

# Consideration of ecologization and standardization in the management of agricultural business operations

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**Abstract.** The article deals with the formation of financial statements of agricultural enterprises, taking into account the indicators of ecologization and standardization in their activities. It is noted that at present time there is a problem of developing innovative directions of managing the strategic development of enterprises based on the use of new forms of financial evaluation of economic activity and compliance with environmental standards. The approaches to a comprehensive assessment of the financial condition of enterprises have been defined, their characteristics and strengths and weaknesses have been outlined. During the financial estimation of the economic activity of the enterprise the set of coefficients must be taken into account, which are formed taking into consideration the indicators of the rating estimation for each parameter of ecologization and standardization. A comprehensive analysis of the financial condition of agricultural enterprises on the basis of Ukrainian and international financial reporting standards has been conducted. It is summarized that the innovative management system based on the use of environmental and unified reporting standards will ensure the improvement of strategic planning mechanisms of socio-economic policy development at the state, regional and local levels.

## 1. Introduction

The processes of globalization and societal transformation have increased the priority of environmental conservation, and thus require enactment of urgent measures from Ukraine since the priority of environmental protection for balanced (sustainable) development remains important. Due to the peculiarities of agricultural enterprises in Ukraine and given the specifics of their work and the focus on further ecologization, becomes relevant the question of improving the integrated approach to the management of strategic development of enterprises based on environmental standards.

On the one hand, it is necessary to obtain objective and comprehensive information for effective management decisions. On the other hand, there is an obvious interest in information that reliably characterizes the essential aspects of the operation of the enterprise by external users, in particular potential investors. Therefore, the task of our study is to compare the results of a comprehensive rating assessment of the financial standing of enterprises using innovative forms of accounting and financial



reporting on the example of the Agrotrade holding and its member companies, including Agroalliance LLC, Rise Company PJSC and Umanagrokhim OJSC.

## 2. Literature review

Theoretical and practical aspects of financial and economic activities of enterprises are covered in the works of V. Ambrosova [1], T. Marenich [1], F. Butynets [2], V. Denysiuk [3], O. Prykazok [4]. Among the studies of the basics of management of strategic development of enterprises special mention should go to the works of foreign and Ukrainian authors, such as: O. Bohatov [5], P. Horskyi [6], A. Karminskyi [7], A. Peresetskyi [7], A. Petrov [7], O. Shabinskyi [8].

However, the issues of improving the methodology of strategic development of enterprises based on the use of innovative forms of financial evaluation of economic activity today are insufficiently studied. Despite the significant amount of research on various aspects of economic activity of enterprises, there is now a problem of research and development of innovative areas of management of enterprise strategic development based on the use of new forms of financial evaluation of economic activity.

The article objective is to improve a comprehensive analysis of the financial standing of enterprises based on the use of Ukrainian and international financial reporting standards.

## 3. Results and discussion

There are two approaches to a comprehensive assessment of the financial standing of the enterprise. First, the rating, and secondly, the factor modeling of the most important profitability indices and the development of a factor model of the coefficient of economic growth stability [5].

Ukraine has developed and introduced a standardized series of rules and regulations on the ecologization of enterprises – ISO 14000. The key concept of the ISO 14000 series is the concept of an environmental management system within the enterprise. Therefore, the central document of the standard is ISO 14001 – Specifications and Guidelines for the Use of Environmental Management Systems. All other documents are regarded as auxiliary – ISO 14004 provides more detailed guidance for establishing an environmental management system, while the 14010 series of documents outlines the principles of a CEMA audit.

The standard ISO 14001 establishes the requirements for environmental management system, which allows any company to formulate environmental policy and objective in accordance with the requirements of environmental legislation of its country. The standard provides basic concepts and definitions, and offers recommendations in the field of environmental policy and environmental management system [9]. According to the given recommendations, any enterprise can create an environmental management system [10].

