Evaluation of the company’s financial condition from the position of different groups of stakeholders

1. Introduction

These days the questions of reliability of the methods of enterprises financial situation analysis have inadequate attention of scientists and specialists; meanwhile, the effectiveness of management decisions depends on them. A large number of internal and external financial and economic problems, occurring in businesses, the contradictory of interests of internal and external users groups, financial analysis, and distinguishing features of industry specifics of business activity do not allow developing a unified methodology for financial analysis.

Due to the lack of a standard provision on the analysis of the financial condition of agricultural enterprises, which provided a common approach to the use of techniques and methods of financial analysis, system of indicators and their evaluation, there is a situation when analysis of the same data leads to different results and conclusions.

The carried out analysis of the financial condition of the agricultural enterprises of Stavropol Region in the Russian Federation, first of all, revealed the impossibility of generalizing the integrated assessment of the activity of business entities. In the meantime, the logic of the research involves not only the definition of the categories of financial condition, but also the comparison of business entities according to their level of financial status with each other and with industry averages in this region. For this, many researchers apply the matrix method, which is used in the comparative analysis of the financial condition of the business entities. However, it is more important for authors to identify the category of the financial condition and ability to generate an objective evaluation of the activities of different categories of users. Comparisons with the "sample" enterprise allows identification of competitive advantages of business entity, which means its rating, but do not show the current financial status and level of efficiency, investment attractiveness, credibility.

The foregoing requires development of the most flexible, universal integrated methods for assessing financial condition of the main categories of users and contains indicators for which quantitative and qualitative evaluation methods are defined, as well as integration of the results obtained for the purpose of ranking of entrepreneurial entities within each group based on the scores.

2. Methodology

2.1 General provisions of the research

As the data base for the research, information and empirical block has been formed with the data of the Federal State Statistics Service according to regions of the Russian Federation. A substantial array of data and calculated information has been accumulated and analyzed using modern methods and tools for information processing. As a specific methodological tool the system of assessment indicators of investment activity of agro industrial complex has been designed.

Undertaken research is based to some extent on methodical approaches and methodological concepts of a number of national and foreign authors. The following should be particularly distinguished: researches on identifying the most relevant indicators for assessing the financial status and social responsibility (Orlitzky, et. al. 2003) researches on the use of non-financial indicators in the statistical models estimation of activity of the company (Larcker 2001); publications relating to the evaluation of business processes to improve the efficiency of its functioning (Hammer 2001), as well as the development
A significant number of modern authors' prospective studies are dedicated to the development of forecasting techniques of the financial difficulties of the company (Sun 2006; Ho, et. al. 2015), as well as the assessment of financial stability (Davis and Stone 2005; Grechenyuk and Grechenyuk 2016; Prochniak and Wasiak 2016; Slabinskaya, et.al. 2015; Tissova, et. al. 2016). At the same time, from our point of view, essential results have been obtained by the authors concerned with the study of the transformational processes under the impact of the economy crisis. So, in the following researches (Aldamen and Duncan 2016; Nenu and Vintilă 2015) the impact of the crisis on the corporate governance system is described; in turn (Akhmetshin and Osadchy, 2015) reveal the peculiarities of accounting during crisis. A number of works (Bobryshev, et. al. 2015; Bobryshev 2015) are devoted to the development of management accounting tools in the greatest extent adapted to the conditions of economic stagnation. Scientific results obtained during examination of methodical approaches to integrated assessment of financial condition deserve special attention (Kyurzhiev, et. al. 2014); the concept of the business model of the enterprise under the influence of various macroeconomic factors was disclosed (Magretta 2002).


Each user in the process of conducting financial analysis pursues his or her information objectives, which as a rule tend to be specific, and often opposite. Subject to the foregoing, it is logical to assume that a particular group of users do not need to carry out all complex of financial analysis procedures, transforming it, in fact, in statistical, with lots of less informative (for specific user) indicators. According to the authors, it is much more important to calculate and to assess appropriately only those indicators that will contribute to effective decision-making. Assessment of the financial position of businesses should be based on a specific set of financial indicators that make up a system, because any single indicator is not able to reflect the financial condition accurately; moreover, it is obvious that a system of indicators should be oriented towards a specific group of users, because their information goals are different.

