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# FINANCIAL ANALYSIS OF LIQUIDITY AND PROFITABILITY AS A TOOL FOR EARLY IDENTIFICATION OF CORPORATE RISKS

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## Abstract

The article examines financial analysis of liquidity and profitability as a practical tool for the early detection of corporate risks (financial instability, threat of default, deterioration in earnings quality, and reduced sustainability of the business model). Based on classical studies on the predictive power of financial ratios and modern approaches to risk management, the logic for constructing an early warning system (Early Warning System (EWS): from the selection of indicators to the interpretation of "weak signals" over time and linking the results to management decisions. It has been shown that a combined analysis of liquidity and profitability improves the quality of diagnostics compared to the isolated use of individual ratios.

**Keywords:** Liquidity, profitability, financial ratios, early warning, corporate risks, bankruptcy, financial stability, risk management.

## Introduction

The scientific novelty of this work lies in its justification for the combined use of liquidity and profitability metrics as complementary leading indicators of corporate risk in an early warning system. A structured approach to interpreting their dynamic combinations is proposed, enhancing the diagnostic value of traditional ratio analysis for the early detection of financial distress.

Financial analysis, including liquidity and profitability assessments, is a fundamental basis for diagnosing the financial health of corporations, used both in academic literature and in the practice of corporate governance and credit analysis. In the United States, the tradition of quantitatively assessing financial

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ratios to predict financial distress and bankruptcy has its roots in 20th-century empirical research. One of the first studies to confirm the predictive power of individual ratios was a series of studies by William Beaver , who used statistical tests to identify differences between firms experiencing financial distress and those that are stable. These studies laid the foundation for subsequent multivariate models for diagnosing corporate risk [1].

A classic example of a multivariate approach is Edward Altman's Z- score model , developed in 1968 at New York University. It became the benchmark method for predicting bankruptcy in American companies based on a linear combination of key financial ratios, including indicators reflecting liquidity, profitability, and activity. The model demonstrated high accuracy in predicting financial instability in the American business context and became widely used by researchers and credit analysis practitioners [2].

Another important approach is the Ohlson O- score, proposed in 1980 by James Ohlson as a logit model for estimating the probability of bankruptcy, incorporating a set of financial variables obtained from the corporate reporting of American public companies. This model became an alternative to the Z- score and has been widely used in empirical studies of corporate risk in the United States [3].

Comprehensive analysis of financial ratios, particularly the combination of liquidity and profitability, has proven effective in identifying financial stress early before it manifests itself in public events (e.g., defaults or bankruptcy). An empirical study using data from US firms found that liquidity and profitability have a significant impact on financial stability and the prediction of distress, particularly when analyzing their dynamics in pre-crisis periods (two years before bankruptcy) [4].

The practical significance of such approaches is also confirmed in modern financial analytics and credit risk management practices, where financial ratios continue to be used in conjunction with credit scoring models and internal corporate risk assessment methodologies. Analysts, investors, and credit institutions in the United States continue to rely on financial statements published in Forms 10-K and 10-Q to monitor signs of deteriorating liquidity

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and profitability and adjust credit policies or investment strategies in the early stages of negative trends [5].

At the same time, modern research also emphasizes the importance of a comprehensive approach to risk assessment, incorporating not only traditional financial ratios but also cash flow aspects, quality management metrics, and market variables. This integrated approach improves the predictive accuracy and reliability of corporate risk assessments in a volatile economic environment. This is particularly important for the American corporate sector, which is characterized by a high proportion of public companies and extensive financial disclosure practices.

Thus, financial analysis of liquidity and profitability in the American context not only reflects the current financial condition of companies, but also serves as a reliable tool for the early detection of corporate risks, making it an integral part of the financial stability management system and corporate risk management .

Early Warning System (Early Warning System (EWS) in corporate finance is a set of financial indicators that are regularly monitored to identify negative trends before critical events such as default, financial distress or bankruptcy. The theoretical basis of the EWS is the assumption that companies' financial difficulties are evident in their reporting indicators in advance, which is confirmed by empirical studies of American companies [6,7]. Within the framework of this methodology, liquidity and profitability indicators are considered key elements of the EWS, as they reflect two fundamental aspects of corporate sustainability: the ability to meet obligations in the short term; the ability to generate profits and maintain the viability of the business model in the long term.

