

# ASSESSMENT OF THE RELIABILITY OF INFORMATION IN THE COMPANY'S FINANCIAL STATEMENTS BASED ON MODELS J. MONTHIER, M. D. BENISHA AND M. L. ROXAS

**Nataliia Pedchenko, Alla Milka, Olena Artyukh-Pasyuta, Oksana Lozova**  
Higher Educational Establishment of Ukoopspilka "Poltava University of Economics and Trade"  
Ukraine

## Annotation

*The article assesses the reliability of the information in the financial statements of PJSC "Morshinsky Mineral Water Plant "Oscar" for 2016-2020 based on the model of J. Montier (C-Score), M. D. Benish (M-Score (8 variable), M L. Roxas (M-Score (5 variable)). To assess the reliability of information in the financial statements of domestic economic entities of various forms and types of activity, it is proposed to use the model of M. D. Benish (8 variable) and M. L. Roxas (5 variable) based on the study of the essence, the order of application and justification of their advantages (relative ease of application, forecasting potential, breadth of use). The algorithm for calculating the indicators of the model of J. Montier (C-Score), M. D. Benish (M-Score (8 variable), M. L. Roxas (M-Score (5 variable) in accordance with the forms of financial reporting approved in Ukraine, which will allow determining the level of reliability of the reported information.*

**Key words:** *credibility, manipulation, model of J. Montier, model of M. D. Benish, model of M. L. Roxas, falsification, financial reporting of the enterprise.*

## Introduction

**Formulation of the problem.** In modern business market conditions, constant changes in tax and accounting legislation lead to the distortion of accounting and reporting information, which, in turn, contributes to a decrease in the level of reliability of financial reporting. Therefore, the search for new approaches to solving the problem of comprehensive assessment of the reliability of information in the company's financial statements becomes important.

Analysis of recent research and publications. The issue of methodological support for assessing the reliability of information in the company's financial statements was studied by domestic and foreign scientists: Beneish M. D., Bezruchuk S., Chaika T. Yu., Dechow P. M., Gracheva N., Jones J., Kucheryava M. V., Marai A., McNichols M. F., Montier J., Plakhtiy T. F., Safonova I. V., Skrypnyk M. E., Tsaruk V. Yu., Vyhivska I. M.

**Highlighting previously unresolved parts of the overall problem.** However, significant scientific achievements in this direction, today in the professional literature the issue of assessing the reliability of information in the financial statements of the enterprise based on the models of J. Montier, M. D. Benish and M. L. Roxas, have not been widely reflected, which means the relevance research.

**Formulation of the goals of the article.** The purpose of the article is to assess the reliability of information in the company's financial statements based on the models of J. Montier, M. D. Benish, and M. L. Roxas.

**Presentation of the main research material.** The formation of reliable information in financial reporting is a form of feedback, thanks to which the subject managing the system receives the necessary information about its current state for the correct assessment of the financial state and detection of deviations from normative values [14].

For a better understanding of the essence of the concept of "reliable information in financial statements", it is necessary to establish what exactly is meant by the term reliability. In the reference literature, the concept of "reliability" is considered as a property of information to be perceived correctly; absence of errors; reliability of collected data; a justified form of the existence of truth; a belief that is based on knowledge and excludes any doubts [16, p. 11].

We believe that the concept of reliability of information in the company's financial statements should be considered in two ways: on the one hand, it is a financial statement that contains reliable, substantiated data, is characterized by the absence of errors and can be correctly perceived by users; and on the other hand, financial statements formed and compiled according to the rules established by legislative and regulatory acts are considered reliable.

The lack of a single interpretation of the reliability of information in the company's financial statements led to the development of separate approaches to its assessment, which have different names and methods of implementation. The authors refer to such approaches as qualitative, formal and indicative.

