The financial statement and the analysis of financial dynamics

"It sounds strange, but it is a fact that balance sheets can be a compelling read."
Mary Archer (1989)

Summary

1. Information in the financial statements

1.1. The mandatory content of the financial statements in its mandatory documents

The aspects of managing a business can be analysed from different aspects:

- Financial aspect, relating to the relationships existing, on the one hand, between the financial needs generated by management and the related coverage methods and, on the other, between the flow of income and the flow of financial expenditure;
- Financial aspect, relating to the relationships between net worth (or own capital) and third-party capital (or debt capital);
- Economic aspect, relating to the relationships between the flow of costs and the flow of revenues.

Consequently, management is observed from the perspective of:

- Of "liquidity" (financial aspect), verifying the existence of a balance between investments and financing methods and between monetary income and expenditure;
- Of the "solidity" (capital aspect), verifying the existence of a balance, within the financing sources, between own capital and third-party capital;
- Of the "cost-effectiveness" (economic aspect), verifying the existence of a balance between the flow of revenues and the flow of costs.

The financial statement represents the main source of information on the management of the company and, in particular, its careful analysis should allow us to observe the management in the various aspects, complementary to each other, that characterize it.

However, it is necessary to verify whether the mandatory content of the financial statements required by Italian regulations is sufficient to provide information on all three aspects of management.

The mandatory content of the financial statements is governed by art. 2423 co. 1 cc (revised by Legislative Decree 18 August 2015 n. 139), which establishes that "the directors must draw up the financial statements, consisting of the balance sheet, the income statement, the cash flow statement and the explanatory notes".

Therefore, according to current Italian regulations, the financial statements are made up of the following documents:

- *Balance sheet*, which illustrates the composition of the company's assets at the end of the administrative year, divided into assets and liabilities;
- *Income Statement*, which illustrates the formation of the economic result for the year by contrasting the revenues and costs thereof;
- *Supplementary note*, non-accounting statement, which illustrates the content of the previous accounting documents, as well as the evaluation criteria adopted in the formation of the balance sheet values.
- *Cash flow statement* (mandatory since 2015 for companies that prepare financial statements in ordinary form) is a financial document of the financial statements, in which a company summarizes all the cash flows that occurred in a given period.

Consequently, the management aspects directly and explicitly represented in the financial statements are the financial aspect (Balance Sheet) and the economic aspect (Income Statement).

The financial aspect is directly represented in the financial statement and can also be deduced from the balance sheet, the income statement and the explanatory notes.

1.2. The financial information that can be deduced from the balance sheet

The assets and liabilities and, consequently, the net worth are located in the balance sheet.

The classification criterion of activities envisaged by our civil code is that of destination, i.e. the use of the active element by the company. In particular, the art. 2424-bis co. 1, establishes that "active assets intended to be used on a long-term basis must be registered among fixed assets".

Therefore, the registration of an asset among fixed assets or among current assets regardless of its "duration", or rather the degree of liquidity about the time of the active asset element.

For strictly financial purposes, this information is, however, very important, as it allows forecasts to be made as to when the active assets can be realized in cash.

This information is, in any case, partially present in the active balance sheet, as:

- The receivables included in fixed assets (B.III.2) must contain the indication of the part collectable within the following financial year;
- The receivables included in current assets (C.II) must contain the indication of the part collectable beyond the following financial year.

In this way, the reader of the financial statements can obtain information on the temporal sequence of the collections deriving from the credits. However, it is necessary to underline the fact that this information concerns exclusively the receivables present in the balance sheet and, therefore, existing at the end of the financial year. There is no direct information regarding the overall amount of receivables collected during the year.

The classification criterion of the liabilities envisaged in the financial statements is that of their origin: in fact, a distinction is made between own means (net equity) and third-party means (debts, severance pay, provisions for risks and charges).

The grouping of debts (D) includes all the company's debts towards third parties, regardless of their origin (financial debts or debts arising following the purchase of production factors) and their collectability (short-term debts and debts long-term).

However, even for debts, it is necessary to provide separate indications of all amounts due beyond the following financial year: in this way, the reader of the financial statements can obtain information on the temporal sequence of payments deriving from the debts recorded in the financial statements at the end of the exercise. Also in this case, it is not possible to have a direct indication of the total debts paid during the financial year nor of those that arose during the same.

1.3. The financial information that can be deduced from the income statement

The income components for the year, i.e. revenues and costs, are recorded in the income statement.

At first glance, it may seem unreasonable to look for financial information in the income statement. In reality, we must not forget that, in most cases[1], revenue is measured by an active financial variation (for example, the rising of a credit rather than a cash inflow) and a cost is measured by a passive financial variation (e.g. the incurrence of a debt rather than a cash outflow).

Therefore, operating income, the difference between revenues and costs, despite being an economic quantity, is capable of providing financial indications. It is particularly useful to analyze the composition and nature of the individual income components, to obtain information on the company's ability to obtain similar income in subsequent years. The financial charges, which indicate the cost incurred by the company in obtaining financial resources with the debt constraint, are then placed in the income statement.

[1]There are some revenues and some costs that are not measured by financial/monetary variations and which, therefore, are called "non-monetary" income components. This is the case, for example, of revaluations and depreciations.

1.4. The financial information can be deduced from the Notes to the Financial Statements

The art. 2427 cc[2] regulates the content of the Notes to the Financial Statements.

Among the various information that must be provided, there is some of a financial nature. In particular:

- Point 6) requires that the amounts of credits and debts with a residual duration of less than five years be indicated, as well as debts backed by real guarantees on company assets. This information must be provided separately for each credit and debit item and must be broken down according to geographical areas;
- Point 19-bis) requires that the loans obtained by the members be indicated, distinguishing them by deadlines and indicating those with a subordination clause concerning other creditors.

The notes to the financial statement in any case must be used by the company to provide all the complementary information of a financial nature necessary to *"provide a true and correct representation [……]"* of the company's situation (art. 2423 co. 3 cc).

2. The Cash Flow Statement

2.1. Definition of statement

Since 2015, the cash flow statement has been expressly required by the civil regulations on corporate and consolidated financial statements.

The cash flow statement is a financial statement document that has become mandatory for some types of companies as a result of the provisions of Legislative Decree 139/2015, later implemented into the national accounting standards by the OIC (Organismo Italiano Contabilità) 10.

Previously, the financial statement - *rectius*: the information contained therein - formed part of the explanatory notes to the financial statements. With the reform of the financial statement regulations, the new article 2425-ter of the civil code was introduced which provides the essential regulatory reference on the subject today.

Doctrine and practice agree in deeming its preparation necessary to satisfy the requirement of truthful and correct representation of the financial situation of a company.

Accounting Principle No. 11 set out by the National Council of Chartered Accountants and Accounting Experts (Consiglio Nazionale dei Dottori Commercialisti ed Esperti Contabili, CNDCEC), relating only to industrial and commercial companies, defines the cash flow statement as a fundamental document for complete financial statement information.

[2]Reference is made to the text of the art. 2427 c.c. as replaced by Legislative Decree. 17.1.2003 n. 6 (of company law reform), in force since 1.1.2004 (even if, in relation to the regulation of the financial statements, special effective dates are foreseen).

As anticipated, following the innovations introduced by the Legislative Decree. 139/2015, which transposes the Accounting Directive 34/2013/EU, the reporting is further regulated by the national accounting standards (OIC 10).

This statement, in fact, on the one hand, allows the information already synthetically required by the legislation to be summarized in an organic way, and on the other it makes information of a financial nature available that would otherwise not be obtainable from the balance sheet and income statement.

There are many financial statement models proposed in the doctrine. In general, to summarize the financial activity of the company, the financial statement must identify the movements that occurred within:

- Net working capital (or net short-term assets), i.e. the excess of short-term or current assets over short-term or current liabilities;
- At the Cash, i.e. liquid assets in cash and at banks (cash and active bank current accounts) plus other money deposits that can be immediately withdrawn without risk of change in value (for example: postal current accounts).

The concept of financial resources to be used depends on the company's activity (merchant, industrial, or services) and the significance of the information obtainable in the various cases.

2.2. Financial statement of changes in net working capital

The preparation of the financial statement in terms of changes in net working capital involves highlighting short-term assets and short-term liabilities.

The classification of active and passive items, deemed most appropriate by Accounting Principle No. 12 of the CNDCEC for the correct representation of the equity and financial situation, is based on the liquidity criterion of the active items and on that of the collectability of the passive items.

The classification of the assets and liabilities of the balance sheet into homogeneous groups highlights the technical and financial aspects of the items themselves. With this classification, indications are obtained regarding the degree of mobility and financial balance of the company. More precisely, we identify, from a technical point of view, the different functionalities of the components of the company assets in the production process and, from a financial point of view, the different aptitude for transforming into cash.

The activities must therefore be divided into two large categories:

- Short-term (or current) assets;
- Fixed assets.

Liabilities must also be divided into two broad categories:

- Short-term liabilities;
- Medium- and long-term liabilities.

As regards the criteria to be used to implement this classification, Accounting Principle No. 12 of the CNDCEC considers it appropriate - for practical reasons - to carry out the aforementioned classification based on the following convention:

1. Assume, as a general rule, the duration of the annual administrative period as a criterion for the classification of accounts, i.e. for the separation of items

between short-term assets and liabilities and fixed assets and medium and long-term liabilities;
2. Consider inventory inventories as short-term assets.

2.3. Cash flow statement

The financial statement in terms of liquidity can be prepared according to the following two settings:

- *The liquidity financial statement*, which can be defined as traditional, places emphasis on the exposure of changes in the financial position in terms of liquidity;
- *The financial statement that exposes the liquidity flows*, which represents the technical evolution of the first, however, while using the changes in the financial position as a drafting tool, emphasizes the liquidity flows deriving from these variations.

The meaning of liquidity adopted by OIC 10 is that of liquid assets in cash and at banks plus other cash deposits that can be immediately withdrawn without risk of change in value. The IASC Accounting Standards and other Foreign Accounting Standards also consider "cash equivalents" as a concept of financial resources, which includes, in addition to the aforementioned assets, highly liquid short-term financial assets. The use of financial resources other than those identified above makes it necessary to highlight the items making up these resources, as well as the changes undergone by them during the financial year.

For banks, an important point of reference is represented by the International Accounting Standard (IAS) n. 7. This accounting standard, in fact, unlike the Italian standard, provides a precise financial statement model for credit and financial institutions.

IAS 7 identifies the meaning of financial resources in cash and cash equivalents and classifies the cash flows that determine the change in the reference financial year into:

- Income management operations (operating activities);
- Investment activities;
- Financing activities.

2.4. Financial statement of liquidity (cash) flows

The financial statement of liquidity flows (cash flow statement) required by OIC 10 refers to Document No. 7 issued in 1992 by the International Accounting Standards Committee (IASC), in turn inspired by Document No. 95 issued in 1987 by the US Financial Accounting Standards Board (FASB).

The cash flow statement classifies the flows that determine changes in liquid assets about the type or nature of the operation that generated them, i.e. between:

- Income management operations;
- Investment operations;
- Financing operations.

For greater clarity, according to Accounting Principle No. 10 of the OIC and IAS n. 7, the financial statement of liquidity flows is an accounting statement that presents the changes, positive or negative, in liquid assets that occurred in a specific financial year. In this logic, the financial flows presented in the statement originate from operating activity, investment activity and financing activity.
It is worth specifying that the topic of the financial statement of liquidity flows will (cash flow statement) be the subject of further in-depth analysis in section 7 of this handout.

***Please note*[3]. Please note that, according to Principle n. 10, operational activity generally includes operations connected to the acquisition, production and distribution of goods and the supply of services, *even if they refer to ancillary management,* as well as other operations not included in investment and financing activities.
Investment activity includes the purchase and sale of tangible, intangible and financial assets and non-fixed financial assets.
The financing activity includes the operations of obtaining and returning liquid assets in the form of debt capital or risk capital.
Liquid assets are represented by bank and postal deposits, checks cash and cash equivalents. Liquid assets also include bank and postal deposits, checks cash and cash equivalents expressed in foreign currency.
It is also envisaged that, when preparing the financial statement, a company can add further financial flows compared to those envisaged in the reference schemes if it is necessary for clarity and a true and correct representation of the financial situation. To this end, some believe it is desirable, where possible, to keep investments in ancillary activities and the income connected to them separate - in a specific section.

2.5. Income management operations

Income management operations consist of the main revenue-generating activities and other activities that are neither investment nor financing. They concern the main management activity and, therefore, generally consist of operations relating to the production and distribution of goods and the provision of services.

Below is an example of the flows generated or absorbed by income management operations:

- Proceeds deriving from the sale of products or the provision of services;
- Collections of royalties, commissions, insurance reimbursements;
- Payments for the purchase of raw materials, semi-finished products, goods and other production factors;
- Payments to employees;
- Tax payments and refunds;
- Other positive or negative flows deriving from operations other than investment or financing.

[3] For further information, we recommend reading the book: Dallocchio M., Salvi A., *Finanza d'azienda* – IV Edizione, EGEA, Milano, 2021.

The liquidity flows generated or absorbed by income management operations are determined with the indirect method, i.e. by adjusting the result of the financial year to take into account the effects of the operations that have determined deferrals in the changes in liquidity (for example: increases in credits, debts, inventory, etc.) as well as those operations whose effects must be included among the flows connected to investment or financing operations (for example: capital gains or losses on transferred assets).

2.6. Investment operations

Investment operations consist of the acquisition and disposal of tangible, intangible and financial assets.

The flows relating to the aforementioned operations are shown as an example:

- Disbursement of loans or repayment of the same;
- Purchases or sales of buildings, plants, equipment or other tangible assets;
- Purchases or sales of intangible assets, such as patents;
- Purchases or sales of shareholdings in controlled and associated companies;
- Purchases or sales of other equity investments and other securities, including government securities and bonds.

2.7. Financing operations

Financing operations are represented by the activities which give rise to changes in the size and composition of the company's equity and medium-long-term debt.

The flows relating to financing operations are shown by way of example:

- Issuance of shares or units representing risk capital, payment of dividends or reimbursement of capital (also in the form of purchase of own shares);
- Issuance or repayment of bond loans, opening or repayment of mortgages;
- Increase or decrease in other debts, even short or medium-term, of a financial nature.

The interest and dividends paid, given the nature of the operations from which they arise, can be considered flows deriving from financing operations and the interest and dividends received can be considered flows deriving from investment operations. Alternatively, all these flows can be considered flows deriving from income management, as they are included in the determination of operating income. In any case, each of these flows must be exposed separately within the chosen category and this classification must be kept constant over time. In other words, a single amount for dividends and interest cannot be shown.

3. The financial statements analysis

3.1. Methodologies and accounting techniques

In the previous paragraphs, it was mentioned that the financial statements can be considered a model of representation of the company's reality. However, the represen-

tation provided by the mandatory civil models does not allow us to express an immediate judgment on the actual economic, financial and equity situation of the company we wish to analyse. It's due:

- Partly due to a margin of discretion tolerated by civil law regarding the representation, recognition and evaluation of balance sheet items, only partly contrasted by a certain consensus regarding compliance with accounting principles;
- Partly to the criteria followed for drawing up the financial statements, where the regulatory aspect prevails over the management one.

For this reason, over the years, various methodologies and accounting techniques have been developed aimed at reviewing the statutory financial statements from a management perspective, to extrapolate from the available financial statements a series of economic and financial information capable, on the one hand, of orienting the corporate governance action, and, on the other, to allow a synthetic analysis of the corporate reality by external analysts. This approach, more generically called "financial statement analysis", can be traced back to some fundamental techniques:

- The reclassification of the financial statement;
- Analysis by margins and indices;
- The analysis of financial flows.

It is understood that an accurate balance sheet analysis must necessarily be preceded by a formal analysis, the purpose of which is to ascertain the reliability of the accounting values and compliance with the accounting principles. Based on the criteria that guide the analyst's investigation, the analyzes can generally be traced back to the following typologies:

- Structure analysis;
- Spatial analyses;
- Dynamic analyses.

Structural analyzes investigate the economic, financial and equity situation of a company concerning a specific moment: they are therefore processed starting from a single financial statement.

Spatial analyzes aim to compare the performance of multiple companies at the same time (*benchmarking*). They therefore require the availability of a balance sheet for each of the companies that you want to analyse, referring to the same moment in time. They are also called temporal, serial or trend analyses. For a spatial analysis to be effective it is necessary that:

- The companies investigated operate in the same sector under similar structural and management conditions;
- The same criteria are applied for the accounting, representation and evaluation of the various balance sheets and income items.

Spatial analyzes can be developed concerning industry-standard data (in this case they are called "position analysis").

Dynamic analyses, aim to analyze the economic, financial and equity dynamics of a company over time. The analysis is conducted starting from multiple consecutive financial statements of the same company. For a dynamic analysis to be effective it is necessary that:

- No radical changes have occurred in company management (spin-offs, mergers, sales of company branches);
- Comparisons are made only on data relating to ordinary management;
- No significant inflationary processes have occurred;
- The accounting and valuation rules have not changed over time.

Dynamic analyses, in turn, can be divided into *historical analyzes* (relating to the analysis of financial years already concluded) and *prospective analyzes* (aimed at the economic-financial planning of future financial years). Concerning information purposes, analyzes can be classified into:

- *Internal analyses*, undertaken by administrators, managers, department heads and professionals, to support governance and operational management activities;
- *External analyses*, developed by external parties (shareholders, credit institutions, suppliers, financial analysts, etc.) interested in the performance of management for possible investments, acquisitions, granting of credit lines, solvency profiles, sector studies, etc.

Concerning the accounting techniques used, the analyses can, in turn, be classified into:

- *Margin analysis*. It is proposed to compare and verify the balance between some aggregate items of the balance sheet or income statement, making the algebraic difference (the values thus obtained are defined *as margins*).
- *Index analysis*. It is proposed to compare some aggregate items of the balance sheet and/or income statement, through ratios (the values thus obtained are defined as *indices or ratios*). It is used both for structural analyses and for spatial and dynamic analyses.
- *Flow analysis.* It provides an interpretative tool for the main financial indices, allowing the reasons for the changes in the financial structure to be identified, with particular reference to the financial requirement (uses) and its coverage (sources).

As already mentioned, business management concerns the complex economic-financial operations aimed at pursuing company objectives (remember that the primary objective of every company is the achievement of an income capable of adequately remunerating the invested capital). The economic aspect of management is focused on the earning capacity of the company, through the relationships between the flows relating to sales revenues and the flows relating to the costs of the acquired production factors. On the other hand, the financial aspect of management, through a balanced dy-

namic of monetary-financial flows, aims to create a solid financial-asset structure and, at the same time, guarantee a degree of liquidity and solvency compatible with the economic dynamics.

Hence the analyst's interest in investigating the general equilibrium condition of the company, as a coordinated and synergistic result of three different equilibrium conditions:

- Economic balance, i.e. the company's ability to produce income (as the difference between the flows of sales revenues and the flows relating to the costs of production factors) in such a way as to remunerate all production factors, including capital;
- Financial balance, i.e. the company's ability to guarantee the monetary/financial outputs required for carrying out management;
- The capital balance, i.e. the company's ability to guarantee the balance between sources (financing) and uses (investments), as well as a debt situation (ratio between own capital and third-party capital) that is sustainable (from an income and monetary).

4. The Reclassification of the Financial Statement

4.1. Premise

Even a reading of the financial statements does not always allow for an immediate and exhaustive interpretation of the economic and financial situation of the company analyzed. It follows that the financial statements can be considered an indispensable source of information which, however, requires some reclassifications and processing before allowing an accurate analysis and interpretation of company management and events.

The reclassification of the financial statements represents the starting point for the economic-financial analyzes that will be developed in the following paragraphs. The reclassification of the balance sheet (according to the financial criterion and the functional area criterion) and the reclassification of the income statement are illustrated below.

It is important to point out that the reclassification of the balance sheet is nothing more than a reaggregation of balance sheet items useful for better understanding:[4]

- of the business model;
- of company performance;
- operational risks;
- of financial risks.

There are two criteria most commonly used for the reclassification of the balance sheet:

[4]For further information, we recommend reading the book: Dallocchio M., Salvi A., *Finanza d'azienda* - IV Edizione, EGEA, Milano, 2021.

- *The financial criterion or, better yet, liquidity/collectability*. Based on which the asset items are divided based on the times of transformation of the respective investments into liquidity and the liability items are based on the maturity of the related obligations.
- *The criterion of functional areas or, better yet, management relevance*. Based on which the balance sheet items are divided based on whether or not they relate to the typical business activity and other management.

The management relevance criterion is generally the preferred one for the reclassification of the balance sheet when the objective of the analysis is to understand the economic and financial profile of the business model and for the valorisation of the company's economic capital.
The liquidity/collectability criterion is instead used more frequently to evaluate the company's ability to meet the commitments undertaken towards its financiers.

4.2. The reclassification of the balance sheet according to the financial criterion (liquidity/collectability criterion)

The analysis of the balance sheet based on the financial criterion aims to:

- measure the company's degree of solvency;
- measure the company's degree of liquidity;
- evaluate, on a preliminary basis, the net capital in the unfavorable bankruptcy/liquidation scenario.

The results produced by using this methodology are particularly useful to two main categories of corporate stakeholders:

- *shareholders and/or owners*, to classify everything owned by the company compared to what the company will have to return to third parties;
- *creditors*, to evaluate the company's ability to meet its commitments.

The discriminating element for the aggregation of asset values according to the liquidity/collectability criterion is "time". The objective is to group the assets and liabilities items according to their time of transformation into money, therefore representing the individual assets in the balance sheet according to their liquidity, and the liabilities according to their duration

According to the art. 2424 of the civil code, the assets of the balance sheet are divided into two classes of fixed assets and availability (working capital) based on the destination criterion. For economic and financial analysis, a further reclassification of the assets based on the degree of liquidity or degree of realizability of the individual investments is more convenient. By degree of liquidity, we mean the ability of each item to transform into cash in the short term (within the year) or the medium-long term (beyond the year). We can thus divide the assets into two blocks:

- Medium-long-term investments (fixed capital or fixed assets) – Consolidated assets;
- Short-term investments (investments in working capital or current assets) – Short-term assets.

Fixed capital (consolidated assets) includes assets intended to remain permanently in the company capital, participating in the production processes that take place in multiple administrative periods. Comprehends:

- Tangible fixed assets;
- Intangible fixed assets;
- Financial fixed assets.

Working capital includes investments relating to current management resources (it is customary to state that gross working capital serves to finance the normal production cycle). In practice, working capital includes all the active items which, through the economic-technical cycle, are presumed to be able to transform into liquid money within the year.

For reclassification purposes, working capital (short-term assets) is divided into:

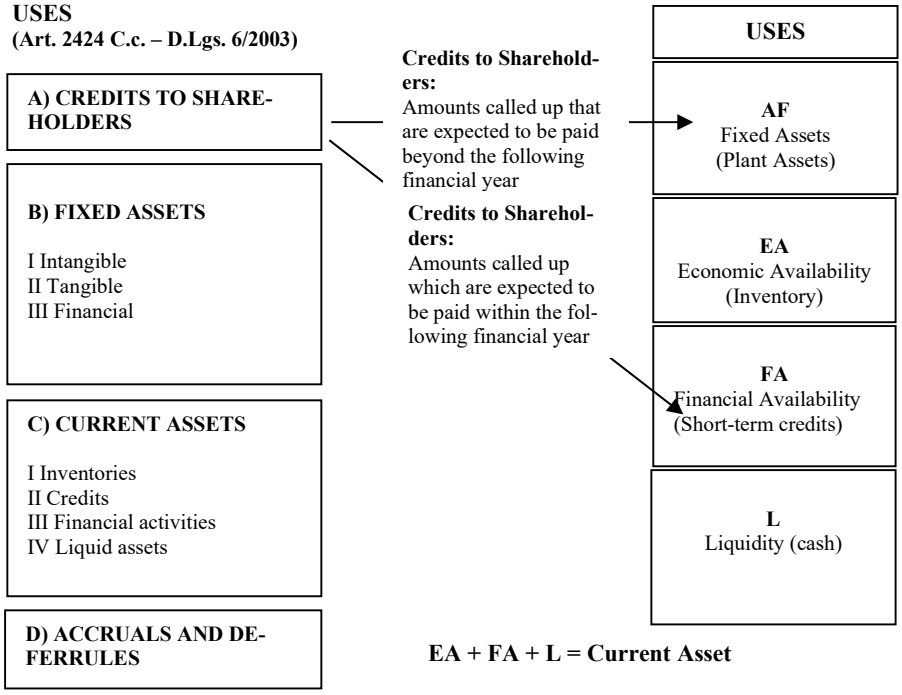
- *Economic availability*: items intended for consumption (e.g. raw materials and semi-finished products) or for sale (e.g. finished products), which can only become liquid again at the end of the economic-technical cycle. Advances to suppliers also fall into this category. Naturally, that part of the warehouse which, due to obsolescence, or precautionary or speculative inventory management, is not expected to be sold in the twelve months following the preparation of the financial statements, should not be included in this aggregate;
- *Financial availability (deferred liquidity)*: deferred liquid assets, which are transformed into liquidity within the year (trade receivables "destined for collection", short-term financing, bills of exchange, etc.);
- *Immediate liquidity (cash)*: items similar to cash and equivalent values (bank and postal current accounts, revenue stamps, short-term government bonds, etc.).

Lastly, it is important to consider that the asset items for which a corresponding liability fund has been established must be recorded net of the amount of the fund itself.

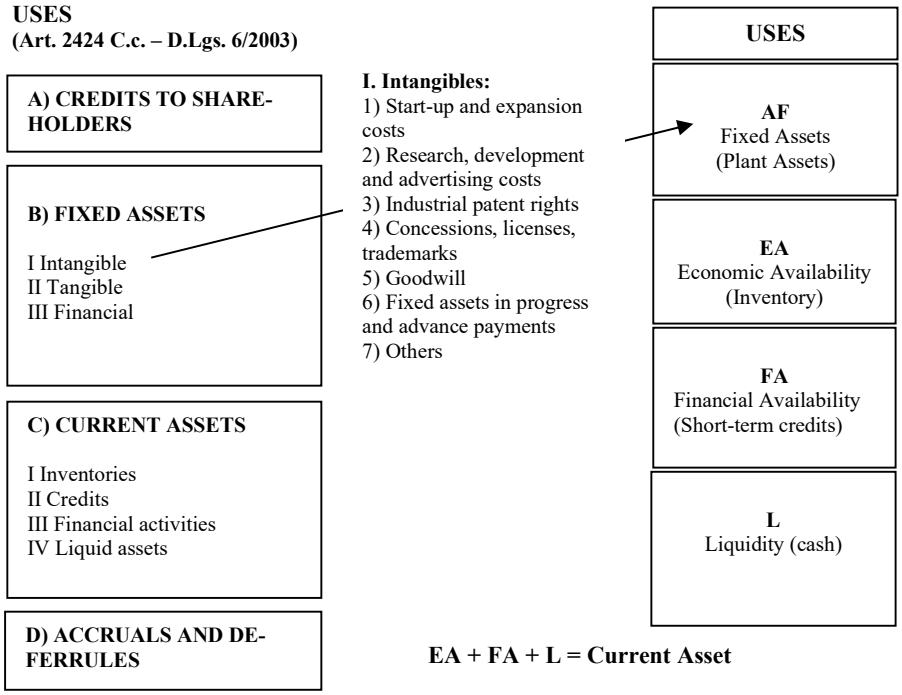
From an operational point of view, the reclassification process consists of transforming the civil balance sheet into the balance sheet reclassified according to the financial criterion.