The authors believe that such a differentiated system of indicators for different types of users should consist of a small number of most informative indicators (4-6), which will allow to eliminate duplication through the analysis of information received, as well as to reduce the labour required for analytical procedures. The system of indicators for specific groups of users of the financial analysis should reflect the most essential characteristics of financial state of agricultural enterprises according to their interests.

Key factors identifying financial status for each group of users can be the following:

- For the owners of the organization it is the effectiveness of activities;
- For investors it is the investment attractiveness;
- For creditors and contractors it is credit worthiness.

Thus, there is a need to identify financial indicators, which will characterize financial condition in the context of these factors. As a result, we get flexible, adaptive to the activities of agricultural organizations methodology, which should take into account the shortcomings identified during the analysis of financial condition of the agricultural organizations of Stavropol region.

Research has shown that currently used techniques virtually do not take into account sectoral peculiarities of economic entities functioning, resulting in a misinterpretation of the outcomes of analytical actions as a consequence of incorrect managerial decisions. In the opinion of the authors, methods of financial analysis should enable ranking score of emitters’ activities with a view to their arranging by categories of financial condition. This technique should ensure equal steps as intervals for coefficients and their score, which will provide a more objective distribution of farms on the qualifying groups.

3. The results

As a result of the carried out researches the block diagram of the algorithm of financial condition evaluation of agricultural organizations by categories was formed (Figure 1).
In the first stage, the authors conducted the selection of indicators for diagnosing financial condition of the business entities. The empirical base for the calculation of the selected indicators was the data of accounting (financial) statements of the agricultural enterprises of Stavropol region. As a result, the authors calculated a value of more than 40 financial dynamic coefficients for five years that constituted the original data matrix. As we have indicated, effective diagnostics of enterprise financial condition should be based on a system of indicators. At this stage it is essential to select precisely those coefficients which most closely reflect the information objectives of each of the categories of users. The difficulty of selection of key indicators for individual categories of users was, primarily, the definition of the main information objective of each of them that, in fact, is an effective indicator.

Most generalizing indicator of the effectiveness of a business entity is a return on equity (Y), which reflects the performance of funds invested in the enterprise (Figure 2).

![Figure 2: Major user groups of financial analysis and their information objectives](source: Author)

We have selected coefficients with a pair correlation indicator (R) of more than 0.5 out of all the indicators included in the original data matrix by step-by-step method of selection using correlation and regression analysis that indicates a tight connection between effective and factorial indicators. In addition, we have taken into account the value of determination that shows how many percent factorial indicators affect the effective one.

During the selection of financial coefficients, we have expanded the population of analysis by the method “enterprise-year” up to 21 units of observation; during the step by step selection, indicators with functional dependence were dropped from the original data matrix.

Thus, identifying stochastic dependence of key indicators for each group of users with financial coefficients (Xn), we have formed the system of indicators of enterprise financial condition with the aim of further selection.

Indicator, in most general terms, reflecting the efficiency of funds usage invested in the enterprise, is the return on investment (ROI). This coefficient characterizes the investment management skills and, therefore, can be used as an effective indicator (Y) with correlation and regression analysis. As a result of step-by-step selection from 27 indicators, 13 were selected (Table 2) with the closest (coefficient of pair correlation (R) is more than 0.5) relation.