We have distinguished two approaches that are the most suitable for agricultural enterprises: 1) the calculation of the summary index of the R-rating score is based on the comparison of enterprises on each index with the conditional sample enterprise, which has the best results on all comparable indices; the rating is determined either by the minimum deviation from the sample enterprise, or by the maximum distance from the point of origin; 2) assessment of the financial standing of the future partner in terms of distance from the critical enterprise; the concept of “conditionally satisfactory enterprise” is introduced when choosing a measure unit of rating: such an enterprise has financial indices with the appropriate specified minimum value, which is determined based on the criteria of economic efficiency of enterprise, enterprise finance; principles of liquidity and profitability; lack of grounds for recognizing the structure of the balance sheet unsatisfactory, and the company – insolvent.

The transition to International Financial Reporting Standards (IFRS) for all Ukrainian enterprises was expected to take place by January 01, 2010, but there were some difficulties due to the cultural, historical and economic characteristics of economic activity in Ukraine [11]. Therefore, today companies can file financial statements according to two standards: Standards of accounting and financial reporting in Ukraine (AFRSU); International Financial Reporting Standards (IFRS).

However, in accordance with the Statement of Standard Accounting Practice 20 “Consolidated Financial Statements”, enterprises of all forms of ownership are recommended to apply IFRS [12].

The main differences between International Financial Reporting Standards (IFRS) and Accounting and Financial Reporting Standards in Ukraine (AFRSU) are as follows:

- 1) IFRS are primarily focused on the investor, AFRSU - on the supervisory authorities;
- 2) reporting, in accordance with IFRS, is formed in accordance with the risks and benefits of ownership of the enterprise, accounting – in accordance with the transfer of ownership on the basis of the Civil Code of Ukraine (CCU);
- 3) in IFRS, in accordance with the principle of compliance, costs are recognized in the period of expected profit, while in domestic practice, a mandatory condition is the preparation of the necessary documentation;
- 4) IFRS is based on fair value ("the amount for which an asset can be exchanged under a commercial agreement between the interested parties"), while the formation of Ukrainian reporting is based on the concept of historical (actual) value;
- 5) IFRS reporting is formed in accordance with the economic content of the transaction, and in Ukraine – in accordance with the legal form of the contract; for example, under a lease agreement, when the property is accounted on the lessor's balance sheet, the lessee's IFRS reporting reflects both the leased asset and the depreciation with the liabilities hereunder;
- 6) the deferred income taxes in IFRS are calculated on the basis of the balance sheet liability method, and in Ukrainian accounting the method of deferred liabilities on the statement of financial performance is applied;
- 7) IFRS defines the mechanisms for accounting for the value of money over time and reporting mechanisms in a highly inflationary economy, while in the AFRSU they are absent;
- 8) in IFRS, profit is the growth of net assets of the enterprise, not related to the contributions of shareholders, calculated on the balance sheet (balance sheet approach) [13].

Under inflation, the company is registered at replacement cost. In Ukrainian accounting, profit is calculated based on the report on the financial standing of the enterprise.

The calculation of the company's rating is based on a set of financial ratios. Financial ratios should:

- be as informative as possible and give a holistic picture of the stability of the financial standing of the enterprise;
- have the same focus (positive correlation, for example, an increase in the ratio means an improvement in financial standing);
- have numerical standards of the minimum satisfactory level or range of changes for all indices;
- pay only according to the public accounting of enterprises;
- give an opportunity to carry out a rating of the enterprise both in space (in comparison with other enterprises), and in time (for a number of periods).

The constituent stages of the methodology of complex comparative rating of the financial standing of the enterprise are:

- 1) collection and analytical processing of reference information for the estimated period;
- 2) substantiation of the system of indices used for rating of the financial standing, profitability and business activity of the enterprise, as well as their classification, calculation of the summary rating index;
- 3) classification (ranking) of enterprises by rating.

We used the five-factor Altman Z-score model and the scoring method in our study. Altman model was used, in particular, to comprehensively assess the financial stability of enterprises in annual and quarterly terms. This model is based on the following indices: return on total assets in terms of balance sheet and net income; the ratio of own and borrowed sources; total assets turnover; the share of working capital in the balance sheet currency.

$$R = \sum_{i=1}^5 y_i - \tau \quad (1)$$

where  $\gamma_i$  is a weight coefficient;  $\tau_i$  is the quantitative value of one of the five indices.