The following sheets illustrate, for each of the asset macro classes, the reclassification methods according to the financial criterion.

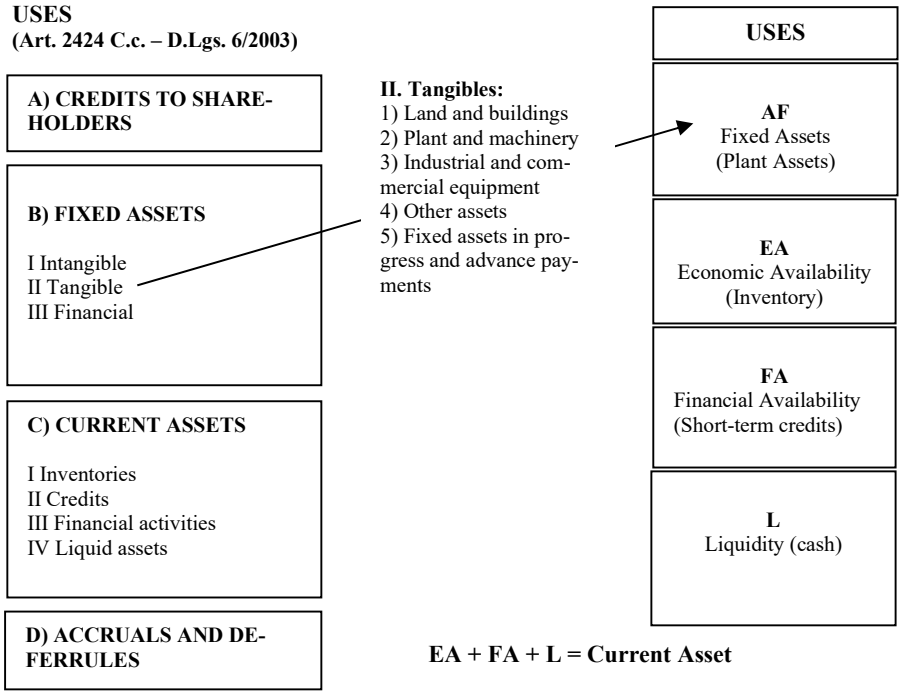
A) Credits to Shareholders



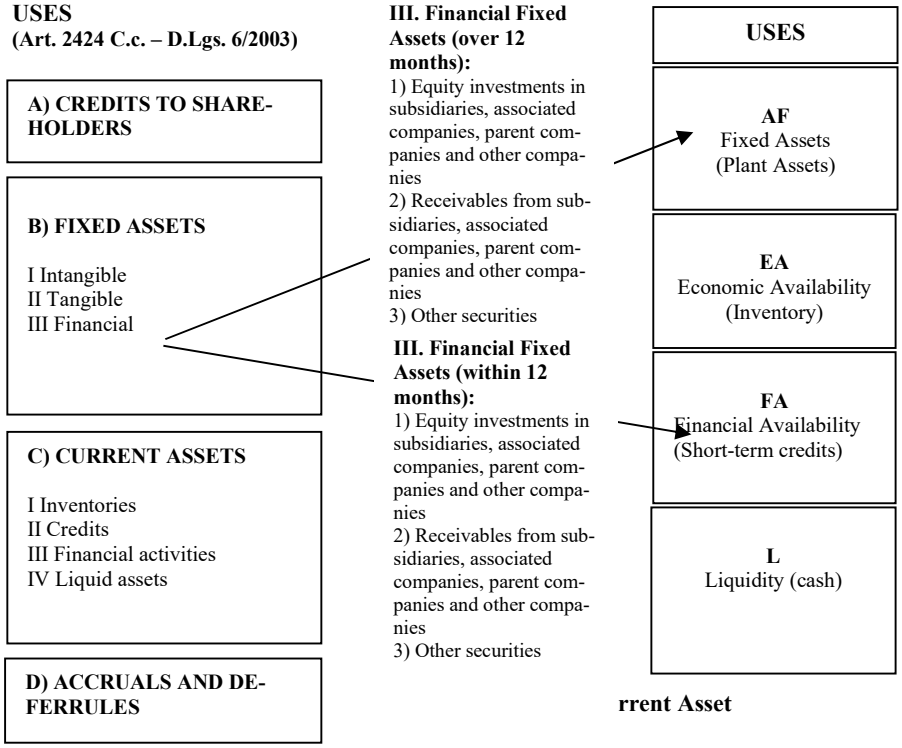
B) Fixed assets – I. Intangible fixed assets



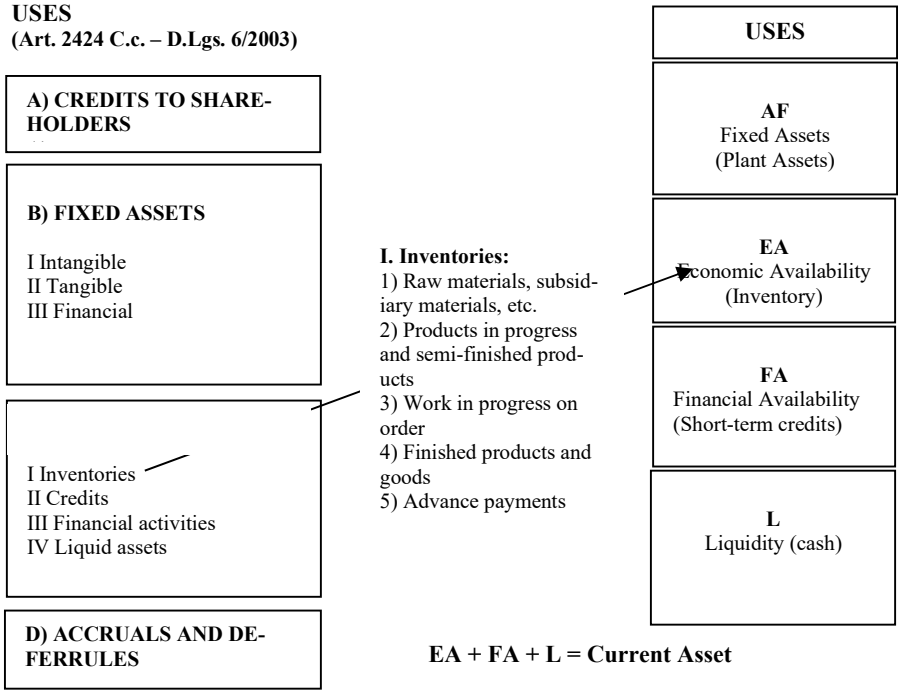
B) Fixed assets – II. Tangible fixed assets



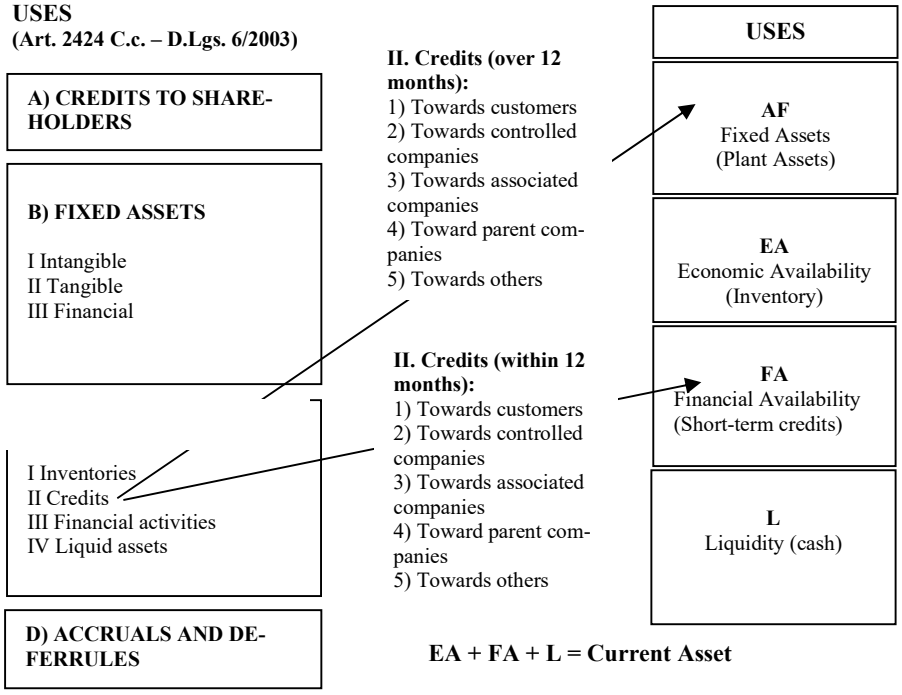
B) Fixed assets – III. Financial fixed assets



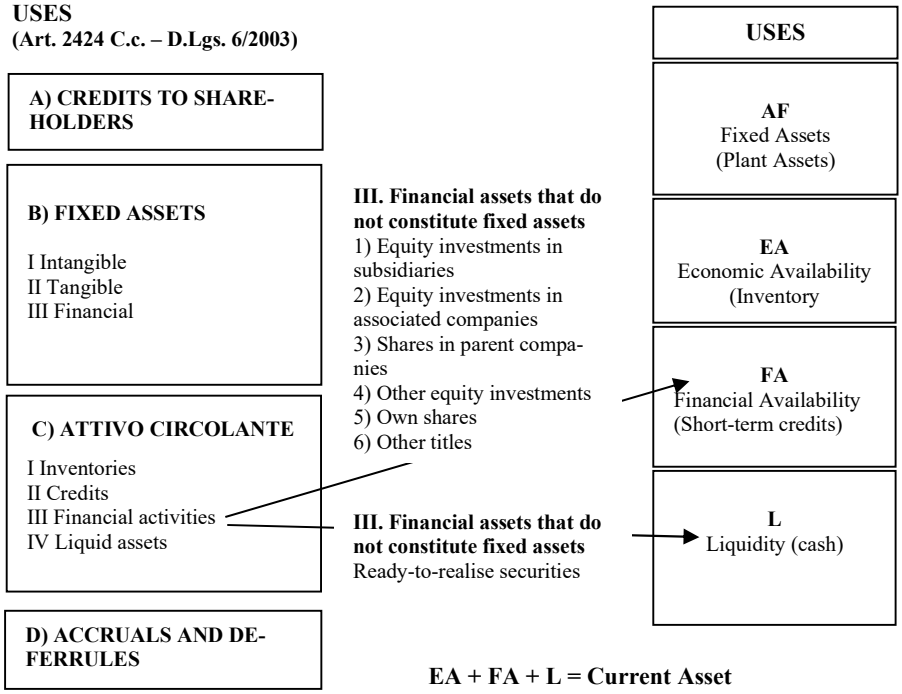
C) Current assets - I. Inventories



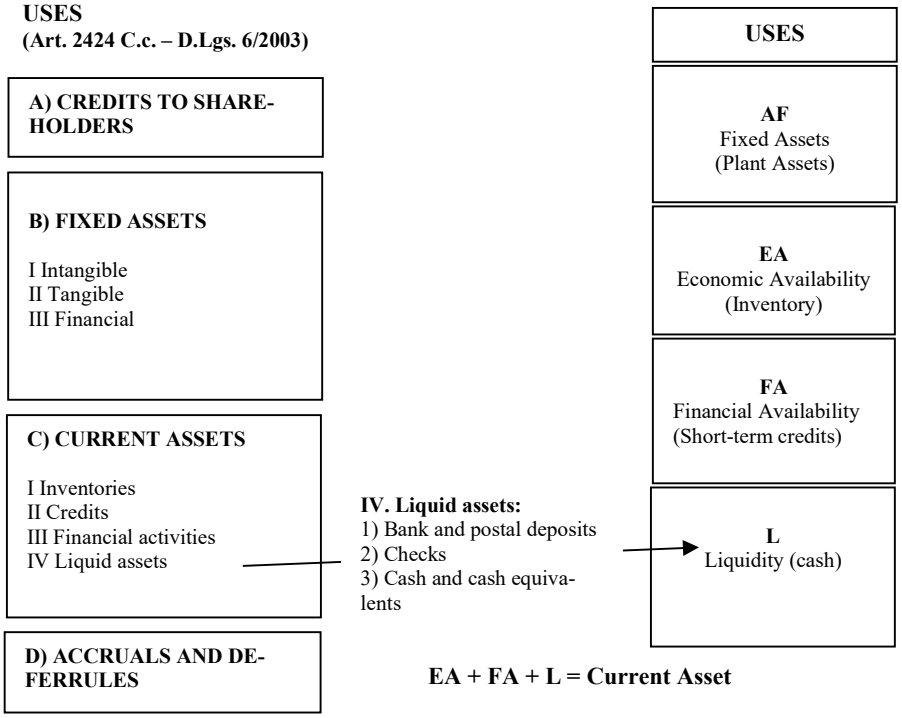
C) Current assets - II. Credits



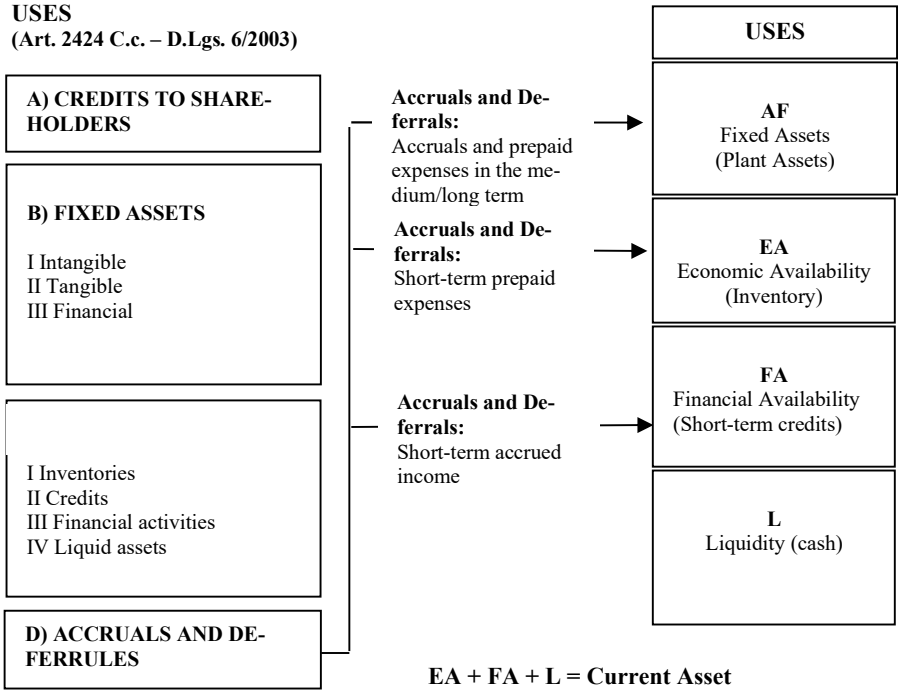
C) Current assets - III. Financial activities



C) Current assets - IV. Liquid assets (Cash)



D) Accruals and Deferrals



By using a mirror classification, it is also possible to reclassify the items making up the balance sheet liabilities, basing the classification on the "time expiry" of the individual items.

We, therefore, illustrate the reclassification of the liabilities of the balance sheet, using, as a criterion, the duration of the loans (degree of collectability), distinguishing between:

- Short-term financing (within the following year);
- Medium-long term financing (beyond the following year).

Medium-long-term financing (permanent capital, consolidated or long-term liabilities) is constructed from equity (or net capital) and medium-long-term liabilities (consolidated liabilities). Short-term financing is given by current liabilities (short-term liabilities or current capital). The liabilities can also be reworked based on the origin of the financing sources, distinguishing between internal sources (own capital or equity) and external sources (third-party capital).

The balance sheet liabilities include:

- *Net equity (or net capital)*: made up of the share capital (initial contribution of the members, possibly integrated subsequently), reserves (profits set aside and not distributed to the members) and the operating result. For greater clarity, the net capital is made up of the share capital, certain types of funds (such as revaluation funds and any non-repayable contributions), the mandatory and optional reserves and the operating profits recorded in the reserve. Any losses are included as a deduction from the latter.

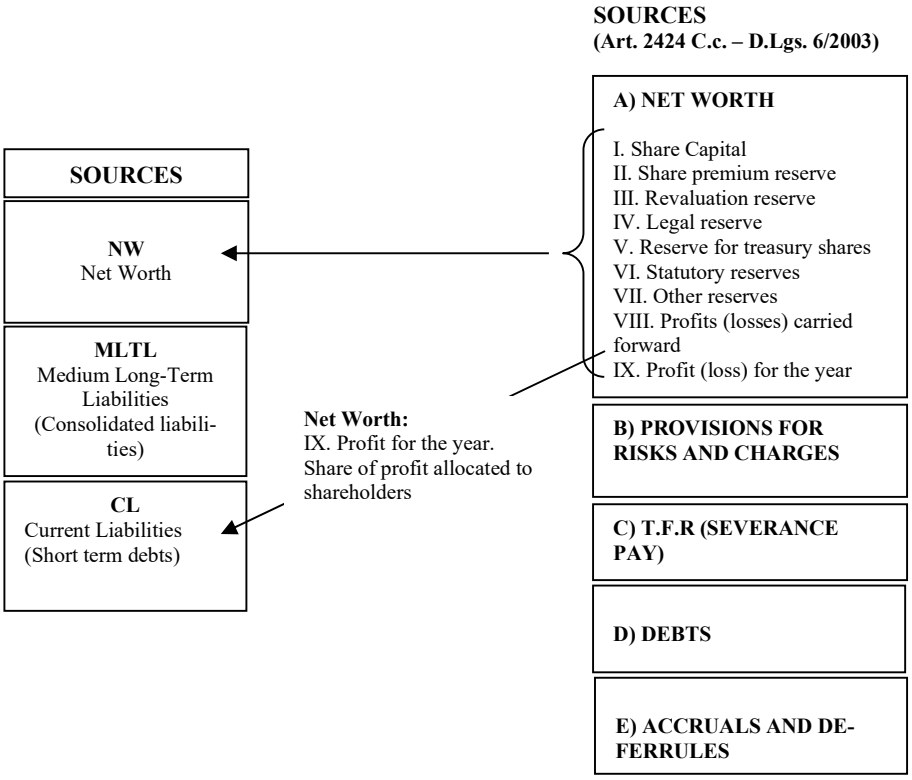
- *Consolidated liabilities*: include multi-year debts (debts to banks and suppliers due beyond the financial year, severance pay provision and provision for risks and charges for the portion expected to occur beyond the financial year, multi-year accruals and deferrals, etc.). For greater clarity, consolidated liabilities include all debts whose repayment is expected over longer maturities. These are *primarily* the residual debt on existing mortgages, bond loans, debts to shareholders for financing provided to one's company, and social security debts. The severance pay fund also falls into this category.
- *Current liabilities (or short-term liabilities)*: include debts to banks, suppliers and the treasury that must be honored within the year, severance pay provision and provision for risks and charges for the portion that is expected to be paid in the exercise. For greater clarity, short-term liabilities, similar to receivables, include debts with settlement expected within the financial year, including bank overdrafts, debts to suppliers, the tax provision and longer-term debts which will be paid during the twelve months following the end of the financial year. The latter include severance pay and instalments of mortgages or other loans for which repayment is expected within the financial year.

Please note.
Please remember that *the sum of total liabilities and net capital must be equal to the total items recorded under assets*.
The accounting statement just described is useful because it offers a summary view of the determinants and components of the book value of equity. *It is appropriate to point out to the student that the values recorded in the financial statements are purely accounting in nature, and therefore do not largely reflect a true financial or market value, since these are values that refer to items recorded generally at the historical cost which, as is easy to imagine, can in turn prove to be profoundly different from the "current" value.*
The book value of equity (or ***Book Value of Equity***) is equal to the following formula:

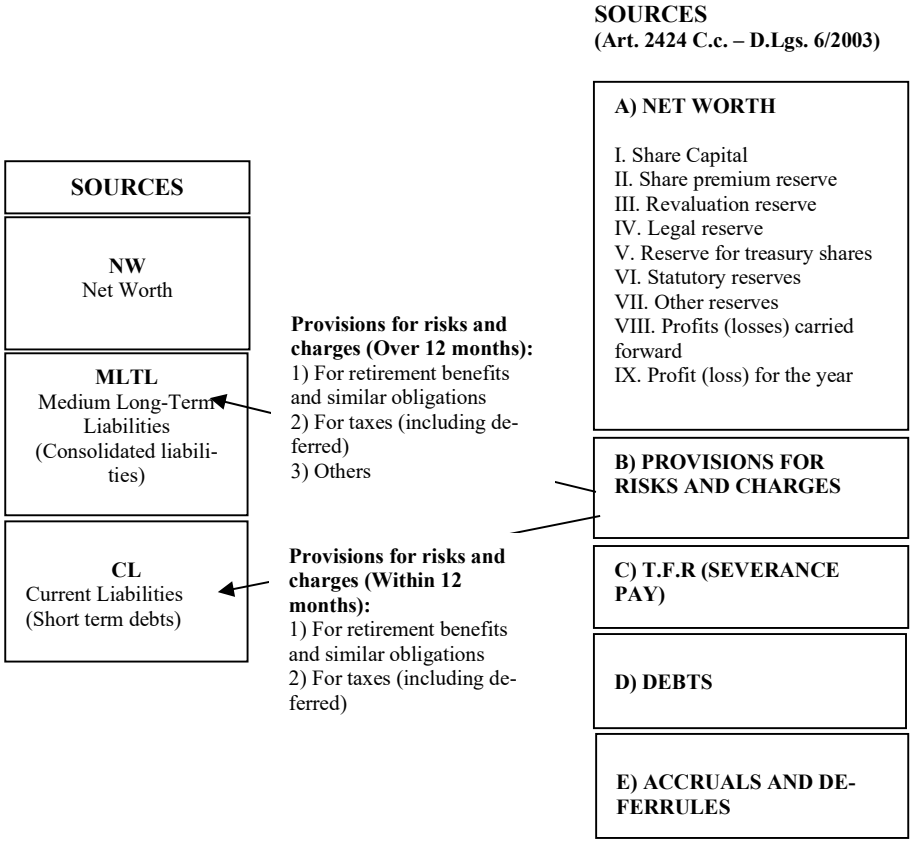
+ Consolidated assets
+ Active soon
- Short-term and consolidated liabilities
= **Book value of equity (Book Value of Equity)**

The following figures illustrate, for each of the macro classes of civil liabilities, the reclassification methods according to the financial criterion.

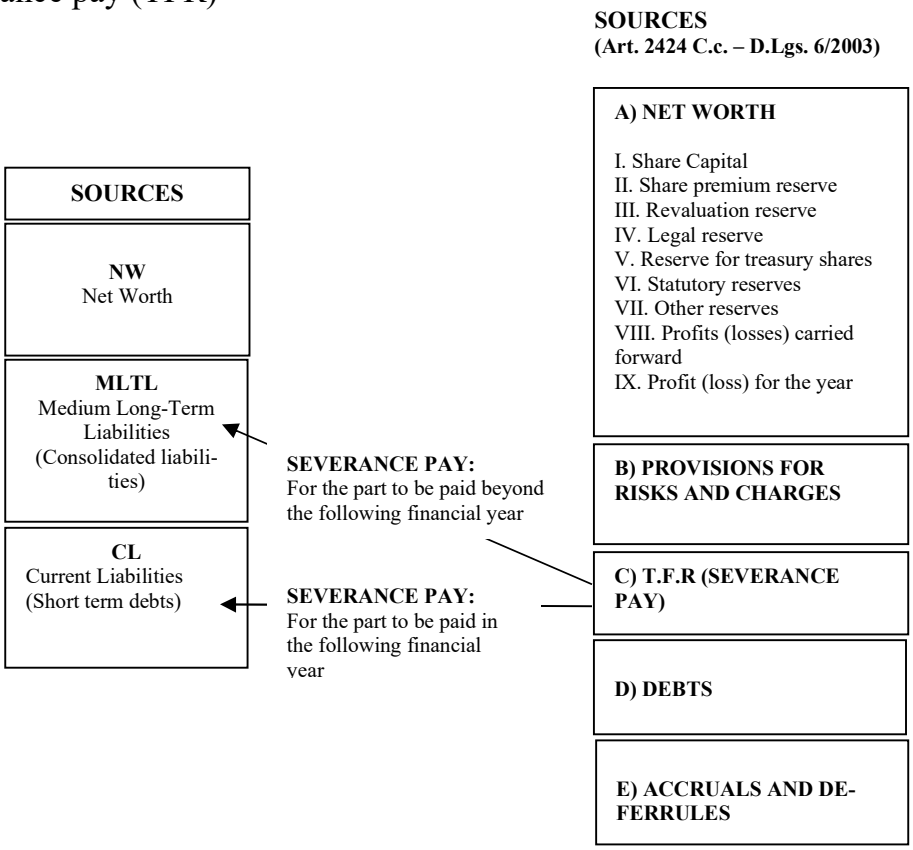
A) Net Worth (Equity)