The use of a qualitative approach has gained considerable popularity in the works of T. Plakhtiy [12, p. 408-418]. The author analyzed a significant number of scientific sources devoted to the problems of assessing the reliability of information in financial statements, and proposed his own methodology, which provides for the calculation of single and integral indicators of reliability, based on the improved structure of the properties of the financial statements of the enterprise. Later, this technique was applied by S. Bezruchuk and D. Lozinsky [2] in relation to social reporting, which testifies to its universality and the possibility of its use not only for the financial reporting of the enterprise.

E. Sokolova [15, p. 360] developed a methodology for assessing the reliability of accounting and reporting information based on a combination of qualitative and quantitative features, N. Malinovska [15, p. 361] tested its own methodology for assessing the reliability of information in the financial statements of state and private companies. In addition, the scientist identified three reliability zones (reliable, semi-reliable, unreliable).

The application of a qualitative approach to the assessment of the reliability of information in the financial statements of an enterprise can be carried out on the basis of the use of various models and is based on the use of the concept of the reliability of information, regarding which there is no unity in interpretation among scientists. This is one of the disadvantages of using this approach in practical activities, since the lack of sufficient comparability of the obtained results is one of the communication barriers between management subjects and stakeholders. The advantage of the qualitative approach is the possibility of its application to various elements of the company's reporting (financial, social reporting, etc.).

The essence of the formal approach is to comply with the existing rules and principles of information formation in the company's financial statements. Within the framework of this approach, it is necessary to pay attention to the research of N. Grachova [5, p. 86], who proposed to evaluate the reliability of information in the quarterly and annual financial statements of joint-stock companies. O. Pokramovich considers the assessment of the reliability of financial reporting in the context of compliance with the norms of disclosure of accounting information, in particular, international standards of financial reporting, the use of which ensures an increase in the level of reliability [15, p. 334].

I. Safonova and A. Silchenko [13, p. 40] note that in addition to fraudulent actions and falsifications related to the violation of the requirements of accounting legislation as a result of dishonest actions, intentional twisting and distortion of the values of financial indicators, there is also the concept of concealment of information in the company's financial statements. Scientists claim that the veiling of information in financial reporting occurs when the requirements of legislative and regulatory documents are met, but deliberate distortion of individual items of an asset or liability is allowed due to a violation of accounting principles or the provisions of the company's accounting policy. However, I. Safonova and A. Silchenko do not indicate how the subjects of the accounting organization distort information in the company's financial statements.

Thus, according to the proposal of the representatives of the formal approach, the assessment of the reliability of information in the financial statements of the enterprise is reduced to the study of the procedure for compliance with the requirements of legislative and regulatory acts related to the disclosure of information and the availability of means of ensuring the reliability of its reliability. However, this is a rather superficial approach, as it does not include the need to check the reliability of the information disclosed in the financial statements of the enterprise, does not take into account the possibility of the entities of the accounting organization performing.

The most thorough studies regarding the reliability of information in the company's financial statements are available among representatives of the indicative approach, who have long-term experience in the empirical application of the developed models and a significant level of theorization of the studied issues, which determines the feasibility of such an assessment. However, even among the representatives of this approach, there are heated discussions about which of the models have the right to exist and have a better predictive ability in terms of predicting manipulations carried out within the accounting system. As A. Marai and V. Pavlovich [8, p. 34-35] note in this regard, due to the fact that earnings management practices cannot be the object of direct observation, as well as due to the existence of a significant number of methods that management uses for their implementation, it is rather problematic to identify them, which leads to the development of a significant number of models. As a result of an in-depth analysis of the models developed by representatives of the indicative approach,

P. Dehou, V. Gi and K. Shrend [4, p. 397-398] established 14 factors that can influence the implementation of manipulations, 9 proxy variables of earnings management and 8 consequences of the influence of the use of such practices, which together form a significant number of combinations for the development of models that would allow determining the existence of manipulations in the accounting system. The existence of a significant number of models for measuring the level of reliability of information in the company's financial statements is evidence of their imperfection and the need to synthesize existing knowledge in this field of research.

