AN EXPLORATORY ANALYSIS OF ACCOUNTING ESTIMATES DISCLOSURE PRACTICES. THE CASE OF ROMANIAN PRIVATE LISTED COMPANIES

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Abstract: *The research aimed to identify and evaluate the level of disclosure of accounting estimates in the annual reports of companies listed on the Bucharest Stock Exchange (BVB) on the premium segment. Excluding the banking sector and suspended companies from the total premium companies, 55 companies were identified in the sample. The companies' annual reports for 2018-2022 were analyzed to identify accounting estimates and any changes in these estimates. For each business, a score of 1 was assigned for changes in estimates and 0 for non-change. Using qualitative research methods, the set of data on accounting estimates was obtained by examining public information in the notes to the annual financial statements. The analysis of descriptive statistics was carried out to interpret the data, classifying companies according to turnover, total assets, average number of employees, and net result. Companies were also clustered into three categories, and the analysis highlighted industries with varying levels of disclosure. These findings provide insights into the level of disclosure of accounting estimates among Romanian companies listed on BVB, with stakeholder involvement and policy development for sustainable economic development.*
Keywords: *qualitative analysis; annual reports; descriptive statistics; accounting estimates.*

JEL* Classification: M41; C38*

1. Introduction

In the financial environment, transparency and quality of accounting information are fundamental to understanding and evaluating a company's performance. In this context, proper disclosure of accounting estimates in annual reports becomes crucial for investors, analysts, and other stakeholders in making financial and investment decisions. This research aims to analyze the level of disclosure of accounting estimates in the annual reports of private listed companies on the Bucharest Stock Exchange (BVB), focusing on the premium segment and excluding the banking sector and suspended companies. By applying methods of qualitative research and descriptive statistical analysis, we will assess financial transparency and identify trends and practices in the disclosure of accounting information. This analysis aims to provide a deeper understanding of how Romanian companies report their accounting estimates.

2. An overview of the relevant studies in the literature

Accounting estimates are strongly present in accounting, most items in the balance sheet and profit and loss account are based on estimates. (Ding, et al., 2020; Gamoi, 2020; Shaw & Whitworth, 2022). Accounting estimates have a significant influence on the quality of an organization's financial and non-financial reporting and are a necessary approach in

accounting to deal with situations where accurate information is not available or cannot be accurately quantified. (Bertomeu, 2020; Ding, et al., 2020; Mohammed, 2022; Zeng, 2022).

A particular area of interest in empirical research is the analysis of the behavior of presenting accounting estimates in the annual reports of listed companies. This research is essential to assess the usefulness and reliability of accounting estimates in financial reporting. It provides insights into the extent to which these factors affect the quality and transparency of financial information.

To conduct empirical research on accounting estimates, researchers use various methods and measures. For example, some researchers examine the relationship between disclosed accounting estimates and increased financial performance and the share of research and development in value-added industries (Wedari and Shafadila, 2022; Ferguson and Seow, 2011; Farcane et al., 2010). They found that higher-quality accounting disclosures are associated with increased growth and development in equity-funded industries. Other researchers may focus on the accuracy and reliability of accounting estimates (Bertomeu, 2020; Ding, et al., 2020).

3. Research Methodology

This study aimed to identify and assess the level of disclosure of information on accounting estimates in the annual reports of companies listed on the Bucharest Stock Exchange (BVB) in the premium segment, excluding the banking sector and suspended companies. This procedure led to the identification of 55 companies that were included in the study sample. The companies' annual reports for 2018-2022 were analyzed to identify accounting estimates and any changes in these estimates.

Based on the study conducted by Farcane et al. (2010), the dataset on accounting estimates was conducted using the qualitative research method. The publicly disclosed information in the notes to the annual financial statements on the selected categories of accounting estimates was examined. Special attention was paid to information relating to property, plant and equipment, revaluation of fixed assets, investment property, intangible assets, impairment of assets, assets held for trading/sale, inventories, provisions for litigation, provisions for decommissioning fixed assets, provisions for the environment, employee benefits, borrowing costs, development and innovation costs, costs of restructuring business activities, and provisions for restructuring, leases, contracts with customers, deferred tax.