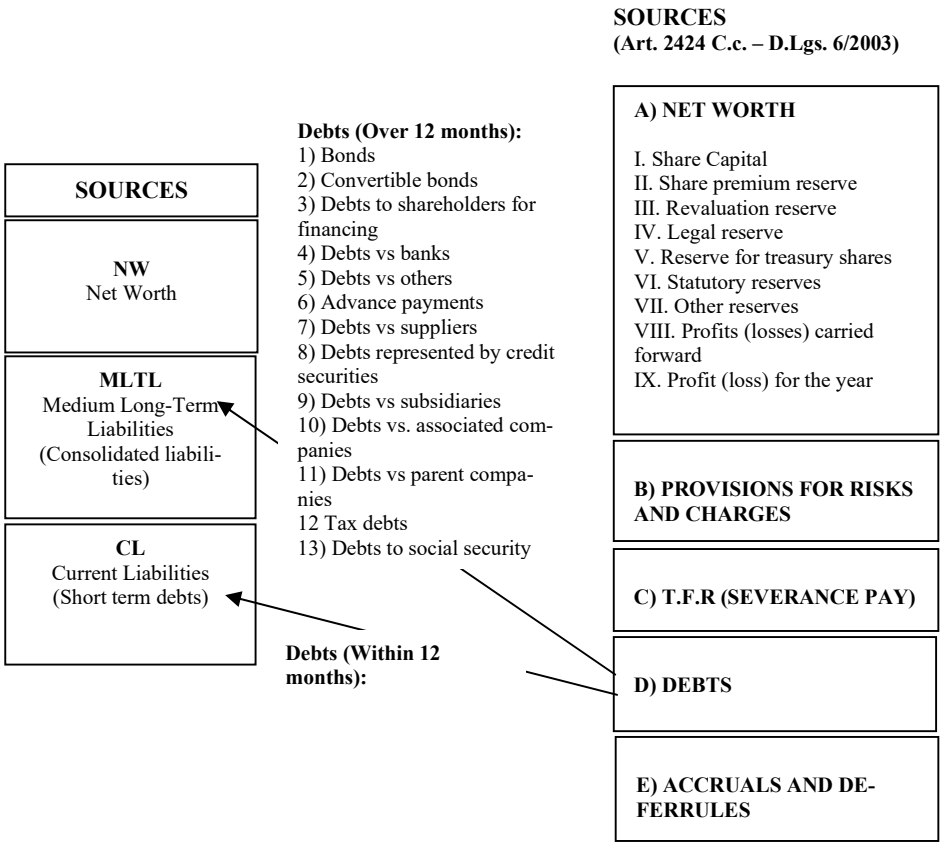
B) Provisions for risks and charges



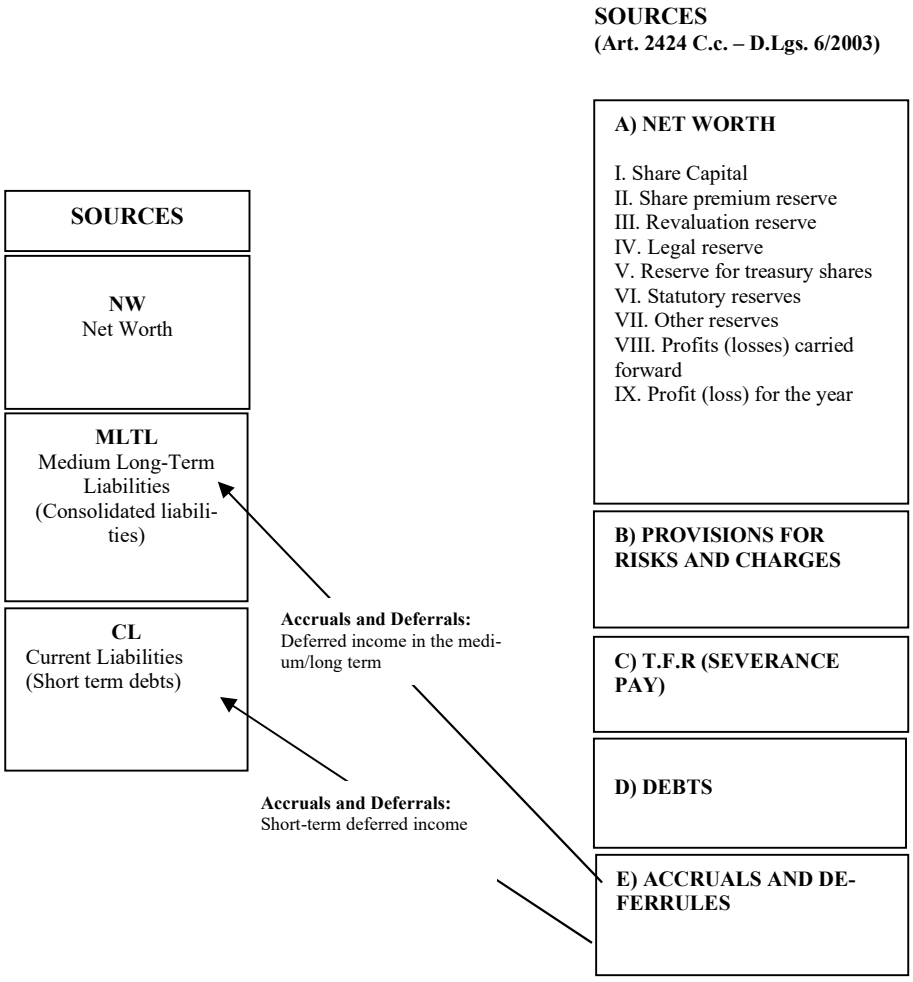
C) Severance pay (TFR)



D) Debts



E) Accruals and Deferrals



4.3 The reclassification of the balance sheet according to the functional criterion (or criterion of managerial relevance)

The balance sheet reclassified by functional areas follows the criterion of managerial relevance: the asset and liability items are grouped based on whether or not they belong to the operational management of the company. In practice, the sources and uses of capital are differentiated according to the economic destination of the investments, favouring a reading of the financial statements from an operational perspective, more representative of the efficiency and profitability of the company.

In other words, the reclassification methodology based on the functional or managerial relevance criterion has the objective of examining in detail the capital resources invested in the company's operating activities and the financing methods adopted. The main purposes are:

- illustrate the relationship between operating assets and a company's liabilities;
- calculate the rate of return on invested capital and equity;
- evaluate the equity capital of a company on the assumption of business continuity (so-called *going concern logic*).

As a starting point, we consider the balance sheet layout. This scheme highlights that the uses (investments) are financed by equity and third-party funds (debts).

As regards investments, the new reclassification criterion leads us to highlight the Operating Invested Capital, CIO (investments directly related to operational management: for example, trade receivables from customers, the availability of warehouse, as well as fixed operational activities such as machines, systems, etc.), differentiating it from non-operational investments (Extra-Operational Use or Ancillary Activities).

As regards the sources, it is important to differentiate "third party means" (debts) into:

- *Operating liabilities (current)*: debts attributable to the economic-technical cycle (think of trade payables to suppliers and the costs of production factors absorbed by the purchasing→production→sales cycle).
- *Financial debts* (payables). When reclassifying the balance sheet according to the functional criterion (or criterion of managerial relevance), it is customary to highlight this item net of immediate liquidity. We are talking about the Net Financial Position (NFP). Here it was deemed appropriate not to clarify the NFP, limiting ourselves solely to allocating the liquidity in the Operational Invested Capital (OIC).

This gives us the reclassified balance sheet layout as in Figure 1.

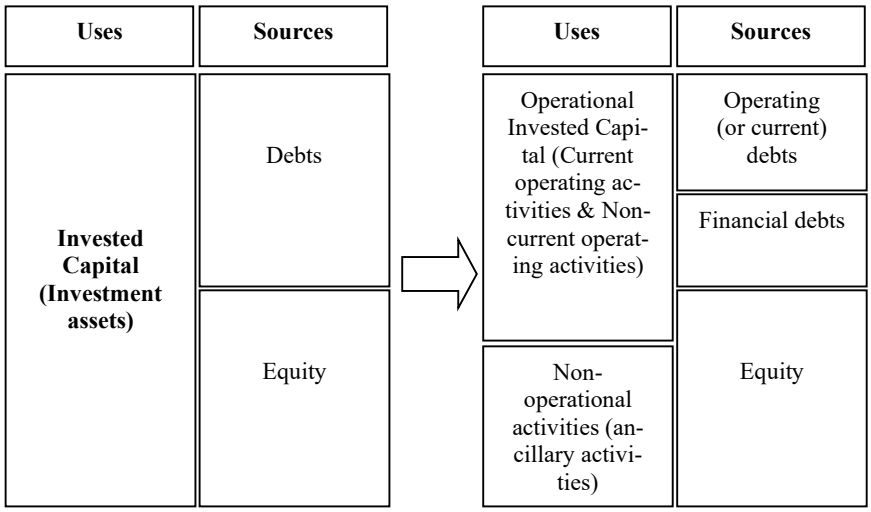


Figure 1. Graphic conceptualisation of the balance sheet reclassified with the criterion of management relevance

By subtracting the operational (current) liabilities from the Operating Invested Capital, we arrive at the notion of "Net Operating Invested Capital" or "Net Operating Invested Capital" (NOIC), which represents the capital invested in operational management (see Fig. 2).

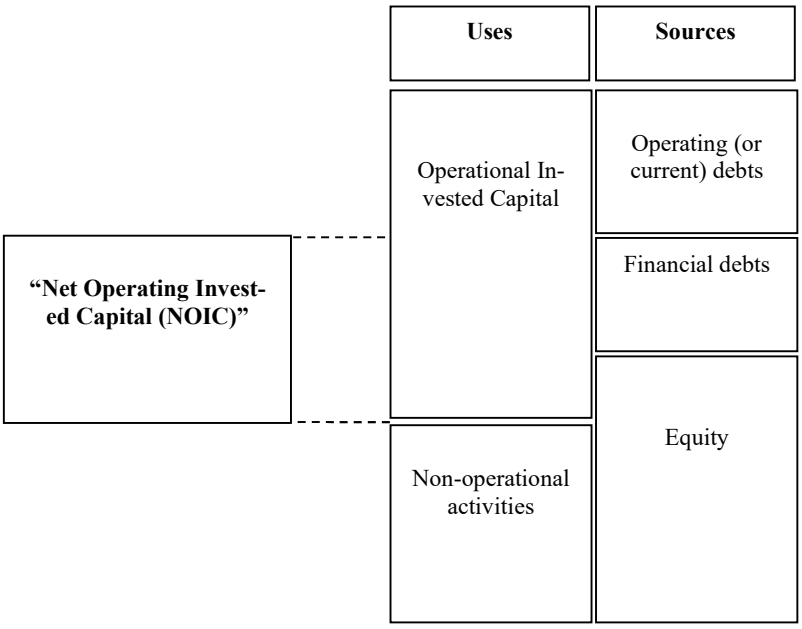


Figure 2. Graphic conceptualisation of the NOIC

The reasoning carried out leads us to the balance sheet scheme reclassified according to the functional or management criterion (see Fig. 3).

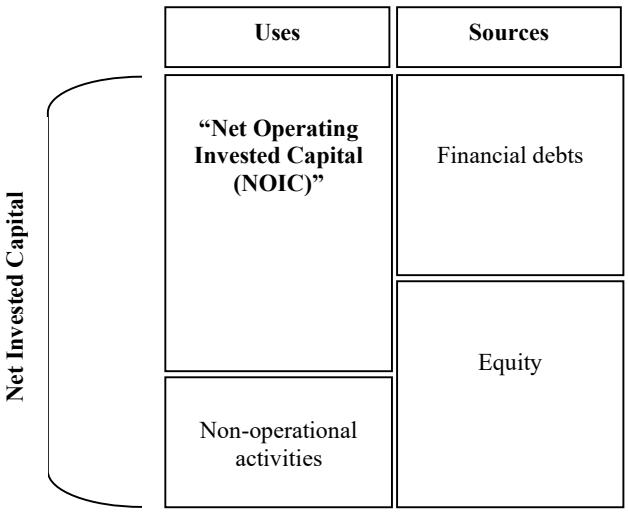
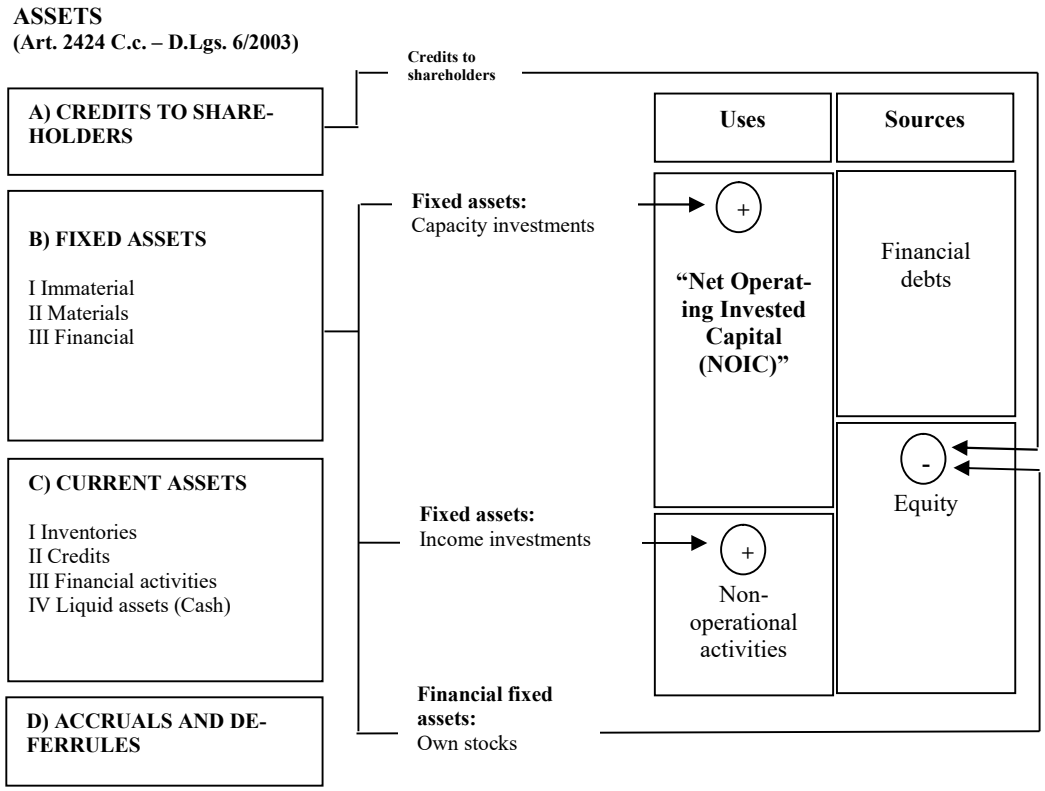


Figure 2. Balance sheet reclassified according to the functional criterion

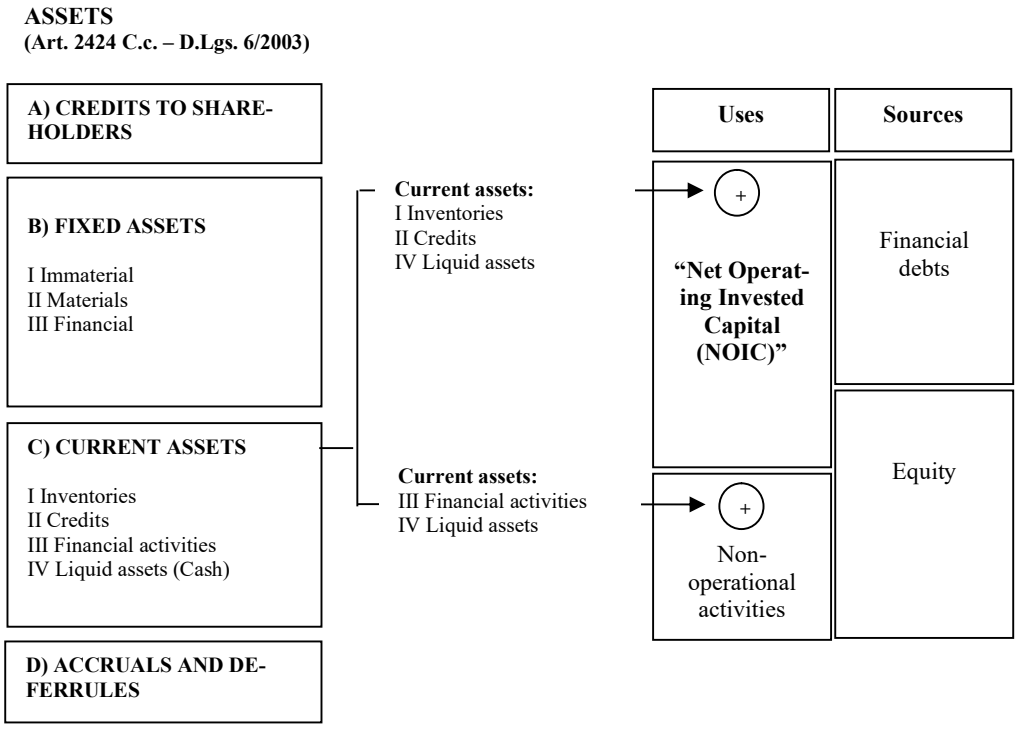
The reclassification process therefore consists of transforming the civil balance sheet into the reclassified balance sheet according to the functional criterion.

The following figures illustrate, for each of the macro classes of the civil heritage, the reclassification methods.

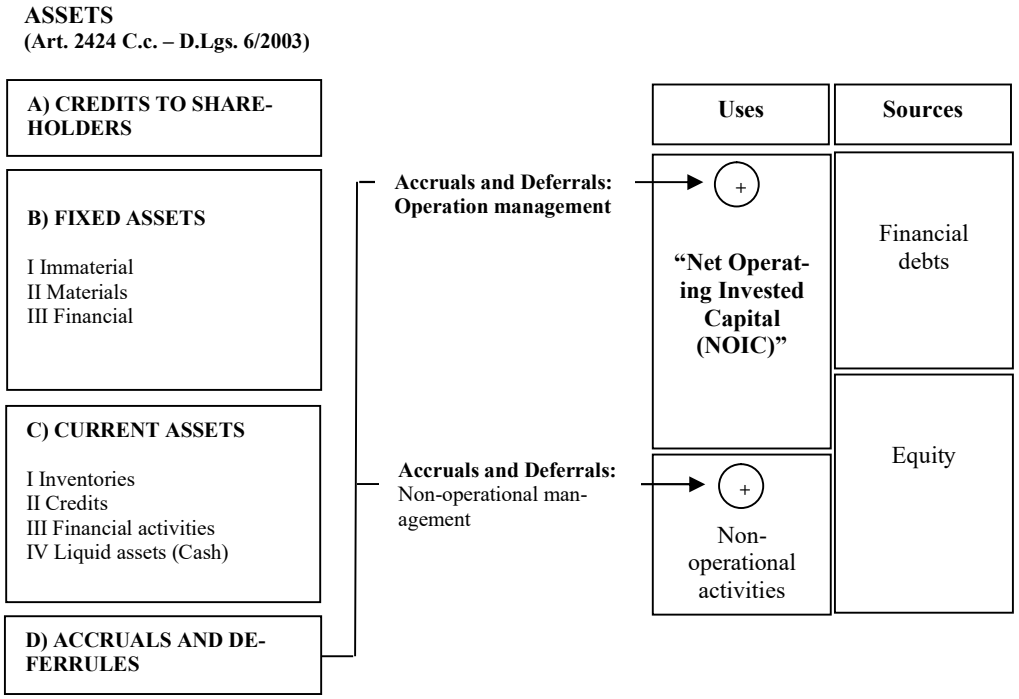
A) Receivables from shareholders B) Fixed assets



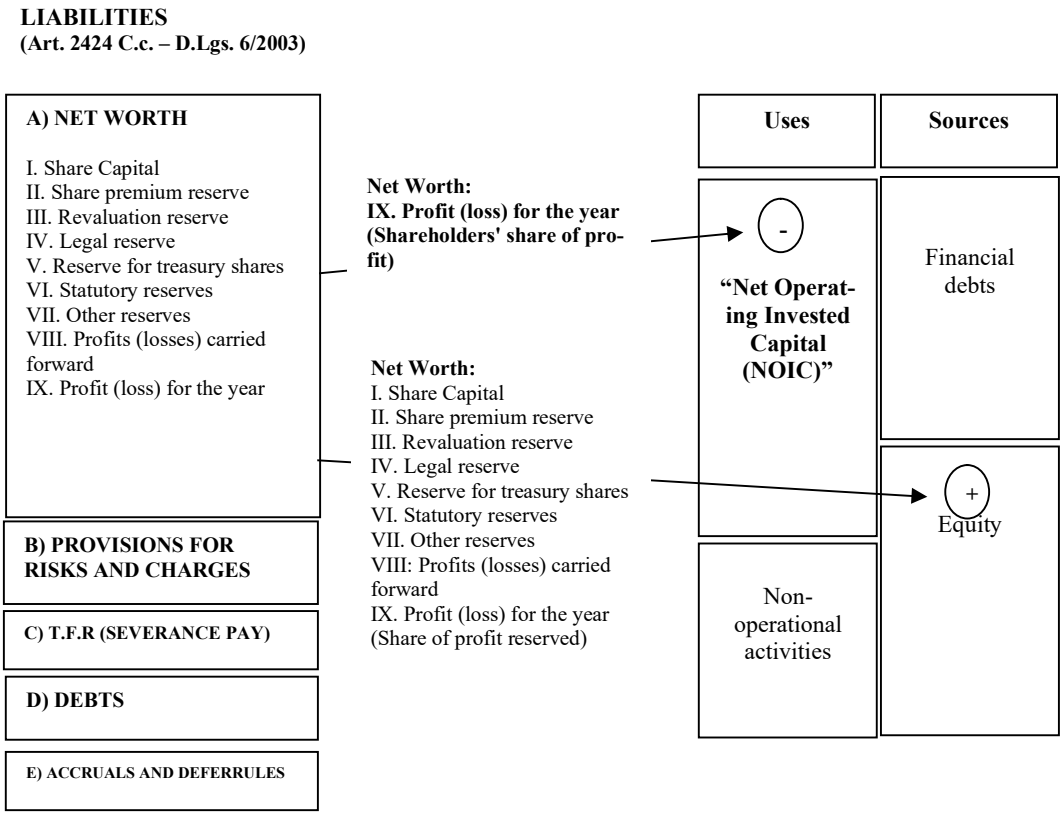
C) Current assets



D) Accrued income and prepaid expenses

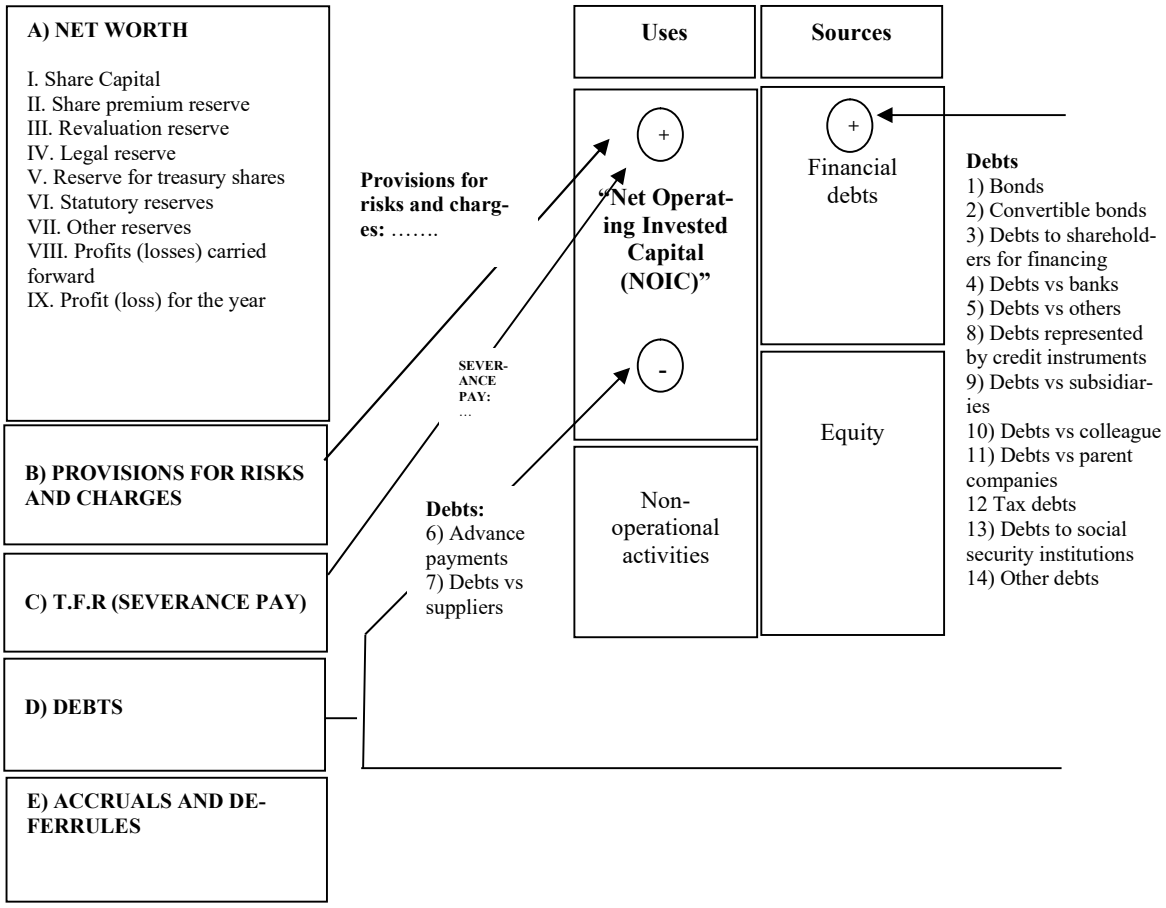


A) Net Worth

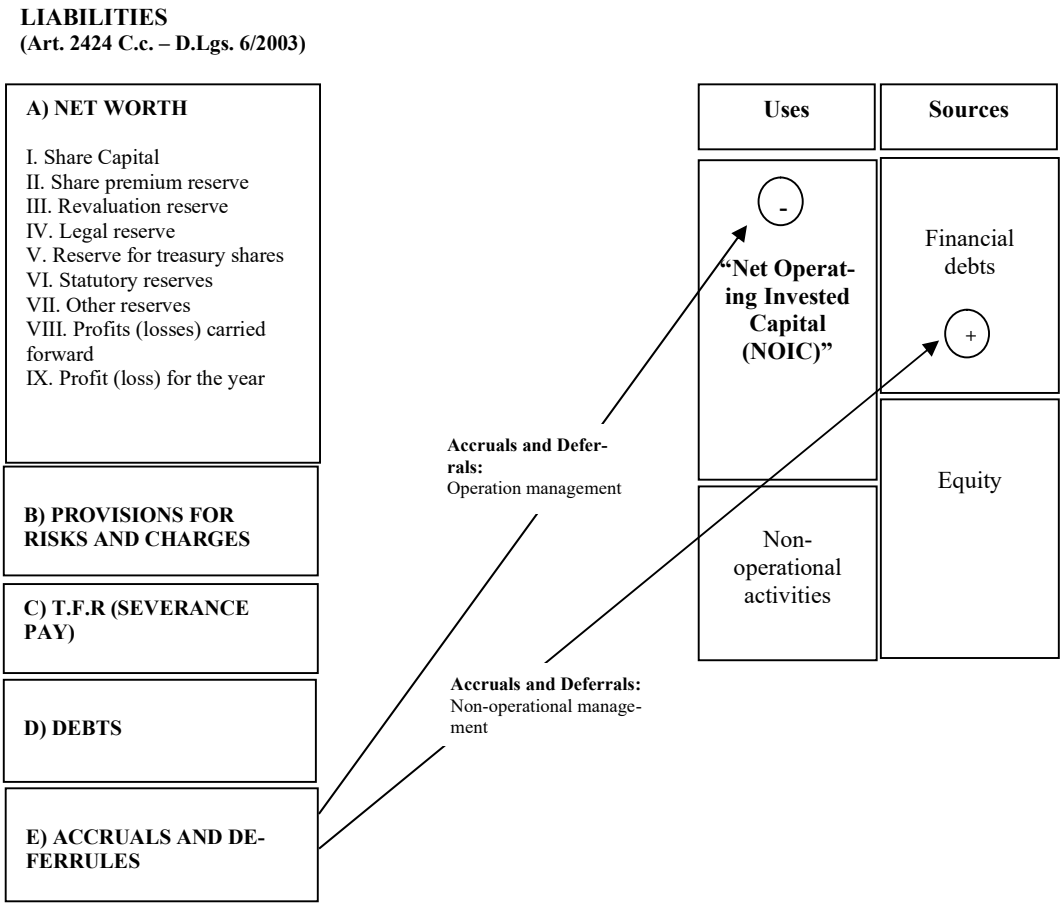


B) Provision for risks and charges, C) SEVERANCE PAY, D) Debts

LIABILITIES
(Art. 2424 C.c. – D.Lgs. 6/2003)



