

DIAGNOSIS OF FINANCIAL EQUILIBRIUM

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Summary

The analysis based on the balance sheet tries to identify the state of equilibrium (disequilibrium) that exists in a company. The easiest way to determine the state of equilibrium is by looking at the balance sheet and at the information it offers. Because in the balance sheet there are elements that do not reflect their real value, the one established on the market, they must be readjusted, and those elements which are not related to the ordinary operating activities must be eliminated. The diagnosis of financial equilibrium takes into account 2 components: financing sources (ownership equity, loaned, temporarily attracted). An efficient financial equilibrium must respect 2 fundamental requirements: permanent sources represented by ownership equity and loans for more than 1 year should finance permanent needs, and temporary resources should finance the operating cycle.

Keywords: *financial equilibrium, balance sheet, working capital, need for working capital, net treasury.*

JEL classification : G32

1. Introduction and context of this study

The main purpose of this article is to bring well-documented information about the diagnosis of financial equilibrium. Any business plan, the company's operation, must take into account the 2 components of financial equilibrium: financing sources and financing needs. The diagnosis' objective is to identify the strong points (opportunities offered by the economic environment) and weak points (risks due to the economic environment) and to propose measures to improve the company's activity. Many bankruptcies happen because aspects related to the financial equilibrium are treated superficially. The first problem that appears is the lack of liquidities, then the interruptions in the activity, losses, and finally, insolvency.

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

2. Diagnosis of financial equilibrium

Etymologically, the word “diagnosis” comes from Greek and is translated by the collocation “able to discern”, and the sense given to the word “diagnosis” in the financial-economic analysis is very close to the one in medicine (where it means analyzing the symptoms and determining the internal or external causes of some abnormal conditions). Nowadays it is also used in the microeconomic domain.

The diagnosis of the financial equilibrium presumes comparing on one hand the company's resources (ownership equity and loans) and on the other its financing needs. For an accurate diagnosis, the sources and financing needs will be divided into long term (over one year) and short time (less than one year). To compile the financial diagnosis, the balance sheet must be divided into financial and functional balance sheets.

Balance sheet represent the main component of financial statements through which the assets, debts and ownership equity is presented, at the end of the financial exercise, and also in case of a merger, division, or cease of the activity. The assets take into account concrete elements of the company's possessions, while the debts and ownership equity include the means of acquiring the possessions. The assets are ordered in the balance sheet according to their nature and liquidity, and the debts and ownership equity according to the nature and chargeability. The balance sheet puts into practice one of accounting's main principles, meaning the double representation, in which the economic elements are reflected through the aspect of material components, and also through the aspect of sources of origin.

The financial balance sheet represents the kind of balance in which the items are organized according to the liquidities (asset items), respectively to the chargeability (liability items). Obtaining the financial balance sheet imposes making some corrections of assets and liabilities based on information from the appendices by regrouping the items according to the time criteria (older or newer than 1 year).

In the financial analysis done with the help of the financial balance sheet, but also every time when a financial diagnosis is made, several **principles** must be respected:

- ✓ Using the fair value in case of tangible assets and financial ones, and not the historical cost; some assets are either undervalued, and then not revaluated afterwards, or useless in the production process and then they must be adjusted or taken out from the operating cycle; the market value will be the closest to their level;
- ✓ Eliminating the non-values (set-up costs) from the balance sheet asset and diminishing of the ownership equity with an identical amount, because these fictive assets do not bring any value for the company; for example when liquidating the company, how does one turn to advantage the fictive assets?;
- ✓ Comparing, in the case of stocks, the net realisable value with the cost of stocks and taking into account the higher value;
- ✓ In the case of stocks, receivables, contractors, which have great variations from one month to another, their medium balance should be used, calculated as their arithmetic mean; final balance should not be used because it can have great differences compared to the medium ones; these elements’ implications can be very important if one analyses the rotation speeds;
- ✓ Each company is unique in its own way, and establishing unique rules for all the companies can have bad consequences; for example, a new company will have a lower level of contractors, clients, but also of the reported results; a new company will not use from the beginning an aggressive commercial politic in case of clients;
- ✓ If the inflation is a two-digit number, then some corrections must be made to eliminate the effects of this phenomenon.