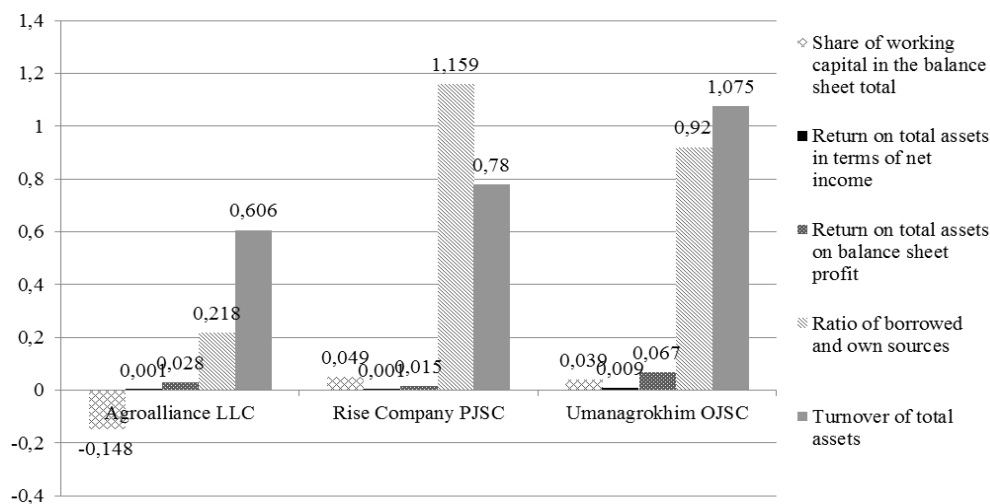
The values of the rating are estimated as follows: at  $R = 3$  financial stability of the enterprise does not cause concern; at  $R = 2.71-2.9$  financial stability is quite high; at  $R = 1.81-2.7$ , the financial stability of the enterprise is not reliable enough; at  $R < 1.8$  the financial stability of the enterprise is unreliable.

Next, let us consider what are the innovative forms of assessing the financial standing of enterprises exist, how they should be applied on the example of the holding “Agrotrade”. In 2014-2020, Agrotrade holding assessed the financial standing of enterprises on the basis of the “Regulations on the procedure for analyzing the financial standing of enterprises”, approved by the Ministry of Finance of Ukraine and the State Property Fund of Ukraine on January 26, 2001, № 49/121 [14].

This allowed Agrotrade holding to evaluate many indices and make an integrated assessment (make a rating) of the financial standing of the companies included in the holding [15-16]. The quantitative risk analysis involved the assessment of the following risk groups: the risk of illiquidity of the enterprise's assets; the risk of reducing the financial stability of the enterprise; the risk of low profitability; the risk of reduced business activity [17-19].

Depending on the value of each index, it belongs to one of four groups, each of which is assigned a certain number of points (from 1 to 4). Next, the total amount of points is calculated taking into account the weight of each indicator  $R = \sum B_i \cdot a_i$ , the final rating is assigned. Hence, four groups of financial stability of enterprises are defined, such as: stable financial standing, rating A1, A2, A3; satisfactory financial standing, rating B1, B2, B3; unsatisfactory financial standing, rating C1, C2, C3; critical financial standing, rating D.

