PESTRE-ROIRE MATRIX -A TOOL FOR DIAGNOSING FINANCIAL PERFORMANCE

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Abstract: This article aims to highlight the importance of the Pestre-Roire Matrix in diagnosing the performance of economic entities. This instrument of financial diagnosis starts from the structuring of the items in the profit and loss account by type of activities and goes through each step necessary for the construction of the final result, namely the net profit or loss of the financial year. The structural analysis of the results is carried out by grouping incomes and expenses, highlighting the use of material, financial and human resources in the activity of the entity.

***Key words**: Financial performance; Financial diagnosis; Intermediate management balances; Profit or loss for the financial year.*

JEL Classification Codes: G32, M41, M49.

1. INTRODUCTION

Operating and financial activity shall mean the total activity of an entity which includes any activities carried out by it as an integral part of its business and the related activities in which it engages and which are a continuation of the said activities, which are incidental to or arising therefrom. An important distinction should be made between revenue receivable and expenditure payable, on the one hand, and calculated income and expenditure, on the other. The determination of the result of the financial year (profit or loss) takes into account both the revenue receivable and the expenses payable and the calculated income and expenses, but only the revenue receivable and the expenses payable directly influence the enterprise's treasury by the receipts and payments it generates (known as monetary income and expenditure). The category of cashable income includes income resulting from the sale of goods and services, income generated by the sale (disposal) of assets, income arising from the performance of obligations of third parties towards the entity. Expenses payable include expenses incurred on purchases of raw materials and materials, expenditures on personnel, taxes and fees, payment of profit tax, etc.

The calculated income and expenditure do not generate cash flows (and therefore do not directly influence the treasury known as non-monetary income and expenses), but are taken into account in determining the result of the financial year. In the category of calculated income are included reversals on provisions for risks and expenses (occasioned by the reduction or cancellation of the provisions in question, for example in situations where their maintenance is no longer justified or the related risks have materialised) or the shares of subsidies paid on the result of the financial year. The calculated expenditure relates to the depreciation of fixed assets, the provisioning of provisions for risks and charges or the net book value of the assets transferred.

The structuring of the items in the profit and loss account by mentioned activities (operating and financial) helps to determine several accumulation margins (known as interim management

balances) which, in essence, constitute steps in the "construction" of the final result, namely the net profit or the net loss of the financial year.

2. MATERIALS AND METHODS

In the specialized materials regarding the research methodology (on Romania's territory Order of the Minister of Public Finance no. 1802/2014 approving the Accounting Regulations concerning the individual annual financial statements and the consolidated annual financial statements) it is shown that the summary accounting document covering the net turnover, income and expenses occasioned by the economic activity carried out by the entity in a financial year, grouped according to their nature, as well as the profit and loss account for the year, shall be the profit and loss account. Vintilă (2005) and Ross-Westerfield-Jaffe (2002) are of the opinion that the accounting testimony of the transition of the entity's property situation from the initial balance sheet state (from the beginning of the financial year) to the final one (at the end of the financial year) is considered to be the profit and loss account. In order to present the topic under research, we will consider the component structures of the profit and loss account: income, expenses and result, according to the nature criterion.

This article falls into the category of fundamental research but also in that of the research of the existing practice in the field. It is based on qualitative and quantitative research methods (methods of examination and measurement of phenomena), and as data sources we mention the documents and texts, as well as the conclusions of the researchers (authors).

3. PESTRE -ROIRE MATRIX, A TOOL FOR DIAGNOSING THE ENTITY PERFORMANCE

Intermediate management balances (SIG) are cash accumulation margins by which the entity's profitability is measured at different levels of its business. These margins are determined according to the following general rule: within each stage (at each level of the company's activity) the revenues related to the respective stage are added and the corresponding expenses are subtracted. The determination of the intermediate management balances **(SIG)** is carried out "in cascade"[1], starting from the most comprehensive intermediate balance (value added) and ending with the most synthetic (net result of the financial year).

From the perspective of intermediate management balances, partial profitability indicators are formed, as the difference between income and expenses of a certain period (Robu at al., 2014, page 320).

The five intermediate management balances are:

- value added;
- gross operating surplus or, where appropriate, gross operating insufficiency;
- the result of exploitation;
- current profit or taxable profit;
- the net profit (loss) or profit or profit or loss for the financial year.

Value added (VA) measures the company's ability to produce an increase in value relative to *"inputs"* from its business partners. This increase of value is achieved by combining and using the factors of production (nature, labor and capital) by the management within the current activity of the entity.