In case of the financial balance sheet, the analysis of the financial equilibrium is done with the help of indicators of working capital (WC), need for working capital (NWC) and net treasury (NT).

Working capital (WC) shows the company’s long-term equilibrium, through permanent sources (ownership equity and long-term debts) and net fixed assets.

$$WC = \text{Ownership equity} + \text{Long-term debts} - \text{Net fixed assets}$$

$$WC = \text{Current assets} - \text{Short-term debts}$$

Diagram 1 shows the way in which the working capital is calculated:

| ASSETS | LIABILITIES |
|------------------------|------------------------|
| FIXED ASSETS | OWNERSHIP EQUITY |
| WORKING CAPITAL | LONG-TERM DEBTS |
| CURRENT ASSETS | WORKING CAPITAL |
| | SHORT-TERM DEBTS |

Diagram 1 Working capital

A **positive working capital** signifies a long-term financial equilibrium, the surplus financing the short-term financing need of the operating cycle. The increase of the working capital can have multiple causes:

- Increase of the ownership equity through multiple ways;
- Increase in the medium and long term debts; thus the financial expenses will increase and this will influence the results of the exercise;
- Decrease of the net fixed assets either through selling of some fixed assets or because of the amortization.

A **negative working capital** highlights the impossibility of fully covering long-term financing. Usually, companies with long production cycles should register an important positive working capital, and those with relatively short cycles can accept lower values of the working capital. For companies that are in the retail trade domain, because big companies allow the payment of the goods after a certain time, they can function with a negative working capital. The decrease of the working capital can have multiple causes:

- ✓ Increase of fixed capitals due to investments or revaluations;
- ✓ Decrease of ownership equity;
- ✓ Repayment of medium and long term loans with a positive effect on financial structure.

Long-term financial equilibrium with ownership equity is done by using the **own working capital (OWC)**. This is defined as the difference between the company’s own capital and fixed assets.

$$OWC = \text{Own capital} - \text{Fixed assets}$$

Foreign working capital (FWC) is calculated as the difference between the working capital and the company’s own working capital:

$$FWC = WC - OWC = \text{Long-term debts}$$

$$WC = OWC + FWC$$

The need for working capital (NWC) highlights the report which must exist between the financing needs related to the operating cycle and resources available to this end.

Temporary needs represent the financing for the renewal of stocks and receivables and they must be covered from temporary sources, respectively from commercial credits from contractors and creditors. NWC is determined in the following manner:

$$\text{NWC} = \text{Stocks} + \text{Receivables} - \text{Operating debts}$$

$$\text{NWC} = (\text{Current assets} - \text{Liquid assets}) - (\text{Short-term debts} - \text{Current bank loans})$$

A **positive NWC** shows that current needs (stocks and receivables) are higher than temporary resources. This situation can be explained as follows:

a) it is a **normal situation** if it is determined by:

- ❖ A policy of expanding the activities which will lead to a stock increase;
- ❖ Increase of sales;
- ❖ Increase of time in the manufacturing cycle.

b) it is an unfavourable situation if it is determined by:

- ✓ The existence of an unfavourable disparity between the liquidity of current assets and chargeability of operating debts (receivables are collected for a longer period of time than the payment of operating debts);
- ✓ The existence of fixed stocks, or unsellable stocks.

A **negative NWC** signifies that there is a surplus of temporary resources in relation to temporary needs. The situation is positive if it is determined by:

- Acceleration of the rotation speed of stocks and receivables (they are cashed in quicker);
- Payment of operating debts during a longer time frame.

