

ACCOUNTING-FINANCIAL ANALYSIS: AN AMPLIFYING FACTOR IN FINANCIAL REPORTING KNOWLEDGE GROWTH

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Abstract:

To identify a potential financial fraud, it is necessary to understand the financial-accounting information contained in the financial statements, as well as how to separate it into economic and financial indicators capable of attesting to both the entity's patrimonial existence and performance, as well as the anomalies caused by the financial fraud. The goal of this research is to examine the possibilities for detecting fraud using a set of indicators calculated from financial accounts, some of which demonstrate the predicted cognitive value over time.

In this respect, the research problem was defined as the application of economic and financial analysis *as a relevant tool for the concrete investigation of financial fraud*, as well as empirical data from accounting professionals. The conceptual method was turned into an applied field by abstracting fraud in a language specific to financial and accounting information and palletising acts in a system of indicators known as the *Guideboard for the Financial Analysis of Fraud*.

This academic tool was put through a statistical method of inquiry to confirm its own beliefs by carefully examining the views of the accounting experts at CECCAR regarding the significance of certain economic and financial analysis indicators.

The general research topic, to which this scientific approach aims to provide a response, is as follows: To what degree does financial-accounting information provided by accounting and capitalised by economic-financial analysis contribute to the improvement of an entity's credibility if it is valuable to individuals interested in its economic performance and is not influenced by fraud?

Keywords: accounting, economic and financial analysis, financial information, annual financial statements, financial fraud, creative accounting.

JEL Classification: M41 – Accounting

1. Introduction. The pragmatic value of systematising financial and accounting information from financial reports

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The scientific approach sought to validate the following research hypothesis: Financial accounting information, the finished product of the professional accountant's activity, is positively associated with economic and financial analysis, because it can be harnessed innovatively through palletising actions in a system of economic and financial indicators, able to signal a potential fraud by manipulating revenues, associated with the financial performance of an enterprise.

The scientific approach was developed and aimed toward the need to apply methods for analysing the quality of financial and accounting information provided through financial statements, which can lead to the revelation of financial fraud. Against the backdrop of the analysis of financial scandals, but also of the typology of fraud, being aware that the financial performance of an enterprise may be affected by fraud, both in the sense of positive cosmetization (overvaluation of income or undervaluation of expenses) and in the sense of negative cosmetization (depreciation of income or overvaluation of expenses), the research study only addresses the side of fraudulent financial reporting built deceit (investors, lenders, suppliers, customers or employees). Financial reporting is the most representative type of systematised financial-accounting information. The regulated yearly financial statements are the most often used type of financial report. Annual financial statements are financial reporting papers that show the amount and quantity of an organization's real and monetary flows at a specific point in time, resulting from its interactions with the outside world and its internal operations, respectively.

Thus, annual financial statements must provide information about an enterprise's financial situation, performance, and cash flows that can be used by a wide range of consumers to make economic decisions. The financial statements are also designed to reflect the results of the undertaking's management, such as how the resources entrusted to it were employed (Feleagă N., Malciu L., 2002) [1]. According to the International Financial Reporting Standards (IFRS), annual financial statements are summary accounting documents that provide information about the economic entity's financial position, performance, and change in financial position, which is useful in the process of making economic decisions. According to IAS1, "presentation of financial statements" refers to "the set of summary accounting documents that are published for the purpose of ensuring financial information of third parties interested in the financial position and performance of the economic entity, which includes the balance sheet, profit and loss account, cash flow table, statement of change in equity, notes, and explanatory statements." (Ionaşcu I., 2003) [2]. We conclude that Romanian economic entities' annual financial statements contain a structured collection of information, including a balance sheet, profit and loss account, statement of changes in equity, statement of assets, statement of cash flows, and annexes. *The balance sheet*, a summary accounting document that summarizes the enterprise's assets, liabilities, and equity at the conclusion of the fiscal year, serves as the beginning point for economic and financial analysis. The balance sheet can be used to examine the enterprise's assets and liabilities, patrimonial existence, and financing sources.

When they are not included in the explanatory notes (financial statement annexes), balance sheet items of the type of receivables and liabilities are employed in economic and financial analysis through indicators that can expose creative accounting procedures). *The profit and loss account*, which is a part of the annual financial statements, is the primary source for evaluating the economic entity's performance since it covers all of the activities conducted in terms of value flows, beginning with the management period's revenues and expenses.

The use of income and expense items in the form of economic and financial indicators in the profit and loss account not only make it easier to understand how well the business is performing, but they also reveal innovative accounting methods that, if not disclosed in the explanatory notes (financial statement annexes), may indicate the presence of financial fraud.

The financial analyst's imaginative thinking dictates the types of economic and financial indicators related to the balance sheet and profit and loss account that can be utilized in the process of identifying fraudulent financial statements. For this reason, a system was created, presented, and explained in this study in a Guidance Board.

The changes in equity represent according to M. Lesconi, A. Frumusanu and A. Breuer (2013) [3], "the increase or decrease in net assets over the period as a result of capitalized gains and losses, including revaluation discrepancies, exchange rate fluctuations, and dividends that are directly recorded as changes in equity along with capital transactions and payments to economic entity owners". The risk of overestimating equity is the main justification for analyzing changes in equity to support an advantageous position on the market, particularly for public corporations.

The statement of cash flows is frequently thought to be the most precise summary document in the format of annual financial statements (Magnan M. 2002) [4]. This reporting document's usage of financial data is crucial for assessing an organization's medium-term and long-term stability as well as its financial health. Using professional judgment as the foundation for classifying operations, there are two fundamental ways to manipulate operational activities in the cash flow statement: raising cash flow from operating activities and decreasing cash flow from operating activities.

The simplest approach for influencing cash flow is thought to be increasing cash flow from operating operations by stagnating or, at most, slowing down the rate of debt payments. To help users correctly understand the information in the balance sheet, the profit and loss account, and, when applicable, the statement of changes in equity or the statement of cash flows, *the notes* to the financial statements should include thorough explanations of accounting policies and any notable changes in assets and liabilities.