To determine the average degree of presentation and quantify the quality of the information disclosed, the range of scores from 0 to 3 was used, where 0 represents the complete lack of information related to the subject; 1 – the disclosure degree is unsatisfactory, the information is poorly presented, very little information has been presented; 2 - medium or satisfactory information is disclosed, and 3 - information is very well presented and communicated in detail. Also, each company scored 1 if there were changes in estimates and 0 if not. Python software was used to perform descriptive analysis and graphs.

4. Results

In light of the updated provisions of OMFP 2844/2016, each company is mandatory to compile the financial statements following the instructions specified in the accounting regulations adopted by Order of the Ministry of Public Finance (OMFP) no. Regulation (EC) No 1802/2014. The provisions lay down size criteria for medium-sized and large entities. Starting from these regulations, in this study we clustered companies into three categories,

companies with good performance, companies with average performance, and companies with poor performance. To achieve clustering, we imposed the following criteria regarding the accounting net result: net result over 10,000,000 RON; net result below 10,000,000 RON and over 1,000,000 RON; and net result below 1,000,000 RON.

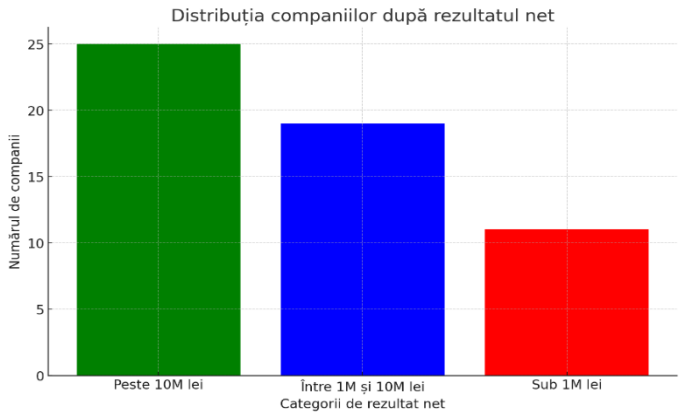

Figure no. 1 Classification of companies by the accounting net result
Source: own processing

Figure no. 1 presents a clear view of how sampled investigated companies are spread over three ranges of accounting net results. The largest category is that of companies with a net result of over 10 million lei, comprising 25 companies such as OMV Petrom S.A., S.N.G.N. Romgaz S.A., S.N., Nuclearelectrica S.A., etc., which indicates that there are a significant number of strong and profitable companies in the sample. The second category includes 19 companies, Turism Felix SA., Farmaceutica Remedia SA., Ropharma SA, etc., companies with a net result between 1 million and 10 million lei, and is also well represented. The category with net result below 1 million lei has the lowest number of companies, 11 such as Casa de Bucovina Club de Munte, Conted SA, Industrial Group Electrocontact SA, etc.

The next clustering that has been done divides the sampled companies into very large companies, medium-large, and large companies. For this, size indicators such as turnover, total assets, and number of employees were used. The aim will be to create clusters so that companies with high values for turnover, total assets, and number of employees are grouped. For this clustering we used the K-Means clustering method, its purpose is to divide a data set into groups or clusters so that objects in the same group are more similar to each other than to those in other groups (Hartigan, and Wong 1979; Perez and Blasco, 2022).

