Assessment of Solvency and Financial Stability of Agricultural Consumer Cooperatives

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Abstract—Agricultural consumer cooperatives are non-profit organizations and act as socially-oriented business entities. They are formed to solve not only economic, but also social issues in rural areas. Domestic and foreign experience in the study of cooperatives has shown their ability to increase labor productivity, to improve financial condition, to update and to modernize the material and technical base of agricultural sector. Therefore, much attention is currently given to the successful operation of cooperatives. This paper is based on the review of the works of domestic and foreign scientists using a systematic approach to the issue, with economic and statistical, balance, abstract-logical research methods. The main part of the materials presented in this article is the assessment of solvency and financial stability of agricultural consumer cooperatives in the region. Data of the Department of AIC of the Kurgan Region became the basis for calculations for the studied business entities. Agricultural consumer cooperatives of the Kurgan Region were the objects of study. This paper considers the structure of the property of cooperatives and sources of their financing; identifies the features of the formation of their financial resources, as well as problems that negatively affect these parameters. Assessment revealed that the solvency of these business entities is at a high level, but the values of liquidity ratios significantly exceed recommended ones what indicates insufficiently rational use of resources. Unstable financial results of studied cooperatives led to the fact that own working capital for almost the entire period (2012-2018) was negative; this fact negatively affected a number of parameters that characterized the financial stability of entities. To strengthen their financial position, agricultural consumer cooperatives should increase their own capital expanding scope and activities what will solve not only economic, but also social issues and problems in rural areas.

Keywords—agricultural consumer cooperation, solvency assessment, financial condition, equity capital, balance liquidity, profitability.

I. INTRODUCTION

At present day, the government is taking important steps to support agricultural production and rural areas. In this regard, issues related to the development of agricultural cooperation in modern market and institutional environment are in the focus of special attention of domestic economic science [1-3]. Significant theoretical and practical results of studying the activities of agricultural cooperatives are described in the works of both domestic (V.B. Burlakov, S.G. Golovina, V.K. Krutikov, A. Petrikov, V. Pakhomov, M.Yu. Sidorkina, A. Sobolev, A.V. Tkach, I. Trotsuk, I. Ushachyov, R. Khudyakova, R. Yanbykh, T.A. Dozorova, N.R. Alexandrova and others), and Western scientists (Bijman J., Cooke M., Fulton M., Hakelius K., Hendrikse G., Hess S., Iliopoulos C., Karantininis K., Lerman Z., Nilsson J., Ollila P., Valentino V. and others).

As it is known, a modern cooperative has to focus not only on purely economic goals (first of all, efficiency), but constantly manoeuvre between economic, social and environmental values, and therefore strive to be functional for its members both from the position of a business unit, and from the position of a special organization designed to solve numerous social problems of rural residents and communities [4-6]. In addition, as a rule, for beginner cooperators, there is a problem of a lack of initial capital and the high cost of borrowed funds what creates an additional burden on future members of agricultural cooperative [7]. Consequently, the survival and competitiveness of these business entities largely depends on their financial condition and, above all, on their solvency and financial stability.

The object of this study was agricultural consumer cooperatives of the Kurgan Region. The subject of this study is a set of parameters that determine their solvency and financial stability.

II. RESEARCH METHODOLOGY

Methodological basis of this study includes the analysis of economic information, statistical data, graphical interpretation method. Theoretical studies were based on the review of the works of domestic and foreign scientists on evaluating activities of agricultural consumer cooperation. The basis for calculations became the official statistics of the Goskomstat of Russia, the Department of Agriculture of the Kurgan Region for the studied business entities.

Studying of agricultural cooperatives at the level of the Kurgan Region involves using a set of different techniques, methods for collecting and processing information specified in financial (accounting) statements. To achieve the objectives of the study regarding solvency and financial stability of agricultural consumer cooperatives, a systematic approach was applied, as well as different qualitative and quantitative methods: economical and statistical, balance, abstract-logical, method of expert evaluations and comparisons. Based on the consolidated balance of cooperatives in the Kurgan Region, these parameters were studied, specifics of the formation of financial resources of cooperatives were defined, as well as problems that negatively affect the results of operations and require resolution for the further development of consumer cooperatives in the region.