The methodology for using liquidity and profitability as EWS is based on the following principles:

1. The principle of the leading signal. Financial ratios react to deteriorating business conditions before formal signs of a crisis appear [8].

2. The principle of combined analysis. Using individual ratios in isolation has limited diagnostic value. Significantly more reliable results are achieved through a combined analysis of liquidity and profitability, which is consistent with the logic of classical bankruptcy prediction models.

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3. The principle of dynamic monitoring. The main focus is not on one-off indicator values, but on stable negative trends and the rate of deterioration of the financial condition [9].

4. The principle of threshold values ( triggers ). For each indicator, benchmarks (historical, industry-specific, or normative) are set, and when crossed, an early warning signal is generated, which corresponds to risk - based practice. monitoring .

The early warning system uses a limited set of the most informative coefficients (Table 1).
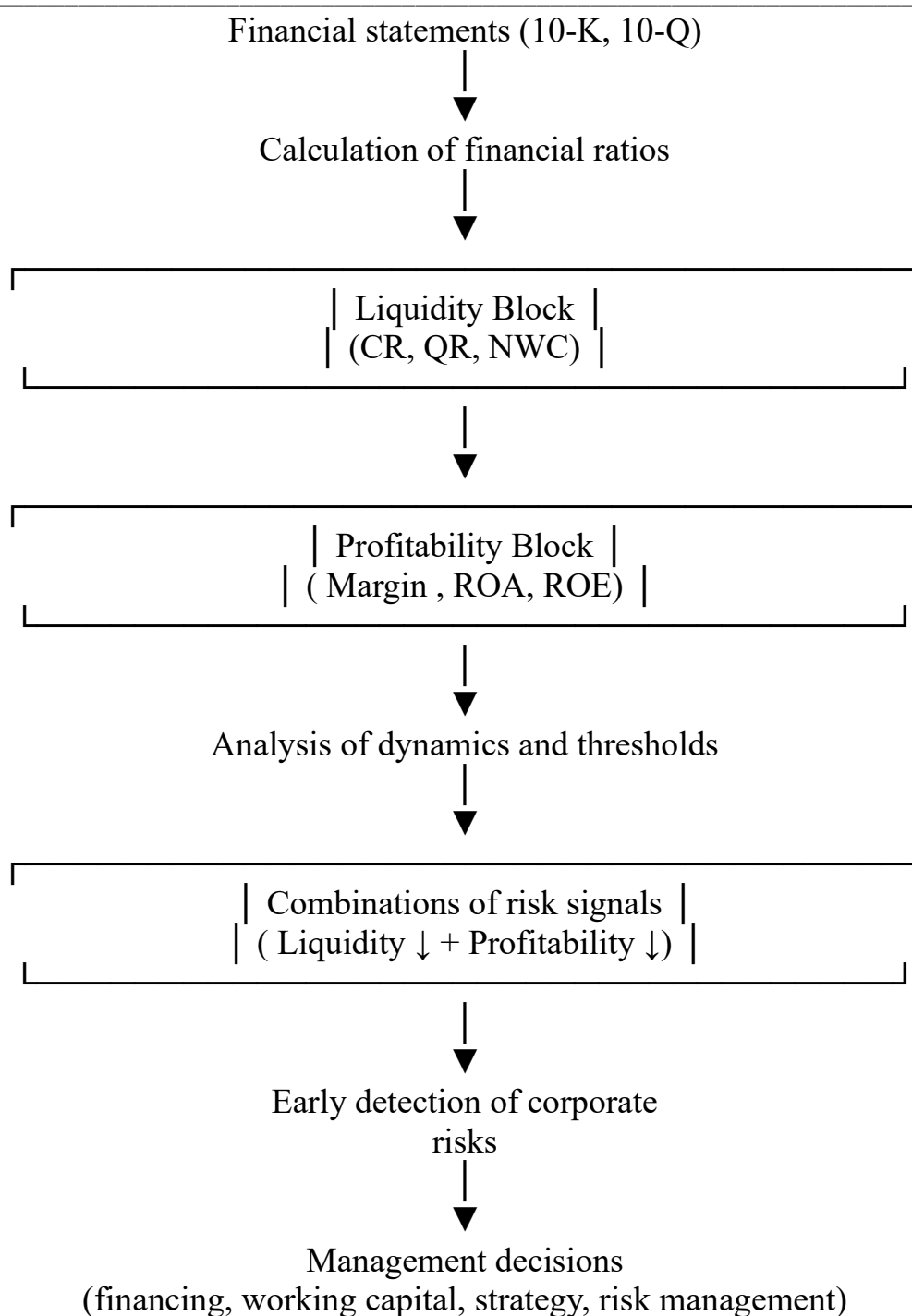
Table 1 - Liquidity and profitability indicators in the EWS system

