an average collection term of 90 days.

Clients represent the natural or legal persons who, as buyers, purchase goods and services for a fee. Client credit (credit sales) represents the timeframe in which the company cashes in money for the sold products and offered services.

Client credit and the cash advances for the suppliers represent capital allocations, being for the future management a financing need. To manage clients, one uses the following indicators:

A) Number of rotations of the client credit (NRCC):

$$NRCC = \frac{\text{Turnover}}{\text{Clients}} \quad (19)$$

B) Rotation duration of client credit (RDCC):

$$RDCC = \frac{\text{Clients} \times 360}{\text{Turnover}} \quad (20)$$

It is believed that there is a minimum efficiency of the client credit at 8 rotations, which correspond to an average collecting term of 45 days. The optimal value is thought to be 30 days.

Current debts include the following elements:

- Commercial debts – suppliers, commercial bills;
- Fiscal debts and debts related to the social insurance;
- Debts related to the associates (shareholders);
- Cash advance from orders;
- Loans from issue of bonds;
- Money owed to credit institutions;
- Income in advance.

To manage **current debts** one uses the following indicators:

A) Number of rotations of debts (NRD):

$$NRD = \frac{\text{Totalexpenditures}}{\text{Current debts}} \quad (21)$$

B) Rotation duration of debts (RDD):

$$RDD = \frac{\text{Current debts} \times 360}{\text{Totalexpenditures}} \quad (22)$$

The minimum value that guarantees an acceptable management of current debts is at least 4 rotations, which corresponds to an average payment term of maximum 90 days.

Operating debts include the following elements:

- Commercial debts – supplier;
- Commercial bills that must be paid;
- Fiscal debts and debts related to social insurance;
- Debts related to the associates (shareholders);
- Cash advance from orders;
- Income in advance.

The following indicators are to be used in order to manage operating debts:

A) Number of rotations of operating debts (NROD):

$$NROD = \frac{\text{Operating expenditures}}{\text{Operating debts}} \quad (23)$$

B) Rotation duration of operating debts (RDOP):

$$RDOP = \frac{\text{Operating debts} \times 360}{\text{Operating expenditures}} \quad (24)$$

The minimum value that guarantees an acceptable management of operating debts is at least 6 rotations, which corresponds to an average payment term of maximum 60 days.

Supplier credit, together with the cash in advance from clients, represents a financing source for the operating cycle. It shows the number of crediting days gotten from the suppliers. **Supplier credit** includes the following: expenses with raw and other materials, other material expenses, other external expenses (energy and water), goods related expenses, expenses related to external services.

To manage supplier credit one uses the following indicators:

A) Number of rotations of supplier credit (NRSC):

$$NRSC = \frac{\text{Suppliers related expenses}}{\text{Suppliers}} \quad (25)$$

B) Rotation duration of supplier credit (RDSC):

$$RDSC = \frac{\text{Suppliers} \times 360}{\text{Suppliers related expenses}} \quad (26)$$

It is believed that one has a minimum efficiency of the supplier credit at 8 rotations, which corresponds to an average term for paying the bills of 45 days. If a supplier is paid later, it is an advantage for the company, as it can use this credit source.

There are 2 indicators for indebttness:

A) Long term degree of indebttness (LTDI):

$$LTDI = \frac{\text{Long term debts}}{\text{Liabilities}} \quad (27)$$

B) Short term degree of indebttness (STDI):

$$STDI = \frac{\text{Short term debts}}{\text{Liabilities}} \quad (28)$$

The value of these 2 indicators together should be below 50%.

In addition to the theoretical part I will present a model of analysis of financial balance, using data from a company called ROTAS, which activates in the commercial sector. In this analysis I will use rotation rates. ROTAS has the following data: fixed assets = 36,500 lei, average stocks 8,500 lei, average receivables = 6,500 lei, liquidities = 10,000 lei, ownership equity = 25,000 lei, long term debts = 14,000 lei, current debts = 22,500 lei, turnover = 50,000 lei, total expenses = 46,000 lei. In the company's sector of activity, these are the average values of indicators regarding solvency and liquidity: current liquidity = 2.0; rapid liquidity = 1.3; at sight liquidity = 0.4; long term degree of indebttness = 0.33; short term degree of indebttness = 0.17; net worth solvency = 0.5; general solvency = 1.8, rotation duration of stocks = 65 days, timeframe for cashing in the receivables= 45 days, timeframe for paying currents debts = 90 days.