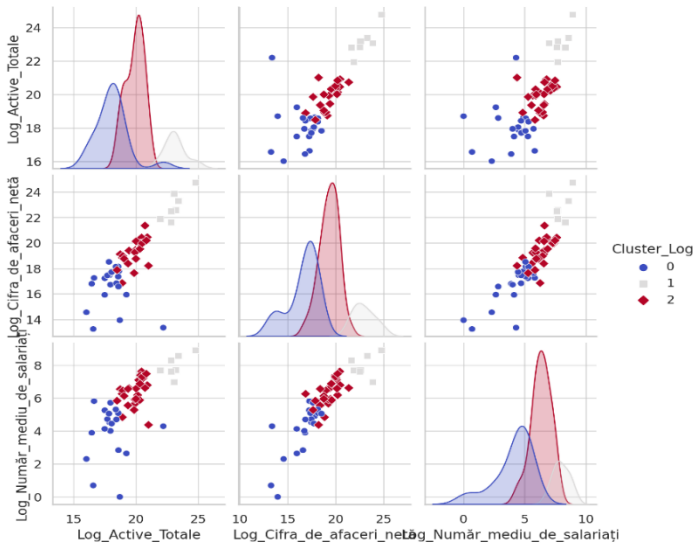

Figure no. 2. Clustering of companies
Source: Self-processing in Python

To achieve the desired clustering, where the first cluster contains the companies with the highest turnover values, total assets, and number of employees (called "very large companies"). This method involves applying the logarithm to the values of turnover, total assets, and number of employees to reduce data dispersion and make distribution more normal, which can help in identifying clusters. After logarithm, we used the K-means algorithm because the K-means algorithm can be applied to data directly or after logarithm, to automatically divide companies into clusters based on their similarities. If we want to ensure that a particular cluster comprises "very large" companies, we can adjust the number of clusters and analyze the results to choose the best division. Companies are classified in the three clusters in figure no.2, as follows:
Cluster 0: These companies are usually smaller or medium-sized, having smaller values for total assets, net turnover, and average number of employees. Companies in this cluster include PTR, BRM, CNTE, STZ, PREB, CMCM, CBC, MECE, AAG, ELJ, ECT, ELGS, ARM, MECF, UAM, ALU, RMAH, CAOR, BCM, BNET, EL.
Cluster 1: Represents "very large companies" with high values for total assets, net turnover, and average number of employees. The companies in this cluster are SNP, SNG, RRC, ALR, SNN, TEL, and TGN.
Cluster 2: Includes medium-sized to large-sized companies with moderate values for said features. The companies in this cluster are VNC, ATB, BIO, SCD, ARTE, TRP, ROCE, PPL, CEON, PREH, ELMA, MCAB, UCM, CMF, CMP, SNO, TBM, IARV, ARS, IMP, RPH, OIL, SOCP, COTE, EFO, TUFE, and M.

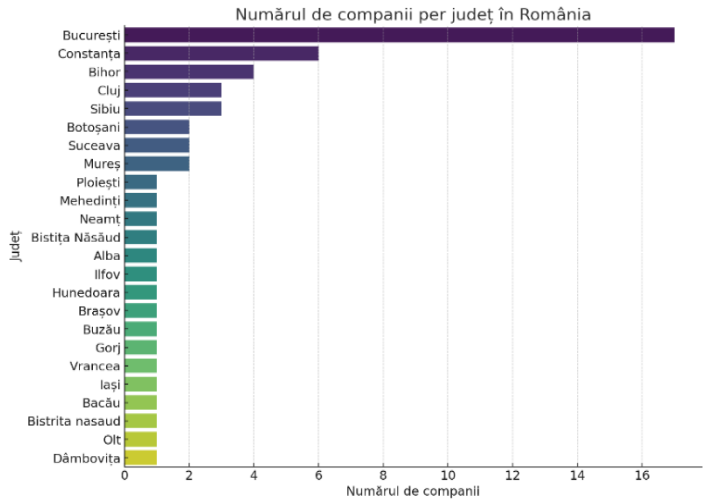

Figure no. 3 Distribution of companies by counties
Source: Self-processing in Python

Figure no. 3 presents the companies assigned for each county in Romania. In this graph, Bucharest has the highest concentration of companies, followed by Constanta, and Bihor. This graph provides a clear representation of the geographical distribution of companies in the research sample.