At the same time, within the framework of the indicative approach, certain types of models began to find more and more empirical confirmations and gained support from representatives of scientists in the field of accounting and economic analysis. Yes, by J. Jones [6, p. 211-212] a model of actual measurement of revenue management based on the use of regression analysis was developed. The scientist found a linear relationship between total accruals and the actions of company management in the process of implementing import operations aimed at reducing revenues. This model takes into account changes in non-discretionary accruals, which may be caused by changes in economic conditions or internal influence, which allows to isolate those accruals that were caused by the actions of the management of a particular company. The change in discretionary accruals occurs due to changes in sales volume, and in non-discretionary accruals - due to the sale of property and equipment of the enterprise. As noted by M. McNichols [9, p. 338], measures to detect accounting manipulation of earnings based on the J. Jones model or the modified J. Jones model are not powerful or reliable enough to assess earnings management behavior in many contexts that may interest researchers in the field accounting, standards developers or analysts.

In support of this thesis, the author cites a number of evidences that contradict the assumptions underlying the models built on the basis of the J. Jones model. As a result, he comes to the conclusion that in the future there will be greater potential and demand from scientists for models that provide for the calculation of financial indicators that confirm the manipulation of subjects responsible for the organization of accounting and the formation of information in the financial statements of the enterprise. The scientific knowledge obtained as a result of the development of such models can contribute to the improvement of the National Regulations (standards) of accounting, as it will allow to identify the most problematic areas of accounting, within which the formation of accounting and reporting information takes place, and in relation to which manipulations are most actively carried out. Such models include the models of J. Montier (C-Score), M. D. Benish (M-Score (8 variable) and M. L. Roxas (M-Score (5 variable)).

J. Montier's model, aimed at providing a general assessment of the reliability of information in the company's financial statements and exposing intentional misrepresentation. The name of the general indicator - C-Score - of the Montier model comes from the title of the author's work "Cooking the books, or, more sailing under the black flag" ("compilation of accounting registers") [10]. C-Score is the product of six indicators that characterize the criteria for assessing the reliability of information in the company's financial statements. J. Montier refers to such indicators: the rate of change of the difference between net profit and net cash flow (K1), the rate of change of the turnover ratio of receivables (in days) (K2), the rate of change of the turnover ratio of stocks (K3), the rate of change of the value of other current assets (K4), the rate of change in the level of depreciation deductions (K5), the rate of change in the currency of the balance sheet (K6). If the calculated indicator of the J. Montier model meets the criteria for assessing the reliability of information in the company's financial statements, then the value of the assessment is 1, if not - 0.

It should be noted that J. Montier's work "Cooking the books, or, more sailing under the black flag" ("compilation of accounting registers") [10] does not present a clear algorithm for calculating indicators that characterize the criteria for assessing the reliability of information in the company's financial statements. Therefore, the authors, taking into account the approved forms of financial reporting in Ukraine [11], proposed an algorithm for calculating the indicators of this model (table 1).

**Algorithm for calculating model indicators by J. Montier according to the information of the financial reporting forms of the enterprise in Ukraine**