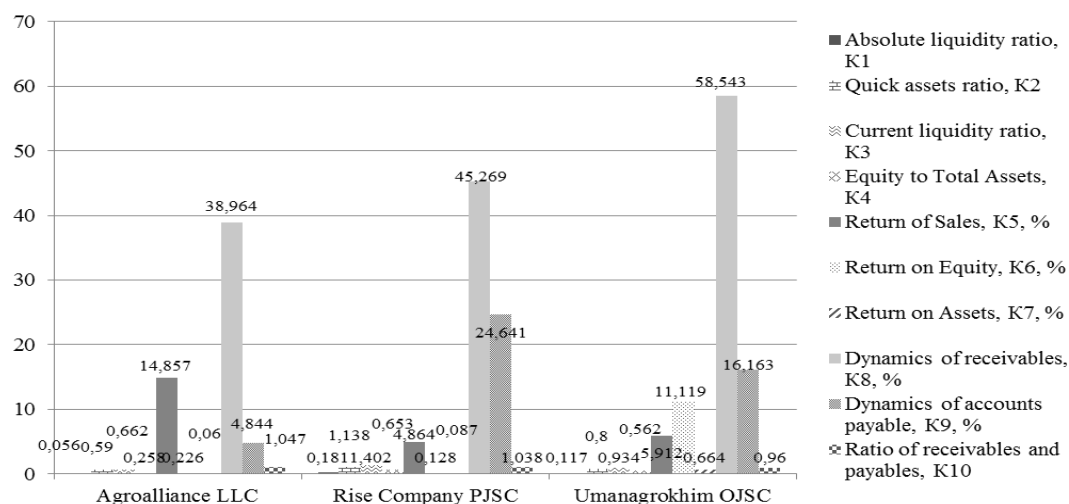
In the course of the study we found compliance with the results of a comprehensive analysis of the financial standing of Agroalliance LLC, Rise Company PJSC and Umanagrokhim OJSC, calculated on the basis of financial statements prepared in accordance with AFRSU and IFRS. In the Fig. 1, 2 the results of a comprehensive assessment of three agricultural enterprises, determined in 2020 by the Altman Z-score, are given. The calculation is based on the data of open financial statements on AFRSU: F. № 1 “Balance Sheet” and F. № 2 “Income Statement”.



**Figure 1.** Complex Assessment according to the Altman Z-Score in 2020.

Source: made by the author based on the conducted research.

The Fig.1 shows that the financial stability of Agroalliance LLC is unreliable, the Rise Company PJSC and Umanagrokhim OJSC – not reliable enough. According to the Fig. 2 in Agroalliance LLC D is a critical financial standing; the Rise Company PJSC B3 – satisfactory; Umanagrokhim OJSC C3 – unsatisfactory financial standing.



**Figure 2.**Complex Assessment Calculation according to the method of Agrotrade Holding

Source: made by the author based on the conducted research.

To assess the absolute effect of economic activity, in accordance with IFRS, comprehensive analytical indices are used that characterize the ability of the enterprise to cover costs and generate profit [4]:

- Earnings Before Interest and Taxes (EBIT) – an index close to the index “Sales Revenue” of the Ukrainian statement of financial results; it is used to estimate the amount of income that covers arrears to the budget (income tax) and creditors (in terms of debt service costs, which are reflected in operating expenses), sufficient to generate net income and pay dividends;

- Earnings Before Interest, Taxes, Depreciation and Depreciation (EBITDA) – reflects how profitable the main activity of the enterprise is.

The index is used when making comparisons by industry counterparts, allows to determine the efficiency of the enterprise regardless of its debt to various creditors and the state, as well as the depreciation method.

Agrotrade Holding used another index, which is a kind of derivative from EBITDA, the so-called EBITDA+ - the amount of profit from sales and depreciation including interest contribution and income tax. It characterizes the amount of income that remains at the disposal of the organization for the purposes of simple and extended reproduction, the payment of income to owners, and reflects the net cash flow of the company.

This index was used by Agrotrade Holding during the implementation of the dividend policy of subsidiaries.

The approximate correspondence of the indices according to IFRS and the calculation of the described indices according to AFRSU on the basis of data F. № 2 and F. № 5 (“Annex to the balance sheet”) can be carried out according to the following scheme:

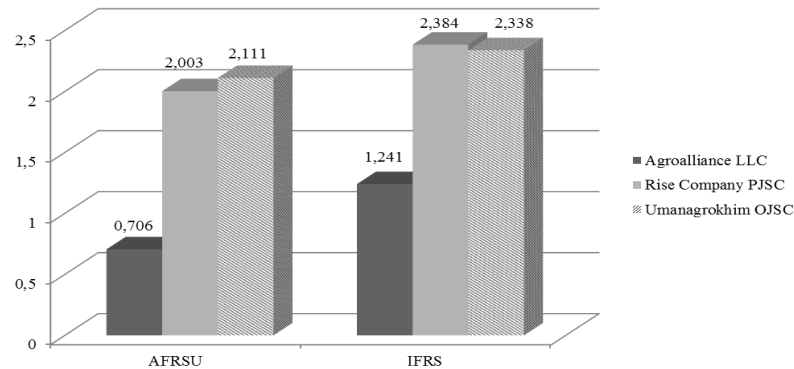
- 1) EBIT = Sales Revenue (p. 2200 F. № 2) = Earnings (line 2110 F. № 2) - Costs of sold goods, products, works, services (line 2120 F. 2) = Gross profit (p. 2100 F. № 2) - Commercial expenses (line 2210 f. № 2) - Management expenses (line 2220 F. № 2);

- 2) EBITDA = EBIT + Depreciation deductions (F. 5);

- 3) EBITDA+ = EBITDA - Interest before payment (line 2330 F. 2) - Income tax for the reporting period (line 2410 F. 2).

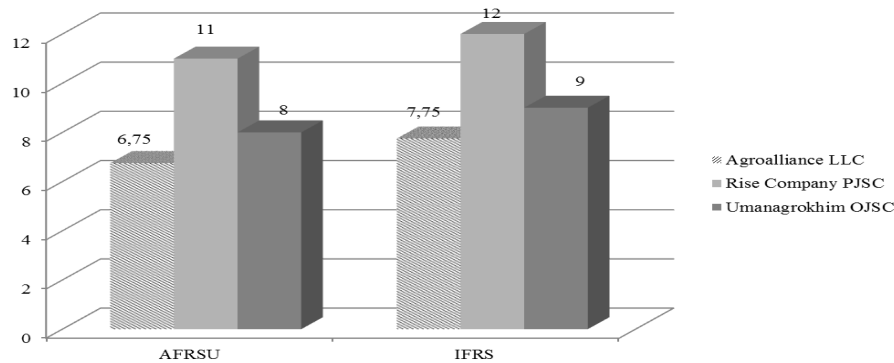
We conducted a comprehensive assessment of the activities of enterprises using reporting based on IFRS. The results of the comparative analysis are given in Fig. 3-4.





**Figure 3** Rating calculated according to Altman Z-Score.

Source: made by the author based on the conducted research.



**Figure 4.** Rating calculated according to the Agrotrade holding method.

Source: made by the author based on the conducted research.

Calculation according to Altman Z-score based on IFRS data showed the rating improvement, but, as before, the financial stability of Agroalliance LLC is unreliable, and the Rise Company PJSC and Umanagrokhim OJSC are not reliable enough. But the final rating according to the method of the Agrotrade holding has improved: Agroalliance LLC – group C3, unsatisfactory financial standing; the Rise Company PJSC – group B2, satisfactory financial standing; Umanagrokhim OJSC – group C2, unsatisfactory financial standing.

#### 4. Conclusions

Based on the conducted calculations, the following conclusions can be drawn: the use of a comprehensive rating assessment of agricultural enterprises allows to see the dynamics of the financial standing of a particular enterprise and compare the performance of different enterprises, which is impossible under the presence of individual indices; the methodology, which is based on a larger number of analytical indices. It should be noted that in order to ensure Ukraine's access to international and European markets, into consideration should be taken such measures that will guarantee the introduction of international environmental management standards, acceleration of the computerization of environmental protection and natural resource exploitation, creation of a national multilevel geo-environmental data management infrastructure and a nationwide environmental automated analytical system of access to environmental information.

Consequently, the improvement of the management system based on the use of environmental standards and unified reporting standards will ensure the improvement of strategic planning mechanisms for the development of socio-economic policy at the state, regional and local levels.

In this regard, further research should focus on the development of innovative forms of financial evaluation of economic activity of enterprises, severally taking into consideration the use of environmental standards as they are an important element of development and the key to success of each enterprise.

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