In the same way M. Lesconi, A. Frumușanu și A. Breuer, (2013) [3], show that "To develop and complete the information shown in the balance sheet, profit and loss account, cash flow statement, and statement of changes in equity, explanatory notes to the yearly financial statements are prepared". The management self-declarations are included in this appendix. When it comes to using creative accounting procedures in a transparent manner, their

significance is overwhelming since they allow any interested user to make accurate decisions.

Between creative accounting and fraud committed in the preparation and communication of financial statements, the economic-financial analysis of the data and information contained in the financial statements is interposed, as a means of enhancing the boundary between the two. The analysis aspects, materialized in the component elements of the financial statements and in the ways of action to detect fraud, are described synoptically in *Table 1*.

Table no. 1. Economic and financial analysis components that are utilized to distinguish between accounting fraud and creative accounting

Components of financial statements	Creative accounting techniques included	Elements of economic and financial analysis of the intended purpose	Possible accounting fraud actions
Balance sheet	-valuations or revaluations of assets -assignments of receivables -optional amortization plan -sale with option to repurchase fixed assets or inventories	overvaluation of assets or undervaluation of liabilities	-Fictitious transfers, recording increases in assets without supporting documentation, failing to record liabilities, and failing to record asset outflows -Inadequate explanation of the innovative accounting methods employed and their effects on the balance sheet's assets and liabilities in the annexes (explanatory notes)
Profit and loss account	-Recording advanced income around current income. -capitalisation of expenses with inventories or investments brought into operation -remission of debt -the establishment of provisions. - Depreciation of inventories or receivables -sale with the possibility to	overvaluation of assets or undervaluation of liabilities	- Failure to record income or record fictitious documents regarding income and expenses -Omission of detailed description in the annexes (explanatory notes) of the creative accounting techniques used and their influences on the performance reflected in the profit and loss account

Components of financial statements	Creative accounting techniques included	Elements of economic and financial analysis of the intended purpose	Possible accounting fraud actions
	subsequently repurchase fixed assets or inventories. -option for the most advantageous way of discharging inventories from management (FIFO, LIFO)		
Statement of changes in equity	Overvaluation of tangible assets and integration into revaluation reserves	Overvaluation of equity	Intentionally favourable revaluation of equity elements (untruthful) without explanation in the notes to the financial statements
Cash flow statement	-keeping track of all transactions, from investing to operating -using cash rather than accrual accounting to report income	using the flexibility of accounting law in classifying cash flows	Using the flexibility of accounting law without this option being explained in the notes to the financial statements
Fixed assets situation	-using various techniques to record depreciation over time -valuing buildings, land, or other tangible assets at entry or through forced revaluation to alter depreciation costs	using the flexibility of accounting law in depreciation and valuation policy	Using the flexibility of the accounting law without this option being explained in the annexes of the financial statements

Source: own research

2. Literature review

The general definition of economic and financial analysis based on financial statements is the methodical examination of its constituent parts in order to derive information that is helpful in making financial decisions. Al-Khoury, A., Al-Shattarat, H., Alghazzawi, R., Haddad, H. (2023) [5], consider the analysis of annual financial statements as having "the fundamental function of converting data into useful information" ". Tabără, N., Horomnea, E., Toma, C. (2012) [6] claim that the primary purpose of yearly financial statements is to

give stock market investors relevant information for decision-making. Since Romanian accounting is still heavily controlled, we believe that the primary purpose of financial statements is to inform associates/shareholders, employees, and, finally, state control organisations. We think that other business partners also use financial statements to make decisions, but the legally required format of these reports does not give them the best information they require, so they turn to specialised financial and economic analysis services, particularly short- and medium-term forecasting. In this regard, we agree with some authors who believe that while some accounting data can be used in a "raw" state during the decision-making process, many of them reveal their informational value after the economic-financial analysis process, which enables the creation of a system of indicators to assess financial and economic performance, a company's health, and possible financial fraud (Mihalciuc, 2009) [7].

We believe that the performance of companies is an important topic in the complex field of economic and financial analysis. Performance is defined as a unique accomplishment in a field of activity by the Romanian language's explanatory dictionary. Accounting theories take a more or less holistic approach to performance. Performance and results are often tightly related, and the accounting result is considered an "indicator" of this association.

(Wang, J., Yung, K.,2011) [8]. The "starting point in profitability-based evaluation methods" (Moskwa-Bęczkowska, D., Reczyńska, J., 2023) [9] is profit maximisation, which is the most common way to describe a company's performance. The drawbacks of the accounting result become "misleading" or apparent over time as a result of the implementation of accounting policies (Dănescu, T., Prozan, M., Prozan, R.D., 2014) [10] and the changes in the objectives of business owners have imposed certain redirections in the approaches of specialists. Financial profitability is the ultimate objective of any firm in this evolving environment, and it is also a necessary prerequisite for an enterprise's survival on the market in a competitive economy (Dănescu, T., Prozan, M., Prozan, R.D., 2014) [10]. The business's economic performance serves as an indicator of its level of competitiveness and encompasses not just financial outcomes but also changes in equity, which are concretised in the achievement of the enterprise's strategic development goals. An intriguing categorisation of the various analyses and metrics used to assess an organization's success is available at Burns, N., Kedia, S. (2006) [11]. These scholars believe that gross profit (before taxes), return on invested capital, customer satisfaction, employee satisfaction, and customer profitability are the most important measures of outcomes. In this context, we orientated the scientific approach to the field of economic analysis, beginning with the general notion that any economic activity implies the existence of relationships (interactions) between economic phenomena, and that these relationships are conditioned by a number of interdependent parameters.