Indicator	Algorithm for calculating the indicator characterizing the evaluation criterion
K 1	$\frac{[(\text{line } 2350 \text{ (2355) form } 2) t - (\text{line } 3400 \text{ form } 2) t]}{[(\text{line } 2350 \text{ (2355) form } 2) t-1 - (\text{line } 3400 \text{ form } 2) t-1]}$
K 2	$\frac{[(\text{line } 2000 \text{ form } 2) t / (\text{line } 1040 + \text{line } 1125 + \text{line } 1130 + \text{line } 1135 + \text{line } 1155) \text{ column } 3+4 / 2 \text{ form } 1)] t / [(\text{line } 2000 \text{ form } 2) t-1 / (\text{line } 1040 + \text{line } 1125 + \text{line } 1130 + \text{line } 1135 + \text{line } 1155) \text{ column } 3+4 / 2 \text{ form } 1)] t-1}{}$
K 3	$\frac{[(\text{line } 2050 \text{ form } 2) t / (\text{line } 1100) \text{ column } 3+4 / 2] t}{[(\text{line } 2050 \text{ form } 2) t-1 / (\text{line } 1100) \text{ column } 3+4 / 2] t-1}$
K 4	$\frac{[(\text{line } 1195 - \text{line } 1100 - \text{line } 1040 - \text{line } 1125 - \text{line } 1130 - \text{line } 1135 - \text{line } 1155) \text{ form } 1) t]}{[(\text{line } 1195 - \text{line } 1100 - \text{line } 1040 - \text{line } 1125 - \text{line } 1130 - \text{line } 1135 - \text{line } 1155) \text{ form } 1) t-1]}$
K 5	$\frac{[(\text{line } 2515 \text{ form } 2) t]}{[(\text{line } 2515 \text{ form } 2) t-1]}$
K 6	$\frac{[(\text{line } 1300 \text{ form } 1) t]}{[(\text{line } 1300 \text{ form } 1) t-1]}$

*Source: developed by the authors for [11]*

Based on the hypotheses of J. Montier and the scientific research of M. V. Kucheryava, we note that:

- the growth of the K 1 indicator is a criterion for assigning the company's financial statements to the category of those for which there is a risk of information distortion. That is, there is a high probability of manipulation of the company's profit;
- indicator K 2 is an indicator that characterizes the efficiency of management of debtors' debts at the enterprise. At the same time, J. Montier, for the purposes of the developed methodology, determines that such a criterion as a significant increase in the duration of the turnover of receivables at the enterprise can be interpreted as an accelerated recognition of income in order to increase profit;
- the rapid growth of the K 3 indicator in the model of J. Montier indicates that the amount of expenses or sales may be underestimated in order to increase the amount of net profit. The reason for such manipulation of financial reporting information is an attempt to increase the indicators of the investment attractiveness of the enterprise in order to attract funds;
- growth indicators K 4 is a criterion that indirectly indicates the probability of distortion of financial reporting information. According to J. Montier, the main assumption regarding this indicator is the following: the company's management is aware that investors often pay attention to receivables and inventories and therefore can hide problems with other current assets;
- a change in the dynamics of the K 5 indicator, in particular its decrease, for the purposes of the specified model, is an indicator that the company is reducing depreciation deductions in order to increase the amount of net profit;
- the general growth of the K 6 indicator, according to the developer of the model J. Montier, is a reflection of another scientific hypothesis, the essence of which is that the purchases of some companies are deliberately increasing. The reason for this is the desire to increase costs and reduce the level of profitability of enterprises in order to avoid taxation [7, p. 88-89; 10].

The numerical limits of the generalizing C-Score indicator are 0-6. The maximum value of C-Score (6) indicates a high probability of falsification of information in the financial statements of the enterprise, the minimum value of C-Score (0) indicates the absence of violations of the reliability of information in the financial statements of the enterprise (absence or low probability of falsification) [10].

In our opinion, the interpretation of the calculated values of the generalizing indicator C-Score can be carried out using an interval assessment of the probability of disclosing inaccurate information in the company's financial statements (table 2).