E) Accruals and deferred income



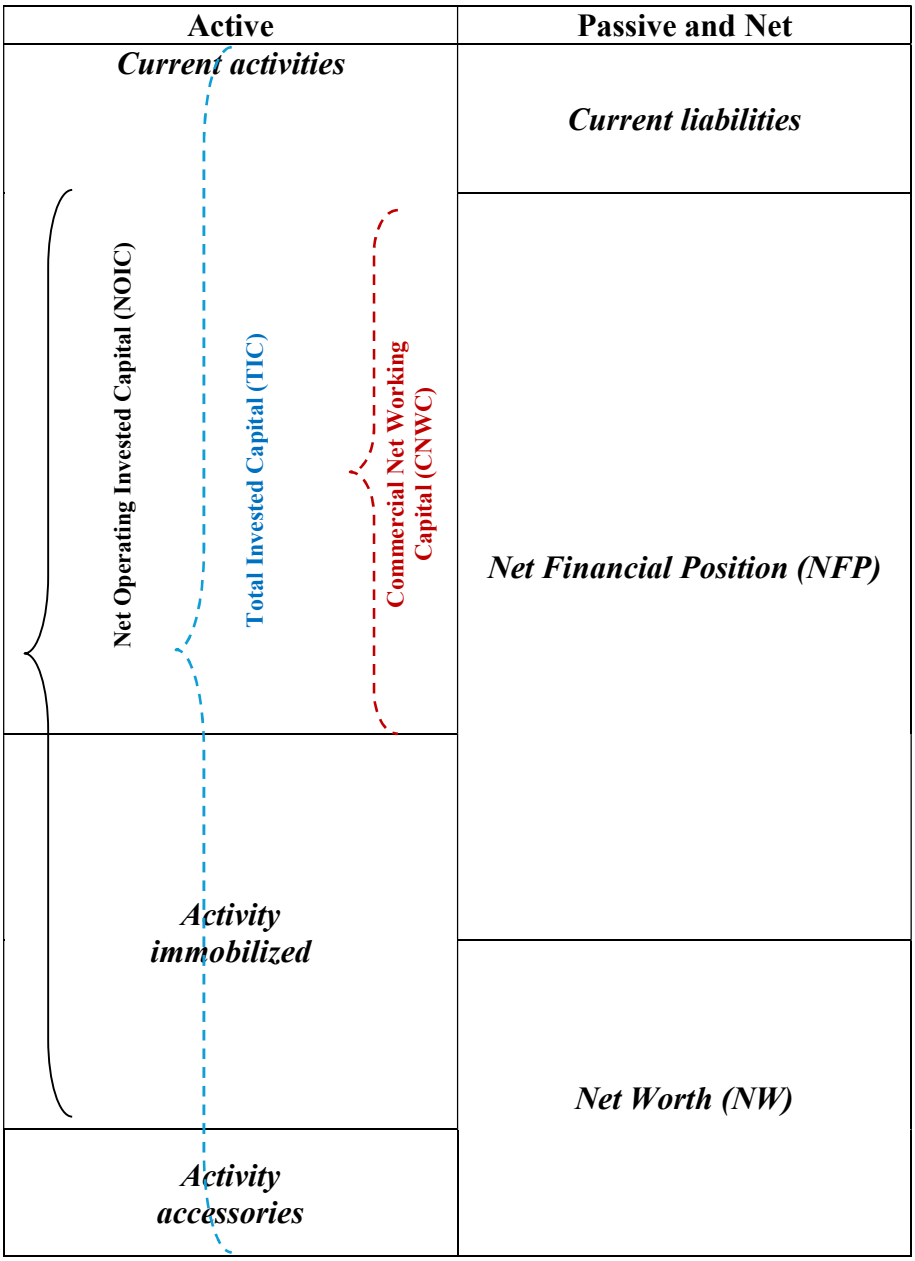
Following what has been argued so far on the reclassified balance sheet statement with the criterion of management relevance, it appears useful to clarify further aspects.[5]

When reclassifying, a process can be followed, divided into five phases:

1. distinction between operational (current) activities and ancillary (extra-operational) activities;
2. identification within the operational activities of the Commercial Net Working Capital (operational or core, also defined as *operating working capital*)
3. identification of fixed assets;
4. identification of the NFP;
5. identification of net worth

The following figure stylizes the reclassified with the criterion of management relevance, but with some revisions compared to what has been argued so far (NFP first and foremost). The following paragraphs better clarify the 5 phases listed above.

[5]For further information, we recommend reading the book: Dallocchio M., Salvi A., *Finanza d'azienda* - IV edition, EGEA, Milan, 2021.



4.3.a. Distinction between operational (current) activities and ancillary (extra-operational) activities

The objective of the first step is to identify the net assets (assets - liabilities) that can be defined as accessories (extra operational) to the operating activity and which do not contribute to the operating income generated by it. In general, there are three main types of activities (extra-operational):

- *Participation in other entities*. This category usually includes securities investments made for speculative purposes (income) and not capacity (industrial, strategic). It is important to point out, however, unlike the examples presented so far, that part of the doctrine holds that even when these shareholdings concern companies which carry out activities connected to the main

one and represent investments of an industrial nature (strategic shareholdings) it is appropriate to exclude them from the *core* activities, as the income that these investments generate (profit from associated investments) does not contribute to forming the operating income of the participant.

- *Balance sheet items (assets and liabilities) that feed income statement items that do not contribute to forming operating income, such as*:
  - ✓ Accruals and deferrals (assets and liabilities) referring to financial investments or loans (i.e. relating to interest income or expense);
  - ✓ Cash and cash equivalents. Part of the doctrine is aimed at distinguishing the liquid assets that originate from operating profitability, compared to the liquidity that originates from ancillary activities. Subsequently, the liquid assets will fully feed the NFP.
  - ✓ Credits or debts not inherent to the company's core business (including long-term financial receivables from investee companies);
  - ✓ Derivative financial instruments held for *trading purposes* whose *fair value* can take on either a positive or negative value.
- *Balance sheet items that feed income statement items that can sometimes contribute to forming operating income, but which concern ancillary activities.* For example, active rents deriving from the leasing to third parties of properties owned by the company, but which do not fall within the company's core business.

4.3.b. Identification of Commercial Net Working Capital within operational activities (CNWC)

After identifying the ancillary activities, the set of other items constitutes the *core activity* of the company, i.e. the set of activities used to carry out the core management.

The identification of core activities is therefore functional to determining the amount of investments that have become necessary for the functioning of the characteristic business activity. This investment, however, must be expressed in net terms, i.e. by subtracting only the operational (non-financial) liabilities generated by the "purchase-transformation-sale" cycle that characterizes the company's activity. The final intent is in fact to identify how much of the operational activities require a requirement of a purely financial nature, in turn covered by risk capital (*equity*) or debt *capital*.

Therefore, a necessary point in this phase is the definition of Commercial/Operational Net Working Capital (or *core,* also called *Operating Working Capital*).[6] This is an aggregate made up of the balance of operational assets and liabilities

[6]Please note: Operating Net Working Capital (ONWC) is a version of Net Working Capital – NWC (of a financial nature), however without the passive financial component. That is, the calculation no longer includes the subtraction of short-term bank debt. This is because it is an operational version linked to the company's characteristic/current management. The full ONWC formula is as follows: (Immediate cash + Deferred cash + Inventories) - Short-term non-financial debts. Going even more specifically, the Commercial Net Working Capital (CNWC) is an NWC that takes into consideration only the deferred and strictly commercial components of the balance sheet. What is immediate, such as cash and the bank, or not of a commercial nature, such as financial

that core management feeds into carrying out its operating cycle. Typically, in a manufacturing company, these include trade receivables, inventory and supply debts. The term working capital derives from the fact that the items just mentioned, unlike fixed assets, refer to operational activities characterized by a physiological rotation, typically generated by the continuous repetition of the purchase-transformation-sale cycle. In some cases, the ONWC can also take on a negative value. In these cases, the purchase-transformation-sale cycle generates financial resources rather than absorbing them. This is the case, for example, of companies operating in large-scale retail trade, which collect sales in cash, often pay suppliers for 120 days and manage a product warehouse with an average turnover of 30 days. This leaves 90 days before the company has to pay the suppliers, within which the company can use the temporarily available resources in the ways it deems most appropriate.

The size and sign of the commercial net working capital are very important to correctly understand the company's business model. If it takes on positive values, an increase in turnover is accompanied by a greater need for financial resources to be found externally. In these cases, it is possible to achieve increases in turnover only if it can procure new external financial resources of a financial nature (naturally the opposite applies if the company reduces its turnover, under the same purchase-transformation conditions -sale). If the operating net working capital is negative, an increase in turnover is accompanied by the generation of further financial resources, whereas its reduction reduces the production of financial resources.

In principle, the management of commercial net working capital represents the area of operational management that is most significantly affected by short-term management choices and therefore requires particular attention. For example, a company that imports goods from the United States settled in dollars may find it appropriate to advance purchases concerning immediate needs in anticipation of a strengthening of the dollar against the euro. This decision involves a simultaneous increase in inventory and supply debt by an equal amount and therefore does not affect the size of the net balance between assets and liabilities circulating in the short term. However, if the purchases of raw materials anticipate production needs, the supply debt is most likely destined to be liquidated before the use of the raw material in the production cycle and the related collection of the trade credit, generating an increase in working capital. commercial net.

The permanent reduction of commercial net working capital requires structural interventions by the company: producing *just in time* (with inventories close to zero), production integration with suppliers and customers; and reducing idle warehouse stocks with efficient logistics management (robotic warehouses, dedicated information systems, etc.).

4.3.c. Identification of fixed assets

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debts and those towards third parties who are not suppliers (for example tax authorities), are no longer considered in the calculation. In other words, it boils down to this formula: (Receivables from customers + Inventories) - Payables to suppliers. ***In practice, the ONWC coincides with the CNWC. Here we use the two concepts interchangeably.***

The three main categories that identify the company's operational activities are:

- net tangible assets (or technical fixed assets),
- intangible assets with a finite life,
- intangible assets with an indefinite life.

Net tangible fixed assets exclusively concern activities relating to typical business management and are expressed net of accumulated depreciation. Please note that if the company is characterized by obsolete systems, their net current value may be very low and therefore not expressive of the normal supply of fixed assets.

assets *with a finite life* are represented by:

- ✓ "internally formed intangible assets". These are types specifically defined by accounting standards such as, for example, the costs of developing a new product or some costs of a commercial nature that can be capitalized;
- ✓ "intangible assets acquired from third parties", or assets with a defined life which in Anglo-Saxon language are usually referred to as *mass assets*. These are intangible assets which are considered to have a finite life in accounting terms, but which can self-generate over time, such as, for example, a bank's customer portfolio. Individual customer relationships have a finite life, even if the portfolio continues to regenerate because the company incurs costs for the necessary replenishment.

assets *with an indefinite life* are made up of:

- ✓ "specific intangibles". These are assets that can be sold by the company (for example a brand) or that arise from the availability of rights (for example a renewable license without charges upon expiry) and which can be considered to have an indefinite life since maintenance costs are lower to the loss of value of the asset if no maintenance is carried out on it;
- ✓ "goodwill". This item is present in the balance sheet only following the acquisition of companies or company branches and is measured by the difference between the price paid for the acquisition and the value of the net assets acquired (pro-quota). This value therefore expresses a premium compared to the market value of the acquired assets that the buyer has recognized to the seller based on the presumed ability of the acquired company to generate an income higher than the normal remuneration expected from the net assets acquired. In the strict sense, *goodwill* expresses that part of *the economic profit* expected by the buyer which the buyer has recognized in the purchase price of the business and which the buyer expects to "recover" through future income flows.

The characteristic that intangible assets with an indefinite life and goodwill have in common is that they are not subject to systematic amortization, but to a periodic impairment test (*impairment test* at least annually).

4.3.d. Identification of the NFP

The term Net Financial Position (NFP) - or Net Financial Debt (NFD) - means the difference between the total financial liabilities (to banks, bondholders, third parties)

and short-term financial assets (excess cash or *surplus/excess cash*, other liquid assets and securities held for trading).

4.3.e Identification of Net Worth

For the analysis of equity, it is necessary to consider the following adjustment elements; you need:

- ✓ add any funds or excess funds that are believed to have been established only for prudential reasons (such as a fund for general risks) or accounting and which do not have the nature of liabilities;
- ✓ eliminate all components that are considered "not significant" as they are destined to be reabsorbed such as, for example, positive or negative reserves on so-called *Available-for-Sales* (AFS) debt securities.[7] In this case, it is necessary to add (deduct) the negative (positive) reserve of the aforementioned securities to the value of the securities in the assets.

4.4 Reclassification of the Income Statement

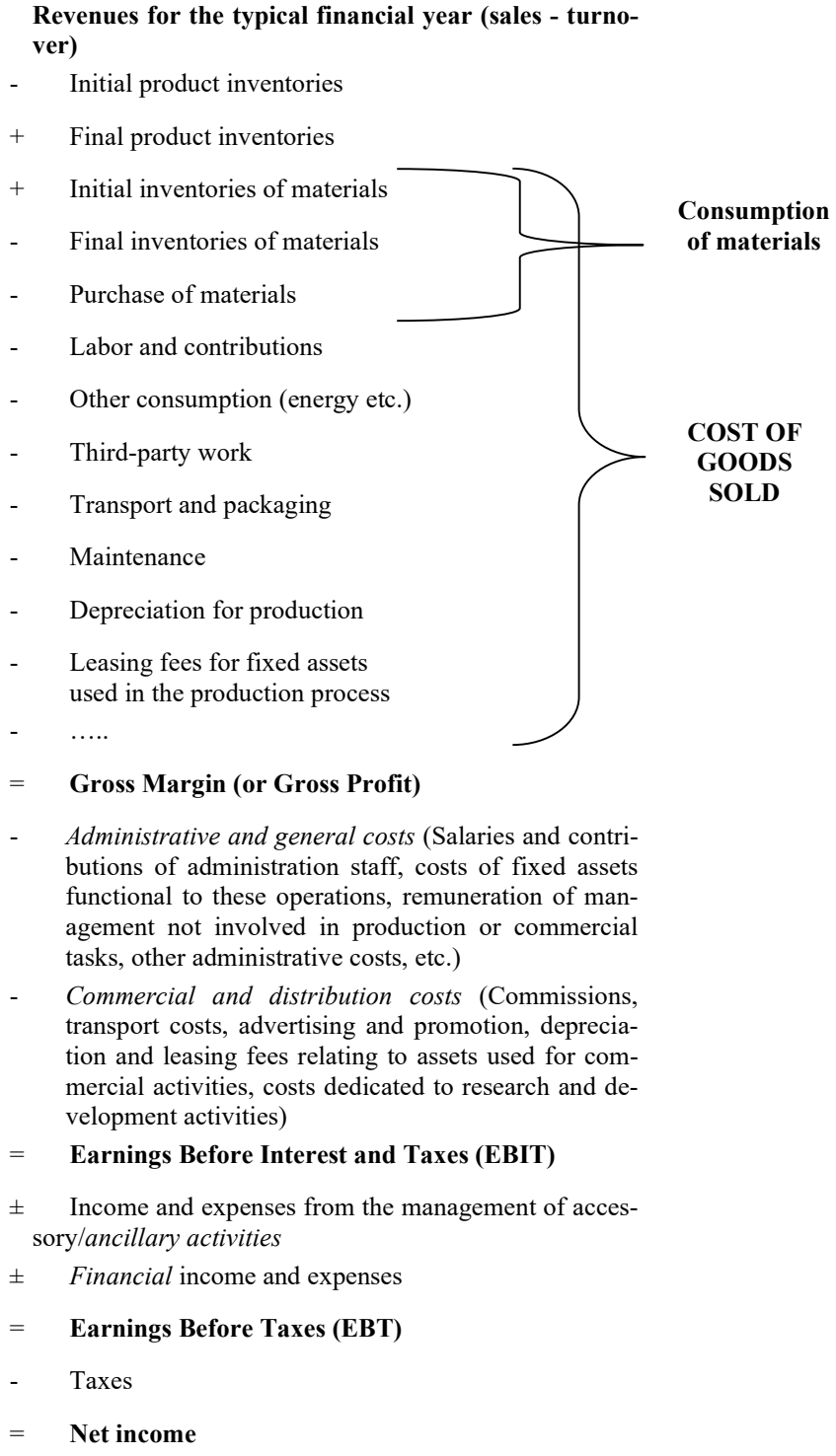
4.4.a. The industrial cost of sales income statement

It is certainly interesting for analysis because it is also able to highlight the gross profit on sales, i.e. the industrial gross margin (*Gross Margin or Gross Profit*). However, this account requires the allocation of costs by destination, which is not foreseen for the income statement intended for publication.

It is therefore an account that can only be reconstructed by the internal analyst, unless the same information, which allows the breakdown of costs by destination, results from indications given in the explanatory notes. For example, the explanatory notes should highlight the amount of depreciation relating to fixed assets used in production, distinct from that relating to commercial and administrative activities. Likewise, it must be possible to distinguish, by function, personnel costs and any other company costs. With the data available from the external analyst, it is difficult to keep separate the data that allows the determination of the cost of production sold (industrial cost of goods sold) and the gross profit on sales (industrial gross margin - *gross margin*). It is also useful to underline the additional difficulty in keeping the data of extraordinary operations distinct from that of ordinary management, a particularly useful distinction for judging the quality of the normal result of the financial year.

The income statement layout with this configuration is shown below:

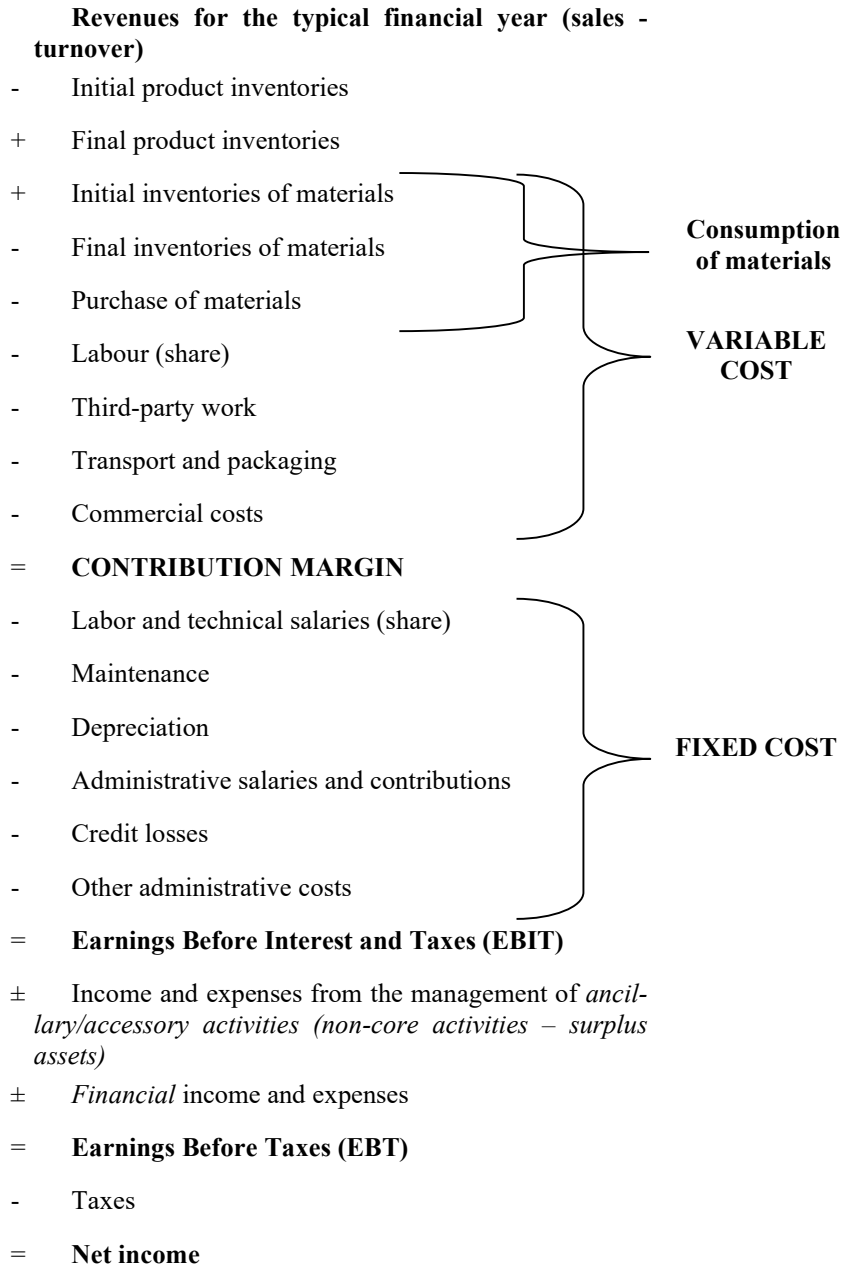
[7] *Available-for-Sales (AFS)* securities are financial securities available for sale, i.e. securities that the bank/company has purchased with a general intention of holding for a long time, but which could be sold on the market at any time, if the conditions were deemed favorable. According to IAS39, this type of financial asset is measured at *fair value* with the changes being allocated to the reserve.



4.4.b. The gross contribution margin income statement

This is what is most difficult to obtain by an external analyst using published financial statement data.

It presupposes the division of costs into fixed and variable costs, which is correctly possible by the internal analyst, who can obtain information in this sense from analytical accounting findings. The income statement is then able, thanks to the subdivision in question, to highlight the contribution of management, after deducting only variable costs, to the coverage of structural costs (fixed) and to the formation of the overall economic result of the year. See the diagram below:



4.4.c. The value-added income statement

The income statement with added value and EBITDA is a recently used configuration, very useful for highlighting the creation of wealth by the company (value added)

and for connecting the economic aspects with the financial ones of the income statement.

The EBITDA is the operating economic result expressed in financial (monetary) terms and therefore, essentially, the self-financing of core management.

The EBITDA is considered an important figure especially in trade union negotiations, because it is a figure not influenced by what have often been defined as budget policies connected with depreciation and amortization and provisions for future expenses and risks. It is an intermediate result whose only non-objective element is represented by the evaluation of stocks.

The EBITDA is also important in estimating the cash flow generated by income management and, if positive, a good "business card" for companies that present themselves to banks to request a possible loan.

It can also be reconstructed based on the income statement referred to in the art. 2425 of the civil code. For the structure, see the following diagram:

Production value (= Turnover + Final product inventories - Initial product inventories + Economy construction + Other revenues)

\- Consumption (purchases of raw materials and semi-finished products, changes in raw materials inventory)

\- Other external purchase costs for operational management

\- Provision to the risk fund

= **Value Added (VA)**

\- Cost of labour

= **Earnings Before Interest, Taxes, Depreciation and Amortisation (EBITDA)**

\- Depreciation

\- Write-downs for lasting loss of value on "core" assets of the period

= **Earnings Before Interest and Taxes (EBIT)**

± Income and expenses from the management of *ancillary/accessory activities (non-core activities – surplus assets)*

± *Financial* income and expenses

= **Earnings Before Taxes (EBT)**

\- Taxes

= **Net income**

5. The interpretation of the financial statements through the reading of the indices

As already mentioned, the balance sheet analysis allows the company to monitor its financial and asset health and to compare its profitability to the extent of the means used to achieve it. The analysis allows the entrepreneur, shareholders and partners to measure the compensation for the capital injected into the company and to compare it with that relating to other forms of investment.

The balance sheet analysis, however, also provides important information to the world outside the company: customers, suppliers and, above all, banks or other financing bodies. The common reason for the interest in the financial statements on the part of external operators is the timely identification of potential financial problems that could prevent the company from meeting its commitments and, in the most serious cases, from continuing its activity.

The interpretation of the financial statements is expressed through a series of capital and economic indices (also called *ratios*), each of which can provide an accurate reading of a specific segment of the company situation. It should be underlined that the analysis by indices neglects fundamental elements of business activity, such as company strategies and the market situation. It is, therefore, essential that this analysis is used exclusively for the purposes for which it is intended.

A further consideration regarding the validity of the indices as sensors of the company condition: their reliability is strictly connected to that of the financial statements from which they are obtained. Consequently, balance sheet maquillage operations (so-called *window dressing*) or inadequate asset or current asset valuation policies can make the reading of the indices less reliable.

To achieve a higher level of precision, the financial statement analysis cannot be limited to examining the data relating to a single financial year, which could be affected by the occurrence of some particular economic or financial event. The analysis must therefore be extended to a historical series of at least three financial years, also to be able to provide a performance view of the company's activity.

Another factor capable of increasing the validity of the analysis is represented by the comparison of the balance sheet data and the relevant indices with those relating to other companies operating in the same sector. This operation, commonly defined as "benchmarking", allows you to carry out a weighted evaluation of the company, in light of the characteristics of the reference market.

5.1. Financial analysis: Financial ratios

The financial analysis of companies is implemented, first of all, through the use of indicators that compare related data with each other. This analysis must then be completed with a dynamic study carried out through financial flows, which will be discussed in depth in the next paragraphs.

Financial analysis through indices is inspired by the following consideration: the company's income and expenses must be in balance. To monitor the existence of this balance, attention is paid to four sectors:

1. Short-term equilibrium;
2. Long-term equilibrium;
3. Global corporate financial balance;
4. Financial balance between extensions granted to customers and extensions obtained from suppliers.

Each of these sectors is explored in depth through the use of indicators that compare values relating to the area concerned.

5.1.a. The short-term financial balance

It can be monitored through margin analysis, i.e. through an analysis of short-term active and passive items. For this purpose, two types of comparisons can be carried out:

- Comparison between short-term assets and short-term liabilities;
- Comparison between short-term liquid assets and short-term liabilities.

The first comparison is generally carried out to analyze the short-term company situation or, better yet, to highlight whether the short-term needs are in balance with the sources having the same expiry characteristics.

From this comparison between absolute values, the determination of the so-called arises. “Availability Margin” which, depending on the hypotheses, can take on negative or positive values:

$$\text{Availability Margin} = \text{Short-term assets} - \text{Short-term liabilities}$$

Short-term assets also include warehouse inventories. For this reason, a positive opinion on the financial structure requires that the availability margin is positive.

The presence of a negative availability margin is a symptom of financial imbalance while, as will be seen in the following pages, the determination of a positive availability margin does not guarantee the presence of a short-term financial equilibrium and, consequently, the existence of coherence between sources and short-term needs; even more, important for short-term financial analysis is the "Treasury Margin" which focuses on the company's liquidity and is given by the difference between deferred and immediate liquid assets and short-term liabilities:

$$\text{Treasury margin} = (\text{Immediate liquidity} + \text{Deferred liquidity}) - \text{Short-term liabilities}$$

The treasury margin should be positive: if the margin is negative, it means that the company is in difficulty in meeting short-term liabilities (financial risk zone).

