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# ANALYTICAL TOOLS FOR ASSESSING THE LIQUIDITY OF ASSETS OF AGRICULTURAL ENTERPISE

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## Abstract

The dynamically developing market environment of business puts forward new requirements for the organization of economic and financial activities of the enterprise in any business area. The organization, as an economic entity in the market, is constantly in close interaction and cooperation with other participants: it enters into various contracts, purchases raw materials and sells its products, performs the duties of a taxpayer, and strives to expand and sustainably develop its business. The solution of such a complex of various tasks is impossible without constant monitoring of current business processes and analysis of the financial condition, the separate most important stage of which is the analysis of liquidity. The approaches to the analysis of liquidity available in the economic literature are of little use for use in the activities of agricultural organizations, which required the development and justification of the author's approach to the analysis of the liquidity of the assets of these entities. In the scientific study, specific liquidity ratios are proposed that are intended for use only in agricultural activities, and the recommended methodology is tested on the practical data of agricultural organizations in the Leningrad region. The use of the proposed tools will allow monitoring changes in the composition of liquid assets and can serve as a signal financial instrument that reflects the deterioration or improvement of the organization's solvency.



*Keywords:* Current assets, liquidity ratios, minimum liquidity requirements

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## 1. Introduction

In market conditions, an enterprise must exhibit a high-quality and sufficient property potential, which is one of the most important conditions for its solvency and competitiveness. The primary indicator of this potential is liquidity – an indicator that comprehensively reflects the ability of an enterprise to carry out continuous economic activities and to timely pay liabilities to counterparties (Badmaeva, 2020).

A modern agricultural enterprise is a complex system that comprises many interrelated and interacting components, and the management of these components is specific. The activities of an agricultural enterprise differ significantly from the activities of other manufacturing enterprises. In agriculture, specific factors are of significant importance, such as seasonality, biological assets, high natural and climatic risks, and low profitability of agricultural production (Baltaeva et al., 2019). This implies special requirements for the organization and analysis of the liquidity of assets of an agricultural enterprise.

A standard approach to liquidity is to show the ability of an enterprise to pay its liabilities on time (Badmaeva & Zolotarev, 2020); in this regard, liquidity is interconnected with any moment of the time period. This paper presents the results of the study and substantiates the author's approach to analyzing the liquidity of assets of a modern agricultural enterprise.

## 2. Problem Statement

Liquidity is a financial characteristic of the state of an enterprise which is based on financial reporting data (Zeller et al., 2019). Liquidity is an integral property of an object (asset) and its essential characteristic that reflects the rate of transformation into monetary form. The greater the liquidity of an asset, the higher its rate of transformation into monetary form (Akanova et al., 2020). At the same time, the degree of liquidity of an asset depends not only on the rate of transformation, but also on the owner's losses from the decreased value of the asset due to an emergency sale (Zimina & Perfilieva, 2016).

To study liquidity in the theory of economic analysis, two approaches are proposed: the first approach implies analyzing and assessing the structure of the balance of payments, and studying groups of assets and liabilities (Takhumova et al., 2019); the second approach is referred to as ratio analysis, which is based on the calculation of liquidity ratios, studying the actual values of the ratios, and comparing them with the standards.

In the context of the changing regulation of Russian accounting and its transition to international standards, all groups of liquidity ratios, which are often calculated based on reporting data, require revision with due regard to the industry and the specifics of the activities of the economic entities under study (Korolev, 2019). Many theoretical and methodological problems of information and analytical support and assessment of sustainable development of enterprises require further elaboration (Khoruzhy et al., 2018).

The main problems in the analysis of the liquidity of assets in agricultural enterprises, in our opinion, are due to these facts: 1) an agricultural enterprise has various and specific components of current assets in its property potential, which requires a special approach to their classification and management; 2) the recommendation for grouping the assets and liabilities of an agricultural enterprise

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according to a general methodology and focus on the general standard value of the ratios are not an effective management tool.

As a result of solution of the indicated problems, an attempt was made to develop and present the author's approach to the classification of current assets of an agricultural enterprise and to analyze the liquidity of assets using the liquidity class.

## 3. Research Questions

The liquidity of assets was investigated based on the study of the economic activities of dairy farming enterprises in Leningrad region.

At present, agriculture is facing a colossal external impact owing to industrial technologies and heavy machinery, mineral fertilizers and pesticides, harmful emissions into the atmosphere and water resources, and climate change (Dumnov et al., 2019). All these factors have a significant impact on the productivity and efficiency of the agricultural sector, its composition and the structure of capital and assets.

The objects of the study were the composition and structure of current assets of fourteen enterprises divided into three groups: eight enterprises with capital of up to 500 million rubles; four enterprises with capital from 500 million to 1 billion rubles; two enterprises with capital over 1 billion rubles.

## 4. Purpose of the Study

The purpose of the study was the development and testing of a methodology for analyzing the assets of dairy farming enterprises.

## 5. Research Methods

The study employed a complex of theoretical and practical methods. The statistical methods were used to carry out a dynamic and comparative analysis of the indicators of activities of the studied enterprises and to reveal the characteristic features of the business and its results.