Table 2

**Assessment of the reliability of information in the company's financial statements according to the model of J. Montier (C-Score)**

The interval of the generalizing indicator (C-Score)	Assessment of the reliability of information in financial statements of the enterprise
0	The probability of disclosing inaccurate information in the company's financial statements is absent
1-2	The probability of disclosing inaccurate information in the company's financial statements is low
3-4	The probability of disclosing inaccurate information in the company's financial statements is average
5-6	The probability of disclosing inaccurate information in the company's financial statements is high

*Source: suggested by the authors*

M. D. Benish's model (M-Score) is based on a system of indicators called "Map of normative deviations of financial indicators" [1]. The map of normative deviations of financial indicators includes eight indicators: daily sales in receivables index (DSRI), return on sales index by gross profit (GMI), asset quality index (AQI), revenue growth index (net income from the sale of goods, works, services) (SGI), depreciation index (DEPI), commercial and administrative expenses index (SGAI), accrual to assets (TATA), financial dependence index (LVGI) (formula 1).

$$M\text{-Score (8 variable)} = - 4,840 + 0,920 \times DSRI + 0,528 \times GMI + 0,404 \times AQI + 0,892 \times SGI + 0,115 \times DEPI - 0,172 \times SGAI - 0,327 \times LVGI + 4,697 \times TATA \quad (1)$$

It is believed that with M-Score < - 2.2, falsification of information in the company's financial statements is unlikely; at - 2.22 < M-Score < - 1.78 there is a slight risk of falsification of information in the company's financial statements; and with M-Score > - 1.78, there is a high risk of falsification of information in the company's financial statements.

Continuing the research of M. D. Benish, M. L. Roxas substantiated the need to shorten M. D. Benish's model (M-Score (8 variable) to 5 indicators, excluding SGAI, LVGI and TATA indicators (formula 2):

$$M\text{-score (5 variable)} = - 6,065 + 0,823 \times DSRI + 0,906 \times GMI + 0,593 \times AQI + 0,717 \times SGI + 0,107 \times DEPI \quad (2)$$

For the modified model of M. L. Roxas, the limit value of M-score is - - 2.76. With an M-score < - 2.76, falsification of information in the company's financial statements is unlikely, with an M-score > - 2.76, there is a high probability of falsification of information in the company's financial statements, and its reliability needs to be increased.

The main content and normative values of the indicators of M. D. Benish's model (M-Score (8 variable) are presented in table 3.

Table 3

**Characteristics and normative values of indicators models of M. D. Benish (M-Score (8 variable)**

Indicator	Normative value for:		Characteristics of the indicator
	honest companies	honest companies	
DSRI	≤ 1,031	≥ 1,465	An increase in the share of receivables in the total amount of sales compared to the previous reporting period may be evidence of exaggerated (accelerated) recognition of sales revenue in order to increase the amount of profit
GMI	≤ 1,014	≥ 1,193	A decrease in the level of profitability of the company's sales indicates the presence of an incentive (motive) to distort data on the amount of profit (in order to overestimate it and artificially increase the investment attractiveness of the company)
AQI	≤ 1,039	≥ 1,254	An increase in the proportion of long-term assets (for example, capitalization of expenses) other than fixed assets relative to the Balance Sheet (statement of financial position) indicates that the company may be deliberately deferring its expenses in order to increase the amount of profit
SGI	≤ 1,134	≥ 1,607	High sales growth rates are not in themselves indicative of earnings manipulation, but businesses with high sales growth rates are more prone to financial fraud as financial condition and capital requirements put pressure on managers to meet sales targets
DEPI	≤ 1,001	≥ 1,077	A sharp decrease in the share of depreciation deductions relative to the original cost of fixed assets indicates that the company deliberately increased the period of useful use of assets
SGAI	≥ 1,054	≤ 1,041	The rapid growth of disproportions in the ratio of administrative costs and sales costs to the amount of net income from the sale of products is evidence of an artificial increase (decrease) in the amount of profit
LVGI	≈ 1,037	≈ 1,111	An increase in financial leverage indicates the enterprise's dependence on sources of external financing. This may be an indirect indicator of the fact that, in order to meet the requirements of lenders, company managers manipulate financial reporting indicators
TATA	≤ 0,018	≥ 0,031	Reflects changes in working capital excluding cash and depreciation relative to all assets of the enterprise, that is, it characterizes the level at which income from accruals exceeds income from cash flows. If the value of this indicator is positive, then this indicates the importance of accruals in the formation of the company's income, which may be evidence of income manipulation

Source: formed by the authors for [3, p. 82; 7, p. 95-96; 15, p. 375-376;]

The proposed set of indicators (table 3) is designed to test the hypotheses expressed by M. D. Benish regarding the fact that enterprises overstate net income from sales of products (revenues) and the value of current assets or carry out overtime capitalization of expenses due to an increase in the amount of receivables, a decrease profitability of sales, a decrease in the quality level of used assets, an increase in net income from sales and accounting reserves.