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The main part of materials presented in this article on the characteristics of the financial results of agricultural consumer cooperatives is the calculation and analysis of generally accepted parameters of financial stability and solvency for the studied business entities.

III. RESULTS

The solvency of an economic entity is directly related to its equity ratio in order to timely pay off for its liabilities. A consumer cooperative, in spite of the fact that it is a non-profit organization, has the right to carry out entrepreneurial activity if this helps to achieve the goals for which it was created. Therefore, the main sources of financial resources of cooperatives are share contributions, income from entrepreneurial activity, other sources (loans, borrowed funds, etc.). In addition, they form funds: share (which determines the nature of property relations of cooperative members); reserve (created to cover losses from emergency circumstances in the amount of at least 10% of share fund), and development. In addition, they form funds: share (which determines the nature of property relations of cooperative members); reserve (created to cover losses from emergency circumstances in the amount of at least 10% of share fund), and development. In addition, they form funds: share (which determines the nature of property relations of cooperative members); reserve (created to cover losses from emergency circumstances in the amount of at least 10% of share fund), and development. In addition, they form funds: share (which determines the nature of property relations of cooperative members); reserve (created to cover losses from emergency circumstances in the amount of at least 10% of share fund), and development.

In general, during the study period, the value of non-current assets (due to the acquisition of fixed assets and incomplete capital investments in production facilities) and equity (due to an increase in retained income) increased especially sharply. At the same time, the share of borrowed capital in liabilities has been declining over the past 2 years, although its absolute value is growing as well as the cost of other balance items. In 2018, the share of current debt for the first time exceeded the share of long-term liabilities.

TABLE I. CHANGES IN THE COMPOSITION OF PROPERTY AND SOURCES OF FINANCING IN THE ORGANIZATION

| Parameter                      | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2018 to 2012, -fold |
|--------------------------------|------|------|------|------|------|------|------|---------------------|
| 1 Non-current assets           | 880  | 3338 | 9764 | 7964 | 5120 | 8293 | 94774 | > 107.7             |
| 2 Current assets               | 85320| 96853| 99904| 107938| 98766| 107644| 170334| > 2.0               |
| 3 Equity                       | -1801| -1381| 4441 | 6606 | 1029 | 26029| 10019 | > 39.9              |
| 4 Long-term obligations        | 50993| 67790| 87650| 95981| 85764| 68540| 59336 | > 1.2               |
| 5 Short-term obligations       | 37008| 36282| 16577| 13313| 17093| 20468| 135733| > 3.7               |
| Balance                        | 86200| 100191| 108668| 115902| 103886| 115937| 265108| > 3.1               |

In this regard, the value of property has increased, as well as the volume of financing. Table 1 shows the aggregated balance of agricultural consumer co-operatives of the region for 2012-2018.

Until 2018, more than 90% of assets accounted for current assets (inventories, receivables and short-term financial investments). In 2018, the share of cash of cooperatives increased by 13.6% while reducing the share of reserves by 14.8%.

Solvency assessment is based on the characteristics of the liquidity of current assets, i.e. the time required to turn them into cash. Balance liquidity, in turn, depends on the degree of compliance of means of payment with short-term liabilities. Grouping of assets and liabilities of balance is shown in Table 2.

TABLE II. GROUPING OF ASSETS AND LIABILITIES AT THE END OF THE YEAR, THOUSAND RUR

| Parameter                      | Group code | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   |
|--------------------------------|------------|--------|--------|--------|--------|--------|--------|--------|
| Most liquid assets             | A1         | 52541  | 55377  | 61175  | 51770  | 34542  | 52978  | 51458  |
| Quick assets                   | A2         | 15482  | 13993  | 29639  | 45330  | 42216  | 35153  | 53056  |
| Slow assets                    | A3         | 17297  | 27483  | 8090   | 10838  | 22008  | 19513  | 65820  |
| Sticky assets                  | A4         | 880    | 3338   | 9764   | 7964   | 5120   | 8293   | 94774  |
| Total assets                   | 86200      | 100191 | 108668 | 115902 | 103886 | 115937 | 265108 |        |
| Maturing liabilities           | P1         | 35199  | 31726  | 11080  | 6031   | 10699  | 10054  | 29785  |
| Short-term liabilities         | P2         | 1809   | 4556   | 5497   | 6716   | 6394   | 7359   | 12314  |
| Long-term liabilities          | P3         | 50993  | 67790  | 87650  | 95981  | 85764  | 68540  | 59336  |
| Fixed liabilities              | P4         | -1801  | -1381  | 4441   | 7174   | 1029   | 29984  | 163673 |
| Total liabilities              | 86200      | 100191 | 108668 | 115902 | 103886 | 115937 | 265108 |        |