[1] The determination of intermediate management balances is referred to in the specialized literature as the "*SIG waterfall"*.

The synthetic character of the added value makes this indicator special, in the sense that it is obtained as an effect-effort type difference (Anghel at al., 2022, page 152).

The relationship of calculating the added value created by the entity is a very intuitive one:

$$VA = PE - CT \qquad (1),$$

where:

- PE = production of the financial year, which includes:
  - net turnover;
  - the change in stocks of finished products and in the production in progress;
  - the production carried out by the entity for its own purposes and capitalized.
- CT = consumptions from third parties (also called external consumptions), which group the following elements:
  - expenditure on raw materials and consumables;
  - external expenditure on energy and water;
  - expenditure on goods;
  - other material expenses.

Vintilă (2005) considers that, since the starting point in determining the value added is represented by the production of the year, the indicator preserves the heterogeneity of the concept of production and, just as the total production is made up of the sold production and the stored production, so the total added value can be decomposed into *the value added sold and the value added produced*:

$$VA = VAV + VAP \qquad (2),$$

where:

- VAV = value added sold;
- VAP = value added produced.

The VAV and VAP indicators shall be determined by following the same methodology as in the case of vav, with the indication that in this case only the revenues and expenses related to the production sold or, as the case may be, stored will be taken into account. Thus, the value added sold will be expressed as the difference between the net turnover and the external consumption related to the realisation of this produced sold. In the case of the added value produced, we will have the difference between the change in stocks and fixed production, on the one hand, and the material expenses related to them, on the other hand.

The importance of the added value lies in the fact that it constitutes the primary source of remuneration of the factors of production that the entity engages in the activity carried out, which is oriented towards the realization of profit. Through the added value created by the company, the distribution of revenues to all those involved in its activity is achieved:

- employees of the company, who provide it with the labor factor, collect salaries, bonuses;
- state bodies in the field of public finances collect from the company taxes and duties (for example, profit tax, value added tax – VAT, social security contributions – pensions, health insurance, payments directed to the unemployment fund);
- capital suppliers collect interest (banks, bond creditors, leasing companies), and other persons collect rents (suppliers of locations where the enterprise operates), royalties, dividends (shareholders of the company);
- insurance undertakings receive insurance premiums due to them for underwriting the risks they face.

Part of the value added is retained by the entity to self-finance the activity carried out.

Unlike value added, which quantifies in monetary terms the contribution made by the entity to its output, turnover only reflects the commercial performance of the firm and as such is considered a less relevant indicator of the entity's performance. At the same time, financial practice

provides us with numerous examples of companies which, at low levels of value added, achieve very high turnover figures. However, an increase in value added may not necessarily be accompanied by an increase in profitability. For example, a company may produce considerably more value added by employing top-level human resources, but its profitability could suffer if the salaries of these employees were very high. Symmetrically, a reduction in the value added created by a company need not necessarily lead to a reduction in its profits, where large corporations prefer to market high-tech products at moderate prices (and at the same time lower prices than those at which such products were launched in the past) and then increase their profits through higher sales.

The added value expresses what the enterprise adds to the economic circuit through its own activity (Petrescu, 2006, page 35).

The value added also allows the degree of integration of the entity to be assessed, based on the following report:

$$GI = \frac{VA}{CA} \qquad (3),$$

where GI = degree of integration.

A value close to 1 of the VA/CA ratio means a high degree of integration. The firm is able to carry out a considerable number of steps in the production process itself without having to rely on products or services provided by third parties. A high degree of integration corresponds to productive autonomy of the company. Integration ratios close to 1 are found in high-tech companies (IT, electronics, telecommunications) and in consultancy services. Such entities rely relatively little on external consumption, concentrating on exploiting their intellectual capital (know-how). At the other end of the scale are companies in the machine-building industry, which are largely dependent on parts and assemblies supplied by other firms, and retail companies such as hypermarkets. These 'live' on the high volume of products sold and not on the low mark-up (which in turn makes the value added created modest). It should not be forgotten that labour efficiency can be measured by value added, using the ratio of the latter indicator to the number of employees with whom that value added was created in the activity carried out by the entity:

$$RM = \frac{VA}{N} \qquad (4),$$

where:

- RM = labour factor yield;
- N = average number of employees in the financial year in which the value added VA was created.

The added value represents the financial surplus formed at the company level, from which the stakeholders will be remunerated (Țilică at al., 2019, page 44).