By analogy with the model of J. Montier (C-Score), the authors proposed an algorithm for calculating the main indicators of the model of M. D. Benishch (M-Score (8 variable) and M. L. Roxas (M-Score (5 variable) to the approved forms of financial reporting in Ukraine (table 4).

Table 4

**Algorithm for calculating indicators of the M. D. Benishch model (M-Score (8 variable) and M. L. Roxas (M-Score (5 variable) according to the information of the financial reporting forms of the enterprise in Ukraine**

Indicator	Algorithm for calculating the indicator
1	2
DSRI	$\frac{[(\text{line } 1040+ \text{ line } 1125+ \text{ line } 1130+ \text{ line } 1135+ \text{ line } 1155) \text{ form } 1) t] / (\text{line } 2000 \text{ form } 2) t]}{[(\text{line } 1040+ \text{ line } 1125+ \text{ line } 1130+ \text{ line } 1135+ \text{ line } 1155) \text{ form } 1) t-1] / (\text{line } 2000 \text{ form } 2) t-1]}$
GMI	$\frac{[(\text{line } 2000 \text{ form } 2) t-1 - (\text{line } 2050 \text{ form } 2) t-1]}{[(\text{line } 2000 \text{ form } 2) t - (\text{line } 2050 \text{ form } 2) t-1]}$
AQI	$\frac{[(\text{line } 1300- \text{ line } 1195- \text{ p. } 1010) \text{ form } 1) t / (\text{p. } 1300 \text{ form } 1) t]}{[(\text{line } 1300- \text{ line } 1195- \text{ line } 1010) \text{ form } 1) t-1 / (\text{line } 1300 \text{ form } 1) t-1]}$
SGI	$\frac{(\text{line } 2000 \text{ form } 2) t / (\text{line } 2000 \text{ form } 2) t-1}{(\text{line } 2000 \text{ form } 2) t / (\text{line } 2000 \text{ form } 2) t-1}$
DEPI	$\frac{[(\text{line } 1012 \text{ form } 1) t-1 / (\text{line } 1011 \text{ form } 1) t-1]}{[(\text{line } 1012 \text{ form } 1) t / (\text{line } 1011 \text{ form } 1) t]}$
SGAI	$\frac{[(\text{line } 2130+ \text{ line } 2150+ \text{ line } 2180) \text{ form } 2] t / [(\text{line } 2130+ \text{ line } 2150+ \text{ line } 2180) \text{ form } 2] t-1}{[(\text{line } 2130+ \text{ line } 2150+ \text{ line } 2180) \text{ form } 2] t / [(\text{line } 2130+ \text{ line } 2150+ \text{ line } 2180) \text{ form } 2] t-1}$
LVGI	$\frac{[(\text{line } 1595+ \text{ line } 1695+ \text{ line } 1700) \text{ form } 1) t / (\text{line } 1300 \text{ form } 1) t]}{[(\text{line } 1595+ \text{ line } 1695+ \text{ line } 1700) \text{ form } 1) t-1 / (\text{line } 1300 \text{ form } 1) t-1]}$
TATA	$\frac{[(\text{line } 1195 \text{ form } 1- \text{ line } 1695 \text{ form } 1) t - (\text{line } 1195 \text{ form } 1- \text{ line } 1695 \text{ form } 1) t-1 - (\text{line } 1165 \text{ form } 1) t - (\text{line } 1165 \text{ form } 1) t-1 - (\text{line } 2515 \text{ form } 2) t]}{(\text{line } 1300 \text{ form } 1) t}$

Source: developed by the authors for [11]

To assess the reliability of accounting information according to the models of J. Montier (C-Score), M. D. Benishch (M-Score (8 variable) and M. L. Roxas (M-Score (5 variable), the authors used public information of the financial reports of PrJSC "Morshinsky Mineral Water Plant "Oscar" for 2015-2020 (table 5).