The distribution of companies by economic sectors reflects the structure and dynamics of the market for the sample, as follows: extractive industry (3 companies); production and supply of electricity and heat, gas, hot water, and air conditioning (2 companies); construction (1 company); wholesale and retail trade; repair of motor vehicles and motorcycles (3 companies); transport and storage (4 companies); hotels and restaurants (4 companies); information and communications (1 company); professional, scientific and technical activities (1 company); health and social work (1 company). The presence of a small number of companies in these categories may indicate a concentration of industries in a few large entities, which is quite common in these sectors. This may also be due to high barriers to entry, such as the need for substantial capital and strict regulations. The manufacturing industry (35 companies) is the largest category in the sample, which suggests that manufacturing is an important engine of the economy. This includes a wide range of activities, from food and beverage production to machine and equipment manufacturing, highlighting the diversity and maturity of the manufacturing sector.

Further on, we proceeded to examine the information on accounting estimates disclosed in the notes to the annual financial statements and to score the degree of disclosure of information according to the selected methodology. Following the qualitative exploration of the information, a descriptive statistical analysis of data on the disclosure degree of accounting estimates was employed.

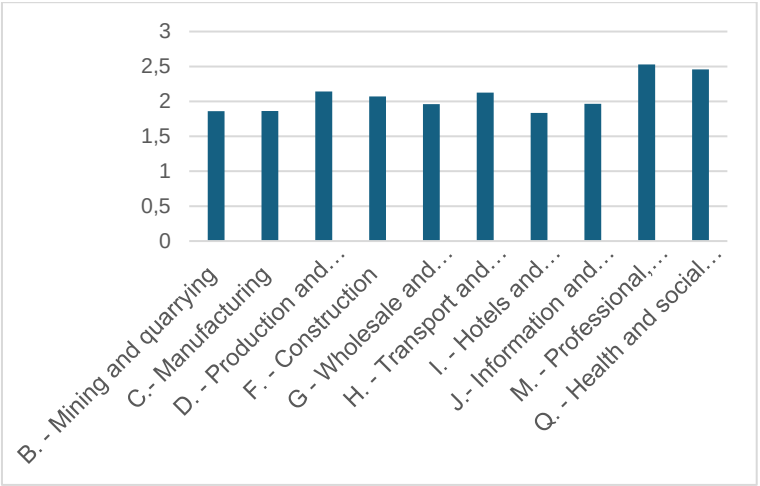

Figure no. 4 The average disclosure score of accounting estimates by industry
Source: own processing

Figure no. 4 highlights the level of disclosure of accounting estimates. We calculated the average corporate disclosure score over five years and found that industry M – Professional, Scientific and Technical Activities (1 company) stands out with the highest score, proving excellent information disclosure. Next is the activity sector Q - Health and Social Assistance (3 companies), and in third place is sector D - Production and Supply of Electricity and Heat, Gas, Hot Water and Air Conditioning (2 companies). These data indicate an interest on the part of these sectors in disclosing information related to accounting estimates in an accurate and well-structured manner. The manufacturing sector containing the most companies has a score of 1.88, with this score being the second lowest placed in this ranking.

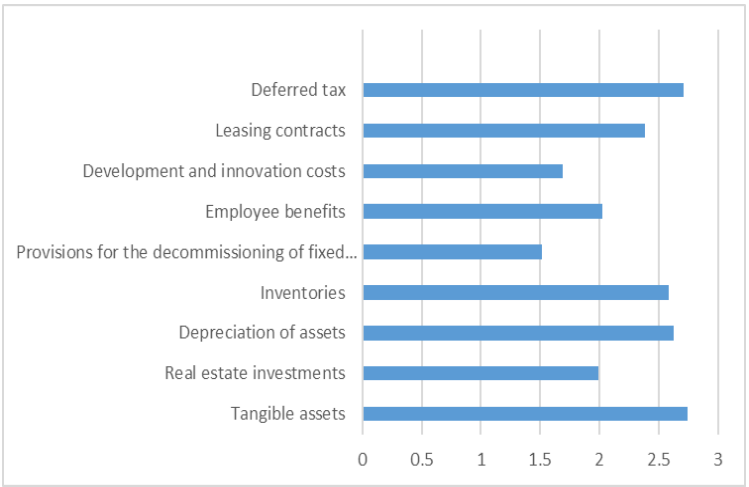

Figure no. 5 The average disclosure score of accounting estimates
Source: own processing