Gross operating surplus (referred to as EBITDA[2] in the Anglo-Saxon literature according to Pantea, 2017, page 227) is an interim management balance that shows the entity's gross operating income. The indicator does not take account of depreciation, provisions, financial income and expenses or taxes, which has led some authors to consider that the gross operating surplus reflects the entity's self-financing capacity on the one hand and its potential to remunerate those who have entrusted it with capital (banks, shareholders, other economic agents, etc.) on the other.

The calculation of the gross operating surplus is based on the value added created by the enterprise, to which other operating income is added and from which staff costs and other operating expenses are then deducted:

[2] **E**arnings **B**efore **I**nterest, **T**axes, **D**epreciation and **A**mortization (eng.).

$$EBE = (VA + AVE) - (CP + ACE) \qquad (5),$$

where:

- EBE = gross operating surplus;
- AVE = other operating income (such as income from donations and grants received, income from the sale of assets and other capital transactions, income from investment grants, etc.);
- CP = staff costs (which include salaries and allowances and expenditure on insurance and social protection);
- ACE = other operating expenses (e.g. maintenance and repairs, royalties, management rentals and rents, insurance premiums, banking expenses, protocol, advertising and publicity expenses, etc.).

To the extent that calculation formula (5) produces a negative result, we are dealing with a *gross operating surplus* (IBE). Many voices in the financial field argue that EBE (EBITDA) is a more relevant measure of a company's profitability than its net profit. Those who favour this idea argue that EBITDA is the basis for the company's self-financing (through net profit for making new investments, depreciation for renewing worn-out fixed assets and provisions to cover possible risks and expenses) and the distribution of income to the state (through taxes, duties and contributions), creditors (through interest and earnings, but also through repayment of debts incurred) and shareholders (dividends).

At the same time, the gross operating surplus has the merit of not being influenced by the company's financial policy, i.e. by its decisions on money/financial market placements and those relating to the financing of the activity (bank loans, bond loans, etc.). The gross operating surplus is also not influenced by elements of a fiscal natured or by the company's dividend policy, but it faithfully reflects the performance of the entity at the level of production and commercial activity and represents a fundamental financial resource for the company.

Despite these apparent advantages, considers EBITDA to be one of those scourged concepts ever adopted by the financial community (King, 2001, page 35-37). He argues that net profit is a more appropriate measure of company performance because financial expenses (interest) and tax expenses (taxes) are priority and unavoidable cash outflows, or ignoring them when discussing a company's profitability would be unrealistic. According to other authors (Friedlob and Schleifer, 2003, page 51) the use of EBITDA by some companies in their financial reporting is justified by their desire to "cosmetise" their financial situation.

The cascading of gross operating surplus from value added is as follows:

VALUE ADDED (VA)
(+) OTHER OPERATING INCOMES (AVE)
(–) STAFF COSTS (CP)
(–) OTHER OPERATING EXPENSES (ACE)
= **GROSS OPERATING SURPLUS (EBE)/ EBITDA**
(GROSS OPERATING SHORTFALL)

The operating result (EBIT[3]) is an interim management balance reflecting the overall net accumulation from operating activity, giving a clear picture of the operating efficiency of the entity, without taking into account the company's financing policy and income tax. The indicator is determined from the gross operating surplus, to which is added the calculated operating income

[3] **E**arnings **B**efore **I**nterest and **T**axes (eng.).

and from which is deducted the calculated operating expenses, according to the following calculation relationship:

$$RE = EBE + VCAE - CCAE \qquad (6),$$

where:

- RE = operating result (profit or loss);
- VCAE = calculated income from operating activities (such as, for example, income from the reduction of operating provisions);
- CCAE = calculated (non-cash) operating expenses (expenses on value adjustments on operating assets, expenses on operating provisions, on disposed assets, etc.).

Therefore, if the gross operating surplus was obtained as the difference between operating income receivable and operating expenses payable, the operating result is calculated taking into account all income and expenses related to the entity's operating activity (both actual and calculated). The cascading of operating profit is determined as follows:

VALUE ADDED (VA)
(+) OTHER OPERATING INCOMES (AVE)
(–) STAFF COSTS (CP)
(–) OTHER OPERATING EXPENSES (ACE)
= GROSS OPERATING SURPLUS (EBE) / EBITDA
(GROSS OPERATING SHORTFALL)
(+) CALCULATED INCOMED FROM OPERATING ACTIVITY (VCAE)
(–) CALCULATED EXPENSES FROM OPERATING ACTIVITY (CCAE)
= **EXPLOITATION RESULT (RE)/EBIT**

The current result (EBT[4]) of the economic entity quantifies in absolute terms the profitability of the firm's current activity (comprising operating and financial activity). This indicator is calculated on the basis of the operating result plus financial income (receivable and calculated) and minus financial expenses (payable and calculated) according to the following relationship:

$$RC = RE + VF - CF \qquad (7),$$

where:

- RC = current result;
- VF = total financial incomes;
- CF = total financial expenses.