Table 5

**Financial reporting information PJSC "Morshinsky mineral water plant "Oscar" for 2015-2020 (thousand UAH)**

Indicator	2015	2016	2017	2018	2019	2020
<i>Balance sheet (statement of financial position) (form 1)</i>						
Assets (line 1300)	471 054	557 626	581 867	539 081	883 753	1 509 334
Residual value of fixed assets (line 1010)	214 325	285 835	308 278	298 039	320 207	684 083
Initial value (line 1011)	393 389	505 620	587 620	631 133	695 876	1 112 955
Depreciation of fixed assets (line 1012)	179 064	219 785	279 342	333 094	375 669	428 872
Reserves (line 1100)	51 479	67 553	90 299	127 659	106 669	153 257
Average annual cost of stocks (line 1100 column 3+4 / 2)	42 372,3	59 516	78 926	108 979	117 164	129 963
Receivables (line 1040+ line 1125+ line 1130+ line 1135+ line 1155)	116 840	96 222	57 507	12 708	150 830	53 790
Average annual cost of receivables (line 1040+ line 1125+line 1130+ line 1135+line 1155) column 3+4 / 2)	91 710,5	106 531	76 864,5	35 107,5	31 769	102 310
Cash and their equivalents (line 1165)	2 850	18 597	13 443	34 567	49 053	206 305
Current assets (line 1195)	171 863	183 931	174 478	190 381	306 552	413 352
Long-term liabilities (line 1595)	1 793	1 999	549	-	107 679	273 080
Поточні зобов'язання (line 1695)	3 080	134 362	170 347	119 248	139 935	457 849
<i>Statement of financial results (statement of total income) (form 2)</i>						
Net income from product sales (line 2000)	661 630	738 572	849 443	1 215 856	1 530 017	1 366 502
Cost of goods sold (line 2050)	544 527	635 682	777 587	1 077 315	1 164 355	1 055 574
Administrative expenses, sales expenses, other operating expenses (line 2130+line 2150+ line 2180)	29 130	41 507	48 872	78 790	108 797	83 163
Net financial result (line 2350)	75 985	58 786	29 711	65 519	232 833	142266
Depreciation (line 2515)	34 509	47 898	61 196	56 956	52 333	85 131

Source: calculated by the authors

Considering the data in the table 5, we affirm that the information in the financial statements of PrJSC "Morshinsky mineral water plant "Oscar" for 2016 and 2020 has no signs of falsification and violation of its credibility. In 2017 and 2019, there is an average probability of disclosing inaccurate information in the financial statements of the company under study. The value of the C-Score indicator in 2018 is 5, which indicates a high probability of disclosure of unreliable information in the financial statements of PrJSC "Morshinsky Zavod Mineralnyh Vod Oskar" and facts of its falsification.

The actual values of the M-Score indicator according to the basic model of M. D. Benish (8 variable) and according to its shortened version - the model of M. L. Roxas (5 variable) for PJSC "Morshinsky mineral water plant "Oscar" for 2016-2020. given in the table 6.