The use of quantitative and qualitative models of the factor economic analysis enabled assessment of the impact of the main factors on changes in the indicators of asset liquidity. Methods of abstraction and modeling were used to determine the standard values of certain groups of current assets of agricultural enterprises in order to develop standard values of ratios and liquidity indicators.

## 6. Findings

Current assets are a form of fair value movement and its circulation in the financial and economic activities of an enterprise (Sheina, 2017). In the study, two main system-forming features of the classification of current assets in an agricultural enterprise have been proposed:

1) in terms of material content: tangible current assets – stocks in the form of seeds, feed, fertilizers, oil products, spare parts, finished products; biological current assets – young animals, animals

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for growing and fattening; financial current assets – financial investments, accounts receivable, monetary assets; other current assets – value added tax on acquired assets, work-in-progress costs, prepaid expenses, obsolete stocks, overdue liabilities;

2) in terms of the degree of liquidity: absolute – monetary assets; high – financial investments, accounts receivable; medium – young animals, animals for growing and fattening, finished products; low – stocks in the form of seeds, feed, fertilizers, oil products, spare parts; zero – value added tax on acquired assets, work-in-progress costs, prepaid expenses, obsolete stocks, overdue liabilities.

The proposed classification is distinguished by the allocation of special groups of tangible and biological assets, which are the most important resources in agricultural activities. For example, the costs of mineral fertilizers account for up to 20% of the total costs per hectare of agricultural land (Zhdanov et al., 2020).

A separate group of current assets is distinguished, which in fact is freed from the circulation of the enterprise's capital. With regard to this classification of current assets, the liquidity ratios of assets have been proposed in the study (Table 01).

**Table 1.** The author's approach to the calculation of asset liquidity ratios

| Ratios | Calculation method | Designation |
|---|---|---|
| Material liquidity | $К_{ML} = \frac{TCA}{CL}$ | TCA – tangible current assets, BCA – biological current assets, FCA – financial current assets, CL – current liabilities, LL – long-term liabilities |
| Biological liquidity | $К_{BL} = \frac{BCA}{CL}$ | |
| Financial liquidity | $К_{FL} = \frac{FCA}{CL}$ | |
| Total liquidity | $К_{TL} = \frac{TCA + BCA + FCA}{CL + LL}$ | |

Based on the results of the study, the boundaries of the standard values of the liquidity ratios of an agricultural enterprise are proposed with an indication of the class (Table 02).

Liquidity as an essential characteristic of an asset must be associated with the period of time during which this asset is able to transform into monetary form. We have proposed an indicator of the liquidity of assets ($I_L$) of an agricultural enterprise calculated according to the equation:

$$I_L = \frac{n \times CA_{Av}}{I_O}$$

where n is the duration of the time period, days; $CA_{Av}$ is average value of current assets, rubles; $I_O$ is income from ordinary activities (revenue plus budgetary funds), rubles.

**Table 2.** Ratios and class of liquidity ratios of agricultural enterprises

| Ratios | Class of ratios, units | | | |
|---|---|---|---|---|
| | Low | Middle | High | Absolute |
| Material liquidity | ≤ 0.5 | 0.51 – 1.0 | 1.1 – 3.0 | ≥ 3.1 |
| Biological liquidity | ≤ 0.5 | 0.51 – 1.0 | 1.1 – 3.0 | ≥ 3.1 |

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| | | | | |
|---|---|---|---|---|
| Financial liquidity | ≤ 0.2 | 0.21 – 0.8 | 0.9 – 2.0 | ≥ 2.1 |
| Total liquidity | ≤ 1.0 | 1.1 – 2.0 | 2.1 – 5.0 | ≥ 5.1 |

The calculation of the actual values of the liquidity indicator for the agricultural enterprises under study yielded the following gradation of this indicator (Table 03).

**Table 3.** Standards and class of asset liquidity indicators

| Liquidity indicators of current assets | Degree of the asset liquidity indicator, days | | | |
|---|---|---|---|---|
| | Absolute | High | Average | Low |
| Material | ≤ 35 | 35.1 – 50.0 | 50.1 – 100.0 | ≥ 101.1 |
| Biological | ≤ 50 | 50.1 – 80.0 | 80.1 – 130.0 | ≥ 130.1 |
| Financial | ≤ 10 | 10.1 – 20.0 | 20.1 – 50.0 | ≥ 50.1 |

The liquidity indicators of the three groups of current assets can be ranked according to the degree of liquidity: absolute, high, medium, low. Any changes towards a decrease in the degree of liquidity are assessed as deterioration in the current solvency of the enterprise, which requires identification of the reasons for deterioration and development of the management measures to eliminate deterioration.

## 7. Conclusion

At present, the business of any enterprise is exposed to a huge number of diverse, heterogeneous, external and internal factors that can not only simultaneously paralyze the normal course of economic processes, but also lead to a loss of solvency, a crisis in economic activity and bankruptcy. The key characteristic of liquidity is the prevalence of current assets over current liabilities.

In agricultural enterprises, the composition of current assets differs significantly from those in enterprises in other sectors of the national economy. The effective management of the enterprise's activities depends on the quality, validity and timeliness of management decisions aimed at the formation and use of the enterprise's working capital.

The major sources of strengthening the liquidity of agricultural enterprises are the increased efficiency of capital circulation management at all its stages and the advanced technologies for the production and sale of agricultural products.

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