Financial income and financial expenses highlight the **Financial Result (RF).**

Of course, relation (7) can be rewritten (taking into account the structure of financial income and expenditure):

$$RC = RE + (VFI + VFC) - (CFP + CFC) \qquad (8),$$

where:

- VFI = financial income receivable (such as interest income, income from shares held in affiliated entities, income from participating interests, income from fixed assets, income from disposed financial assets, income from favourable exchange rate differences, income from discounts received, etc.);
- VFC = calculated financial income (e.g. income from impairment adjustments on financial fixed assets and short-term financial investments);

[4] **E**arnings **B**efore **T**axes (eng.).

- CFP = financial expenses payable (e.g. losses on receivables related to participations, expenses on financial investments disposed of, losses resulting from unfavourable exchange rate differences, expenses on interest and discounts granted, etc.);
- CFC = calculated financial charges (such as depreciation of financial fixed assets, charges for impairment adjustments on financial assets, amortisation of bond redemption premiums, etc.).

The algorithm for cascading the result from the current activity is:

VALUE ADDED (VA)
(+) OTHER OPERATING INCOMES (AVE)
(–) STAFF COSTS (CP)
(–) OTHER OPERATING EXPENSES (ACE)
= GROSS OPERATING SURPLUS (EBE) / EBITDA
(GROSS OPERATING SHORTFALL)
(+) CALCULATED INCOMED FROM OPERATING ACTIVITY (VCAE)
(–) CALCULATED EXPENSES FROM OPERATING ACTIVITY (CCAE)
= EXPLOITATION RESULT (RE)/EBIT
(+) FINANCIAL INCOME RECEIVABLE (VFI)
(–) FINANCIAL EXPENSES PAYABLE (CFP)
(+) CALCULATED FINANCIAL INCOME (VFC)
(–) CALCULATED FINANCIAL EXPENSES (CFC)
= **CURRENT RESULT (RC)/EBT**

Pestre-Roire Matrix for the analysis of the entity's current result is as follows:

***	**RF > 0**	**RF = 0**	**RF < 0**
RE > 0	**A**	**B**	**C**
RE = 0	**D**	**E**	**F**
RE < 0	**G**	**H**	**I**

Source: adapted from Pestre-Roire (1989), page 35.

If the entity is in one of the **situations A, B or D**, its profitability is positive, since neither the operating result nor the result from financial activity is less than zero. These are the 'desirable' situations. Case A corresponds to both a profitable operation (RE > 0) and a successful financial policy (RF > 0), which is generally the case for companies with significant market positions (Gâdoiu, 2015, page 75). They run operating activities characterised by efficient management of inventories, trade receivables and payables to suppliers, and have cash surpluses which they optimally place on the money and/or financial market. Of course, these investments generate significant cash resources at maturity (or on sale, as in the case of securities) and have a positive impact on the company's profits.

The achievement of **state B** implies the pursuit of a profitable operating activity (RE > 0) and a balanced financial policy (RF = 0). As a result of the profitable activity carried out, the company is able to finance itself to a certain extent, which allows it to avoid dependence on debt and to avoid incurring high financing costs, which would automatically directly affect its cash flow and profitability.

Situation E, whose probability of occurrence in practice is minimal, corresponds to the balance between operating income and expenses (RE = 0) on the one hand, and between financial income and expenses (RF = 0) on the other, with the entity's current result being zero.

In situation C, the entity's operating activity yields a profit (RE > 0), but a poor financial policy (RF < 0) consumes these resources and, at the same time, affects the company's cash flow, and the current result may be close to zero. In such a context, it is advisable for the entity's management to try to optimise the company's investment policy, so as to result in a better financial performance and hence a better current result. Equally true, however, is the fact that operating profit allows the company to repay its debts, which over time will lead to lower interest expenses and improved profitability.