Table 6

**The value of the M-Score indicator by models M. D. Benisha (8 variable) and M. L. Roxas (5 variable) for PJSC "Morshinsky Mineral Water Plant "Oscar" for 2016-2020**

Indicator	2016	2017	2018	2019	2020
1	2	3	4	5	6
DSRI	0,734	0,521	0,162	8,962	0,398
GMI	1,273	1,635	0,746	0,447	1,048
AQI	0,878	1,076	0,553	3,094	0,938
SGI	1,116	1,150	1,431	1,258	0,893
1	2	3	4	5	6
DEPI	1,046	0,916	0,901	0,978	1,403
SGAI	1,273	1,027	1,137	1,094	0,859
LVGI	3,551	1,199	0,752	1,268	1,729
TATA	- 0,278	- 0,174	- 0,021	0,032	- 0,301
<b>M-Score value according to the model of M. D. Benish (8 variable) (normal value -2.22)</b>	<b>- 4,704</b>	<b>- 3,315</b>	<b>- 3,231</b>	<b>5,686</b>	<b>- 4,701</b>
<b>M-Score value modeled after M. L. Roxas (5 variable) (normal value -2.76)</b>	<b>- 2,875</b>	<b>- 2,594</b>	<b>- 3,806</b>	<b>5,585</b>	<b>- 3,442</b>

Source: calculated by the authors

According to the data given in the table 6, it is possible to establish the presence or absence of signs of falsification of information in the financial statements of PrJSC "Morshinsky Zavod Mineralnyh Vod "Oscar" for 2016-2020 according to the basic model of M. D. Benish (8 variable) and according to its modified M. L. Roxas (5 variable) option. Thus, based on the calculated values of the M-Score indicator and their comparison with the normative values according to the models of M. D. Benish (8 variable) and M. L. Roxas (5 variable), the company under investigation did not falsify information in the financial statements for 2016 -2018 and 2020, which is evidence of its reliability. On the contrary, PJSC "Oscar Morshynsk Mineral Water Plant" discloses inaccurate information in the financial statements for 2019 to satisfy its own property interests, which misleads both internal and external stakeholders of the financial statements due to a change in their perception of the financial results and profitability of the company under study .

Comparison of interpretations of the generalizing indicator C-Score according to the model of J. Montier, M-Score according to the model of M. D. Benish (8 variable) and M. L. Roxas (5 variable) regarding the reliability of information in the financial statements of the studied company for 2016, 2019 coincide, 2017 and 2018 do not (table 7).

Table 7

**Comparison of the results of the assessment of the reliability of information in financial statements PrJSC "Morshyn Mineral Water Plant "Oscar" for 2016-2020, conducted according to the models of J. Montier, M. D. Benish (8 variable) and M. L. Roxas (5 variable)**

Year	Value C-Score for model J. Montier	Value M-Score according to the model M. D. Benisha (8 variables)	Value M-Score according to the model ML Roxas (5 variables)	Availability misrepresentation of financial credibility enterprise reporting
2016	2	- 4,704	- 2,875	+ / + / +
2017	3	- 3,315	- 2,594	+ + / + / +
2018	5	- 3,231	- 3,806	- / + / +
2019	4	5,686	5,585	- / - / -
2020	2	- 4,701	- 3,442	+ / + / +

Note. Conventional designations: "+" - the probability of disclosing inaccurate information in the company's financial statements is low; "++" - the probability of disclosing inaccurate information in the company's financial statements is average; "-" - the probability of disclosing inaccurate information in the company's financial statements is high.

Source: compiled by the authors

**Conclusions.** It is worth noting that according to the results obtained on the basis of the model of M. D. Benish (8 variable) and M. L. Roxas (5 variable), the conclusions about the reliability of the information are more well-argued, since they are based on detailed calculations of indicators reflecting the relationship between the key indicators of the financial and economic activity of PrJSC "Morshinsky Mineral Water Plant "Oscar" (property status, liquidity, business activity, financial stability and profitability). Also, according to the specified models, it is possible to find areas where violations or distortions of reported data are likely to have occurred. Instead, J. Montier's model includes criteria that are mostly general in nature.

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Received: 14 October 2022.

Accepted: 27 December 2022.