When economic-financial analysis identifies and explains the sources of occurrences, highlights their linkages, and forecasts the evolution of predetermined parameters, it takes on a scientific quality. Additionally, it combines in a unique way, deductive reasoning (from

the general to the particular) with inductive reasoning (empirical study that examines reality and develops general principles). In order to achieve this, economic-financial analysis uses a numerical language that is valued mathematically to abstract economic events. This form of abstraction brings us closest to economic reality, but only to the extent that the premises (the financial - accounting information contained in the financial statements) are not falsified.

3. Research methodology

From the perspective of scientific research methodology, traditional research methods were applied: systematic and structured analysis, statistical surveys based on questionnaires, synthesis, induction and deduction, analogy and comparative analysis, and survey-based statistical methods. It was concluded that, by constructing a statistical model to facilitate the analysis of interdependence and causality relationships, a series of answers can be provided regarding the laws governing the phenomenon of financial fraud, with the possibility of extrapolating, generalizing, or even predicting the existence and consequences of fraud in financial statements. To assess the relevance of financial and accounting information in detecting financial fraud, as well as to determine its correlation with the economic performance of companies, whether or not affected by fraud, a statistical survey method was employed to assess the perceptions of specialists in the field (CECCAR-member certified public accountants with relevant experience of over 10 years in accounting expertise and audit, particularly in criminal cases). In the discussion regarding the economic performance of enterprises, the calculation of a system of economic and financial indicators was addressed analytically and descriptively, using the comparison method, both by difference (absolute values) and by ratio (relative values or percentages).

In addition, an economic and financial analysis was conducted to aggregate the system of indicators directly or indirectly correlated with factors influencing fraud in financial statements and to assess their relevance within the broader context, using a comparative analysis across time and space.

4. Vulnerability of the quality of financial and accounting information to various users. Implications and complications regarding the development and communication of financial reports.

Based on the information contained in the annual financial statements, a user can make economic decisions for, at least, the following situations: selling or purchasing goods or services; maintaining and/or increasing the company's capital; maintaining and/or increasing the company's solvency and financial autonomy; granting, restricting or canceling loans depending on the company's degree of financial indebtedness; increasing or terminating commercial contracts; establishing the company's compliance with respect to the taxation of financial results or dividends. We believe that the different users of

financial and accounting data determine how creative accounting approaches are used to manipulate the qualitative aspects of data. We will examine the accounting mechanisms that impact certain positions in the financial statements in relation to the interests of the most significant users in order to further identify a model of indicators capable of reasonably detecting the existence of creative accounting elements in fraudulent financial statements. We emphasise that when these inventive accounting methods are not revealed in the financial statements that are provided to the user, they turn into fraud.

From the perspective of the user of financial accounting information, accounting fraud can occur in the following stages of the accounting information life cycle:

1. In the preliminary phase of preparing supporting documents for accounting purposes.
2. In the accounting recording phase of transactions, either based on false supporting documents or without the preparation of apparently legal supporting documents.
3. In the phase of communicating accounting information through financial statements available to interested users.

The first two phases are not related to creative accounting techniques, which constitute individualized criminal acts (forgery and use of forgery). Creative accounting techniques are specific to the production of financial - accounting information, which has materialized through the favorable interpretation of the existing legislation for the enterprise, for the way in which transactions reflected in legally drawn up documents are recorded in accounting, without violating the applicable law. If these legislative interpretations, based on professional expertise of the producer of financial-accounting information, are transparently described in accounting policies and then brought to the attention of accounting information users within the framework of financial reporting, there is no doubt that we are not dealing with accounting fraud. In this case, we believe that the responsibility for ensuring the application of the qualitative qualities of financial - accounting information is shared by the producer and user of this information. By providing an accurate description of its accounting policies, the first guarantees that the financial accounting information is understandable, and the second must take on the responsibility of knowing how to take advantage of the financial accounting information's content, either through the use of specialised consulting or its own technical expertise. However, we can declare that we are in a fraud situation if innovative accounting methods (Table 2) are employed and these methods are not founded on explicit and comprehensive accounting policies that are made known to the user of financial accounting information within the framework of financial reporting. The illegal activity manifests itself in the distribution of fraudulent financial statements that are constructed using inventive accounting methods without the user of financial accounting information being aware of them. In this instance, outlining the intention to mislead the user, the financial-accounting information becomes vulnerable even though it is fundamentally correct. This is because the user of accounting information makes potentially harmful decisions without knowing the true method of its construction,

decisions that he would not have made if he had known that the financial statements that were communicated to him contained creative accounting.

Table no. 2. An examination of innovative accounting strategies that leave financial and accounting data vulnerable in order to satisfy the needs of different users

Interested user	The interested manifested by the user	Creative accounting techniques that make financial - accounting information vulnerable
Investors	The information that guarantees the investor's comfort regarding the return on investment and the inherent risk involved is of interest to the investor. In this regard, he is interested in the quality of the client portfolio as well as the changes in turnover, net profit, and dividends paid out.	<ul style="list-style-type: none"> -accounting for revenue from sales of goods/services before delivery of goods/services, and -accounting in the current financial year for the production obtained or related products/services and subsequent financial years -inflation of mutual services/profits within the group, - estimation of provisions, entitlements, etc.
Creditors	In order to reassure creditors that the loans they have been granted will be repaid at maturity together with the associated interest, information is crucial. They are interested in the following in this regard: turnover, ability to pay, fixed asset value, debt, solvency and liquidity, and asset debt ratio, etc.	<ul style="list-style-type: none"> -recording of expenditure in capitalisation accounts by way of investment, -overvaluation of the economic life of assets, - change of amortization policy, disempowerment by the forced cancellation of a debt -extension of payment terms, - the consolidation of subsidiaries by equivalence or -exclusion from consolidation of over-indebted subsidiaries, etc.
Suppliers	Suppliers require information that gives them confidence that the goods/services delivered/provided will be paid at maturity. This information may include liquidity and solvency, turnover evolution, indebtedness, and expense evolution, etc.	<ul style="list-style-type: none"> - Income inflation, -overvaluation of expenses, - knowledge of some real estate, -overvaluation or undervaluation of expenses with depreciation of immobilized assets -undervaluation of liabilities and equity, etc.
Clients	For clients, information is important that ensures their comfort that the activity is	<ul style="list-style-type: none"> - overvaluation of circulating assets