Net treasury (NT) is another indicator of financial equilibrium. It is established in the following way:

$$\text{NT} = \text{WC} - \text{NWC}$$

$$\text{NT} = \text{Liquid assets} + \text{Short term financial investments} - \text{Current bank loans}$$

$$\text{NT} = \text{Treasury assets} - \text{Treasury passives}$$

A net positive treasury means a state of financial equilibrium for the whole enterprise.

A **functional balance sheet** represents the type of balance sheet based on ordering the items based on their nature and grouping on-balance-sheet items according to the company's three cycles: operating, investing and financing.

The functional balance sheet presents separately the on-balance-sheet items involved in the company's operating, investing and financing cycles. Short-term assets are included in the operating cycle, meaning the operation of purveying, producing and selling. The investing cycle includes buying of fixed assets. The financing cycle takes into account the stable (permanent) resources, and those received after the operating activities, temporary assets and resources are divided into two categories: operating and non-operating assets.

The balance sheet's functional analysis is done by using the global working capital indicators (GWC), global need for working capital (GNWC) and global net treasury (GNT). The way in which the necessary operating working capital is insured, based on the global net working capital or based on the resources disengaged outside the operating activities, must be analysed in the functional analysis.

Global working capital (GWC) is established according to the formula:

$$\text{GWC} = \text{Stable resources} - \text{Stable assets}$$

If $\text{GWC} > 0$ it is considered that the company is in a long-term equilibrium.

The need for global working capital (NGWC) has two components: the need for operating working capital (NOWC) and need for non-operating working capital (NNOWC).

The need for operating working capital (NOWC) is the fundamental indicator of the functional balance sheet and is determined according to the formula:

$$\text{NOWC} = \text{Operating assets} - \text{Operating debts}$$

The need for non-operating working capital (NNOWC) is established according to the formula:

$$\text{NNOWC} = \text{Non-operating assets} - \text{Non-operating debts}$$

The interpretation of the NOWC indicator must be done by taking into account other indicators.

NOWC > 0 can mean two things:

- a) It can mean a normal situation if it has reasonable values, depending on the domain of activity;
- b) It can mean an abnormal situation if there is a big stock, litigant clients or too reduced operating debts (too quick payment of the contractors).

NOWC < 0 can have two explanations:

- a) It can show a great situation if it is the effect of an optimal operating cycle and of a policy of payment and collection terms (collection terms are lower than payment terms for the contractors);
- b) It can be the effect of the company’s restriction of its activity, manifested through a reduction of stocks and receivables (there is no production or sales, so the level of stocks and receivables is low); at the same time, there can be some debts from operating activities.

The level of NOWC depends on the domain in which the company operates [2, p.157]:

- Industrial companies usually have a positive necessary operating working capital, while retail companies have a negative one (this constitutes a short term financing source, disengaged continuously, from which fixed assets can be financed);
- A large-sized necessary operating working capital is registered in domains with long productions cycles;
- A small necessary operating working capital is registered in domains with short production cycles.

To highlight the general financial equilibrium, the net global treasury (NGT) can be calculated, as a difference between the GWC and NGWC according to the formula:

$$NGT = GWC - NGWC$$

In the Anglo-Saxon literature the term “net working capital” is used. This is actually a working capital which is determined as a difference between the current assets and current debts:

$$\text{Net working capital} = \text{current assets} - \text{current debts}$$

The economic balance sheet represents the kind of balance sheet that draws a strict line between the financial elements and elements that are relevant for the company’s production and commercial cycle.

The economic balance sheet excludes from the current assets the financial elements (liquid assets and short term financial investments), while from the balance sheet liabilities it excludes the operating debts.