* Source: http://dsh.kurganobl.ru – official website of the Department of agri-food complex of the Kurgan Region.

Fig. 1. Changes in the number of agricultural consumer cooperatives, units.

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Based on these data, it is possible to assess the type of balance liquidity (Table 3). The balance is considered to be absolutely liquid if there are the following ratios (Formula 1):

$$A_1 \geq P_1, \ A_2 \geq P_2, \ A_3 \geq P_3, \ A_4 \leq P_4$$  (1)

Until 2017, agricultural consumer cooperatives had a non-liquid balance, since slow assets did not exceed the value of long-term liabilities, and sticky assets, on the contrary, exceeded equity, i.e., there was a lack of financing. Since 2017, the fourth inequality normalized, as mentioned above, due to the growth of retained income. Therefore, the consolidated balance of cooperatives has changed from a non-liquid state to an insufficiently liquid state.

Balance liquidity is considered to be the basis of solvency of an economic entity. In other words, liquidity is a way to strengthen solvency. However, at the same time, if the organization has an impeccable reputation and is constantly solvent, it is easier for it to maintain its liquidity. Solvency of agricultural consumer cooperatives of the Kurgan Region is shown in Table 4.

In the dynamics of 2012-2018, solvency parameters also have no stable trend, although all ratios exceed standard values. This indicates a high degree of coverage of liabilities with assets. At the same time, high current liquidity ratio may indicate the presence of idle cash and excess reserves. In other words, this means suboptimal financial management in cooperatives.

Unlike balance liquidity which characterizes the organization’s ability to pay off its short-term debtors at the moment, financial stability is a certain state of a business entity that guarantees its constant solvency. Financial stability depends not only on the results of its activities, but also on changes in external environment. Financial stability of organization indicates the state of its economic resources, their distribution and use what guarantees the further development of its activities. Therefore, solvency is an external expression of the financial condition of organization, and financial stability is its internal characteristic which indicates the balance of cash and commodity flows, income and expenses, funds and sources of their formation. Thus, one of the most important tasks facing cooperatives is the assessment of their financial stability (Table 5).

In the course of assessing financial stability, not all conventional coefficients were used, since, with the exception of 2017, own working capital of agricultural consumer cooperatives was negative. Moreover, in 2012-2013, there was uncovered loss in balance. Therefore, the values of such parameters as current assets to equity ratio, or equity ratio do not reflect reality. For the same reason, equity to total assets ratio and financial leverage for the first 2 years of the analysis were not calculated.

First two coefficients do not correspond to the recommended values for the entire period, since there is not enough equity. Current debt ratio met the standard in 2014-2017. But in 2018, the value of this ratio has risen sharply due to the increased growth rate of short-term liabilities (3.5 times) over the growth rate of balance currency (1.2 times) what was due to an increase in all items of short-term liabilities and especially in deferred income. Financial stability ratio that shows the share of equity and long-term liabilities in the balance currency for only three years (2014-2016), exceeded minimal recommended value.

As a result of performed assessment, it can be concluded that in the long term the financial condition of the agricultural cooperatives in the region is not stable. The main reasons are: shortage of equity, high share of borrowed capital. Nevertheless, we should not forget that the specifics of organizing the activities of consumer cooperatives allow the possibility of attracting borrowed funds, both of their members and other legal and physical persons, as well as government support; moreover, active efforts are taken in this direction.