Now I will calculate the rates for the ROTAS company:

$$\text{Current liquidity} = \frac{\text{Current assets}}{\text{Current debts}} = \frac{8,500 + 6,500 + 10,000}{22,500} = 1.11$$

$$\text{Rapid liquidity} = \frac{\text{Current assets - stocks}}{\text{Current debts}} = \frac{6,500 + 10,000}{22,500} = 0.73$$

$$\text{At sight liquidity} = \frac{\text{Liquidities}}{\text{Current debts}} = \frac{10,000}{22,500} = 0.44$$

Long term degree of indebttness (LTDI):

$$LTDI = \frac{\text{Long term debts}}{\text{Liabilities}} = \frac{14,000}{61,500} = 0.23$$

Short term degree of indebttness (STDI):

$$STDI = \frac{\text{Short term debts}}{\text{Liabilities}} = \frac{22,500}{61,500} = 0.37$$

Total degree of indebttness (TDI):

$$TDI = \frac{\text{Total debts}}{\text{Liabilities}} = \frac{36,500}{61,500} = 0.60$$

Net worth solvency (NWS):

$$NWS = \frac{\text{Ownership equity}}{\text{Liabilities}} = \frac{25,000}{61,500} = 0.41$$

General solvency (GS):

$$GS = \frac{\text{Total assets}}{\text{Total liabilities}} = \frac{61,500}{36,500} = 1.68$$

Rotation duration of stocks (RDS):

$$RDS = \frac{\text{Stocks} \times 360}{\text{Turnover}} = \frac{8,500 \times 360}{50,000} = 61.2 \text{ days}$$

Rotation duration of receivables (RDR):

$$RDR = \frac{\text{Current receivables} \times 360}{\text{Total income}} = \frac{6,500 \times 360}{50,000} = 46.8 \text{ days}$$

Rotation duration of debts (RDD):

$$RDD = \frac{\text{Current debts} \times 360}{\text{Total expenses}} = \frac{22,500 \times 360}{46,000} = 176 \text{ days}$$

Table 1 has the values of financial indicators for the ROTAS company, and also the average values of the activity sector in which the company operates:

Table 1 Interpretation of financial indicators

Indicators	ROTAS company	Average	Interpretation
Current liquidity	1.11	2.0	High risk
Rapid liquidity	0.73	1.3	High risk
At sight liquidity	0.44	0.4	Low risk
Long term degree of indebttness	0.23	0.33	Low risk
Short term degree of indebttness	0.37	0.17	High risk
Total degree of indebttness	0.6	0.5	Low risk
Net worth solvency	0.41	0.5	High risk
General solvency	1.68	1.8	Medium risk
Rotation duration of stocks	61.2	65	Medium risk
Timeframe for cashing in receivables	46.8	45	Low risk
Time frame for paying current debts	176	90	High risk

Source: Own calculation

Observations:

ROTAS has good values for the following indicators: long term degree of indebttness and total degree of indebttness, at sight liquidity and timeframe for cashing in receivables, the risks related to these indicators being low. The general solvency indicator and the rotation duration of stocks indicator reflect a good activity, while the other 5 indicators, namely the current liquidities, rapid liquidities, short term degree of indebttness, net worth solvency and the timeframe for paying current debts show an inadequate activity, with negative implications in the company's activity.

4. Conclusions

To treat all companies in the same manner or to include all companies from the industrial sector in the same category is a mistake. Each sector of activity has its own particularities regarding financial balance. A certain value of an indicator can mean a positive activity for one company but a negative activity for another. The individual value of an indicator does not give pertinent and convincing information. An adequate diagnosis must analyze as many financial indicators as possible, over a longer period of time and compare the data with the standards. The static analysis must always be accompanied by a dynamic analysis.

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