| Group | Indicator | Economic interpretation | Risk signal |
|---|---|---|---|
| Liquidity | Current Ratio | Overall short-term solvency | Steady decline |
| Liquidity | Quick Ratio | Liquidity excluding inventories | Fall with stable CR |
| Liquidity | Net Working Capital | The company's financial buffer | Negative value |
| Profitability | Operating Margin | Efficiency of core activities | Margin compression |
| Profitability | ROA | Return on assets | Decline in efficiency |
| Profitability | ROE | Return on capital | Growth through debt |

The key element of the methodology is the analysis of combinations of indicators, rather than individual coefficients. The most significant patterns include:

1. Simultaneous decrease in liquidity and profitability → high risk of financial distress and potential failure.

2. Maintaining profits while liquidity deteriorates → risk of a gap between accounting profit and cash flows.

3. An increase in ROE with a decrease in ROA and liquidity → a signal of excessive financial leverage and a hidden increase in corporate risks.

Below is a conceptual diagram of how EWS works:

Financial statements (10-K, 10-Q)

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Calculation of financial ratios

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| Liquidity Block |
| (CR, QR, NWC) |

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| Profitability Block |
| ( Margin , ROA, ROE) |

▼

Analysis of dynamics and thresholds

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| Combinations of risk signals |
| ( Liquidity ↓ + Profitability ↓) |

▼

Early detection of corporate
risks

▼

Management decisions
(financing, working capital, strategy, risk management)

**Scheme 1.** EWS scheme based on liquidity and profitability

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Thus, liquidity and profitability within the EWS serve as basic leading indicators, allowing for the early identification of corporate risks and ensuring timely management decisions.

Despite the widespread use of liquidity and profitability indicators in early warning systems for corporate risks, the ratio approach has a number of methodological and practical limitations that must be taken into account when interpreting the results.

First, financial ratios are sensitive to accounting policies and financial reporting standards, which can reduce the comparability of indicators across companies and periods. Changes in inventory valuation, depreciation, or revenue recognition methods can distort liquidity and profitability dynamics without actually changing the company's economic position.

Secondly, ratios have limited informative value when analyzed statically. One-off indicator values may reflect temporary or seasonal effects and do not necessarily indicate the development of persistent corporate risk.

Third, universal threshold ratios have limited applicability because optimal levels of liquidity and profitability vary significantly across industries, stages of the company's life cycle, and macroeconomic conditions.

To improve the diagnostic and prognostic reliability of the EWS model, it is advisable to apply the following methodological approaches:

1. Dynamic analysis. Assessing the rate and direction of changes in indicators over time allows us to identify early signs of deteriorating financial performance, reducing the risk of false alarms.

2. Combining indicators. The combined use of liquidity, profitability, and capital structure indicators is consistent with the logic of multivariate models for predicting financial distress and increases the robustness of the findings.

3. Cash flow integration. Supplementing ratio analysis with operating cash flow and liability coverage indicators reduces the gap between accounting profit and actual solvency.

4. Industry and historical threshold calibration. Using benchmarks and the company's own historical data increases the relevance of early warning signals.

Taken together, these measures allow us to consider liquidity and profitability analysis not as an autonomous tool for crisis forecasting, but as a structural

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element of an integrated corporate risk management system, ensuring the early identification of financial threats, provided that the methodological approach is correctly configured.

Therefore, this article substantiates the role of financial analysis of liquidity and profitability as an effective tool for the early identification of corporate risks. It is shown that these indicators possess a leading diagnostic ability and allow for the detection of signs of financial distress at early stages, before the onset of formal crisis events. A combined analysis of liquidity and profitability provides a more reliable assessment of a company's financial stability compared to using individual ratios, as it reflects both short-term solvency and the long-term economic viability of the business model.

The proposed methodological approach to interpreting financial ratios within an early warning system (EWS) helps reduce information asymmetries and improve the validity of management decisions in corporate risk management. The results of the study can be used in financial analysis, credit scoring, and internal control practices, as well as in further empirical studies of corporate risks.

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