Interested user	The interested manifested by the user	Creative accounting techniques that make financial - accounting information vulnerable
	carried out in accordance with the principle of continuity, especially when the collaboration is long-term. This information can be stock situation, turnover of personnel, situation of fixed assets, etc.	<ul style="list-style-type: none"> - decrease in claims by adjustments, artificial transactions - the depreciation of some claims, -reclassification of assets held for sale, -overvaluation of the production of goods/services, etc.
Fiscal and other authorities	For the authorities, the information presented is critical for regulating economic activity, establishing budgetary policies, calculating national income, and other statistics. This information can include compliance with legal provisions, calculation and payment of taxes, fees, and legal contributions, etc.	<ul style="list-style-type: none"> -Transactions with connected parties or related parties - improper capitalisation of expenses, - Change in amortisation policy, - registering taxable income as advance income. - handling of expenditure on uncapitalised investments -Deduction of interest expenses based on the degree of indebtedness, -use of tax facilities without meeting the legal requirements, etc.
Employees	Information is crucial for ensuring that employees are comfortable with the activity's adherence to the principle of continuity, that the organization is stable and profitable, and that it can offer them career opportunities, pensions, and other benefits in addition to sufficient compensation for their labour. This data may include the evolution of profit and turnover, the evolution of the pay fund, and the costs associated with professional training, etc.	<ul style="list-style-type: none"> -Making provisions, -managing revenue by boosting turnover for supplies of products or services to be supplied or delivered, and decreasing turnover by recording revenue ahead of time, even when the delivery of goods or the supply of services occurred, etc.
Audience	Information on turnover, the evolution of accounts receivable, the evolution of debt, the evolution of profit, and dividends granted may be sources of information generated by the published financial statements. This is because any user in the audience may be	they are similar to those that can affect investors, creditors, suppliers, customers, employees or state authorities.

Interested user	The interested manifested by the user	Creative accounting techniques that make financial - accounting information vulnerable
	interested in the evolution of entities to have an overview of market developments, of a particular field of activity.	

Source: designed and made by author

The techniques used by the company's management in response to external pressure directly reflect the impact that these different users of financial accounting information have on the realisation and communication of financial statements. It is clear that if any creative accounting-specific technique is not used clearly, financial accounting information becomes insecure. For instance, the business runs the risk of defaulting on its debts, which puts pressure on the company's management (Gunny, K., 2010) [12]. Leverage measures external pressure by comparing total assets to total liabilities. We can evaluate the company's loan repayment capacity with the aid of this report. The company's credit risk is also high if it has a lot of debt. This is backed by studies carried out by Huang, S. Y., Lin, C. C., Chiu, A. A., & Yen, D. C. (2020) [13]. They demonstrate that the higher the company's leverage ratio, the greater the likelihood of misleading financial reporting, as it can encourage managers to commit fraud. It is also evident that an investor or lender would not risk losing money if the entity's financial status was such that they would not receive the projected dividend or interest. A supplier would not give higher payment terms if the undertaking was in excessive debt, with the danger of default and implied risk of payment. Additionally, if there had been obvious economic instability, employee turnover, or a significant decline in the assets required for the production to be sold, a client would no longer have signed a long-term contract with the business. These factors together put pressure on management to come up with ways to guarantee the company's survival, especially during a trying time. At first glance, it can appear that these solutions are meant to trick users if they make use of creative accounting strategies. However, an informed user can no longer be seen as a misled user if these solutions are transparent. This is not the case, however, when schemes that require the fabrication of fictitious documents, false transaction records, or other fakes in physical documents or computer files are used instead of inventive accounting procedures that are permitted by the relevant law. In this particular case, we are dealing with accounting fraud that ultimately employs creative accounting strategies to hide the fraudulent activity rather than creative accounting. The primary consequence of employing creative accounting techniques is the concealment of financial fraud, which makes it extremely difficult for users of financial statements to receive a comprehensive picture of the financial results, either due to a lack of accounting expertise or a lack of access to the data and information used to prepare the financial statements. In this scenario, however, the vulnerability of financial and accounting information is directly tied to fraudulent activities committed during the development phase, which are typically

only found through criminal investigations. To adequately substantiate this opinion, we further investigated the possibilities of revealing fraudulent financial statements that also appeal to creative accounting techniques, using as an economic-financial analysis tool, capable of generating an index-guide, capable of fulfilling the overall purpose of the research.

5. Statistical investigation on the efficacy of splitting accounting information in a system of indicators related to the analysis of fraud associated with the performance of companies.

Theoretical claims were strengthened through statistical survey research aimed at the basic construction of a *Guideboard* in economic and financial analysis, the outcome of the creative action of palletising the financial indicators contained in the financial statements with practical implications in revealing the fraud associated with the evolution of the financial performance of enterprises, in order to justify the incorrect opinion of generalist labelling of creative accounting as fraud.

5.1. Preliminary actions

We first created a picture of the most well-known indicators that are directly calculated based on the data in the financial statements and have varying degrees of significance in the economic analysis of the performance of enterprises in order to ensure greater accuracy of the results and the effectiveness of obtaining opinions applied, concretely, to a known situation. We have created a three-column structured picture that includes the name of the indicator, the calculation formula, and explanations deemed relevant to be kept in relation to the use of each indicator with a higher degree of calculation complexity. This is done in the overall context of research efforts and for easier consultation, including to prevent potential confusion or momentary inattentions for the interviewees. Because it is the outcome of separating financial and accounting data into groups relevant to the balance sheet parts based on a comprehensive study of the literature related to the research issue, this process of creating the produced picture was generally referred to as splitting. Based on data from the balance sheet and profit and loss account, we created a table of economic and financial indicators that we named the *Guideboard* for the economic and financial analysis of fraud related to the economic performance of businesses. It is displayed in Table no. 3.

