Accounting and analytical support of financial analysis of agricultural enterprises

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Abstract. The development of analytical tools for financial analysis of the organization at the stage of economical growth is considered in this article. Reorientation of the methodology for financial stability evaluation, in accordance with the functional approach, is most relevant for the processes of distribution and redistribution of in-house financial resources. By the example of the report of the enterprise it is shown that both economically significant information and effective solutions to financial problems, including the tasks of maintaining investment attractiveness, can be obtained only with the appropriate accounting system.

1. Introduction
Nowadays our country’s agriculture, as well as other sectors of the economy, is involved in innovation processes aimed at improving the efficiency and enhancing the competitive advantages of agricultural enterprises. One of the conditions for the manifestation of innovative activity is the sufficiency of financial resources, which can be attracted from internal and external sources by the economic entity. The experience of investment activity shows the important role of state support and attracting private investments to solve the problems of economic development [1, 2, 3]. When deciding whether to join a project, financial and strategic investors evaluate not only investment risks, but also financial risks, highlighting the risk of loss of business solvency in their composition. Priority for this characteristic of financial condition has been entrenched in view of the recognition of financial stability as one of the main factors of the internal environment that form the investment attractiveness of organizations.

In the scientific community, there is a substantial discussion of the directions of the development of the analytical tools of financial analysis, which allows us to predict possible financial problems and develop measures to minimize financial risks and measures for financial recovery, including, but not limited to, accessible forms of the state support. Improving the ability to make effective management decisions is inextricably linked to the problem of forming an adequate accounting and analytical support.

Interpretation of the definition of “accounting and analytical support” implies not only the information itself, but also “the technology of its collection, generalization, processing and analysis, formed within the framework of the accounting and analytical system” [4]. Improving accounting and analytical support can be headed to further processing of existing methods taking into account their computer implementation or adaption of new mathematical models, for example, eventological scoring for economic indicators [5].
The aim of the research is a critical review of the traditional methodology for calculating financial stability indicators and identifying areas for improving the organization of accounting as an information base for calculating analytical indicators, which will provide more objective assessments of the financial condition of agricultural producers, and automation of accounting processes.

2. Materials and methods

Based on the data obtained from the accounting balance-sheet of the annual accounts of one of the agricultural enterprises of Krasnoyarsk region according to the methodology that ensures the implementation of the Federal Law of the Russian Federation “On the financial recovery of agricultural commodity producers” [6], financial indicators have been calculated. The calculations are presented in Table 1.

| Indicator | Input data for calculation the coefficient | Balance sheet item code | Calculation, coefficient value, score |
|-----------|------------------------------------------|-------------------------|--------------------------------------|
| 1 Absolute liquidity ratio | More liquid assets | ln.1240 + ln.1250 | 141 = 0.0043 |
| | Current liabilities | ln.1500 – ln.1530 – ln.1540 | 33151 (4 scores) |
| 2 Quick assets ratio | More liquid and quick assets | ln.1240 – ln.1250 + ln.1260 | 141 + 3304 = 0.100 |
| | Current liabilities | ln.1500 – ln.1530 – ln.1540 | 33151 (3 scores) |
| 3 Current ratio | Current assets | ln.1200 | 42516 = 1.282 |
| | Current liabilities | ln.1500 – ln.1530 – ln.1540 | 33151 (4.5 scores) |
| 4 Working capital to current assets ratio | Working capital | ln.1300 – ln.1100 | 120860 - 120909 = -0.001 |
| | Current assets | ln.1200 | 42516 (3 scores) |
| 5 Equity to total assets | Owner’s equity, reserves | ln.1300 + ln.1530 | 120860 = 0.74 |
| | Total assets (liabilities) | ln.1600 | 163425 (17 scores) |
| 6 Equity to total assets relating to the formation of reserves and costs | Owner’s equity | ln.1300 | 120860 = 3.093 |
| | Input value added tax | ln.1210 + ln.1220 | 39071 (13.5 scores) |
| In total: | | | 45 scores |

The total amount of points (45) makes it possible to refer the agricultural enterprise to the third of five groups, which indicates an insufficient level of financial stability.

This situation is caused to a greater extent by the negative value of the coefficient of working capital to current assets ratio, which indicates the absence of the company’s working capital. At the same time, the financial independence coefficient, showing the share of property formed at the expense of own funds, was 0.74, which exceeds the optimal value (0.5) and indicates high independence of the enterprise from external sources of financing (borrowed funds).

Bring to notice that the calculation of the amount of working capital in accordance with the Decree of the Government of the Russian Federation No. 52 [6] is carried out according to the formula:

\[ IF = OE - NA, \]

where IF – internal fund;
OE – owner’s equity;
NA – noncurrent assets.
For such users of economic information as shareholders and potential investors, the methodology for calculating the amount of working capital which is given above is not entirely correct, as it is too generalized. In the works of GV Savitskaya [7], DA Pankov [8], the calculation of indicators is carried out in more detail, taking into account additional accounting information.

The differences in the methods are associated with the presence of different sources of financing and, therefore, their consideration in calculating own working capital. This will entail a change in the value of the indicator “Working capital ratio”.

The main source of financing of non-current assets in addition to owner’s equity may be long-term loans and borrowed funds taken for the purchases and modernization of fixed assets. Another option for borrowed sources is leasing. At present time, under the terms of the agreement, the leased asset is recorded on the balance sheet of the lessor or lessee. Starting in 2022, in compliance with Federal Standards of Accounting 25/2018 “Lease Accounting”, such a choice will not be offered anymore. The leased asset will have to be recorded on the lessee’s balance sheet as part of non-current assets as a right to use the asset [9]. Then, the fourth section of the balance sheet liability will reflect liabilities to the lessor in the sum of the discounted amount of leasing payments.