![Figure 1: Integrated assessment algorithm of the financial condition of the agricultural enterprises by category of users (where R is the pair correlation, Kconc is the coefficient of concordance (compliance) of expert opinions)](source: Author)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Pair correlation (XY)</th>
<th>Regression coefficient</th>
<th>Student criterion value</th>
<th>Determination</th>
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</thead>
<tbody>
<tr>
<td>1. Absolute liquidity coefficient (X14)</td>
<td>0.74657</td>
<td>51.81445</td>
<td>4.89138</td>
<td>0.557374</td>
</tr>
<tr>
<td>2. Solvency ratio (X23)</td>
<td>-0.72868</td>
<td>-0.28752</td>
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<tr>
<td>3. Current liquidity ratio (X16)</td>
<td>0.67671</td>
<td>3.73870</td>
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<td>0.457937</td>
</tr>
<tr>
<td>4. Quick ratio (X15)</td>
<td>0.64963</td>
<td>14.52404</td>
<td>3.72471</td>
<td>0.422026</td>
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<tr>
<td>5. Sustainable funding ratio (X5)</td>
<td>0.59894</td>
<td>71.44267</td>
<td>3.26017</td>
<td>0.358731</td>
</tr>
<tr>
<td>6. Equity ratio (X3)</td>
<td>0.59502</td>
<td>80.80022</td>
<td>3.22706</td>
<td>0.35404.7</td>
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<tr>
<td>7. Turnover rate of payables (X13)</td>
<td>0.54968</td>
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<td>0.302149</td>
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<tr>
<td>8. Cash turnover ratio (X12)</td>
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<td>9. Bankruptcy prediction ratio (X7)</td>
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<td>10. Asset coverage (X2)</td>
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As we have already pointed out, for each of the three scorecards, it is necessary to select a small number of the most informative coefficients (4-6). Thus, financial ratios with high value of pair correlation, selected at the previous stage, have been subjected to expert review. When forming the system of indicators for creditors, we have used only the method of expert assessment, because of the difficulty in allocating the effective indicator for this category of users.

For the purpose of obtaining objective data on the results of the expert study, we have formed a focus group of 30 respondents with high degree of predictability in the field of economic analysis. Expert competency assessment was carried out on the basis of a questionnaire developed for the selection of indicators for three groups of users; the experts were given three questionnaires.

As a result of the expert poll, data table has been received, where financial coefficients with the fewest ranks are included in the system of indicators for a particular group of users, but first, it is needed to assess the degree of consistency of expert opinions.

Table 2: Outcomes of correlation and regression analysis of financial condition indicators for investors

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As a result of the expert poll, data table has been received, where financial coefficients with the fewest ranks are included in the system of indicators for a particular group of users, but first, it is needed to assess the degree of consistency of expert opinions.
<table>
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<tr>
<td>1. Return on equity (X27)</td>
<td>0.96964</td>
<td>0.83969</td>
<td>17.28520</td>
<td>0.940210</td>
</tr>
<tr>
<td>2. Absolute liquidity coefficient (X14)</td>
<td>0.70234</td>
<td>42.23923</td>
<td>4.30078</td>
<td>0.493288</td>
</tr>
<tr>
<td>3. Solvency ratio (X23)</td>
<td>-0.64301</td>
<td>-0.21985</td>
<td>-3.65969</td>
<td>0.413459</td>
</tr>
<tr>
<td>4. Current liquidity ratio (X16)</td>
<td>0.62878</td>
<td>3.01027</td>
<td>3.52478</td>
<td>0.395368</td>
</tr>
<tr>
<td>5. Level of shareholders' equity, % (X25)</td>
<td>0.61224</td>
<td>0.72636</td>
<td>3.37524</td>
<td>0.374840</td>
</tr>
<tr>
<td>6. Equity ratio (X3)</td>
<td>0.61505</td>
<td>72.37313</td>
<td>3.40006</td>
<td>0.378281</td>
</tr>
<tr>
<td>7. The ratio of permanent capital and non-current assets (X24)</td>
<td>0.59914</td>
<td>25.31390</td>
<td>3.26185</td>
<td>0.358968</td>
</tr>
<tr>
<td>8. Quick ratio (X15)</td>
<td>0.57585</td>
<td>11.15624</td>
<td>3.07024</td>
<td>0.331607</td>
</tr>
<tr>
<td>9. Asset coverage (X2)</td>
<td>0.57131</td>
<td>29.45985</td>
<td>30.03420</td>
<td>0.326393</td>
</tr>
<tr>
<td>10. Cash turnover ratio (X12)</td>
<td>0.55282</td>
<td>0.16604</td>
<td>-2.89175</td>
<td>0.305612</td>
</tr>
<tr>
<td>11. Sustainable funding ratio (X5)</td>
<td>0.53943</td>
<td>55.75682</td>
<td>2.79246</td>
<td>0.290987</td>
</tr>
<tr>
<td>9. Bankruptcy prediction ratio (X7)</td>
<td>0.52999</td>
<td>44.30146</td>
<td>2.72427</td>
<td>0.280892</td>
</tr>
</tbody>
</table>