Table no. 3. Guideboard for the economic and financial analysis of fraud related to corporate economic performance, based on information from the balance sheet and income statement

	Derivative indicators	Calculus formula	Description
<i>a</i>	Rate ale rentabilității totale		

1	Return on Equity (R_f) or ROE	net profit/total equity	The ratio is typically significantly less than one; it measures the efficiency of equity utilization (how many lei in profit is generated for every one lei invested in equity by shareholders).
2	Economic profitability rate (R_c) or ROA	Net profit/total assets	It measures the efficiency of asset utilization (how many lei in profit are generated for every lei invested in the company's assets).
3	Commercial profitability rate (R_c)	Gross profit/turnover	Show the efficiency of sales.
4	Rate of profitability of resources consumed (R_{rc})	gross profit/total expenses	Show the capacity of gross profit to cover expenses.
5	The rate of financial return on permanent capital (R_{fper})	gross profit/permanent capital (own capital + provisions + long-term liabilities)	It shows whether the gross profit covers the financing needs, including in the long term.
6	Total net asset (ANC)	Total asset-total debts	It measures the shareholders' wealth, that is, the debt-free asset.
b	Operational profitability rates		
7	Profitability rate of operating expenses (%)	cost of goods sold/net sales	It measures whether the costs of the goods sold are covered.
8	Gross margin rate (%)	gross profit (net sales - cost of goods sold)/net sales	It measures how much gross profit returns to a sales unit.
9	Margin rate of operating profit (%)	operating profit (net sales - operating expenses)/net sales	It measures how much operational profit returns to a sales unit.
10	Net profit margin rate (%)	Net profit/net sales	It measures how much net profit returns to a sales unit.

1	Asset 1 rentability (ROA) (%)	net income/ (sold initial assets+endual assets)/2)	It measures the coverage of income assets.
1	Return on 2 equity (ROE) (%)	net income/ (initial balance equity +end equity balance)/2)	It measures the degree of capital coverage from income.
1	Net revolving 3 fund (FRN)	FRN = Kper - Ain, Kper = Kp + Dtl; Permanent Capital - Net Fixed Assets (Permanent Capital=Capital Own+Long Term Debts)	It is the expression of the long-term financial balance and is the surplus of the permanent capital over fixed assets.
1	The Needed 4 revolving fund (NFR)	St + Cr - Dnef that is, stocks+credits-non- financial liabilities, based on the value of turnover,	It shows the sums that the economic body must spend to carry out its production process, excluding the sums allotted to asset financing; the ideal ratio is below 15% (10% - 15%).
1	Treasury 5 balance (T)	T = FR - NFR or Tasset: Tpassive: the liability treasury, which includes current loans and the bank's credit balance; asset treasury, which includes cash available from accounts and home and short-term placements	In the short term, a positive treasury indicates that the financial balance has been reached; however, over time, an abundance of stable resources simply results in their inefficient use, which has detrimental effects on loan repayment, interest payments, and labour and capital compensation.
1	Absolute 6 change in net turnover due to the variation in the number of employees (Ns)	$\Delta C_a / N_s$	Temporal analysis of the income gap generated by the number of employees
1	Absolute 7 change in net turnover due to variation in average labour productivity per employee (W)	$\Delta C_a / W$, where (W= CA /medium no. of employees	Temporal analysis of the income gap generated by the employment productivity gap on employees.

18	Gross margin or added value (Q_a)	$Q_a = C_p + I_t + C_f + A + P_n$	where C_p : staff expenses, including taxes and duties thereof (CAS, unemployment, health). I_t : corporate tax and other taxes and fees paid by the firm. C_f : financial expenses (interests, commissions, regularizations, etc.). A : depreciation of fixed assets. P_n : net profit.
19	Degree of vertical integration (GIV)	$GIV = \text{added value} / \text{turnover}$	The degree of vertical integration that is closer to 1.00 indicates how well-integrated and resilient the economic unit is, and how less vulnerable it is to changes in the financial crisis, interest rates, and currency rates, etc).
20	Contribution of the human factor to the formation of added value	Employees expenses/added value	It is estimated that a contribution of 50% is good .
21	The contribution of fixed assets to added value (A_{af}):	$A_{af} = \text{fixed assets} / \text{added value}$	Calculate how fixed assets contribute to the creation of added value.
22	Rate of financial solidarity (R_{sf})	$R_{sf} = \text{equity} / \text{turnover}$	demonstrates the percentage of equity capital covered by income received; the empirical values for this indicator that are regarded as normal are between 55% și 66%.
23	Capital management rate or cost-effectiveness ratio (R_{ge})	$R_{ge} = \text{financial expenses} / \text{total sales or turnover}$	Show the coverage of financial expenses in turnover; The normal value of this ratio is between 1,2% și 2,5%.
24	The rate of correlation between liquidity requirements and sales (R_{lv})	$R_{lv} = \text{fixed assets} / \text{total sales}$	calculates the fixed assets' contribution to the turnover; The rate's usual value fluctuates between 10% și 25%.