To facilitate the analysis, especially when it is conducted on a large number of financial years, scholars have identified, for each margin, a specific quotient that can be deduced from the analysis by margins.

The use of the two indicators facilitates the analysis as the comparison of figures expressed in absolute value represents a complex operation, especially if carried out over multiple years. The variability of the values and the high amounts that distinguish them constitute obstacles to a financial analysis which must be implemented through comparisons of active and passive accounting items, developed over a perhaps very large number of financial years.

The indicators used are identified by the name of the margin to which they refer. The analysis is therefore carried out using the "availability index", which aims to test the existence of the balance between short-term assets and short-term liabilities (short-term active ÷ short-term passive), and the " liquidity quotient" which instead monitors the liquid financial balance of the company (see Fig. 4).

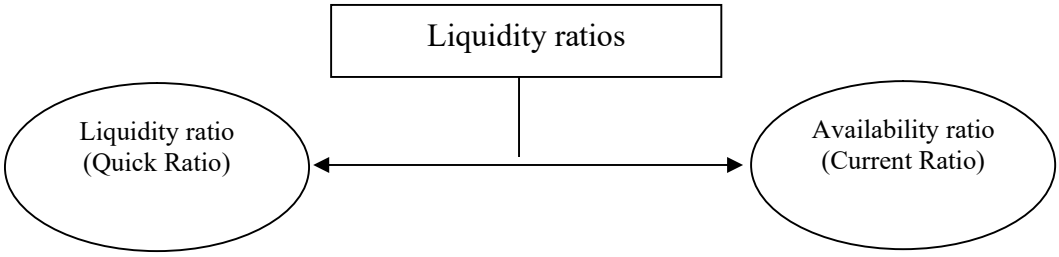


Figure 3. Liquidity ratios

Concerning the availability index (also called the *Current Ratio*), one could hypothesize that the short-term equilibrium is guaranteed by a substantial equality of the two values. However, this does not correspond to the truth as, within the short-term assets, an anomalous item can be identified compared to all the others: the warehouse. All short-term assets and liabilities items (except the warehouse) are characterized by the circumstance that collection or payment does not normally require any activity on the part of the company. As regards the warehouse, however, the transformation of mail into cash requires a sales activity that could encounter unforeseeable difficulties. For this reason, short-term static equilibrium is guaranteed if the availability index amounts to approximately 1.5-2 or higher. In the Italian situation, there is a tendency to settle towards the lowest value, a circumstance which however guarantees a more than satisfactory static balance.

The short-term financial analysis is completed by determining the so-called. "Liquidity ratio". The objective of this indicator is to verify the existence of a "short-term equilibrium". This *ratio* is calculated by comparing company liquidity with short-term liabilities (see Fig. 5).

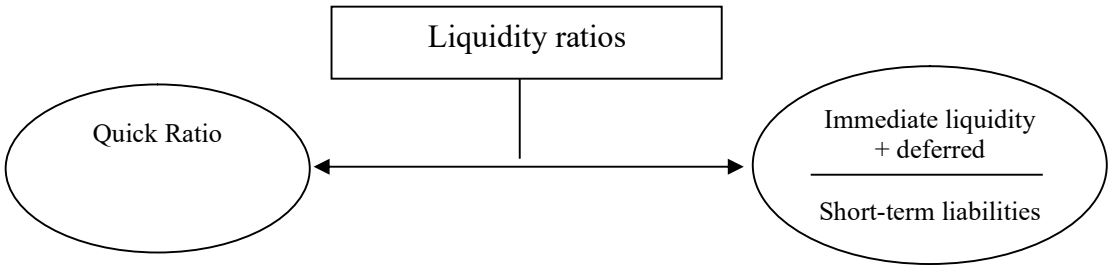


Figure 5. Liquidity ratios. *Quick Ratio*

The liquidity quotient, unlike other *ratios*, is translated into English with a term that is very explanatory of its meaning: *quick ratio*. The use of the term *quick* implies an analysis of the most easily liquidated items within the short-term assets. Since the least liquid item is represented by inventories, the substantial difference between the two

availability and liquidity indices lies in the respective presence and absence of inventories in the numerator. The reference parameter for the liquidity index can be identified at the level: 0.7 – 0.8.

There is a hypothesis in which the parameters indicated above completely lose their value. This is the case in which the company does not have a warehouse. If the company has no stocks, it is clear that the two indices (availability and liquidity), except in the case of advances to commercial suppliers, are perfectly equal. Most companies operating in the tourism sector fall into this hypothesis.

5.1.b. Long-term financial balance

It is measured by contrasting the amount of long-term assets with the total long-term liabilities + equity, i.e. with long-term sources.

This comparison allows us to highlight whether the long-term needs are in balance with the sources having the same maturity characteristics.

From this comparison between absolute values, the determination of the so-called arises, "structure margin" which, depending on the hypotheses, can take on negative or positive values:

$$\text{Structure margin} = (\text{Long-term liabilities} + \text{Equity}) - \text{Long-term assets}$$

The presence of a negative structural margin is a symptom of financial imbalance while the determination of a positive structural margin highlights a situation characterized by substantial coherence between sources and short-term needs.

Since the reclassified budget presents a balance between sources and needs, it is clear that the availability margin is equivalent, in amount and sign, to the structural margin. This means that in the presence of a positive structural margin, the company will have an availability margin of the same positive amount. If, however, the short-term situation was unbalanced and characterized by a negative availability margin, the long-term situation would also highlight a negative structural margin of the same amount (see Fig. 6).

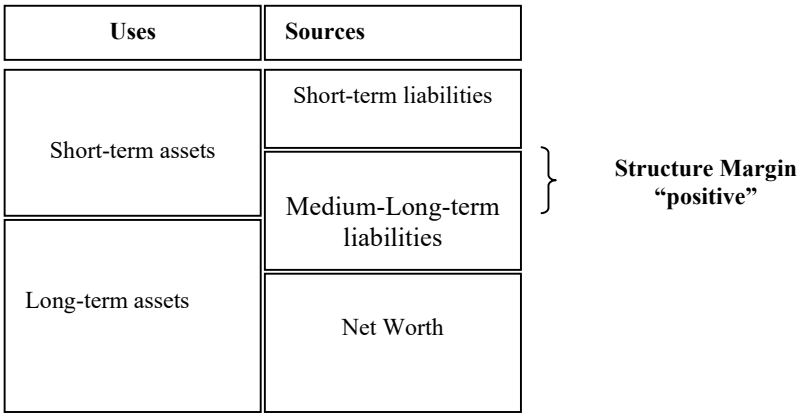


Figure 6. Graphic conceptualisation of the Structure Margin

Also in this case, to facilitate financial analysis, the development of a quotient is preferred to in-depth comparisons between absolute values which, due to its intrinsic characteristics, favours the analysis, especially if carried out over several financial years.

The long-term static financial balance is monitored by the so-called. "Long-term asset coverage ratio". This *ratio*, identified by the ratio between long-term liabilities + net equity and long-term assets, highlights which part of the long-term assets have been financed by sources characterized by maturity characteristics similar to the covered needs:

Long-term asset coverage ratio
= (Long-term liabilities + Equity) / Long-term assets

The index should always be higher than one as a value lower than 1 would imply long-term financing of the assets implemented with short-term sources: a circumstance which, from a financial point of view, shows a clear imbalance.

5.1.c. The global financial equilibrium of the company

It is typically monitored using the debt ratio. This *ratio* can take various formulations. The most widespread formula is the one that compares the total invested capital and the total net worth *(Leverage)*.

Debt ratio = Invested capital / Shareholders' equity

Since the invested capital can only be financed by equity or debt, the denominator of this index, indirectly, shows the degree of debt of the company. To guarantee a balanced budget, a low net worth implies the presence of high debts while, on the contrary, a high net worth is compatible with the existence of low debt. There is no real reference parameter for this index. It is possible to state that if the indicator stands at a value of around 3, financial balance is usually guaranteed. The presence of higher values must instead be interpreted above all in light of the intertemporal trend of the *ratio*, which shows the trend of the extended debt over various financial years.

The inverse formula (Net Worth / Invested Capital) is called "Financial Autonomy" as it expresses the incidence of net worth on the total invested capital. The index is considered positive for values > 30% (in practice we want to ensure that at least 30% of the financial sources are contributed by the financiers through paid-in capital and reinvested profits). Critical situations are recorded for index values < 10-15% (on the other hand it should be noted that a capital endowment exceeding 50-60% does not necessarily have positive implications). In this regard, a study conducted by the Observatory on the balance sheets of Italian joint-stock companies has highlighted (relative to the period 1997-2002) a strengthening of the average capital component, recording an average increase in the financial autonomy index from 21.9% to 27.6% of total assets.

5.1.d. The financial balance between extensions granted to customers and extensions obtained from suppliers

This balance is monitored by comparing the average credit duration and the average debt duration.

The "average credit duration" is determined by comparing the trade credits existing at the time of closing the accounts and the daily sales. To correctly determine the index it is important to underline that:

- The receivables placed in the numerator must include all trade receivables gross of the provision for bad debts. If the adjustment fund were removed, the "sub-standard" loans, i.e. the loans that extend the average duration, would essentially be eliminated;
- Revenues or credits must be modified to make the two values homogeneous. Credits contain VAT while revenues do not. For the numerator and denominator to be homogeneous, it is therefore necessary to eliminate the VAT contained in the credits or add the annual VAT to the revenues:

Average duration of trade receivables
= [(Trade receivables before the provision for bad debts * 360) / (sales + VAT)

The “average duration of trade payables” is determined in a similar way to the average duration of receivables. Therefore, the same considerations made above regarding the need to eliminate VAT from debts or add it to purchases of raw and subsidiary materials also apply to this index:

The average duration of trade debts
= (Trade payables * 360) / (purchases of raw and subsidiary materials + VAT)

The comparison between the average duration of debts and the average duration of credits represents a fundamental step in evaluating the financial balance of the company. A lack of homogeneity in durations to the detriment of the average duration of debts would indicate the presence in the company of a discrepancy between extensions obtained from suppliers and extensions granted to customers.

A possible average credit duration lower than the average debt duration would instead mean a differentiation of payments in favour of the company.

It should be noted, however, that this statement must be contextualized within the context of the company being analyzed. The average duration of debts could be very low compared to the average duration of credits and yet there is a financial balance due to the reduced presence of debts compared to sales revenues.

5.2. Profitability analysis

The term profitability generally highlights the company's ability to generate an income adequate to remunerate all production factors, including invested capital.

To analyze profitability, it is not sufficient to focus on the conditions of global profitability, but rather it is necessary to analyze the contribution of the different management areas, with particular reference to the ability of the characteristic area to generate income.

The following list shows the main indicators generally used for profitability analysis:

- Operating profitability (ROI - ROCE)
- Return on equity (ROE)
- Incidence of non-operational management
- Profitability of Sales (ROS)
- Rotation of invested capital
- Gross Operating Margin (EBITDA)
- Average cost of financing sources (ROD)

5.2.a. Profitability analysis. Operating profitability (ROI, ROCE)

The ROI *(Return On Investment)* expresses the degree of remuneration of the invested capital concerning the income from operational management.

Figure 7 stylizes the determinants of ROI.

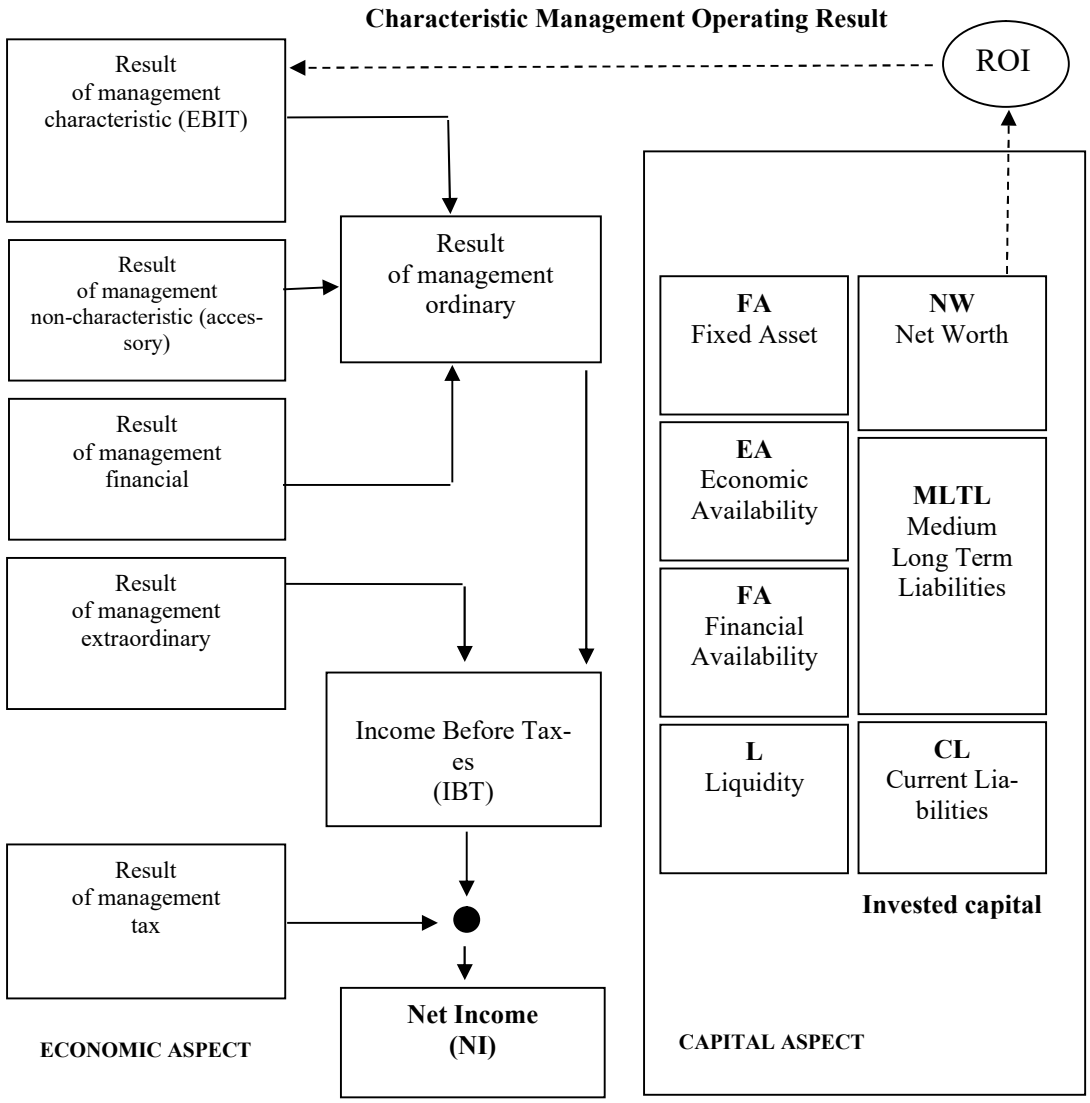


Figure 7. Graphical conceptualisation of ROI

$$ROI = EBIT / Invested\ capital$$

ROI is an index aimed at measuring how much the company can make use of the invested capital to produce operating income (it is an index relating to the efficiency of the processes related to core management).

The ROI provides a measure of the cost-effectiveness of management regardless of the financing methods used since the operating result is independent of financial charges and the contribution of other management areas. An ROI = 13% indicates that for every 100 Euros of invested capital, the company produces an operating income of 13 Euros. It can be deduced that, in principle, the ROI should not be lower than the average cost of money (otherwise the profitability would not even be able to cover the interest expense for any loans).

Let's imagine calculating the ROI starting from the balance sheet at 12.31.2006. We observe that, by applying the formula used for the definition, the operating result ac-

crued throughout the 2006 financial year would be correlated to the capital invested at 12.31.2006. In doing so, the classic cause (invested capital) → effect (operating result) relationship of a classic efficiency indicator is lost, where the invested capital has the function of *driving* the operating result. In other words, it would not make sense to evaluate the income produced throughout the financial year 2006 about the final invested capital alone.

On the other hand, if it is simple to follow the continuous dynamics of the income variables, it is much more complex to follow the continuous dynamics of the assets: for this reason, in 2006" the average value between the capital invested at the beginning of the year (as per the balance sheet at 12.31.2005) and the invested capital at 12.31.2006. Thus the formula becomes:

ROI = EBIT / Average invested capital

where the average invested capital is calculated as the semi-sum of the invested capital at the beginning and the end of the financial year in question (this explains why at least two to three financial statements are always required to develop an accurate analysis).
Another clarification refers to the invested capital. Since we are interested in measuring the profitability of only the characteristic management (*core* or institutional activity of the company), it is more correct to take into consideration only the capital invested in the characteristic area (see Fig. 8). In this case we find ourselves in the presence of a particular ROI configuration known as ROCE (*Return On Capital Employed*). This is a ratio of crucial importance because it provides a summary indication of the company's ability to generate operational management profitability adequate to the remuneration needs of its financiers.
The ROCE can be constructed according to the *asset side logic*, using the sum of the CNWC and the fixed operating assets as the denominator:

ROCE = EBIT / (CNWC + Operating Fixed Assets)

Furthermore, the ROCE, in a practically equivalent way, can be constructed with a *liability side logic* (instead of an *asset side*), adding the Net Financial Position and the Shareholders' Equity.

ROCE = EBIT / Net Financial Debt (NFP) + Equity (NW)

More correctly, the ROCE can be calculated using the balance sheet model reclassified according to the functional criterion, using the net operating invested capital as the denominator (see Fig. 8).

Generally in Italy when talking about ROI we refer to the ratio between operating income and invested capital, while in Anglo-Saxon countries we refer to ROCE. For completeness, it must be said that ROCE is certainly the most correct measure of return on capital. If we compare this measure with the weighted average cost of capital (WACC), we can understand whether the company creates value (returning capital at a rate higher than its cost), or destroys it.

To conclude, it should be noted that in the calculation of ROI and ROCE, the operating income can be assumed net of taxes (often indicated with the Anglo-Saxon acronym NOPAT = *Net Operating Profit After Taxes).* In this case, you will have:

ROI = Net Operating Profit (NOPAT) / Invested capital

ROCE = Net Operating Profit (NOPAT) / Net Financial Debt (NFP) + Equity (NW)

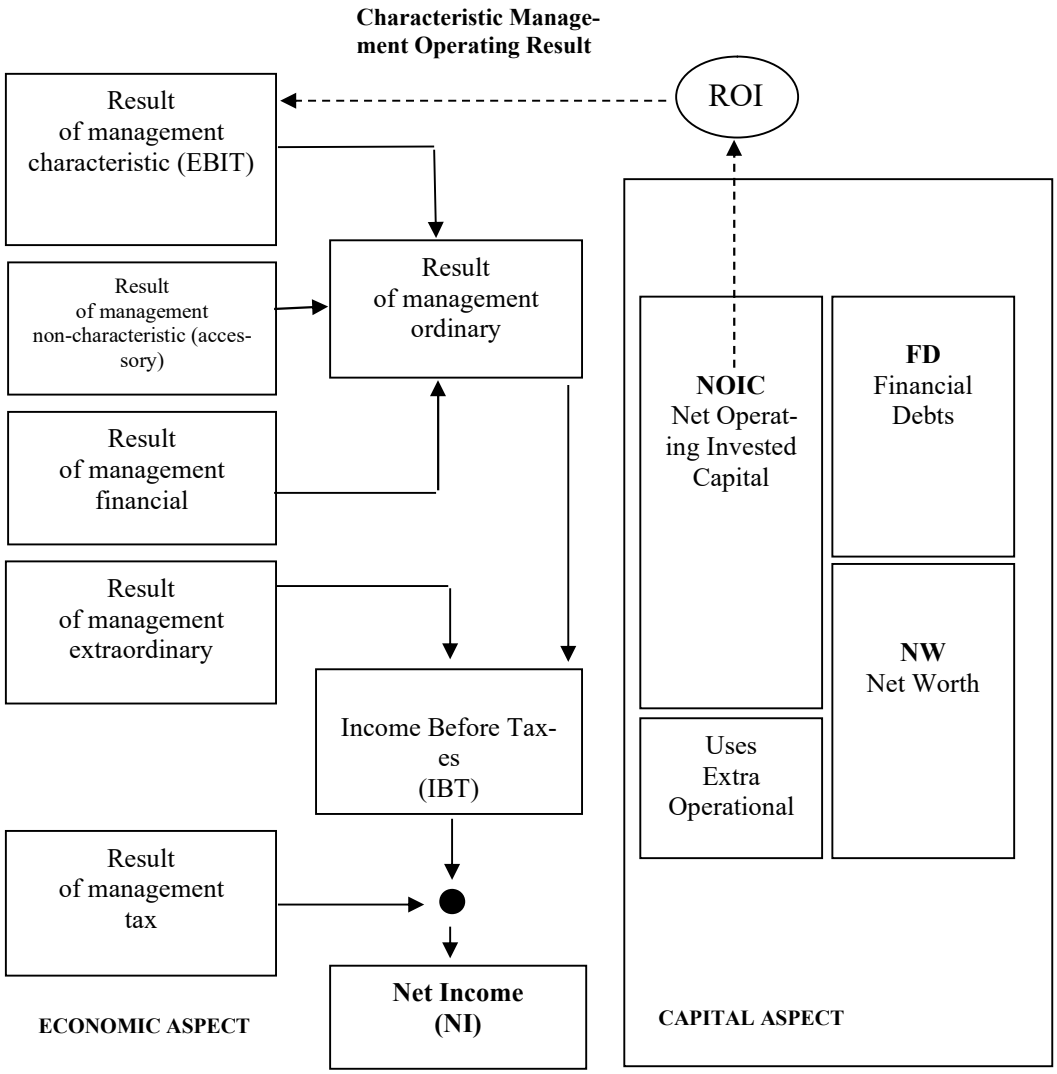


Figure 4. Graphical conceptualisation of the ROI constructed by isolating the NOIC

5.2.b. Profitability analysis. Return on equity (ROE)

The ROE (*Return on Equity*) expresses the overall profitability of equity capital (risk capital):

ROE = Net Income / Shareholders' Equity

It is an indicator of the overall level of cost-effectiveness and efficiency of the company since the net income is influenced by investment policies (depreciation), by the choices of how to finance the company (financial expenses and income), by unpredictable events (income and extraordinary charges), as well as taxation. An ROE = 6% indicates that for every 100 Euros of capital invested by shareholders, the company produces a net income of 6 Euros. This justifies why ROE, in principle, should not be lower than the yield on short-term government bonds or bank deposits.

ROE (like ROI) is one of the main indices taken into consideration by the bank to assess creditworthiness, since the ability to produce income conditions the level of risk of the financing operation. The considerations already carried out for ROI lead us to a more precise calculation formula:

$$\text{ROE} = \text{Net Income} / \text{Average Shareholders' Equity}$$

where the denominator is calculated as a half-sum of the net assets at the beginning and end of the financial year in question.

Sometimes the ROE calculation is stripped of the tax effect. In practice, since net income is influenced by the State's fiscal policy, in the formula net income can be replaced by gross income (IBT = Income Before Taxes), obtaining:

$$\text{ROE (gross)} = \text{IBT} / \text{Average equity}$$

For a graphical conceptualisation of the ROE calculation, see Figure 9.

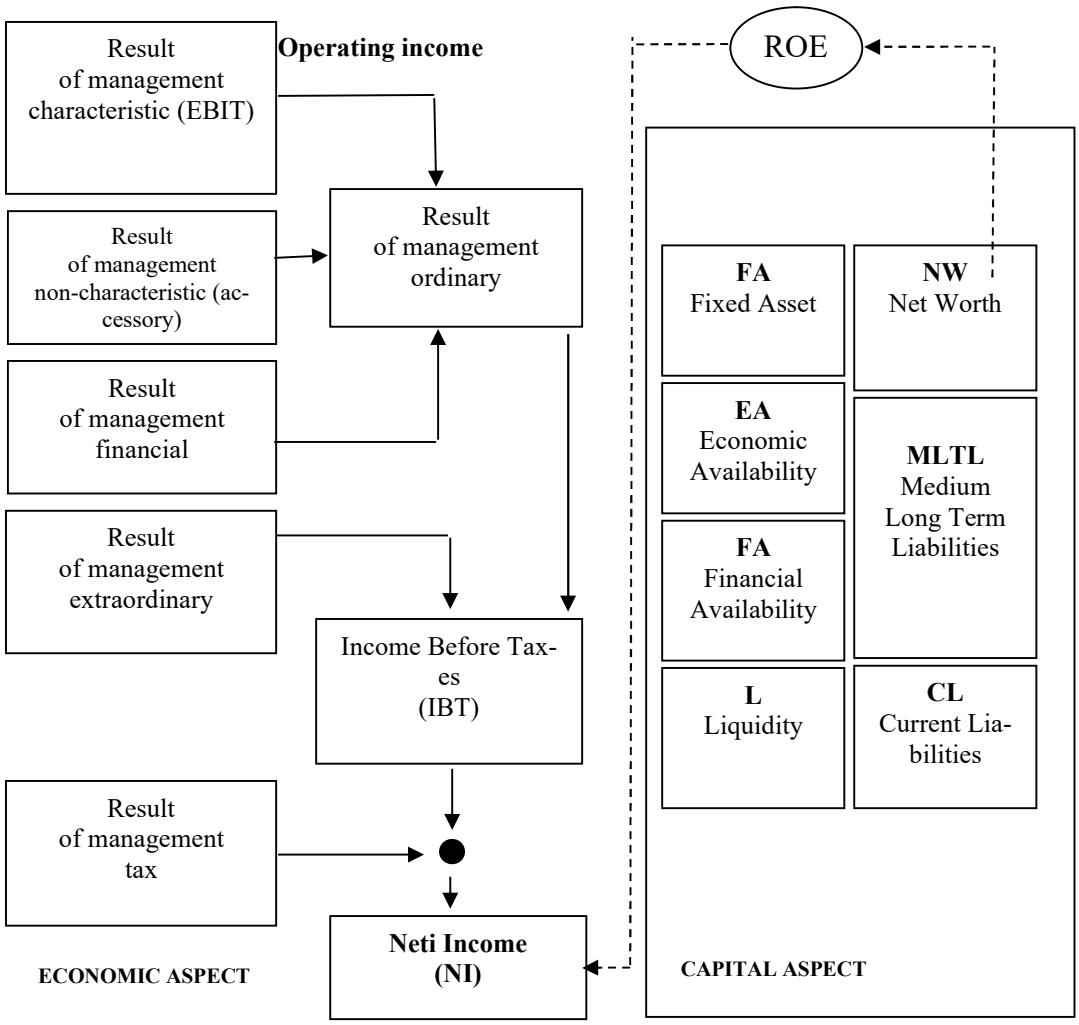


Figure 5. Graphic conceptualisation of ROE

The ROE can be expressed as a function of the ROI, the degree of debt and the index relating to the incidence of core management (see Fig. 10).