Figure no. 5 represents the categories of accounting estimates examined in this research. The average disclosure score over the past five years was determined and found that the most carefully prepared accounting estimates were for property, plant, and equipment, deferred tax, and impairment of assets. These estimates are presented in the most detailed way in companies' annual reports.

The average disclosure score of accounting estimates recorded for each sampled company is presented in Figure 6. Thus, it can be seen that some companies managed to stand out by paying attention to the granularity of information in the disclosing accounting estimates. Among these companies, we note ELGS, with a score of 2.89, ALR with a score of 2.61, and MECF with a score of 2.65. The results indicate that these companies are concerned about providing transparent and accurate information, thus providing a clearer picture of their financial situation to investors and other stakeholders.

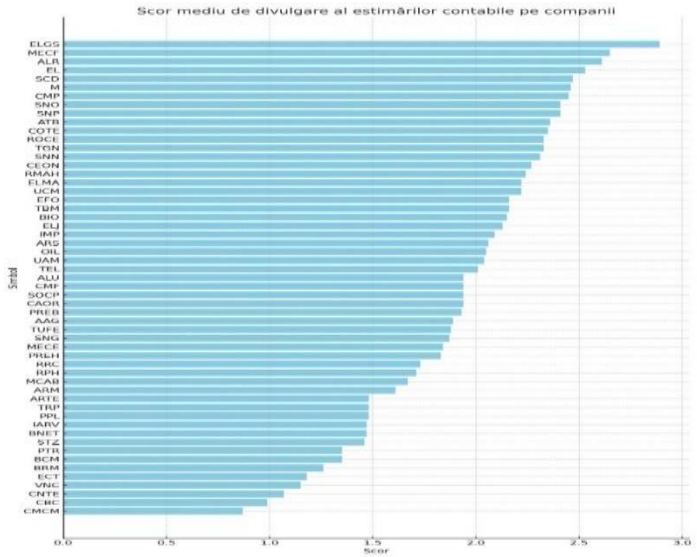

Figure no. 6 The average accounting estimates disclosure score by company
Source: own processing in Python and Matplotlib

5. Conclusions

The empirical study focuses on the analysis and assessment of quantitative and qualitative financial data, providing a broad view of the results. The descriptive statistical analysis for a sample of 55 companies listed on the Bucharest Stock Exchange (BVB) revealed several significant aspects regarding their characteristics. First, the sampled companies were clustered into three distinct categories by size. The largest cluster, called Cluster 1, comprises companies characterized as "very large", with considerable values for total assets, net turnover, and the average number of employees. These companies include SNP, SNG, RRC, ALR, SNN, TEL, and TGN. In contrast, most of the sampled companies fall under Cluster 2, which includes medium-sized companies. Looking at the geographical distribution of these companies, we noticed that most of them are located in Bucharest, followed by Constanta and Bihor counties. From an industrial point of view, manufacturing companies predominate in our sample.

The analysis also included assessing the average disclosure score for companies over five years. The results indicate that Industry M (Professional, Scientific, and Technical Activities) scored highest, signifying excellent information disclosure. The analysis also revealed that the most carefully prepared accounting estimates over the past five years were those for property, plant, and equipment, deferred tax, and impairment of assets. Among the limitations of the study, the low number of companies included in the sample and the short period must be mentioned. Afterward in the research, we want to emphasize the importance of investigating the topic concerning the link between the advanced artificial intelligence

technologies and the perception of professional accountants with emphasis on training the main competencies.

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