This procedure is performed in the following sequence:

- The amount of ranks of each expert for each financial indicator selected is determined (correlation and regression analysis).
- The average value is calculated:

\[
\bar{S} = \frac{mn(n+1)}{2n} = \frac{1}{2} m(n+1) \quad (2)
\]

where \( n \) is the number of measured parameters,
\( m \) is the number of experts (in this case 30).

- The algebraic difference between the sum of ranks of the 1 indicator and average value:

\[
d = S_j - \bar{S} \quad (3)
\]

- The sum of squared algebraic differences is determined:

\[
K = \sum_{j=1}^{3} d^2 j \quad (4)
\]

It is shown in the theory of expert assessment that if the views of all experts coincide, but among the ranks, given by experts, there are no identical, then the average squared algebraic difference is maximum and may be calculated with the following formula:

\[
K_{max} = \frac{1}{2} m^2 (n^2 - n) \quad (5)
\]

Further, with the aim of determining the statistical significance, Kendal coefficient of concordance is calculated (W):

\[
W = \frac{K}{K_{max}} \quad (6)
\]

where \( K \) is the squared algebraic differences,
\( K_{max} \) is the maximum average squared algebraic differences.

If the Kendal coefficient of concordance equals or close to zero, it means almost complete inconsistency of expert opinions, the further work is recommended in case if coefficient of concordance exceeds 0.4. In the selection of financial coefficients of financial condition indexes system for each of the categories of users, Kendal coefficients of concordance exceeded 0.57, therefore, selected at this stage coefficients may be included in the scorecard.

It should be noted that some indicators selected according to experts, should be considered in totality, for example, asset turnover ratios in the scorecard for the creditors were assigned the same ranks, as well as profitability ratios in the scorecard for top management.

Thus, for each of the indicators systems the following financial ratios were selected:

**Indicators for top management:**
- Return on assets (Ra);
- Return on equity (Req);
- Profitability of sold products (Psp);
- Asset coverage (X2);
- Solvency ratio (days) (X23);
- Equity ratio (X3);
- Absolute liquidity coefficient (X14)

**Indicators for investors:**
- Return on equity (X27);
- Level of shareholders' equity, % (X25);
- The ratio of permanent capital and non-current assets (X24);
- Asset coverage (X2);
- Current liquidity ratio (X16)
4. Discussion

General discussion results in scientific and expert community of methodical aspects of expert assessment of the agricultural enterprise financial condition and their correlation with the results of the studies of foreign authors confirm the view of the researchers on the need for differentiation of indicators to assess the financial condition of enterprises by different stakeholders.

5. Conclusion

As a result of the research at this stage, it is possible to formulate the following conclusions:

1. There is no single mechanism of enterprise assets and liabilities structure analysis by internal users; it makes it necessary to develop a model for analysis of assets and liabilities, as structured sequence of analytic action.

2. Current methods of financial analysis do not permit summarizing the conclusions about the financial condition of business entities in assessing the position of different categories of users.

3. Mechanism of financial condition analysis does not take into account sectoral specificity, resulting in a misinterpretation of the analytical activities results.

4. There is a need to establish a system of indicators to determine the financial condition category, which would allow timely diagnosing the crisis phenomena in the activities of the organizations of a particular industry.

References


1. Stavropol State Agrarian University, 355000, Stavropol, trans. Zootechnical 12. Email: bobrishevaleksey@yandex.ru