In addition to the theoretical part, we present an example of a diagnosis model for a company that operates in the industrial domain, which has the following simplified balance sheet [processing 2, p. 164]:

SIMPLIFIED BALANCE SHEET

| ASSETS | GROSS | Amortization & adjustment | Net | LIABILITIES | |
|-----------------------------|----------------|---------------------------|----------------|---------------------------------|----------------|
| Set-up costs | 1,200 | 500 | 700 | Share capital | 38,250 |
| Fixed assets | 58,680 | 8,680 | 50,000 | Revaluation reserves | 2,500 |
| Financial fixed assets | 4,200 | | 4,200 | Reserves | 4,000 |
| Stocks | 18,600 | 900 | 17,700 | Provisions | 1,800 |
| Clients | 21,300 | 600 | 20,700 | Financial debts | 22,500 |
| Various receivables | 800 | | 800 | Contractors | 20,500 |
| Investment securities | 750 | | 750 | Social, fiscal and salary debts | 3,400 |
| Cash at bank and in-hand | 6,500 | | 6,500 | Various creditors | 2,800 |
| Premium on redemption bonds | 1,500 | | 1,500 | Treasury credits | 7,100 |
| Total assets | 113,530 | 10,680 | 102,850 | Total liabilities | 102,850 |

Additional information:

- 10% from the financial fixed assets have a less than one year duration;
- 5% of stocks have a rotation speed of 400 days;
- 15% of the clients are cashed-in during over one year;
- 40% of provisions are for litigations, and the implementation period is 6 months, and 60% are for guarantees offered to clients and have an implementation period of over 1 year;
- Financial debts represent long-term loans, from which 20% are instalments with less than 1 year due-dates;
- 20% of the contractors are paid over a 1 year period;
- The debts with profit tax represent 12% from the total of the social, fiscal and salary debts.

In order to analyse the financial and frctional equilibrium, we will draw up the financial and the functional balance sheet:

FINANCIAL BALANCE SHEET

| ASSETS | NET | LIABILITIES | NET |
|--|---------------|--|---------------|
| Tangible assets | 50,000 | Share capital | 38,250 |
| Financial fixed assets | 3,780 | Revaluation reserves | 2,500 |
| Stocks with a rotation period > 1 year | 885 | Reserves | 4,000 |
| Clients with a cash-in period of > 1 year | 3,105 | Provisions with a due-date > 1 year | 1,080 |
| | | Financial debts > 1 year | 18,000 |
| | | Contractors > 1 year | 4,100 |
| | | Set-up costs | - 700 |
| | | Premium on redemption bonds | - 1,500 |
| Net assets | 57,770 | Permanent capitals | 65,730 |
| Working capital (WC) = 7,960 | | | |
| Stocks with a rotation period < 1 year | 16,815 | Contractors with payment < 1 year | 16,400 |
| Clients with a cash-in period of < 1 year | 17,595 | Social, fiscal and salary debts | 3,400 |
| Various receivables | 800 | Various creditors | 2,800 |
| | | Provisions with a due-date < 1 year | 720 |
| Temporary needs < 1 year | 35,210 | Temporary resources < 1 year | 23,320 |
| Need for working capital (NWC) = 11.890 | | | |
| Financial assets < 1 year | 420 | Treasury credit | 7,100 |
| Investment securities | 750 | Refund instalments for long-term loans | 4,500 |
| Cash at bank and in-hand | 6,500 | | |
| Treasury assets | 7,670 | Treasury liabilities | 11,600 |
| Net treasury (NT) = - 3,930 (7,960 – 11,890 and 7,670 – 11,600) | | | |