Most often, when assessing the financial condition of economic entity, balance structure and solvency are compared. But this method does not take into account such economic parameters as profit and profitability; it can lead to the considering of enterprises with steady production growth and positive profitability to be insolvent and vice versa. Disturbance of financial balance is obvious not only from...
liquidity, but also from profitability. Profitability parameters allow evaluating the efficiency of using assets in a business entity [10].

Due to the fact that gross profit, profit from sales and net profit were obtained just in several years, the profitability parameters of production, sales, assets and capital for a number of years are negative (Table 6).

| TABLE VI. CHANGES IN PROFITABILITY PARAMETERS |
|-----------------------------------------------|
| Parameter                                      | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Source data                                   |
| Gross profit, thousand RUR                     | 1658  | 1591  | 2124  | 5975  | 1908  | 4479  | 2295 |
| Profit from sales, thousand RUR                | -2507 | -4137 | -1385 | 2400  | -607  | 199   | -2383|
| Net profit, loss, thousand RUR                 | -2087 | -1697 | 237   | 276   | -1726 | 20152 | 348  |
| Cost value, thousand RUR                       | 67034 | 46006 | 54507 | 19878 | 29029 | 34275 | 71766|
| Average asset value, thousand RUR              | 76529 | 93196 | 104430| 112285| 109894| 109012| 190523|
| Average value of current assets, thousand RUR  | 75651 | 91187 | 97897 | 103421| 103352| 103205| 158989|
| Average cost of equity, thousand RUR           | -1291 | -2881 | 1721  | 5525  | 3819  | 13979 | 54119|

Calculation

| Profitability of assets (net profit),%          | -2.7  | -1.8  | 0.2   | 0.3   | -1.6  | 18.3  | 0.2   |
| Profitability of current assets (net profit),% | -2.8  | -1.9  | 0.2   | 0.3   | -1.7  | 19.5  | 0.3   |
| Profitability of equity (net profit),%         | -115.9| -43.7 | 13.8  | 5.0   | -45.2 | 144.2 | 1.0   |
| Profitability of sales (profit from sales),%   | -3.8  | -9.2  | -2.5  | 9.3   | -1.5  | 0.5   | -3.2  |
| Profitability of production (gross profit),%   | 2.5   | -2.0  | 3.9   | 30.1  | 6.6   | 13.1  | 5.2   |

It is the above-mentioned contradiction that is observed when comparing financial stability ratio and profitability of production. So, in 2017 and in 2018, the profitability of production activities was 13.1% and 3.2%, respectively, and financial stability ratio was less than the standard one. This fact once again confirms that consumer cooperatives should continue increasing their own capital and attract long-term loans to expand the scope of their activities.

IV. CONCLUSIONS

Thus, during reviewed period from 2012 to 2018, there was an increase in the number of agricultural consumer cooperatives in the Kurgan Region; accordingly the cost of property and the volume of financing also increased. A significant increase in the share of non-current assets indicates increasing production potential of organizations, and the increasing of equity is a positive factor indicating growing financial stability of consumer cooperatives. Moreover, additional volumes of borrowed financial resources allow them to significantly expand the volume of agricultural production.

Performed assessment showed a high degree of solvency that provides the ability to fully pay for their liabilities. At the same time, over-normative values of solvency ratios indicate suboptimal financial management. So, the excessive amount of idle cash can be explained by the irrational use of these resources; excess reserves lead to decreasing liquidity of cooperatives and increase in costs.

Analysis of the financial stability of cooperatives which determines long term solvency showed, firstly, an unstable trend, and secondly, non-compliance with standard values for a number of parameters. At the same time, high share of borrowed funds indicates the specifics of the formation of financial resources in consumer cooperatives and cannot be interpreted unambiguously. This conclusion is also confirmed by the parameters of production profitability that, during the study period, were significantly differentiated, in particular, profitability of equity with the value in the range from -115.9% to 144.2%.

To strengthen their financial position, agricultural consumer cooperatives should increase their own capital with expanding scope and activities; it will solve not only economic, but also social issues and problems in rural areas.