In the event of **state G**, the entity's operating activity generates losses (RE < 0), while the rescue may come from profitable financial activity (RF > 0). Although the company's investment policy and the financing decisions taken by its management have a direct impact on the company's cash flow and profitability (potentially generating significant tax savings and profits), a healthy functioning of the company still requires ensuring its profitability at the expense of operating activity. In this situation, although the company may be profitable, there may be structural weaknesses in the operating activity; in addition, it should be borne in mind that the financial activity can fluctuate seriously as a result of the volatility of the financial markets.

In case F, the firm's operating income strictly covers operating expenses (RE = 0) and the financial activity results in a loss (RF < 0). This situation may be the consequence of massive debt for investment which, in theory, would improve operating profit in the future, and as such case F may be acceptable. However, this is not the case if the return on new equipment does not meet expectations or if the markets in which the company operates are declining (Pestre-Roire, 1989, page 36).

Situation H corresponds to a loss-making operation (RE < 0) and a balanced financial policy (RF = 0). In this case, although the company's management has found the formula for balanced financing of the entity and most likely applies a responsible financial investment policy, the operating loss is still a warning signal worth considering. Management needs to identify operating failures (whether they relate to old or underperforming fixed assets, problems in the supply or production chain, or late payments from customers) and address them, as the company's financing structure ensures a profitable business.

Finally, **situation I** is the worst of all, characterised both by operating shortfalls (RE < 0) and financial losses (RF < 0). The isolated occurrence of such a situation may not necessarily be a major problem (especially if the firm had been profitable for several previous financial years), but the perpetuation of such a scenario has the most damaging consequences and may threaten the very existence of the firm. Case I is by far the "undesirable" situation.

Starting from the current result for the financial year, by subsequently reducing it by the income tax, the final interim balance is obtained, i.e. **the net result for the financial year (net profit or loss**). Net profit expresses the accumulation of value which will ultimately increase or decrease the capital held by the shareholders of the entity. We find Helfert's , categorisation of the net result as *'the bottom line'* very expressive. The net loss reflects the impossibility of restoring the invested capital, potentially damaging equity (Bondoc, 2014, page 43).

The waterfall determination of the net result is shown below:

VALUE ADDED (VA)
(+) OTHER OPERATING INCOMES (AVE)
(–) STAFF COSTS (CP)
(–) OTHER OPERATING EXPENSES (ACE)
= GROSS OPERATING SURPLUS (EBE) / EBITDA
(GROSS OPERATING SHORTFALL)
(+) CALCULATED INCOMED FROM OPERATING ACTIVITY (VCAE)
(–) CALCULATED EXPENSES FROM OPERATING ACTIVITY (CCAE)
= EXPLOITATION RESULT (RE)/EBIT

(+) FINANCIAL INCOME RECEIVABLE (VFI)
(–) FINANCIAL EXPENSES PAYABLE (CFP)
(+) CALCULATED FINANCIAL INCOME (VFC)
(–) CALCULATED FINANCIAL EXPENSES (CFC)
= CURRENT RESULT (RC)/EBT
(–) CORPORATE TAX (IMP)
= NET PROFIT OR LOSS (PN)

As far as corporate income tax is concerned, it should be noted that it is determined by applying the percentage rate of tax to the taxable profit, and not to the gross profit. The concepts of *taxable profit* and *gross profit* differ in that gross profit is determined as the difference between the firm's total income and total expenditure, whereas taxable profit is determined by taking into account taxable income and deductible expenditure.

Once the company's net profit is established, it is allocated to the legally prescribed purposes and can be used to cover losses incurred in previous financial years; to distribute dividends to shareholders; to build up reserves or increase existing ones; or to carry forward for future use.

4. CONCLUSIONS

Performance is related to the notion of profit and expresses the ability of an entity to achieve results expressed in monetary units through the use of financial resources and economic means. The performance of the entity is expressed in different ways and depending on the elements of effect and effort taken into account. Ways of determining and measuring performance have evolved significantly over time. Methods are still being sought to quantify the economic consequences of managerial decisions.

Following the research, some proposals for the correct diagnosis of the entity's performance are:

- we recommend the study of the profitability of operations in relation to the analysis of the situation of the main markets in which the entity operates;

- we recommend treating the entity's financial result with some reservations. Although it can have a considerable impact on the profitability of the company, the basis of the company's earnings must nevertheless be its operating activity, since this groups together the operations that the economic entity carries out on a regular basis with a view to making a profit.

- Net profit is the most widely used indicator (in absolute figures) for assessing the performance of the entity.

Pestre – Roire matrix is an important tool for diagnosing the performance of the entity that mirrors the different situations in which the profit is recorded.

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