FUNCTIONAL BALANCE SHEET

| ASSETS | GROSS | LIABILITIES | |
|--|---------------|---------------------------------|---------------|
| Set-up costs | 1,200 | Share capital | 38,250 |
| Fixed assets | 58,680 | Revaluation reserves | 2,500 |
| Financial fixed assets | 4,200 | Reserves | 4,000 |
| | | Provisions | 1,800 |
| | | Amortization and adjustments | 10,680 |
| | | Financial debts | 22,500 |
| | | Premium on redemption bonds | - 1,500 |
| Gross fixed assets | 64,080 | Permanent capitals | 67,550 |
| Global working capital (GWC) = 14,150 | | | |
| Stocks | 18,600 | Contractors | 20,500 |
| Clients | 21,300 | Social, fiscal and salary debts | 2,992 |
| Current operating assets | 39,900 | Operating debts | 23,492 |
| Need for operating working capital (NOWC) = 16,408 | | | |
| Various receivables | 800 | Various creditors | 2,800 |
| | | Profit tax | 408 |
| Need for non-operating working capital (NNOWC) = - 2.408 | | | |
| Investment securities | 750 | Treasury credits | 7,100 |
| Cash at bank and in-hand | 6,500 | | |
| Treasury assets | 7,250 | Treasury liabilities | 7,100 |
| Global net treasury (GNT) = 150 (14,150 – 16,408 - - 2,408 and 7,250 – 7,100) | | | |

Conclusions of the financial balance sheet

The positive working capital of 7,960 lei indicates that there is a long-term financial equilibrium, and this amount can finance the company's operating cycle.

The need for working capital also has positive values of 11,890 lei, which at first would indicate a financial disequilibrium. However, the situation is normal if we take into account the domain in which the company operates. The stock level in the industrial domain is high, and exploiting debts (attracted resources) cannot finance the operating cycle by themselves. For companies in the commercial domain, NWC has negative values. In fact, the temporary financing needs of **35,210 lei are financed as follows**¹: **7,960 lei through working capital, 23,320 lei through operating debts (temporary resources), and the value of 3,930 cannot be financed.**

Some measures must be taken to increase the stocks' rotation speed (some were put in the fixed assets category, a negative aspect for financing the company), and to cash in faster the receivables.

The negative net treasury of 3,930 lei means the same thing: the company needs financing in order to carry on its activity in good conditions.

The financial equilibrium is shown in diagram 2:

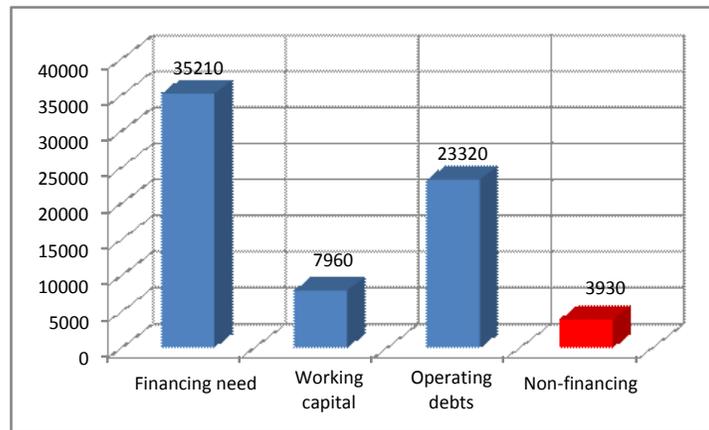


Diagram 2 - Financing the operating cycle according to the financial balance sheet

If the rotation rates cannot be modified in favor of the company, a solution for the financial equilibrium (increase of liquidities) with a zero net treasury could be the following²: we increase the ownership equity with 3,930 lei, amount that will be found in the liquid assets. The values will be: $WC = 65,730 + 3,930 - 57,770 = 11,890$ lei. NWC will have the same value of 11,890 lei, and $NT = 0$. In this case, the financing of the operating cycle is shown in diagram 3:

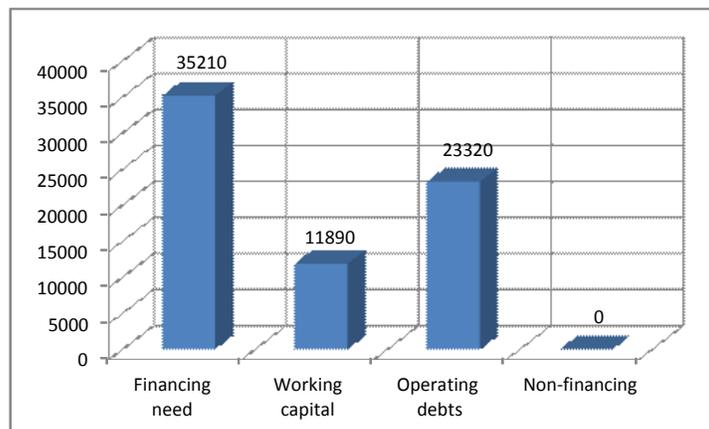


Diagram 3 – Financing the operating cycle according to the functional balance sheet