25	Asset return rate (R_{va})	$R_{va} = \text{turnover}/\text{total asset}$	Displays the extent to which assets are covered by turnover; The asset's return rate often has a higher value than 1,4.
26	Stock rotation speed (V_{rs})	$V_{rs} = \text{sales volume } (C_a)/\text{Average stock of finished goods } (St).$	Displays the sales rhythm of the supply of commodities. A rotational speed of 6 is considered good.
27	Instant payment capacity (C_{pl})	$C_{pl} = \text{available (home and bank accounts) } (Disp) - \text{debts (amounts due within a year) } (Dts)$	Shows the available funds after current debts have been paid. Any positive value of the payment capacity of the economic entity is regarded advantageous.
28	The rate of patrimonial liquidity (R_{lp})	$R_{lp} = \text{active assets } (Ac)/\text{short-term liabilities } (Dts)$	Measuring the extent of the current liabilities of assets with immediate capitalization. If the liquidity ratio is at least unitary ($R_{lp} = 1.00$), then the situation of the economic entity is considered good.
29	Asset liquidity rate (R_{la})	$R_{la} = (\text{current assets } (Ac) - \text{stocks } (St))/\text{short-term liabilities } (Dts)$	demonstrates how current liabilities are covered by instant availability. For the economic entity to benefit from the circumstances, it is suggested that $R_{la} \geq 1.$
30	Solvency ratio (R_s)	$R_s = \text{total capital}/\text{total debts}$	if $R_s > 60\%$, the economic entity has good solvency, also if $R_s < 30\%$ the economic entity is considered incapable of payment
31	General liquidity rate (R_{lg})	$R_{lg} = (\text{bank} + \text{house} + \text{portofolio})/\text{total assets}$	The activity health indicator expresses the possibility of financing the activity; if this indicator takes over 30%, then it indicates an insufficient use of capital; at the same time, too close to 1% indicates an acute need for liquidity. Empirically normal, beneficial values are between 5 și 25%.
32	Depreciation ratio (R_{dep})	$R_{dep} = \text{amortization } (A)/\text{fixed assets } (\text{imobilizări corporale}, Af)$	New fixed assets must typically be purchased if the depreciation rate is less than 40% since the current ones are suffering from "moral wear."
33	Total debt ratio (R_{it})	$R_{it} = \text{total debts } / \text{total capitals}$	Shows the ratio between the total debt of the entity and the capital invested; if the ratio is less than 50%, the liabilities negatively influence the economic profitability, and if approaching 100%, the investment policy is compromised, due to the insufficient funds of the economic entity.

3 4	Term debt ratio (R_{iter})	$R_{iter} = \text{financial liabilities}/\text{own capital}$	demonstrates that if financial liabilities are more than the amount of equity ($R_{iter} > 1$), they will negatively impact the economic entity, leading to a loss of financial autonomy and insolvency when rates and interest can no longer be met by turnover.
3 5	Repayment capacity rate (R_{cr})	$R_{cr} = \text{financial debts}/\text{turnover}$	Is the economic entity's capacity to pay back the yearly debt from turnover.
3 6	Treasury rate (R_{trez})	$R_{trez} = \text{fiscal debts}/\text{turnover}$	If the debts to the state treasury can be repaid within 30 days, then their level relative to the turnover is good; if they cannot be repaid, after 45 days the problems related to interest and penalties begin.
3 7	Self-financing rate (R_{af})	$R_{af} = \text{real estate investments}/\text{turnover}$	For a self-financing capacity to be considered good, the self-financing rate must be more than 50%.
3 8	Expenditure rate per 100 Lei total revenue	Debts/total income	displays the percentage of realised income that is used to cover expenses.
c .	Business risk analysis ratings (exploitation).		
3 9	Risk of exploitation (R_c)	the level of turnover fully covering operating expenses/turnover	The amount of turnover that completely covers operational costs is known as the profitability threshold.
4 0	Safety margin (M_s)	$M_s = (\text{turnover} - \text{profitability threshold or operating expenses})/\text{turnover}$	Show the threshold at which profit can be made.
4 1	Leverage effect of exploitation (P_e)	$P_e = [(\text{Profit year } 1 - \text{Profit year } 0) / \text{Profit year } 0] / [(CA \text{ year } 1 - CA \text{ year } 0) / CA \text{ year } 0]$	Demonstrates how much the gross/net profit will fluctuate if the turnover changes by a percentage between periods; the higher the exploitation lever, the greater the risk of exploitation.
4 2	Average collection period	$365/\text{net sales}/(\text{initial balance } A/R + \text{final balance } A/R)/2$	Shows the period during which sales receivables are collected on average.
4 3	Speed of stock rotation	$365/\text{cost of goods sold}/(\text{initial stock})$	Shows the average time the stock is sold.

		$\frac{\text{balance+ final stock balance)+2)}$	
4 4	Rotation speed of the flow rates	$\frac{365/\text{accounts to be paid}/(\text{initial stock balance+ final stock balance})/2)}$	Shows the average period during which the stock debts are paid.
4 5	Cash conversion cycle	$\frac{\text{stock rotation speed+average collection period-debit rotation speed}}$	displays the typical amount of time that the business has access to the revenues from stock sales after taxes have been paid.
4 6	Fixed asset return	$\frac{\text{Net sales}/(\text{initial fixed assets balance+final fixed assets balance})/2)}$	Displays the typical time frame over which sales cover the fixed assets used in sales.
4 7	Operating profit volatility (EBIT) (coefficient of variation)	standard deviation of earnings before interest and taxes for multiple time periods	Shows the dynamics of earnings before interest and taxes, illustrating the positive or negative impacts of the variability of exploitation from one period to another.
4 8	Sales volatility (coefficient of variation)	Average net sales/standard sales deviation for multiple time periods	Display sales dynamics, emphasising the positive or negative effects of the variation of sales from one period to another.
4 9	Volatility of debt burden	Changes in earnings before interest and taxes as a percentage of changes in sales	Demonstrates the dynamics of sales profitability by highlighting swings in earnings before interest and taxes.
d .	Financial risk analysis rates (leverage effect)		
5 0	Leverage effect index (1)	$\frac{\text{total debt (long and short term)}/\text{assets}}$	Indicates the extent of the coverage of liabilities in assets.
5 1	Leverage effect index (2)	$\frac{\text{total debt (both short-term and long-term) divided by equity}}$	Indicates the degree of coverage of equity liabilities.
5 2	Interest coverage rate	$\frac{\text{earnings before interest and taxes}/\text{interest expenses}}$	Indicates the coverage of interest expenses on operating earnings without interest and taxes.
5 3	Operating cash rate	$\frac{\text{operating cash}/\text{current liabilities}}$	It shows how the money made from the exploitation activity will satisfy current responsibilities.