Currently, the government pays great attention to improving the agrarian policy of supporting and developing agricultural consumer cooperation which contributes to the competitiveness of small and medium-sized agribusiness and consolidates its position in agri-food markets [11-13]. V.B. Burlakov, summarizing the views of leading economists and agrarians, mentioned that cooperation is the most rational effective way to develop agricultural industry because the future belongs to it [14]. The government now continues paying great attention to improving the agrarian policy of supporting and developing agricultural consumer cooperation which contributes to the competitiveness of small and medium-sized agribusiness and consolidates its position in agri-food markets [14,15].

REFERENCES

[1] R. Yanbykh and V. Sarakin, “Classification of cooperatives and development of agricultural cooperation,” APK: ekonomika, upravlenie (AIC: Economics, Management), No. 7, pp. 13-22, 2018. (in russ.)
[2] A. Kurakin and O. Visser, “Post-socialist agricultural cooperatives in Russia: A case study of top-down cooperatives in the Belgorod region,” Post-Communist Economies, Vol. 29, No. 2, pp. 158–181, 2017. https://doi.org/10.1080/14631377.2016.1267974
[3] S. G. Golovina, E. E. Loretz, and L. N. Smirnova, “Multifunctionality of agricultural cooperatives activities,” Agrarian Bulletin of the Urals, No. 3 (182), pp. 58-67, 2019. https://doi.org/10.32417/article_5ce405141f3952.34454910
[4] A. Wolz, S. Golovina, J. Nilsson, and S. Hess, “Reviewing changing institutional conditions for private farming in Russia,” Outlook on Agriculture, Vol. 45, No. 2, pp. 111-116, 2016. https://doi.org/10.1177%2F0030727016651214
[5] A. V. Tkach and N. N. Romanenko, “Cooperation in AIC of Russia,” APK: ekonomika, upravlenie (AIC: Economics, Management), No. 3, pp. 30-36, 2014. (in russ.)
[6] V. K. Krutikov, V. I. Eremeneev, and O. V. Fyodorova, “Innovative potential of the cooperative movement in the solution of problems of agro-industrial complex,” The Bryansk State University Herald, No. 3, pp. 199-203, 2014. (in russ.)
[7] M. I. Drozdova, L. P. Nagovitsina, and E. V. Nagovitsina, “Improving world economic relations and possibility of cooperative development,” Herald of the Belgorod University of Cooperation, Economics and Law, No. 1 (68), pp. 39-51, 2018. (in russ.)

The table was calculated by the author. Source: http://dsh.kurganobl.ru – official website of the Department of agri-food complex of the Kurgan Region.
[8] L. I. Ilyina and N. V. Ruzhanskaya, “Financial management in consumer cooperation organizations,” Syktyvkar: Komi Republican Academy of Public Administration and Management, 2016. (in russ.)

[9] S. Golovina, S. Hess, J. Nilsson, and A. Wolz, “Networking among Russian farmers and their prospects for success,” Post-Communist Economies, Vol. 31, No. 4, pp. 484-499, 2019. https://doi.org/10.1080/14631377.2018.1537737

[10] T. Dozorova, N. Alexandrova, V. Sevastyanova, and A. Dozorov, “Methodical approach to evaluating the effectiveness of agricultural consumer cooperatives,” APK: ehkonomika, upravlenie (AIC: Economics, Management), No. 3, pp. 17-27, 2019. https://doi.org/10.33305/193-17

[11] R. Yanbykh, V. Saraikin, and Z. Lerman, “Cooperative tradition in Russia: a revival of agricultural service cooperatives?,” Post-Communist Economies, Vol. 31, No. 6, pp. 751-771, 2019. https://doi.org/10.1080/14631377.2019.1607439

[12] N. Kuznetsova and A. Ilyina, “Impact of cooperative groups on the competitiveness of agricultural producers,” Mezhdunarodnyi Sel'skokhozyaistvennyi Zhurnal, No. 4, pp. 46-49, 2016. (in russ.)

[13] D. A. Kaldiyarov and J. A. Asanova, “The development of agricultural cooperation in aic complex of Russia”, Problems of agrimarket, No. 2, pp. 124-128, 2017. (in russ.)

[14] V. B. Burlakov, “Main directions of development of modern agrarian science of cooperation,” Ostrovskie chteniya (Ostrovsky Scientific Conference), No. 1, pp. 352-363, 2017. (in russ.)