¹ Own calculations and interpretations

² Own calculations and interpretations

Conclusions of the functional balance sheet

The functional analysis based on the functional balance sheet refers to the perspective regarding the **continuation of activity**.

The global working capital is 14,150 lei and shows that there is a long-term financial equilibrium, because permanent resources (durable, acyclic) finance the gross fixed assets (stable, acyclic assets).

The need for operating working capital has a positive value of 16,408 and shows that the operating debts of 23,492 cannot finance by themselves the operating assets that amount to 39,900 lei. Part of this need will be financed by the global working capital (14,150 lei), and the difference of 2,258 lei by the need for non-operating working capital (2,48 lei), or by treasury credits.

The need for non-operating working capital has a negative value of -2,408 lei and shows that temporary non-operating resources (various creditors and profit tax), can finance various receivables. The surplus from this fund will finance the need for operating working capital.

The global net treasury is 150 lei and shows that the company's general equilibrium is good.

The financial balance sheet shows the financial equilibrium from the point of view of liquid assets, and the functional one mainly shows if the conditions to continue the company's activity are fulfilled. The company's functional equilibrium is shown in diagram 4:

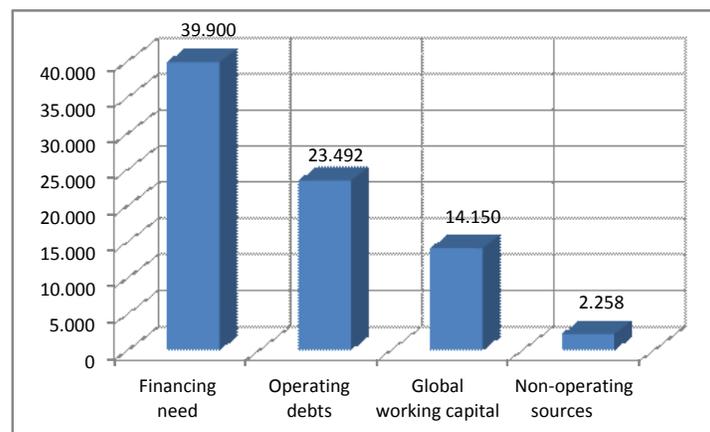


Diagram 4 - Financing the operating cycles according to the functional balance sheet

3. Conclusions

An efficient financial diagnosis must signal the disequilibrium which can exist in a company's management. For this, the financial analyst will take into consideration the following aspects:

a) The existence of an optimal ratio between the level of fixed assets and that of the current assets. Usually, the current assets are the ones that bring profit and cash flow for the company. This ratio depends on the domain in which the company activates. There is an optimal ratio for the metallurgical or building industries, and another optimal ratio for a commerce company.

b) A level of stocks that is too high can signal either an exaggerated supply policy with working and other materials, or the existence of some merchandise which could not be sold. The financial diagnosis must establish the optimal level of stocks by taking into account the supply costs, but also the storing costs (Wilson-Whitin model) or a constant ratio of the working capital/stocks will be followed.

c) An exaggerated share of receivables can signal deficiencies in cashing them in, but also an aggressive expansion policy, a good reason to make a more in-debt analysis (constant ratio turnover/receivables or tracing the stocks).

d) The share of treasury assets (liquid assets, bank accounts, investment transferable securities) must have low values (usually between 35%); exceeding these levels would signal the incapacity to identify some viable investment perspectives;

e) Assuring an optimal ratio between the ownership equity and loaned capitals, without exceeding the degree of indebtedness.

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