The first relationship between ROE and ROI is thus highlighted.

In particular, it is understood that ROE increases as operating profitability (ROI) increases, as debt increases and as non-operational management increases (the relationship between ROE and debt will be explored in more detail in the paragraph dedicated to financial leverage).

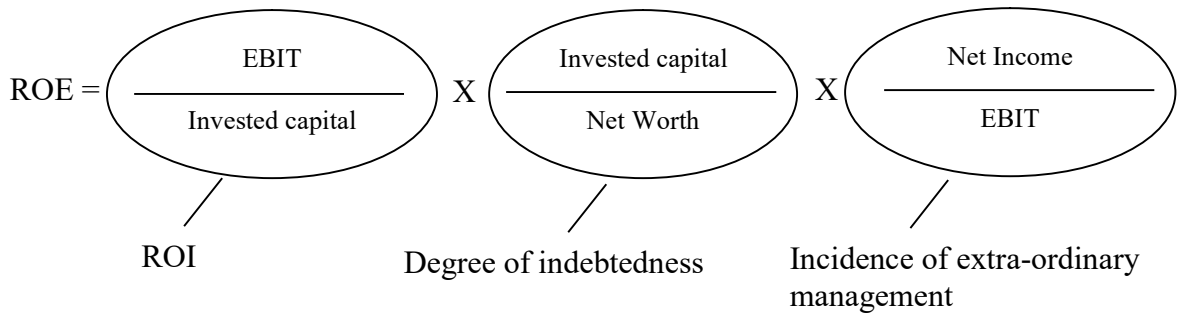


Figure 10. Determinants of ROE

5.2.c. Profitability analysis. Profitability of Sales (ROS)

The ROS (*Return on Sales*) expresses the percentage impact of the operating result (EBIT) on total sales revenues:

$$ROS = EBIT / Sales$$

A ROS = 15% indicates that 100 Euros of revenue generated 15 Euros of operating income (operational management costs absorbed the remaining 85 Euros).

It is perhaps the most used operating profitability index: it summarizes both internal efficiency conditions and market ones, being influenced by the structure of company costs and by market prices. A high sales profitability highlights the ability to charge prices much higher than the costs incurred; this may depend on the company's market power (ability to impose high sales prices) and/or the ability to contain the cost structure (thanks to efficient resource management).

However, the ROS is a less "clean" profitability index than the ratio between gross operating margin and revenues since it is influenced by the investment policy and the accounting policy of depreciation (introducing a variability that is independent of the company's reality).

It is an index particularly used in internal analyses, since it allows the profitability of different product lines to be compared, to identify any corrective measures capable of improving overall profitability. The higher the ratio, the better the situation in terms of profitability.

Any guiding values are highly dependent on the sector. In principle, the following reference values are generally used for industrial companies.

Guide values:

- < 8% → Products with little added value, mature technologies, high competition
- 8% - 12% → Satisfactory result
- 12% - 15% → Positive result
- > 15% → Company with a winning business formula (for technology, quality, service, etc.).

Similar findings can be had for companies providing services (it is sufficient to add 5% to the values indicated above).

The ROI can be expressed as a function of the ROS.

The report (see Fig. 11) indicates that to improve the return on invested capital (ROI), it is possible to act on two fronts:

- ✓ Increase profitability of revenues (ROS) → earn more for the same turnover;
- ✓ Increase efficiency in the use of capital (rotation of invested capital or asset turnover ratio) → use less capital for the same turnover.

The report teaches us that, all things being equal, ROI can be improved (priority objective for the entrepreneur, shareholders and financiers), by reducing costs, increasing productivity, increasing sales volumes, increasing prices, but also reducing inventories, keeping trade credits under control, obtaining greater extensions from suppliers, not investing in low-yield activities. Optimal results in terms of profitability of invested capital are obtained for ROI values > 14%-15%.

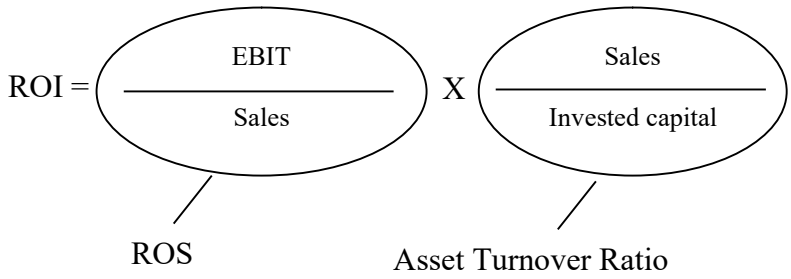


Figure 11. Determinants of ROI

5.2.d. Profitability analysis. Rotation of invested capital (Asset Turnover Ratio)

The relationship between ROI and ROS allows us to introduce the index:

Asset Turnover Ratio = Sales / Invested Capital

The turnover index allows the efficiency of the invested capital to be assessed, since it expresses the capacity of the invested capital (or total assets) to produce revenues (indicates the number of times that the invested capital is renewed as a result of sales). The invested capital turnover index is by far one of the main indices for assessing the degree of solvency and financial risk of a company. In fact, for the same turnover, the higher the invested capital, the higher the level of debt (therefore the simplest way to reduce debt is to contain the level of investments).

Optimal index values:

- > 1.2 → for industrial companies
- > 2.0 → for commercial businesses

Table 1 represents an example of a profitability analysis.

Table 1. Reading of profitability indicators

ROS	S/IC	ROI	Considerations
10%	1.4	14%	Good efficiency in the use of capital, good profitability of invested capital
14%	1.0	14%	High profitability of revenues, high capital requirement, good profitability of invested capital
7%	2.0	14%	Poor profitability of revenues, high efficiency in the use of capital

The following Figure (see Fig. 12) schematizes the relationships between the main profitability indices (ROE tree).

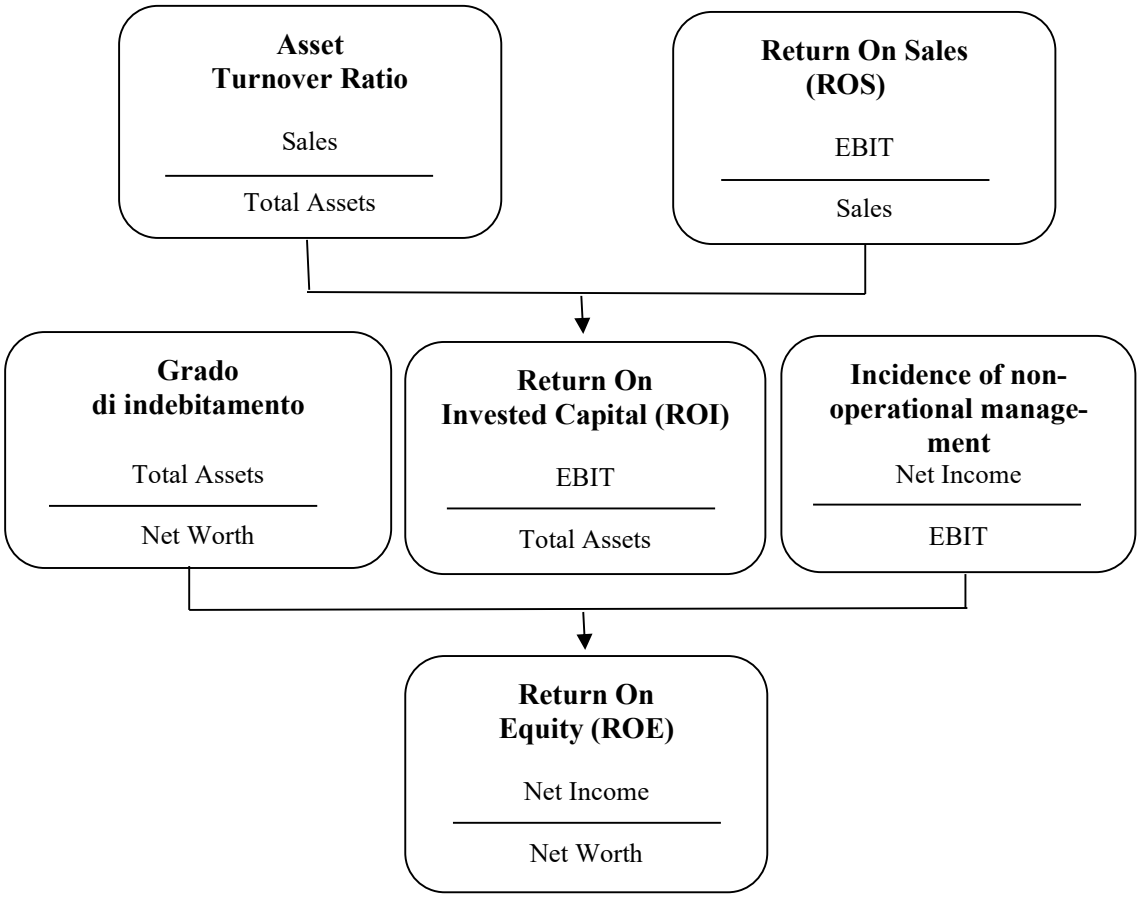


Figure 12. ROE tree

5.2.e. Profitability analysis. EBITDA

The EBITDA (*Earnings Before Interests, Taxes, Depreciation and Amortization*) – in Italian: Margine Operativo Lordo), is given by the difference between revenues and operating costs alone:

EBITDA = Operating profit + Depreciation

It is an extremely important index since it qualifies as the profitability measure least influenced by non-operational variables. Investment policies (depreciation), choices of how to finance the company (financial charges and income), unforeseeable events (extraordinary income and charges), as well as taxation, do not influence EBITDA in any way.

EBITDA is certainly the most significant profitability index. It is no coincidence that there is a now famous golden rule: having to choose between only three variables to understand a company, it is best to choose the turnover (how big the company is), the EBITDA (what its profitability is) and the debt. net financial (what is its solidity).

From this perspective, the index is particularly interesting:

EBITDA / Sales

Clearly the higher the ratio, the better the situation in terms of profitability. Any guiding values strongly depend on the sector. In principle, the following reference values are generally accredited for industrial companies.

Guide values:

- < 10% → Products with little added value, mature technologies, high competition
- 10% - 15% → Satisfactory result
- 125% - 20% → Positive result
- > 20% → Company with a winning business formula (for technology, quality, service, etc.).

Similar findings can be had for companies operating in the tourism sector (it is sufficient to add 5% to the values indicated above).

5.2.f. Profitability analysis. Average cost of financing sources (ROD)

The ROD (*Return On Debts*) represents the average cost of financing sources, calculated based on the ratio between financial charges/expenses and third-party funds (or debts) - (onerous and non-onerous):[8]

ROD = Financial expenses / Debts

The considerations already carried out for ROI and ROE lead us to a more precise form of calculation:

ROD = Financial expenses / Average third-party funds

[8]Yield on debt (ROD) is also a measure of profitability relative to leverage of a business. Debt yield shows how much the use of borrowed funds contributes to profitability, but this metric is rare in financial analysis.

Where the denominator is calculated as a half-sum of the debts at the beginning and end of the financial year in question. As regards third-party means, the formula takes into consideration:

- ❖ means against payment (financial debts): e.g. credit openings, bonds, mortgages etc.;
- ❖ non-onerous means (e.g. debts to suppliers);
- ❖ implicitly onerous means (e.g. TFR/SEVERANCE PAY revaluation).

If only financial debts (onerous debts) are considered, the formula becomes:

Cost of financial debts = Financial expenses / Average financial debts

The following figure (see Fig. 13) conceptually illustrates the relationships between the profitability indices (ROI, ROE and ROD):

- ✓ the company uses Invested Capital (IC) to generate operating income (relationship expressed by ROI);
- ✓ the income produced makes it possible to remunerate the risk capital contributed by the owners (shareholders, quota holders) - an expression of the ROE - and the financial sources for consideration, made available by external financiers (relationship expressed by the ROD).

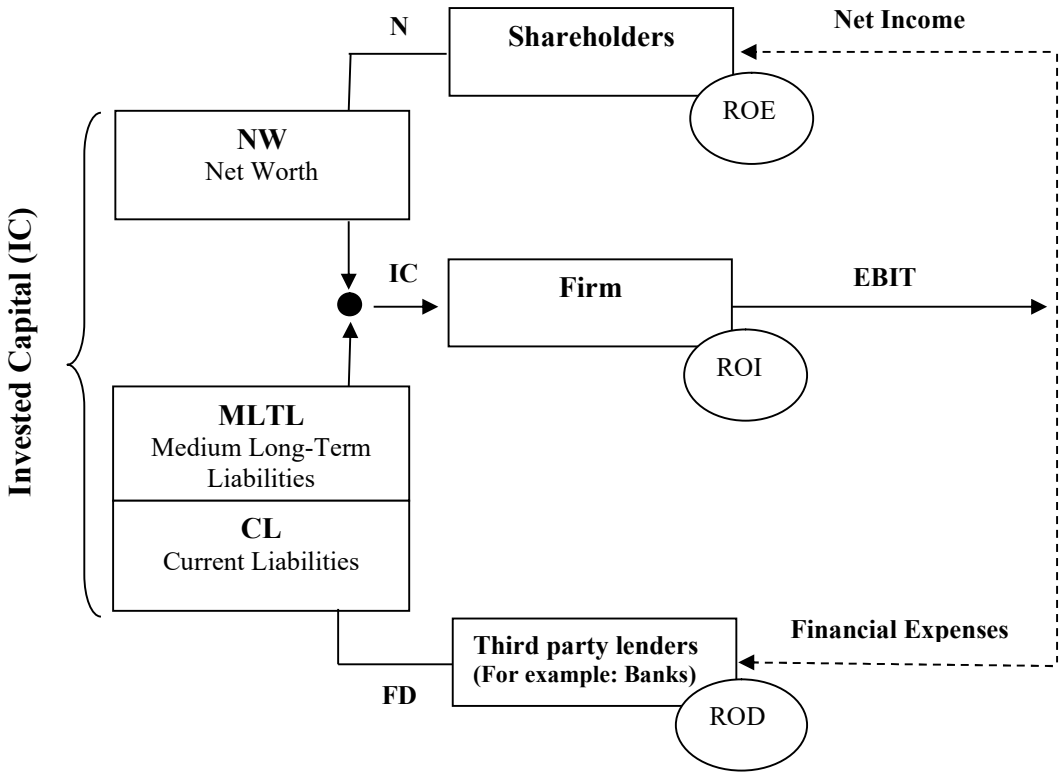


Figure 13. Graphic conceptualisation of the relationship between profitability indices

6. Financial leverage

6.1. Satisfactory profitability

Before introducing the topic of financial leverage, it is necessary to make a premise regarding the concept of "satisfactory profitability" for the shareholder or shareholder (the topic will be taken up again and explored in depth in the handout which discusses the determinants of the creation of corporate value).

The indicator that best represents profitability, i.e. the degree of remuneration of the company owner, is ROE; this indicator, which has an accounting nature and does not take into account two fundamental variables in the evaluation of the value generated for the shareholder:

- Operational risk;
- Financial risk.

The aforementioned risk variables, if considered for determining the cost of capital committed by the shareholder in carrying out his entrepreneurial activity, become essential comparison factors in the definition of economic value generated for company ownership. From the perspective of risk capital holders, therefore, the creation of economic value derives from the comparison between the negotiated and expected profitability of the ownership (ROE) and that which the business system generates taking into account the risk (satisfactory profitability).

From what has been said, the essential need emerges for the company that operates in market conditions to research all the variables potentially generating economic value in strategic and operational choices. According to the interpretative model of the value creation process developed with the CAPM (*Capital Asset Pricing Model*) method[9], the general factor that measures the growth of economic value is:

the profit rate, *Tp*

definable as the difference between the expected net return on equity (ROE) and its cost (return "due" to the market in light of the risk relating to the investment in shares or units - K_E*):*

$$Tp = (ROE - K_E)$$

where K_E represents satisfactory profitability (cost of invested capital - risk) and is obtained from the combination (sum) of the "Return on zero-risk loans" and the "Risk premium".

If the estimate of the return on zero-risk investments is easily determinable (just refer to medium-long term government bonds), the measurement of the risk premium is more complicated and the subject of heated academic debate.

[9]An overview of the theories that led to the CAPM can be found in DR Harrington, *Modern Portfolio. Theory and the Capital Asset Pricing Model. A User's Guide*, Prentice Hall, Englewood Cliffs, 1983, Ch. 1.

We will return to the concept of measuring the risk premium in subsequent handouts. For now, let's limit ourselves to underlining that financial leverage, i.e. the degree of indebtedness, represents a risk factor (financial risk) that contributes to increasing the shareholder's satisfactory profitability or, better yet, the cost of risk capital (*KE)*.

The following Figure (see Fig. 14) depicts the contribution of financial leverage in the theory of value creation.

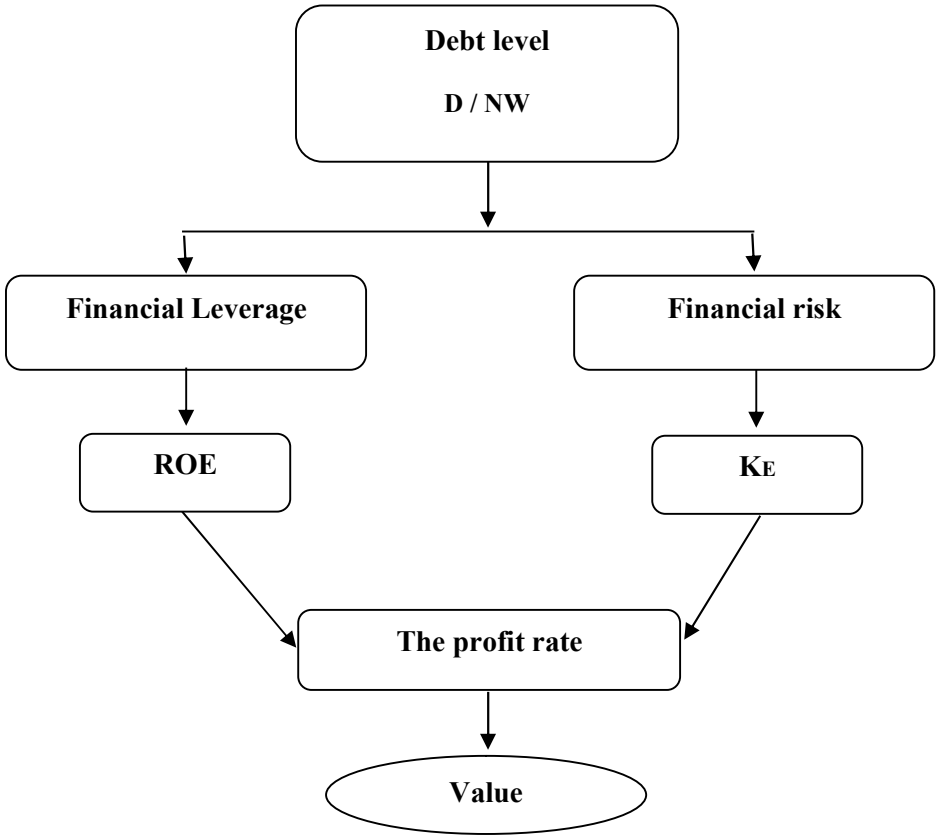


Figure 14. Graphic conceptualisation of the relationship between financial leverage and company value

6.2. Financial leverage

Debt policies must be planned based on:

- Of company profitability (ROI, ROE),
- Of the burdensomeness of financial debts (ROD),
- Of the corporate capital structure.

In certain circumstances, in fact, with the same operating income, the use of debt produces a financial multiplier effect on the profitability of equity (measured by ROE). This effect is called financial leverage. To illustrate the leverage effect we consider the following variables:

- ✓ PTI = Pre-Tax Income
- ✓ NI = Net Income
- ✓ OI = Operating Income
- ✓ FE = Financial Expenses
- ✓ FD = Third-party financial resources (Financial Debts)
- ✓ NW = Net Worth
- ✓ IC = Invested Capital

Since the financial leverage model is centered here on the analysis of the influence exerted by financial management alone on the formation of net operating income, consideration of the other areas relating to atypical and extraordinary management is omitted to assume, by simplifying hypothesis, that the results of the latter are null.

From this derives the definition of net income as the simple difference between operating income and the result of financial management, understood as expressing only the cost of the financial structure, as follows:

$$PTI = OI - FE$$

$$PTI = (OI / IC * IC) - (FE / FD * FD)$$

where ROI = OI / IC and ROD = FE / FD

$$PTI = ROI * IC - ROD * FD$$

Given that Invested Capital (IC) is otherwise definable as Net Worth (NW) + Third-party financial resources (FD):

$$PTI = (ROI * NW) + (ROI * FD) - ROD * FD$$

$$PTI = (ROI * NW) + [(ROI - ROD) * FD]$$

Dividend for Net Worth (NW):

$$\textbf{1)}\ ROE \text{ before tax (gross)} = ROI + [(ROI - ROD) * FD / NW]$$

Assuming that income taxes are equal to the rate "t" and that (1-t) expresses the fraction of income resulting after the payment of income taxes, we will have:

$$\textbf{2)}\ ROE = ROI + [(ROI - ROD) * FD / NW] (1 - t)$$

The following figure (see Fig. 15) analytically represents the financial leverage, by equation **1),** on the Cartesian axes, reporting the "debt level" (FD / NW) on the abscissae and the profitability indices on the ordinates (ROE and ROI).

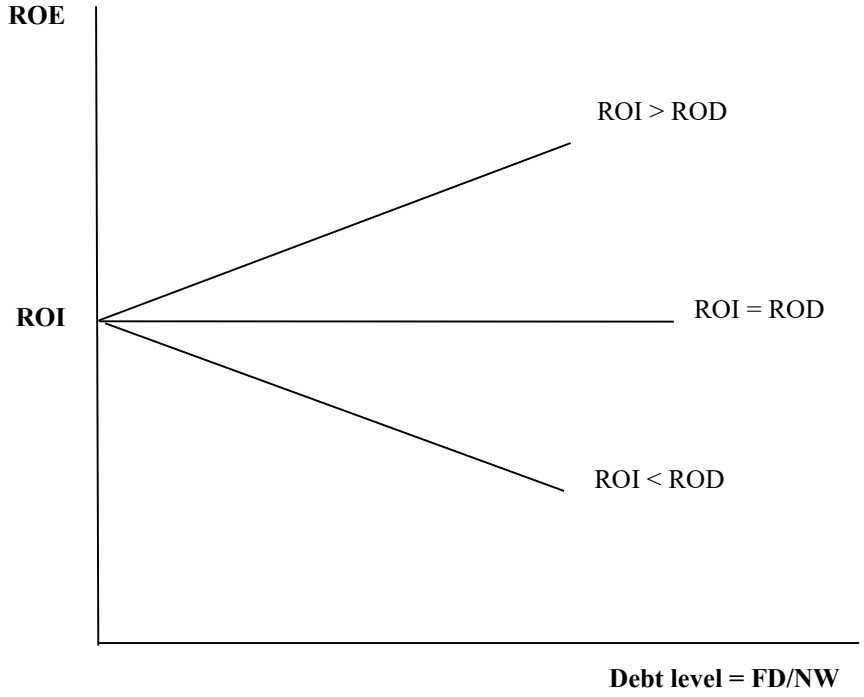


Figure 15. Graphical conceptualisation of leverage

From the analysis of the lines, we understand that, if the operating profitability (ROI) exceeds the average cost of money ROD, the ROE grows as the debt increases (the gap between ROE and ROI grows as the debt increases).

This effect is justified since debts can generate wealth, but only thanks to the company's ability to use financial sources at returns higher than the cost of money. It is no coincidence that companies often resort to third-party financing with the main aim of fully exploiting the opportunities related to company profitability (leverage effect).

Note (see Fig. 16) how, with the same debt, the leverage effect increases as the spread (ROI – ROD) increases. It is equally important to note that when the burden of ROD debt exceeds operating profitability (negative spread) it is necessary to reduce the dependence on debt to avoid a negative leverage effect on the return on equity (ROE).

It should be remembered that a positive spread is not sufficient to justify an investment policy financed with onerous debts (in this case the investment decisions, as mentioned in the previous paragraph and the subject of further study in another handout, must take into account the cost of capital = debts + equity).

In summary, the level of debt (*Leverage*) → FD / NW tends to increase as dependence on third-party financiers increases. From an economic point of view, an increase in the index therefore entails a change of the same sign in the amount of financial charges, both following the increase in the rate at which the loans are obtained and following the increase in the base on which these charges are calculated.

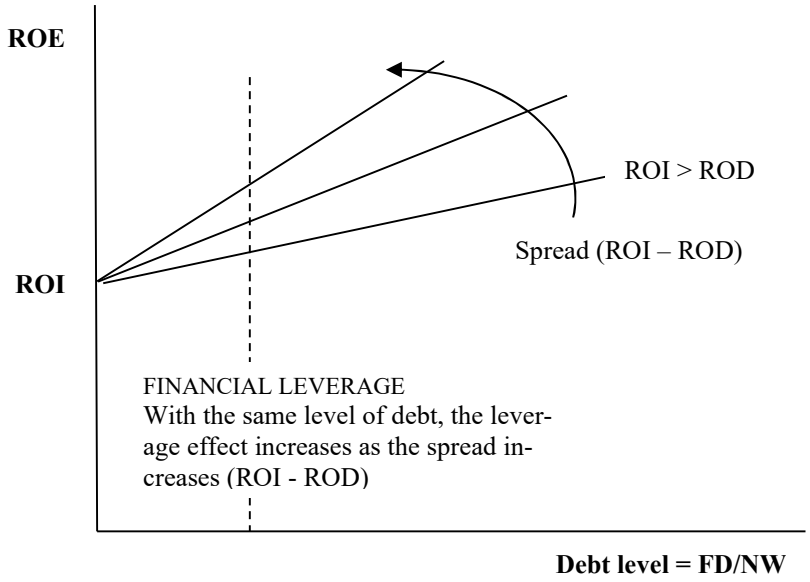


Figure 16. Graphic conceptualisation of financial leverage, with the same debt

From this point of view, it is convenient to resort to debt until the return obtained from the investment of the new capital raised is higher than the cost of the capital itself - Leverage Effect -. This maneuver, however, requires careful analysis of the consequent positive and negative effects. If, in fact, at a later stage the index reaches too high values, the cost of capital increases, as well as the company is judged too risky by external financiers, it may even be denied the possibility of obtaining new financing or the renewal of those expiring.

7. Analysis of financial flows

7.1. Premise

As mentioned previously, the total liabilities express the coverage of the financial needs at a given moment (funding sources). The analysis of two consecutive financial statements allows you to calculate the change in financial needs, ignoring, however, the operations that caused these changes during the year (static analysis).

Flow analysis, on the other hand, allows us to explain the changes that have occurred in the company's financial structure, based on the financial flows (positive and negative) that have accompanied management. The analysis of financial flows represents a completion of the structural analyzes illustrated previously (analysis of capital solidity and liquidity).