Taking into account different sources of financing, the methodology for calculating the owner’s equity will be represented by the following formula:

\[
IF = OE + LTP\text{INA} - NA,
\]

where LTP INA– long-term payables for investments in non-current assets.

Non-current assets of an enterprise can be financed not only from permanent capital (owner’s equity + long-term liabilities), but also from short-term borrowed funds. Attraction of borrowed funds is necessary in case of covering the needs of the enterprise in fixed and current assets. Such a need may arise for the enterprise when introducing innovations in agricultural production, due to the lack of the required start-up capital, seasonality in production, procurement, and processing of products, which is especially characteristic for the agricultural sector of the economy.

The source of short-term borrowed funds may be lease arrears payable within 12 months after the reporting date, debt on the repayment of short-term loans and borrowings received for the purchases of fixed assets. It should be noted that it is impossible to obtain such information from financial statements. It is necessary to make a selection of data form primary documents, which is quite time-consuming in some cases. At the same time, it is possible to customize computer accounting programs to user requests. In this regard, the working chart of accounts for bookkeeping should include the necessary sub-accounts or analytical accounts. The examples of sub-accounts and their full names, introduced as part of the approved accounting policies of the enterprise, are presented in Table 2.

| Sub-account number | Sub-account name |
|--------------------|------------------|
| 66/NA              | Settlements on short-term loans and borrowings for the acquisition of non-current assets |
| 66/PNA             | Interests on settlements on short-term loans and borrowings for the purchases of non-current assets |
| 67/NA              | Settlements on long-term loans and borrowings for the purchases of non-current assets |
| 67/PNA             | Interests on settlements on long-term loans and borrowings for the purchases of non-current assets |
| 76/LP              | Lease payment obligation |

In the economic activity of an enterprise, there are operations when a loan obtained for the purchase of non-current assets is used for other purposes. A reverse situation is also possible when an investment asset is purchased at the expense of other credit resources. The initial cost of an investment
asset is formed in this situation, taking into account the provisions of RAS 15/2008 [10]. Then the change in funding sources should be reflected in sub-accounts. In case of a combination of various sources of financing non-current assets, objective information can be obtained only when applying the monetary theory of accounting [11].

Based on the information obtained on the basis of the proposed sub-accounts, the formula for calculating the value of owner’s equity should be transformed as follows:

\[ IF = OE + LTP\ INA + STP\ INA - NA, \] (3)

where – STP INA - short-term payable on investments in non-current assets, LTP INA – long-term payable on investments in non-current assets.

The amount of the owner’s equity calculated using this technique will reliably reflect the amount of owner’s equity used to finance current assets.

3. Results and discussion
Calculating the final indicator of the financial condition of agricultural producers in points, providing that the coefficients (pp. 1, 2, 3, 5 and 6, Table 1) are calculated according to standard regulations, and the ratio of provision with working capital (p. 4, Table 1) according to the adjusted methods, it has been found the studied agricultural organization has gained 64 points. In accordance with certain values of the boundaries of the group in points [6], the agricultural enterprise can be referred to the first group characterizing a sufficient level of financial stability.

Changes in the calculation results confirm the influence of the methodology for calculating working capital on the final assessment of the level of financial stability of the studied agricultural enterprise.

Based on the results of the analysis, the conditions for debt restructuring of the agricultural producer are specified, namely, the period for which the enterprise – financial management entity receives a deferred payment and subsequent installment payment of debt. This parameter should be recognized as relevant in the debt management system, which will give an opportunity to achieve the goals of innovative development.

Calculation of the working capital according to the standard (1) and modified formulas (2, 3), the corresponding security ratios of current assets are shown in Table 3.

| Table 3. Assessment of the level of financial stability depending on the methodology used to calculate the value of working capital. |
| Calculation methodology of working capital | Working capital financed by equity to total assets ratio | Economic interpretation of the calculation results |
| IF = OE – NA | -0.001 | This is a critical level of financial stability due to the lack of working capital. There is not enough owner’s equity even to finance non-current assets. The enterprise operates in the area of increased financial risks. This significantly limits its ability to localize stochastic disturbances in the internal or external environment. The quality of business indicators is low. There are grounds for a negative assessment of the indicator of the operational cash flow sufficiency. Implementation of the investment strategy is developing according to the pessimistic scenario. **Crisis management measures are relevant.** |
| IF = OE + LTP INA - NA | 0.22 | This is a low level of financial stability, because only 22% of current assets is financed from own funds. An |
increase in the value of current assets, most of which is slow-moving for agricultural enterprises, can lead to negative consequences associated with the growing problems of ensuring sustainable financing of operating activities. Measures of financial recovery are relevant. This is a sufficient level of financial stability, because for an absolute financial stability, according to industry guidelines, the ratio should exceed a 50 percent threshold. The deviation of the actual indicator from the optimum (0.44 and 0.5) is classified as acceptable. The level of risk of loss of financial stability is below average. Measures of operational control over changes in the stock of financial strength are relevant.

4. Conclusion
Summarizing the results of the research, it is to be noted that the solution of issues of improving the accounting and analytical support of the financial analysis of agricultural producers should be approached comprehensively. When using the recommended financial and analytical procedures, appropriate attention should be paid to the organization of accounting as an information base for calculating analytical indicators. Rational construction of a system of analytical and sub-accounts will make it possible to increase the objectivity of the estimates and conclusions.

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