Source: own design based on research made

5.2. Methodological standards in statistical research

We selected a sample of expert accountants at random from the CECCAR Members' Table of September 2025 in order to quantify the quantitative and qualitative examination of the indicators in the *Guideboard*. In order to get accurate and pertinent responses to the topics we are interested in, experience and practical competence are crucial components. For this reason, the visual criterion regarding their age was a choice-oriented initial step. Thus, following several free email conversations in which we presented the scientific objective of the research, we specified the need to be a voluntary participant in this study, subject to practicing the profession of expert accountant for at least 10 years and demonstrating judicial accounting expertise in criminal cases. Using this selection method, we finally managed to disseminate the questionnaire and get the answers from a total of 25 expert accountants with over 10 years of professional experience in this field, of which 12 were male and 13 female, considering that it is sufficient and reasonable to fulfil the purpose of empirical investigation, especially that during the filling-in sessions, there were also collective debates, randomly grouped.

Additionally, we decided that the questionnaire's assessment of respondents' opinions should be limited to two open-ended questions in order to accurately capture, in addition to the research effort beliefs, their agreement or disagreement regarding the significance of certain indicators that best depict an organization's economic performance as well as how they can be used to investigate financial fraud. The Guideboard, which included the 53 previously mentioned indicators, was appended to the questionnaire in order to double check the accuracy and dependability of the responses.

The questionnaire had the following questions:

Question no. 1: Please provide your thoughts on the indicators that enable the description and impact of an enterprise's financial performance and that can be computed using the data in the annual financial statements, on a scale of 1 to 5 (1 being the most important and 5 the least important).

Question no. 2: Please indicate, on a scale of 1 to 5, which of the signs listed in question no. 1, in your opinion, may indicate potential financial fraud in the financial statements based on their correlation with one another.

The statistical survey took 135 minutes to complete, including introductory talks. Each responder had a maximum of 30 minutes to complete the questionnaire and have it collected. Excel was used for response processing, including tabulation, score computation, and graphical visualisation. The score for each indicator or association of derived indicators was calculated by weighting the number of positions on a specific place on a scale of 1 to 5 with the complement to the number 6 (5 for place 1, 4 for place 2, 3 for place 3, 2 for place 4, and 1 for place 5). The responses were also double-checked for thoroughness to

ensure that each place in the hierarchy was covered vertically by at least one variant of the suggested indicator combinations.

5.3. Results, Discussion, and Conclusions

1) All 25 certified public accountants who voluntarily agreed to complete the questionnaire answered the first question regarding the indicators that describe a company’s financial performance and can be calculated based on information from the annual financial statements. The summary of the responses is presented in Table 4 and Figure 1.

Table no.4 The summary of the responses –question no.1

No.	Indicator name	5	4	3	2	1	Score
		1	2	3	4	5	ranking
1	Gross margin rate	11	1	2	0	0	65
2	Absolute change in net turnover	0	8	10	0	0	62
3	Added value	4	2	6	0	0	46
4	Loan quality index	0	4	0	0	2	18
5	The Needed revolving fund	2	4	0	0	3	29
6	Degree of vertical integration	0	0	0	0	8	8
7	Economic profitability rate	4	0	0	6	5	37
8	Return on Equity	2	0	0	3	3	19
9	The rate of patrimonial liquidity	1	4	7	7	4	60
10	Leverage effect index	1	2	0	9	0	31
	TOTAL	25	25	25	25	25	

It was noted that, according to the surveyed accounting experts, the first ten indicators calculated on the basis of the information in the financial statements to describe the financial performance of an enterprise are ranked in order of significance as follows: gross margin rate, turnover rate, patrimonial liquidity ratio, added value, rate of economic profitability, leverage ratio, revolving fund needs, financial strength rate, etc. quality index of claims and degree of vertical integration. An agreement was established (women and men) that at the top of the evaluations of the relevance of indicators are operational profitability rates, followed by patrimonial and treasury rates.

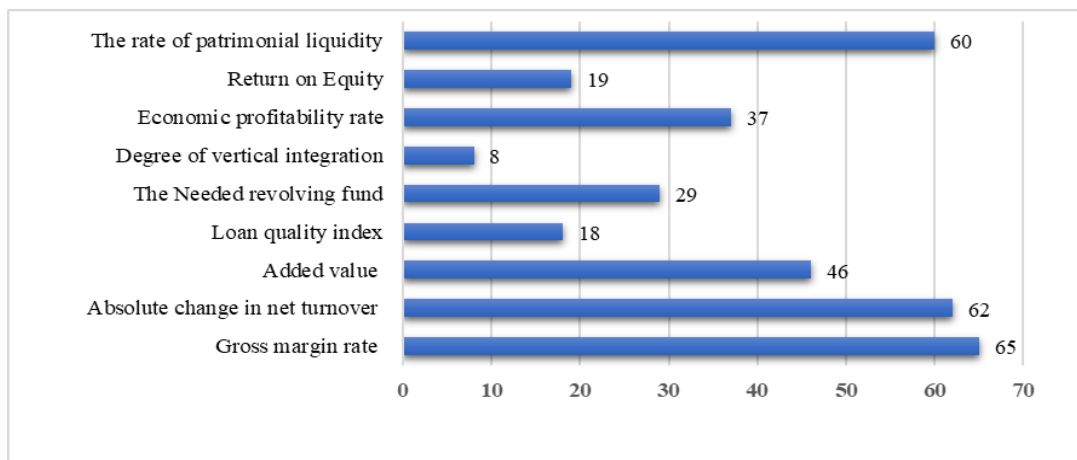


Figure no. 1 Own design based on research made

2) All 25 certified public accountants who voluntarily agreed to complete the questionnaire answered the second question regarding which of the indicators mentioned in question 1, when considered in combination, might suggest possible financial fraud in the financial statements. The summary of the responses is presented in Table 5 and Figure 2:

Table no.5 The summary of the responses -question no.2

No.	Indicator name	5	4	3	2	1	Score
		1	2	3	4	5	ranking
1	Decline in gross margin and increase in debt ratio	9	8	2	1	4	89
2	An increase in revenue and a decrease in the debt collection rate or the debt-to-asset ratio	12	7	4	1	1	103
3	An increase in the economic rate of return and a decrease in the net profit margin	1	2	6	8	7	54
4	Increase in the debt ratio (trade payables) and increase in the revenue collection rate	2	4	11	6	3	74
5	An increase in the return of equity and an increase in the employee turnover rate	1	4	2	9	10	55
	TOTAL	25	25	25	25	25	

Additionally, it was observed that, according to the accounting experts surveyed, a potential financial fraud may be revealed in the financial statements if some of the signs listed in question no. 1 are associated, in the following order of significance: increase in turnover and decrease in the rate of receivables collection, or by raising the debt ratio of assets, decreasing gross margin, and raising the debt ratio, respectively, raise the rate of revenue

collection and raise the rate of trade indebtedness, or raise the financial soundness rate and raise the staff turnover index, lower the rate of economic profitability, and lower the net profit rate.

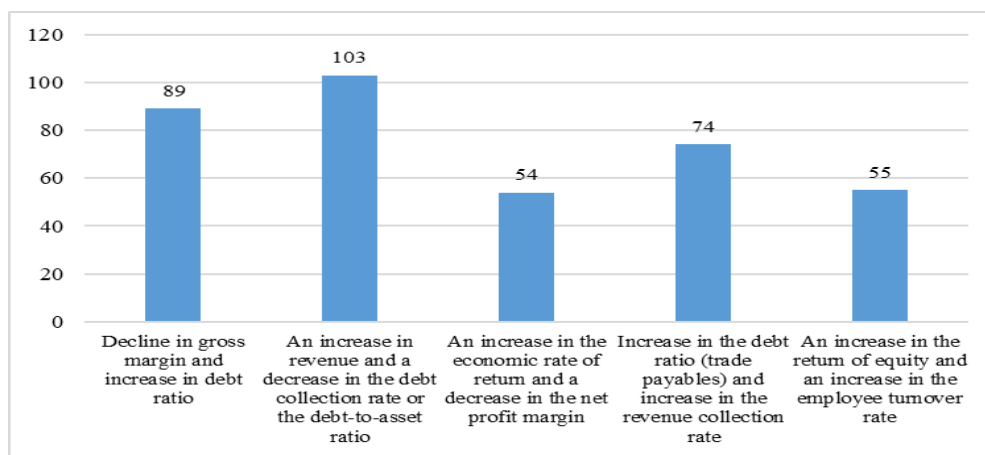


Figure no. 2 Own design based on research made

It follows that a possible financial fraud can be signalled by analyzing the balance sheet and profit and loss indicators, the best rated being the association between the turnover dynamics and the receivables collection dynamics or the gross margin dynamics and the debt ratio dynamics. In case of identification of an increase in turnover that is not accompanied by an increase in the level of receivables related to the sales that make up the turnover, it may be suspected that some revenues may be registered, which, although it determines the assurance of a stable economic performance indicator, does not generate the normal treasury of the activity carried out. In this instance, it is possible to identify income inflation with the express intent of presenting a fictitious economic performance. Overvalued or fictitious expenses that do not impact the treasury for a reasonable amount of time may be suspected in the event of a decline in gross margin and an increase in the debt ratio of assets, even though there is also an increase in the revenue collection rate.

5.4. Conclusions of the statistical survey

We conclude that the debt-to-asset ratio is widely regarded by accounting professionals as the most revealing indicator of potential revenue manipulation, with a direct impact on the assessment of a company's financial performance in cases of suspected fraud.

6. Conclusions

Financial fraud materialized in the construction and communication of fraudulent financial statements is a phenomenon that brings the greatest money losses worldwide. In this context, any efforts to disclose financial fraud can only be of benefit to any enterprise. The cognitive contribution of accounting information in the process of disclosing financial fraud was highlighted innovatively in this study through positive associations with economic and financial analysis and statistical survey. In order to identify the issue of knowledge management in conveying the creation of financial and accounting information about businesses, we used a new methodology in the study. Synthetically, we chose to advance knowledge in this area rather than criticise in order to find ways to enhance the quality of financial and accounting data. We saw this as a fundamental component of a more intricate, visionary construction for the current evolutionary stage of accounting, which can acquire new cognitive valences in conjunction with the scientific nature of economic and financial analysis. This is because accounting professionals' work will soon be primarily focused on the financial and economic examination of automatically processed financial and accounting data. In keeping with this prediction, we have highlighted the weaknesses in the process of creating and disseminating financial statements to different users while simultaneously promoting the utilitarian contribution of systematising financial and accounting information from financial reports, enhancing its qualitative features. By separating actions in a system of indicators known as *Guideboard for financial analysis of fraud*, this conceptual method has been turned into an applied area that encapsulates fraud in a language unique to financial and accounting information. In order to validate its own conviction, this academic tool was subjected to a statistical method of inquiry that looked closely at the opinions of CECCAR accounting professionals regarding the significance of economic and financial analysis indicators that, through creative association, can reveal causal relationships between an enterprise's economic performance and the action of financial statement fraud communicated to users. As a result, we emphasised the significance of combining and separating accounting and financial data into economic and financial indicators, which were creatively structured in the corresponding *Guideboard for financial fraud analysis*. We then verified the survey's relevance. Regarding the significance of certain indicators deemed appropriate to highlight both the economic performance of an enterprise and the possible existence of fraud in financial statements, we have acquired the well-informed opinions of the accounting professionals within CECCAR with pertinent experience performing accounting expertise in criminal cases. We concluded that professional accountants must respond to fraudulent inventiveness by being creative in exposing it based on the opinion survey results.

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