Having two consecutive financial statements available, the structural analysis allows us to identify the financial and equity configuration of the company in two very specific moments (corresponding to the closing date of the financial statements), highlighting the changes that occurred during the year; flow analysis allows us to understand the reason for these variations. By way of example, if the structural analysis highlights a worsening of the short-term financial position, the flow analysis highlights the causes of this worsening.

Before entering into the merits of financial analyses, it is necessary to distinguish two fundamental quantities: "funds" and "flows".

In economic disciplines the term "flow" is used to indicate the variations undergone, as a result of management, in the "fund" value of asset elements, in a given interval of time; the concept of flow is dynamic, that is, it implies movement, and in this sense it contrasts with the basic concept.

The "funds" in question can be:

- Liquid assets (immediate liquidity);
- The treasury margin;
- Current assets (gross working capital);
- Net working capital;
- All balance sheet items (assets & liabilities).

Financial flow analyzes are applied both in historical analyzes and in prospective analyses; in this regard, see the following figure (see Fig. 17).

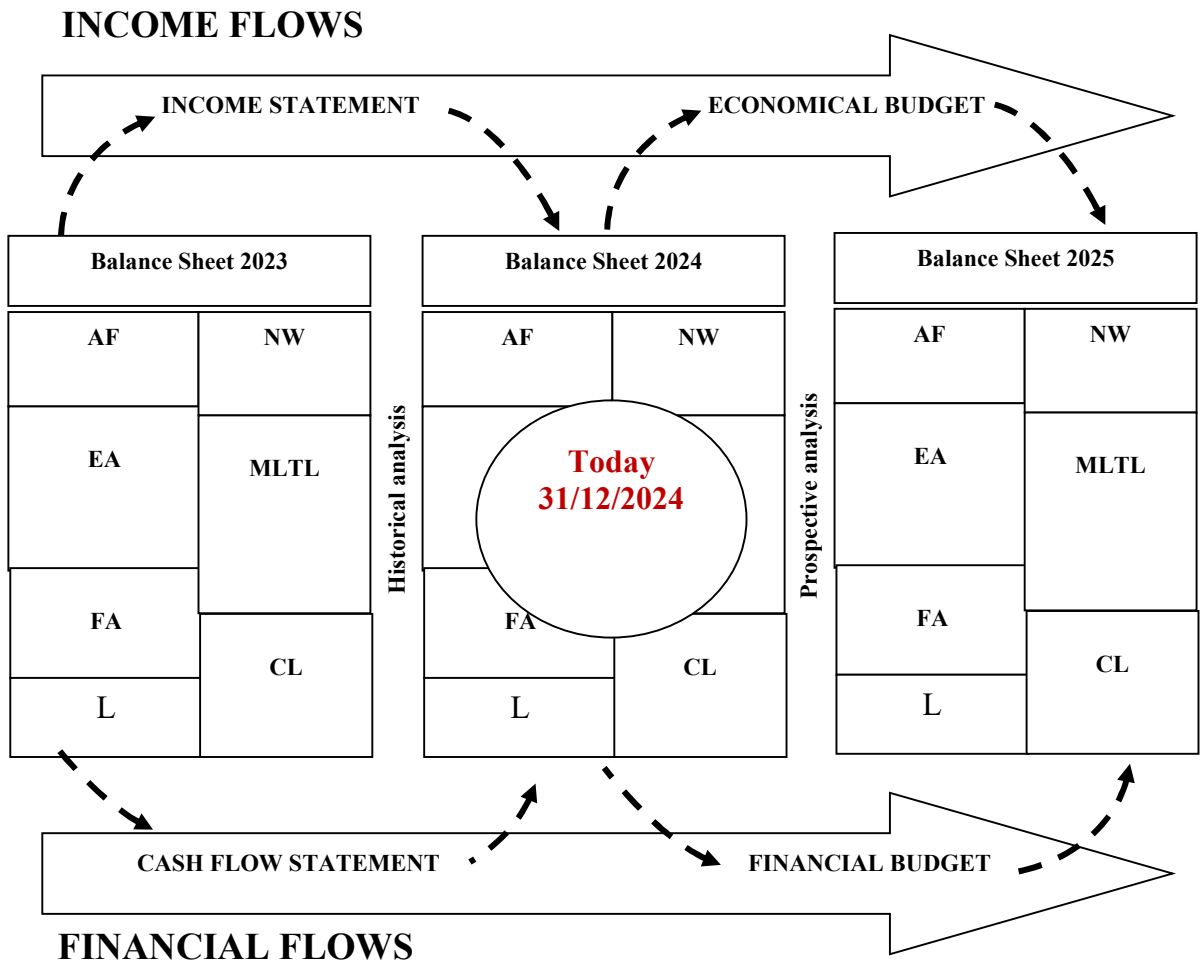


Figure 17. Graphic conceptualisation of historical and prospective flows

The analysis of financial flows is developed using the financial statement tool.

The purpose of the financial statement is the identification of those financial flows (positive and negative) generated by the various management activities, which lead to a change in the balance sheet items.

Before going into the merits of the financial analyses, we will look more closely at some characteristics of financial flows.

7.2. Financial flows

The analysis of financial flows allows us to highlight which company operations have provided financial resources to the company and which have caused the consumption of these resources.

Whenever we record a change in balance sheet items, we know that that change is attributable to positive or negative financial flows. It should immediately be noted that, among the shareholders' equity items, we find an item directly related to profits (or losses for the year).

Management causes positive financial flows, associated with revenues, and negative financial flows, associated with costs (those so-called "non-monetary" costs/revenues which correspond to a financial flow that occurs in a financial year other than that of competence are excluded, such as depreciation, write-downs, etc.).

We can then talk about:

- Financial flows generated by income management;
- Financial flows deriving from changes in balance sheet items.

More specifically, we can trace the changes in the capital structure to:

✓ To the economic result of management (profits/losses for the year);

✓ To investment and disinvestment operations;

✓ To financing operations (with own and third-party means) and related reimbursement operations;

✓ To the dividend policy.

The following figure (see Fig. 18) highlights the different types of positive and negative financial flows. On the left of the table, "financial flows", the main negative financial flows are listed (Investments, reduction of debts, reduction of net capital), while on the right side, the positive financial flows are collected (Self-financing, disinvestments, increase in debts, contribution of own capital etc.).

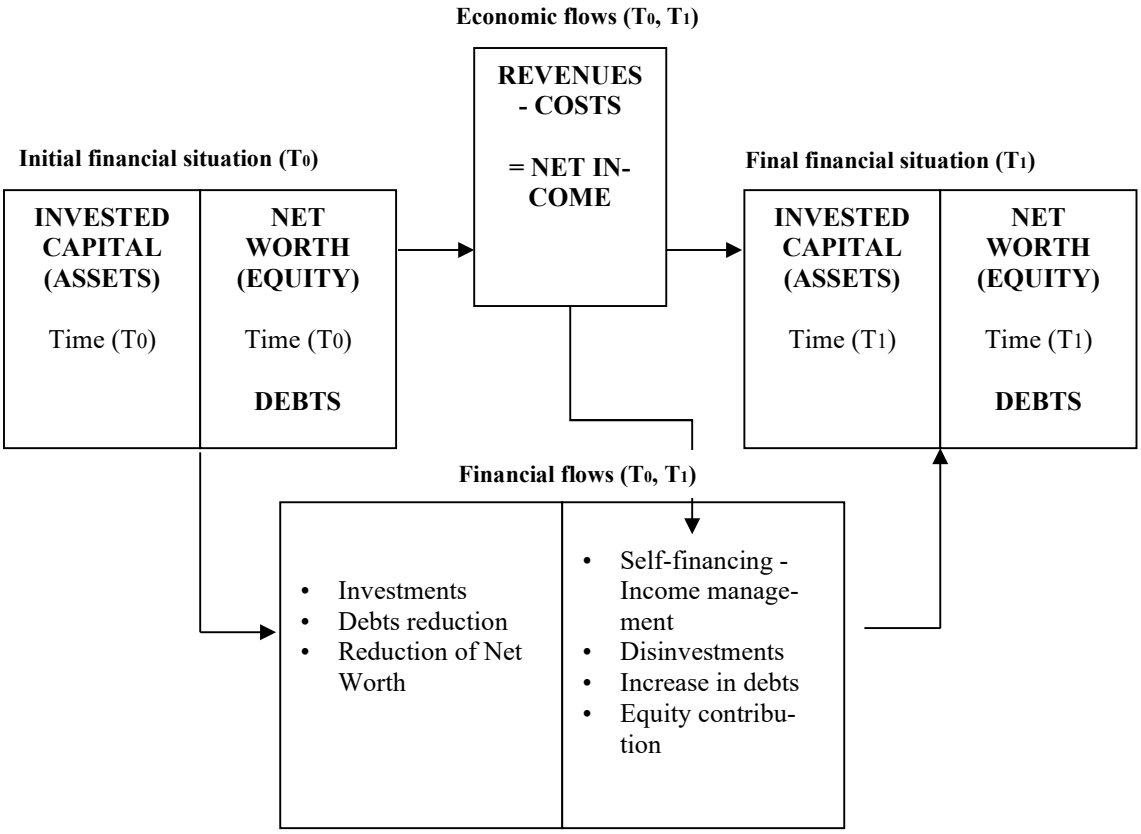


Figure 18. Graphic conceptualisation of negative and positive financial flows

Please note that the flows must be interpreted from a financial perspective. By way of example, an increase of 100 euros in trade debts (compared to a purchase invoice of 100 euros with payment in 90 days) should not be interpreted negatively (thinking about the increase in debt), but rather in terms of positive flows, since the supplier, for 90 days, finances our current activity and, therefore, frees up 100 euros of financial resources, available for any investments in working capital.

7.3 . The financial statement tool

The flow analysis is developed using the financial statement tool. The cash flow statement performs the same function in terms of financial movements that, in economic terms, is performed by the income statement.

The "income statement" explains why a change occurred in the net equity (profit or loss) through the analytical presentation of the relevant costs and revenues, while the "cash flow statement" explains why a change occurred in the company's financial structure and provides the analytical reasons for these variations in terms of financial flows.

7.4. The financial statement of cash flows

What at the end of the financial year concretely speaks for or against the good economic and financial performance of a company's management activity is the positive or negative variation that occurs in its liquidity.

The monetary movements of the cash register and banks, both active and passive, determining a positive flow of liquidity, attest that the company has achieved the most fundamental objective for any economic activity: "the self-generation of liquidity".

The analysis of a company's ability to generate cash flows is, therefore, fundamental for appreciating company performance both in the short and medium-long term, as well as for the processes of evaluating company solvency.

From the perspective of an external analyst, the analysis of cash flows is fundamental for evaluating the credit *standing* of a company, with particular reference to the ability to generate flows capable of remunerating the debt capital and the related interests (hence the need to do not limit the investigation to historical analysis but extend it prospectively).

In the case of the cash flow statement, *the* "fund" quantity of which we want to investigate all the movements that have caused a variation is liquidity.

The objective of cash flow analysis is to prepare a statement capable of explaining why a specific economic result is often accompanied in reality by a different financial performance; the economic accrual principle leads us to determine an operating result that is different from the increase (or decrease) in liquidity in the same period.

Cash flow analysis helps us understand the reasons for these differences.

« *The rules relating to cash flow are very simple. Every time a company writes a check, there is a cash outflow; when he receives a check, there is a cash inflow. This is*

the only rule, and its enormous simplicity means that it is difficult to find mechanisms to hide unpleasant truths about the company's affairs ».

The notion of "immediate liquidity" which is linked to the financial statement can be assumed by considering the balances of bank current accounts.

In this way, we will talk about net or immediate liquidity to indicate:

- ✓ + cash,
- ✓ + bank current account balances,
- ✓ + easily negotiable short-term securities.

Here we represent two types of cash flow financial statements. For both, the method is indirect.

The first reporting scheme highlights the operating result, while the second proposed scheme starts from the EBIT (Operating Income).

The first statement, determined starting from the economic result (indirect method), is defined as follows:

Net income
+ Depreciation and write-downs
± Change in funds
→ (A) Self-financing of income management

± Customer variation
± Change in various receivables (non-financial)
± Warehouse variation
± Change in suppliers
± Change in various debts (non-financial)
→ (B) Change in operational or commercial net working capital (CNWC)

→ (A) + (B) = (C) Cash flow from income management

- Refunds of mortgage capital
+ Taking out mortgages
± Investments / disinvestments of Fixed Capital
± Risk capital increase / dividend distribution
→ (D) Cash flow from non-profit operations

→ (C) + (D) = (E) Total cash flow

The first section (A) of the statement highlights the self-financing of income management, obtained by adding to the operating result (profit or loss) non-monetary costs and income such as depreciation, write-downs and changes in funds (TFR/SEVERANCE PAY fund, risk fund, etc.): we can say that self-financing repre-

sents the "monetary result" of income management (unlike net income which represents the "economic result").

The second section (B) of the statement allows you to calculate the change in operating or commercial net working capital (CNWC or ONWC), given by:

$$\text{ONWC} = (\text{Inventory} + \text{Receivables}) - \text{Non-financial debts}$$

The operating net working capital expresses the net investment necessary to support the current technical-commercial activity (purchases → production → sales), without considering fixed investments (such as machines, systems, etc.). In reality, most of the capital invested by companies is often used in active working capital (warehouse + customer receivables), fortunately, a part of these investments is financed by suppliers (passive working capital).

The ONWC therefore represents the financial requirement not covered by suppliers: the efficient management of this type of investment is essential for the company's financial balance.

The change in the ONWC indicates the difference between the ONWC of the financial year and the ONWC of the previous financial year. It indicates (if the flow is negative) how many resources have been freed (how much cash has been generated) by the reduction of the ONWC, or (if the flow is positive), how much has had to be invested (how much cash has been absorbed) to meet the needs of current management.

Therefore, in summary, if in a period the net operating working capital (excluding cash) is reduced, the operating cash flow for that period is higher than the net income: the ONWC items have produced liquidity; if, on the contrary, the ONWC increases, the operating cash flow is lower than the net income: in this case, the ONWC items have "retained" liquidity. If there is depreciation, the operating cash flow is greater – with the same working capital – than the net income.

At this point, the third section (C) of the statement allows us to calculate the cash flow of income management, given by the algebraic sum of self-financing and the change in net operating working capital.

The cash flow from income management represents the monetary result deriving from income management, minus the monetary requirement absorbed to finance operating working capital. This is by far the most important cash flow to keep track of. Often, the cash absorption deriving from the financing of working capital absorbs many of the financial resources generated by the monetary profit of the management (it is, therefore, necessary to keep this phenomenon under control and ensure that the cash flow of the income management remains positive).

The fourth section (D) of the statement highlights the so-called cash flow generated or absorbed by non-profit management concerning the monetary income and expenditure that occurred within the sectors of the balance sheet other than the operating net working capital and the income statement (e.g. the change in fixed capital, assets and financial debts).

The fifth section (E) of the statement allows you to calculate the total cash flow, given by the algebraic sum of the results of income management and non-income management; this flow represents the increase or decrease that the liquid assets exist-

ing at the beginning of the financial year have undergone during the management period as a result of the company's monetary activity.

« *Note that, by definition and for accounting purposes, the total cash flow is equal to the change in the short-term cash and bank balance between one financial year and the previous one and therefore represents the actual change in the company's net liquidity* ».

The second proposed statement[10] is useful in the analysis of a company's ability to "generate operating cash flows", fundamental for appreciating company performance both in the short and medium-long term, as well as for the processes of evaluating the financial sustainability of the business strategies. In other words, the analysis of flows is fundamental for evaluating the credit *standing* of a company, with particular reference to the ability to generate flows capable of remunerating the debt capital and the related interests that are necessary for the implementation of investment strategies. 'business.

The cash flows highlight the direction, positive in the case of cash inflows and negative in the opposite case, and the intensity of the financial movements generated by the company activity, that is, they define the so-called financial dynamics concerning the most interesting time frame, the month rather than the quarter or year.

In particular, the following cash flows stand out as fundamental for this document:[11]

- Current operating cash flow;
- Free cash flow from operations;
- Cash flow to service of debt;
- Cash flow to service of equity.

Looking at the management areas, it is absolutely clear that the operational one occupies a central role. It is the real "engine" of the company.

It is therefore from operational management that we need to start the analysis of cash flows. In particular, attention must be focused on the "current" area of operational management. Here, the daily activities of purchasing consumer factors, their transformation to obtain products and, finally, the sale of the products obtained are brought together. These activities constantly generate monetary income and expenditure. To evaluate the conditions of financial equilibrium of the management it is essential to measure the current operating cash flow, i.e. to understand whether the activities that

[10]For further information on the second reporting format, proposed here, see: A. Ferrandina, F. Carriero, A. Quintiliani, *Business and enterprise development,* IPSOA Milan, 2008.

[11]To fully grasp the strategic meaning of cash flows, see: F. Giunta, F. Ciaponi, *The analysis of cash flows. Lesson no. 1, The construction of the financial statement*, in: Administration & Finance courses, June 2003; M. Bonacchi, F. Ciaponi, *Cash flow analysis. Lesson no. 2. The financial statement: application criteria*, in: Administration & Finance courses, July 2003; F. Giunta, F. Ciaponi, *Cash flow analysis. Lesson no. 3. The interpretation of the financial statement*, in: Administration & Finance courses, August 2003; C. Teodori, *The construction and interpretation of the financial statement*, Giappichelli Turin, 2002; A. Cascio, *Cash-Flow*, Pirola Editore Milan, 1994.

animate the "operating cycle" determine, as a whole, a cash surplus or a monetary requirement.

Just as on an economic level it is the current operational management that is responsible for producing income, so on a financial level it is from this management area that the availability of monetary means to be used to meet the various payment commitments raised by the other management activities must come. corporate. Think, for example, of the purchase of new plants, the repayment of debts, and the payment of dividends. Current operational management, in essence, constitutes the company's monetary "aqueduct". If the aqueduct is "dry" there is trouble.

Moving into the outlined perspective, the flow analysis must start from the determination of the current operating cash flow. To this end it is necessary, first of all, to quantify the non-monetary costs and income such as depreciation, devaluations and changes in funds (SEVERANCE PAY fund, risk fund, etc.): we can say that the current operating cash flow represents the "monetary result" of current management (unlike the operating income - EBIT - which represents the economic result).

To determine the current operating cash flow, it is necessary to proceed with further adjustments due to the change in the operating or commercial net working capital (CNWC).

The current operating cash flow thus obtained represents the monetary result deriving from current management, minus the monetary requirement absorbed to finance the commercial net working capital.

So far we have measured the "flow" of the company's main "water pipe": current operating cash flow. Cash movements, however, are not attributable only to operating cycle activities. After determining the monetary movements due to current operational management, the monetary movements deriving from "structural" operational management are considered.

Structural operational management is represented by the complex operations through which the company's production system is set up, maintained and developed. That is, these are operations for the purchase (and disposal) of buildings, plants, machinery, but also patents, *know-how*, etc. From this perspective, the cash movements deriving from this area of management can be traced back to:

- Acquisitions of tangible and intangible assets, which cause cash outflows;
- Disposals of tangible and intangible assets, which generate monetary income.

Concerning acquisitions, to correctly calculate the cash outflows of structural operational management, first of all, the value of the systems must be expressed net of the depreciation fund; furthermore, it is necessary to take into account the annual depreciation quota allocated during the financial year and any devaluations for lasting losses in value as well as the extensions granted by the plant suppliers, the effects of any revaluations and transfers of operational fixed assets in the face of increases in share capital.

Disposals are "signalled" by decreases in accounts opened under fixed assets. As in the case of acquisitions, a correct calculation of cash receipts due to disposals first requires that the value of the plants is expressed net of accumulated depreciation. In ad-

dition to this, it is necessary to take into account the capital gains and losses achieved with the sale of the assets.

The most important aspect is constructed precisely from the capital gains and losses from disposal. As is known the movements of fixed assets are expressed in accounting at cost values. However, the selling price is not necessarily equal to the cost price.

Therefore, as a general rule, capital gains must be added to the amount of the decrease in fixed assets, while capital losses must be subtracted.

In conclusion, structural operational management can produce monetary outflows and inflows. Therefore, it can result in a deficit (i.e. a requirement) or (more rarely) a net cash surplus. The amount of this balance is commonly referred to as "capex" (*capital expenditure*).[12]

Based on this result, we can calculate the overall operating cash flow. It is obtained by adding the cash surplus (or deficit) of current operational management with the cash deficit (or surplus) of structural operational management.

The overall monetary result of operational management is commonly referred to as *Free Cash Flow From Operations*. The sign of *free cash flow* can be:

- Positive, in which case it measures the amount of monetary means available to the company to meet payment commitments deriving from other management operations;
- Negative, in which case an operational monetary requirement arises. The operational financial requirement indicates the amount of monetary means necessary to make the investments linked to the consolidation and development plans of the chosen competitive arenas. These monetary means must be collected through operations carried out in the context of financial management.

The calculation of *free cash flow*, but above all its composition, is of great importance to judge the equilibrium conditions of management.

The comparison between the current operating cash flow and the monetary balance deriving from structural operating activities is crucial.

This comparison highlights the company's ability to cope with its "own forces" alone, i.e. with only the monetary means produced through the daily alternation of purchase-transformation-sale operations, the financial needs deriving from consolidation and development of the operational structure.

The guiding idea is that the company must be able to satisfy, first of all, the needs relating to the investments necessary to consolidate and develop the structure with which it competes in the relevant business. It is thanks to these investments that the "current flows" are produced and, therefore, the "monetary aqueduct" of the company is fed. A company that does not know how to adequately support the development of its production structure, represented by tangible and intangible assets, will erode its

[12] *Capital Expenditure* (Capex): Represent incoming and/or outgoing cash flows for the realization of investments in fixed assets of an operational nature. That is, these are investments and/or disinvestments in fixed capital. For an in-depth discussion of Capex see: E. Pavarani, *Financial equilibrium. Criteria and methodologies in the logic of Basel 2*, McGraw-Hill Milan, 2006.

position of competitive advantage and will soon dry up its ability to generate adequate self-financing.

Of course, for the development of the structure, it is always possible to resort to debt or the raising of risk capital. But, beyond the onerousness of these choices, it must be considered that the times of the financial market do not necessarily coincide with those of competition in "strategic business areas". The long time necessary to prepare a financial operation and bring it to completion (assuming that the financiers positively welcome the company's requests) is contrasted with the short times with which it is essential to respond to the moves of the competition. Only by having internal resources is the company able to move promptly and without constraints.

Once operational management is over, attention shifts to financial management. The examination of the movements of this area of management is carried out based on the distinction between active financial management and passive financial management.

Active financial management can produce monetary income as well as monetary expenditure. Revenues are associated with dividend collection operations, sales of financial assets, etc.; the exits are associated with operations for the purchase of option rights, purchase of financial assets, etc.

In conclusion, active financial management can generate a cash surplus or deficit (i.e. a requirement).

Even passive financial management can produce both income and expenditure of money. However, to increase the informative scope of the cash flow analysis, it is useful to initially limit the analysis of the monetary movements of passive financial management only to the operations that determine cash outflows.

Moving along this path, therefore, passive financial management necessarily determines a monetary requirement.

The most significant examples of exits caused by passive financial management consist of:

- Payment of interest expense;
- Repayment of capital portions of loans taken out.

Taking a "broadened" vision of financial management, i.e. considering risk capital operations alongside credit capital operations, further monetary outflows can occur in correspondence with:

- Reductions in share capital. In this regard, consider the increasingly frequent *buy-back operations with the subsequent cancellation of the shares;*
- Profit distributions;
- Reserve distributions.

The monetary movements of the financial area, both active and passive, can be organized in such a way as to highlight the formation of particular "margins".

By contrasting the *free cash flow from operations* with the monetary movements attributable to active financial management, it is first of all possible to determine the cash flow to service the debt (*free cash flow to debts*).

Starting from this margin it is then possible to quantify the cash flow to service the risk capital (*free cash flow to equity*): simply subtract from the cash flow to service the debt the amount of outgoings due to the payment of interest liabilities and repayments of credit capital quotas.

The contribution that each of them can provide to the analysis of the financial conditions of management is evident:

- **Cash flow to service debt** expresses the company's ability to generate sufficient monetary resources to adequately service loans. In other words, we want to highlight the degree of actual solvency of the company understood as the ability to meet debts with its internal resources, after having satisfied the operational and financial investment needs. This ability could also be measured by comparing the current operating cash flow directly with the amount of payments imposed by the financing contracted by the company. The basic idea, however, is that a company is truly solvent if it can repay debts, pay interest and pay dividends without "sacrificing" the development of investments, especially those relating to the operational structure. For this reason, the current operating flow is first contrasted with the monetary needs linked to the operational structure (capex) and, only subsequently, with the needs generated by debt servicing;
- **Cash flow serving *equity*** constitutes the premise for understanding:
  - To what extent does the remuneration paid to risk capital holders (either in the form of dividends or in the form of share repurchases) contribute to determining the financial requirement;
  - If the resources produced internally allow us to cover this requirement, or it is necessary to resort to external sources?

Once the cash flow serving the *equity has been determined*, we move on to measure the consistency of the monetary balance of the management seen as a whole, regardless of the acquisition of financial means from outside. This is obtained by adding to the cash flow serving the *equity* the amount of expenditure due to the management of the net assets, i.e.: distributions of profits, distributions of reserves, reductions in share capital.

The "overall" cash flow that results after considering the disbursements relating to the service of the net capital can be:

- Positive, in which case we talk about discretionary cash flow. Discretionary cash flow indicates the amount of net monetary means available to the company for the most diverse uses. It corresponds to the net change in cash recorded in the reference period;
- Negative, in which case there is an overall monetary requirement for management.

In light of these observations, the choice to leave out the cash flows deriving from the taking out of new debts or increases in risk capital is understandable. Only in this way, is it possible to highlight whether the company:

- It can produce, without turning to the outside, monetary *surpluses;*

or,

- How much is the financial requirement of the entire company management and how is it composed, to cover which the use of external sources is essential?

If we had considered loan repayment operations together with those of acquiring new financial sources, we would not have been able to grasp these important aspects. Requirements and their external coverage would have, so to speak, mixed.

The second statement, determined starting from the EBIT (indirect method), is defined as follows:

EBIT
+ Depreciation
+ Devaluation of fixed assets
= Gross self-financing
- Taxes for the year
= Net self-financing
± Change in Operating Net Working Capital (ONWC)
± Change in TFR (SEVERANCE PAY)
± Change in other provisions
= Current Operating Cash Flow (COCF)
± Capital gains - Capital losses from disposal
± Change in fixed assets (tangible and intangible)
= Free Cash Flow from Operations (FCFO)
± Income and expenses from active financial management
± Change in financial assets
= Cash flow before extraordinary income and expenses
± Extraordinary income and expenses
= Cash flow to service debt
- Financial charges
- Repayment of financial debts at ML term
- Repayment of short-term debts
= Cash flow serving Equity
- Distribution of dividends
- Reimbursement of share capital
= Overall financial requirement (surplus).
+ Opening of ML term debts
+ Taking on short-term debt
+ Capital increases
= Change in cash balance

7.5. Cash flows by activity or management area (in-depth analysis)[13]

[13]For further information, we recommend reading the book: Dallocchio M., Salvi A., *Finanza d'azienda* - IV edition, EGEA, Milan, 2021.

Cash flow analysis is a fundamental step in evaluating a company's performance as it allows you to answer the following questions:

- The company management as a whole generated a *surplus* or a financial requirement during the financial year.
- What are the company areas that have generated or absorbed financial resources?
- Is the company's financial dynamics sustainable over time?

It is therefore clear that an in-depth study of the financial dynamics becomes necessary to identify the determinants that have generated the variations in liquid assets. To understand the corporate financial dynamics, it is first of all appropriate to distinguish between:

- ***economic result***, which derives from the contrast between revenues and costs about the financial year relating to the various company managements: "characteristic", "investment", "ancillary and financial". It is a result based on the " *principle of economic competence* ";
- ***cash flow***, which is obtained by algebraically adding the monetary income and expenditure that occur during the financial year. As with the economic result, it is possible to distinguish financial results relating to the different company areas. The principle based on which it is determined is the " *cash principle* ", according to which the monetary income and expenditure relating to revenues and costs about previous and subsequent financial years constitute cash flows, but whose numerical/monetary manifestation occurs in the current financial year.

The study of corporate financial dynamics requires first of all the aggregation of cash flows by "areas of activity" or "management areas", to obtain a statement that is simultaneously concise, but at the same time fulfils the function communicative and cognitive of financial dynamics. To this end, it is appropriate to identify three activities or management areas to which three categories of cash flows are associated. The table below compares the management areas with their respective relevant cash flows:

Management areas	Cash flow (nomenclature)
1) Current operational management (includes fiscal management)	Cash Flow from Operations (CFO)
2) Investment Management	Cash Flow from Investing (CFI)
3) Financial Management	Cash Flow from Financing (CFF)

In the scheme proposed by Dallocchio and Salvi (2021), the fiscal cash flow is included in the *Cash Flow from Operation* (CFO), as it is preferred not to proceed with the attribution of the tax burden weighing on each management area. The correct formal process which sees the attribution of the relevant taxes between the various managements is contrasted with the material difficulty of dividing the taxes between the various managements. Therefore, in drawing up the cash flow statement by management area it is usual to attribute the entire amount of taxes to "current operational management).

Below is presented the financial dynamics scheme widespread in practice in which the cash flow for the period is obtained from the algebraic sum of the cash flows of the different management areas and ends with the change in cash and cash equivalents:

Core business cash flow (CFO)
± Cash flow from investing activity (CFI)
= Operating Cash Flow (FCFO)
± Cash flow from ancillary activity (if any)
± Funding Management Cash Flow (CFF)
= Cash Flow for the period (Δ Liquid assets)

CORE/CURRENT BUSINESS CASH FLOW (CFO)

Core or current asset cash flows (*Cash Flow from Operation*, CFO) arise from the buy-transform-sell cycle. The summary report for determining the CFO is as follows:

$$CFO = EBITDA – Operating\ Taxes - \Delta CNWC$$

EBITDA can logically be determined according to two methods: "direct" and "indirect". The direct method "starts from the top" of the income statement and considers all the revenues and monetary costs of current operational management, while the indirect method starts from the "bottom" (*bottom-up*), i.e. from the operating result. financial year (or period, the so-called *net income* - *net profit*) appropriately adjusted to exclude all non-monetary or monetary income flows not pertinent to ordinary management, such as net capital gains from non-current management, income from *surplus assets*, depreciation of tangible assets and intangibles with a finite life, financial charges.

The operating taxes and the change in CNWC are subtracted from the EBITDA to arrive at the cash flow configuration of current operational management. The importance of arriving at the EBITDA flow initially is based on the fact that EBITDA constitutes a ***potential monetary flow*** generated by the purchase-transformation-sale cycle, as it includes revenues and monetary costs which find expression in the cash flow of the current financial year or future financial years.

At the end of the reference financial year, the portion of significant revenues and costs in the income statement that does not translate into cash flows feeds the corresponding CNWC items. From an income point of view, the purchase-transformation-sale cycle generates "current" revenues and monetary costs which are summarized in the EBITDA flow, while from a financial point of view, it usually generates increases or reductions in the CNWC.

More generally, the simple rule underlying the relationship between income flows in the income statement and balance sheet items applies: an increase in assets generates an absorption of financial resources and vice versa, while an increase in liabilities releases liquidity, and vice versa.

For example, an increase in accounts receivable indicates that the company has collected only part of the sales during the year, resulting in a lower incoming cash flow compared to the sales recognized in the income statement. On the contrary, an increase

in supply debts indicates that a part of the purchases is not paid during the year, so more liquid assets will remain in the company.

It is possible to state that a "use" of financial resources occurs if $\Delta CNWC > 0$.

This scenario implies, given the same EBITDA and operating taxes, the following relationship:

$$\Delta CNWC > 0 \rightarrow EBITDA > CFO$$

Conversely, a "source" of financial resources is produced if the opposite occurs. In this case, the previous relationship is reversed:

$$\Delta CNWC < 0 \rightarrow EBITDA < CFO$$

Concerning the relationship between EBITDA and CFO it is appropriate to make further reflections. A persistent discrepancy in values between CFO and EBITDA (with the same operating taxes) may suggest that the company is not able to collect all the income produced, that part of this income is "fictitious" or that the counterparties (customers) are not liquid. An excessively aggressive commercial policy can lead to an increase in non-performing loans.

Financial analysts often consider the EBITDA flow as a proxy of the cash flow from ordinary operations (regardless of taxes), not taking into account - although they are naturally perfectly aware of it - the role that commercial net working capital plays. Matching EBITDA with CFO is not entirely without foundation if the company is not experiencing strong growth. In these cases, EBITDA tends to approximate the CFO, as investments in working capital are limited, i.e. minimal variations in commercial net working capital are observed over time. On the other hand, if the company is growing strongly, the EBITDA ignores the expansion of the CNWC. Two identical companies belonging to the same sector but in different stages of the life cycle could present the same EBITDA but different CFOs precisely because they are going through different stages of the life cycle. *A mature company absorbs cash to a limited extent and has a CFO close to EBITDA, while a growing company absorbs cash due to the expansion of net commercial working capital and has a CFO lower than EBITDA (to the point of assuming net values negative)*.

A negative CFO must find an answer to one of the following questions:

1. is it negative because the company is growing and therefore needs to finance the commercial net working capital, but still records EBITDA flows that do not express a condition of equilibrium?
2. Is it negative because the investments made do not generate rates of profitability higher than the cost of capital and therefore destroy value for shareholders?
3. Is it negative because the company is characterized by an inefficient CCN management policy?

A further aspect capable of determining significant deviations between EBITDA and CFO flows is given by the length of the purchase-transformation-sale cycle. Companies that operate by order, for example, have a rather long working capital cycle,

since orders sometimes require the passage of several administrative years, while the procurement of raw materials and semi-finished products usually takes place in the short term. The effect is that the use of financial resources for the purchase of raw materials and product development is not balanced by the collection of credits (unless substantial advances are paid by customers) or by the lengthening of payment terms to suppliers. In this case, the CFO is lower than the EBITDA not so much due to the growth effect, but due to the business model which requires a significant amount of investment in commercial working capital. Otherwise, a company that operates in large-scale retail trade is characterized by a limited purchase-transformation-sale cycle, so in these cases, the CFO tends to be higher than the EBITDA.

CASH FLOW FROM INVESTING ACTIVITY

Investment management cash flows (*Cash Flow from Investing*, CFI) are cash flows resulting from the activity of investing in operating fixed assets. However, since companies may need to make investments both in operational fixed capital and in ancillary activities, CFIs can (but this is not frequent in practice) be divided into two subcategories:

- ✓ *Cash Flow from Investing* relating to fixed assets of an operational nature (also defined as *Capex, Capital Expenditure);*
- ✓ *Cash Flow from Investing* relating to ancillary activities.

CASH FLOW FROM OPERATIONS (FCFO)

This distinction in turn allows us to obtain the operational cash flow (*Free Cash Flow from Operations*, FCFO, i.e. the cash flow generated by the Net Operating Invested Capital (NOIC), as the difference between the *Cash Flow from Operation* and the *Cash Flow from Investing* in fixed operating assets only:

$$FCFO = CFO - CFI$$

CFI from operational activities includes investments to maintain or replace existing income capacity and development investments, i.e. investments aimed at increasing the ability to generate income over time. If *capex* is higher than depreciation, assuming that these reflect the real consumption of assets, the company is making investments to expand its production and distribution capacity.

The analysis of the composition of investments is an effective tool for identifying the company's long-term strategies. To determine the CFI from operating activities, it is appropriate to determine the net *capex* for the period, understood as investments in tangible assets net of any disinvestments.

It may be useful to remember how to obtain the value of final tangible assets (here assumed exclusively in operating activities):

$$\textbf{Net tangible fixed assets}_t = \text{Net tangible fixed assets}_{t-1} - \text{Depreciation}_t + \text{Capex}_t - \text{Disinvestment (at book values)}_t$$

If during the financial year, the company did not make any disposal of fixed assets, the *capex* at the end of period t will be given by the following relationship:

$$\textbf{Capex}_t = \text{Net tangible fixed assets}_t - \text{Net tangible fixed assets}_{t-1} + \text{Depreciation}_t$$

If some assets were disposed of during the financial year, to determine the net *capex* it is appropriate to consider two scenarios about whether or not the operation has generated a capital gain/loss. As is known, the sales price of fixed assets does not necessarily coincide with the net book value of the property sold. In this case, the disposal gives rise to a capital gain or loss. To reconstruct the monetary dynamics of the sale, since the sale price is not indicated in the financial statements, it is necessary to reconstruct it, increasing or decreasing the net book value transferred respectively by the capital gain or loss recorded in the Income Statement.

In summary:

- *If the sales price = net book value you will have*:

$$\text{Capex}_t = (\text{Net tangible fixed assets}_t - \text{Net tangible fixed assets}_{t-1}) + \text{Depreciation}_t$$

- *If the sales price > net book value you will have* :

$$\text{Capex}_t = (\text{Net tangible fixed assets}_t - \text{Net tangible fixed assets}_{t-1}) + \text{Depreciation}_t - \text{Capital gain}_t$$

- *If the sales price < net book value you will have*:

$$\text{Capex}_t = (\text{Net tangible fixed assets}_t - \text{Net tangible fixed assets}_{t-1}) + \text{Depreciation}_t + \text{Capital loss}_t$$

If the net balance between CFOs and CFIs is consistently negative over the years (CFO + CFI < 0), this implies that the company is financing its investment projects through external financing sources. In such cases it can turn to the banks by taking out new financial debts, it can issue bonds on the market or it can resort to paid share capital increases. However, such a policy is not sustainable in the long term. If repeated over time, it could compromise financial balance and the achievement of sustainability objectives.

It should be noted that according to Accounting Principle No. 10, the financial flow deriving from the consideration paid/collected for the acquisition and sale of a business unit should be presented separately in the investment activity net of the cash acquired or disposed of as part of the operation.

CASH FLOW FROM ANCILLARY ACTIVITY (IF ANY)

Concerning any *Cash Flow from Investing* relating to ancillary activities, if the latter are represented, for example, by civil buildings that are depreciated, the net investments will be determined based on the previous relationships used for the net *Capex*. The CFI connected to them includes all income generated by ancillary activities, such as dividends collected from equity investments. If these fixed assets include equity investments or securities (not included in cash and cash equivalents for determining the net financial position), the cash flows generated by the ancillary area in financial year t will be obtained using the following relationship:

CFI (ancillary activities) = (Net investments in ancillary activities $_t$ + Related income/expenses $_t$)

The following diagram summarizes the main components of *Cash flows from investing* :

± Net Capex (or investments)
± Acquisition of company branches (net of sales)[14]
± Income/Costs from ancillary activities
± Net investments in ancillary activities
= Cash Flow from Investing (CFI)

It is hardly necessary to underline that the positive sign in front of *Capex* (such as investments in ancillary activities) must naturally be understood in an algebraic sense. This means that the flow will be negative if investments prevail and positive if disinvestments prevail.

FINANCIAL ASSET CASH FLOW

Cash Flow from Financing (CFF) represents the monetary exchanges between companies and lenders. This category therefore includes both operations relating to debt financing (a loan from a bank gives rise to an inflow of financial resources) and operations relating to lenders of equity capital (a distribution of dividends constitutes a financial outflow, as opposed to a capital increase). The main components of the CFF are:

- Financial charges
± Δ Severance pay fund
± Δ Financial Debts
+ Sale of Treasury Shares
- Purchase of own shares
- Dividends paid
+ Paid Capital Increase
= **Cash Flow from Financing (CFF)**

8. The Break-Even Analysis

8.1. Profitability graphs

The trend of costs and revenues constitutes one of the main tools to support company decisions. From an operational point of view, the analysis of the trend of costs and

[14]OIC 40 requires that the financial flow deriving from the consideration paid/collected for the acquisition/disposal of a business branch is presented separately in the investment activity, net of the cash acquired or disposed of as per the operation.

revenues as a function of sales volumes is of particular importance. This analysis is called *break-even analysis*. Let's consider a Cartesian plane (on which we report the quantities sold of a product on the abscissas and the costs and sales revenues on the ordinates) and represent the following functions:

Fixed costs C = Cf
Variable costs C = Cvu * Q
Revenue R = Ru * Q

Where:
Cf = Fixed costs
Cvu = Unit variable cost
Ru = Revenue per unit = selling price per unit
Q = Quantity sold

The following figure (see Fig. 19) highlights how the lines of total costs and total revenues intersect at a particularly important point in the analysis of economic results: the so-called *break-even point*. The break-even point highlights the QBEP sales volume at which sales revenue equals the total costs incurred to produce the products sold. For sales volumes below the break-even point, the company finds itself in a loss area (revenues are not sufficient to cover the total costs incurred). For sales volumes above the break-even point, the company is in a profitable area.

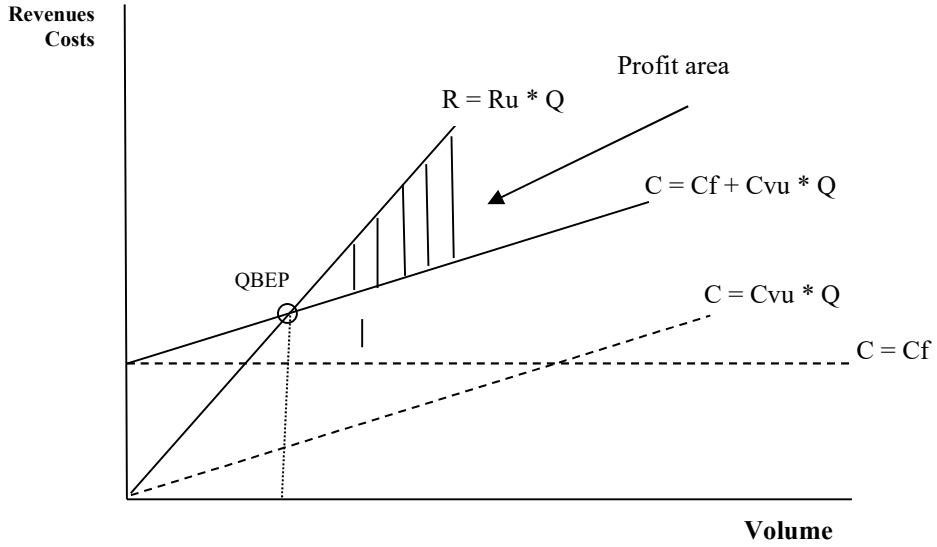


Figure19. Graphic conceptualisation of the BEP

From the intersection of the cost and total revenue curves, the result is:

$$1)\ QBEP = Cf / (Ru - Cvu)$$

Since the difference (Ru – Cvu) represents the unit contribution margin, 1) can be represented by the relationship:

$$QBEP = Cf / MDCu$$

From the analysis represented in the following figure (see Fig. 20) we can see how the contribution margin grows proportionally to sales volumes. At the break-even point, the margin can cover all fixed costs. For higher volumes it allows you to enter the profit area, generating profit.

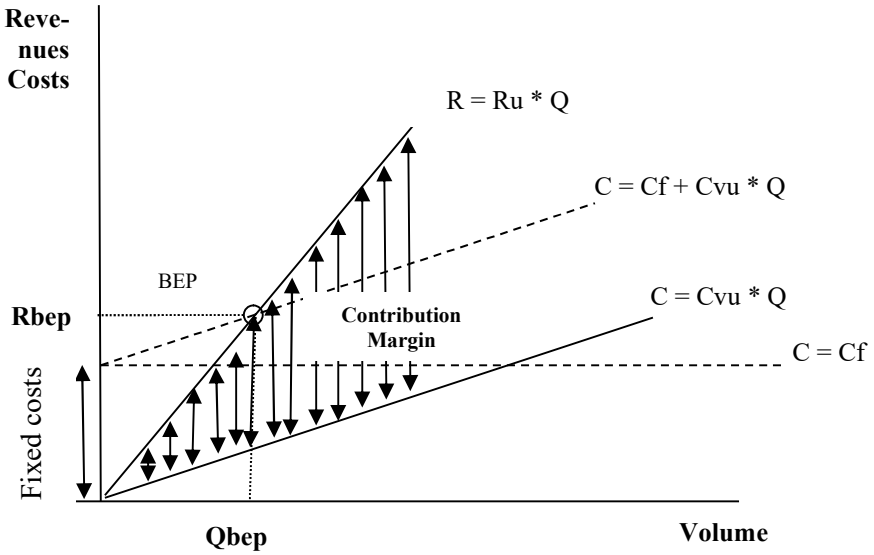


Figure 20. Graphic conceptualisation of the contribution margin

8.2 . Profitability graphs applied to financial statement analysis

The analysis of the break-even point can be applied to the balance sheet, in the hypothesis in which the analyst, starting from the income statement, can discriminate the fixed costs from the variable ones. It follows that the accuracy of the analysis of the break-even point that is obtained starting from the information presented in the financial statements is correlated to the correct division of operating costs into fixed and variable.

The analysis can be developed by graphing the linear function:

$$OI = f (Revenue),$$

which expresses the trend of the operating result as turnover varies (see Fig. 21).

Since the operating result is given by:

$$Operating\ Income = OI = Revenues - (Fixed\ costs + Variable\ costs)$$

the straight line can be easily drawn by identifying:

- Point A, representative of the limit situation in which Revenues = 0 → Variable costs = 0 → Operating Income = - (Fixed costs);
- Point C, which represents the position corresponding to the balance sheet situation (the coordinates are given by the operating result and turnover, as shown in the balance sheet).

The intersection of the straight line with the x-axis (OI = 0) allows us to identify point B, corresponding to the break-even point, whose intercept is constituted by the unknown (the break-even sales revenue RBEP). You have:

$$RBEP = \text{Total fixed costs} / MDC\%$$

where "MDC% = 1 – (CVariables / RBalance)" is the contribution margin in percentage.

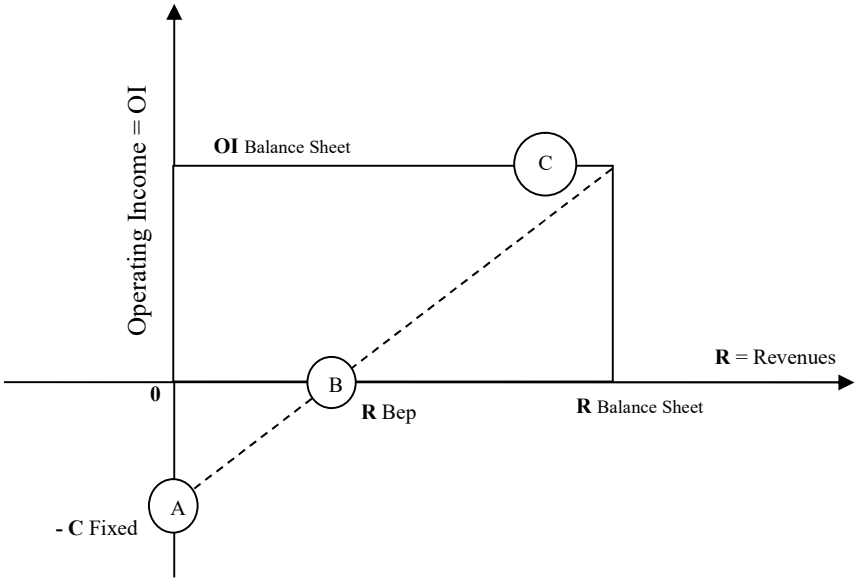


Figure 61. Graphic conceptualization of the report: operating income, turnover

8.3. The operating leverage

Profitability curves allow us to analyse the variation in the economic result as the sales volume varies. The following figure (see Fig. 22) allows you to represent the economic result obtained by moving from a QA sales volume to a QB volume:

« *Operating leverage highlights the effect of the change in sales volume on the economic result* ».

Stating that a product is characterized by an operating leverage of 15 means that, given a 10% increase in sales, an increase in the economic result of 150% will be obtained.

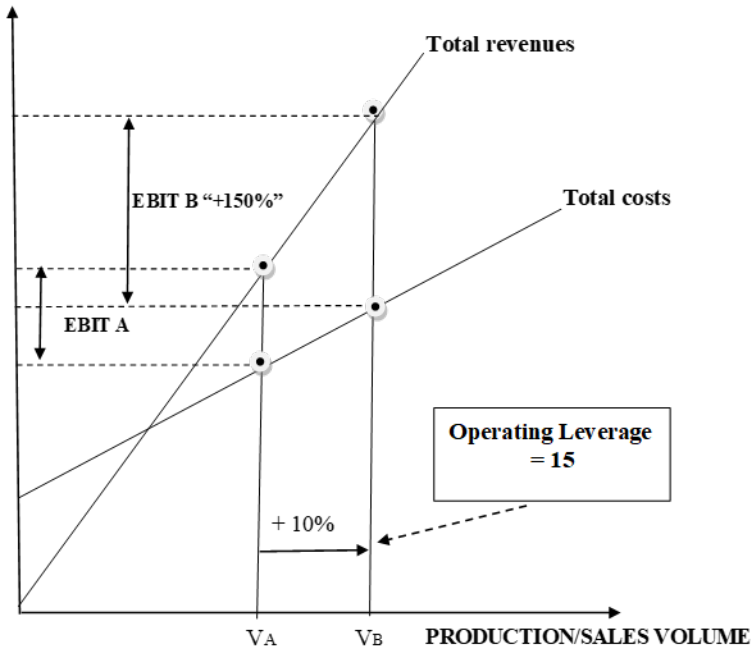


Figure 22. Graphic conceptualisation of operating leverage

The leverage effect is not due to variable costs (variable costs are proportional to the production volume and, as such, give rise to an operating leverage equal to unity).

The leverage effect derives from the fixed costs and their incidence at the unit level: with greater production volumes the fixed unit costs progressively decrease their incidence on the cost of the product, freeing up significant margins in favour of the economic result (in practice a company that has many fixed costs and is more subject to the effect of changes in sales volumes than a company that has a less rigid cost structure). The greater the incidence of fixed costs, the greater the leverage effect. The operating leverage (at a certain sales volume) is given by the relationship:

Operating leverage = Total contribution margin / Operating profit

The concept of operating leverage can be applied to financial statement analysis:

- Highlighting the income effects of an increase (or decrease) in turnover;
- Analyzing the company's cost structure, highlighting its rigidity (high incidence of fixed costs), rather than flexibility (high incidence of variable costs).

The following table (see Tab. 2) compares three companies with a different operational structure (with the same turnover and operating results).

Table 2. Comparison between companies with different operational structures

	Company A	Company B	Company C
Revenues	2000	2000	2000
Total variable costs	600	800	1000

MDC (Contribution Margin)	1400	1200	1000
Total fixed costs	1000	800	600
Operating income (EBIT)	400	400	400
Operating Leverage	**3.5**	**3**	**2.5**

Company A, characterized by the more rigid operating structure (higher fixed costs), has the best operating leverage (leverage = 3.5). This means, for example, that for a 10% increase in revenues, the operating result will increase by 35%. On the other hand, faced with a decrease in turnover, the company with better operating leverage will be penalized, as it will be burdened by the greater incidence of fixed costs (see Fig. 23).

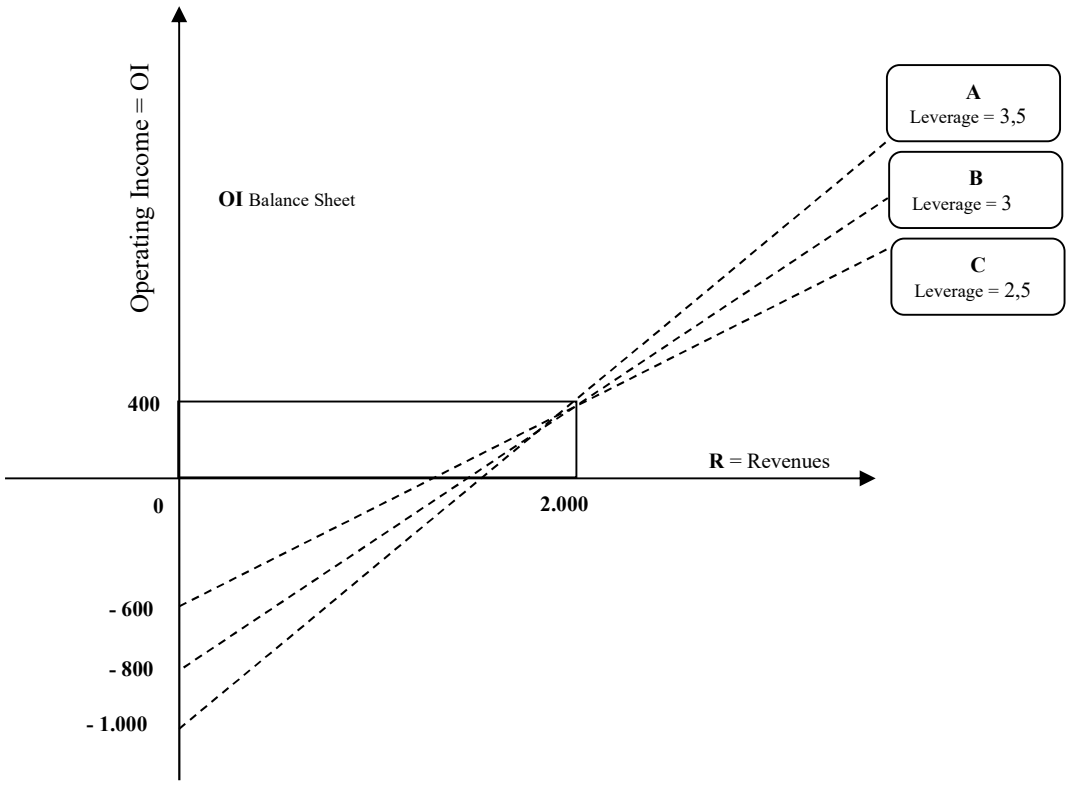


Figure 23. Graphic conceptualisation of operating leverage. E.g. comparison between companies