METHODS FOR ASSESSING FINANCIAL STABILITY IN INDUSTRY

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Abstract. This paper systematizes the core methods used to assess financial stability in industrial enterprises. The study combines ratio analysis (liquidity, leverage, solvency, profitability and cash-flow metrics) with trend/benchmark analysis, DuPont decomposition, an integral stability index and bankruptcy-risk tools such as the Altman Z-score and scoring approaches. The results indicate that a comprehensive assessment framework improves early risk detection, supports capital structure decisions and strengthens evidence-based financial management.

INTRODUCTION

Financial stability is a cornerstone of sustainable industrial development. Industrial firms operate under high capital intensity, long operating cycles, volatile input prices and, in many cases, significant currency and interest rate exposure. In this context, financial stability assessment is not limited to reporting compliance; it is a decision-support process that helps managers and stakeholders understand whether the firm can meet its obligations, finance operations, maintain investment capacity and absorb shocks without losing independence.

The research problem addressed in this paper is the fragmentation of assessment practices: enterprises often rely on isolated indicators (e.g., current ratio or debt-to-equity) without linking them to business models, industry benchmarks and forward-looking risks. Therefore, the goal of the study is to propose a structured set of methods for assessing financial stability in industry and to demonstrate how a combined approach improves analytical validity and managerial usefulness.

LITERATURE REVIEW

In corporate finance and accounting research, financial stability is typically associated with solvency, liquidity, and the capacity to generate sufficient cash flows. Classical approaches use ratio analysis and balance-sheet structure indicators, while later studies introduced statistical and scoring models to predict distress and bankruptcy. Altman's Z-score became one of the most cited tools for early warning, later complemented by Ohlson-type models and other probabilistic approaches. At the firm level, the DuPont framework links profitability to asset turnover and leverage, allowing analysts to trace performance drivers.

In applied industrial analysis, financial stability is also treated as an outcome of operational efficiency, cost control and risk management. For example, the journal "Iqtisodiy taraqqiyot va tahlil" emphasizes that low profitability, weak working capital management and imbalanced funding sources (equity versus debt) are typical roots of deteriorating financial condition, and proposes managerial actions such as optimizing inventories, reducing costs and improving management accounting.

METHODOLOGY

The methodological framework integrates three levels: (i) ratio-based diagnostics, (ii) dynamic and comparative analysis, and (iii) integral assessment and risk forecasting. The proposed approach is suitable for industrial enterprises where working capital and fixed assets play a major role.

3.1. Ratio-based diagnostics

The first layer uses a system of financial ratios grouped into five blocks:

• Liquidity and working capital: current ratio, quick ratio, net working capital, cash ratio;

• Solvency and leverage: debt-to-equity, debt-to-assets, interest coverage, equity ratio;

• Profitability: return on assets (ROA), return on equity (ROE), operating margin, net margin;

• Efficiency: inventory turnover, receivables turnover, asset turnover;

• Cash-flow sustainability: operating cash flow (OCF) to short-term debt, OCF to interest, free cash flow trend.

3.2. Trend and benchmark analysis

To avoid one-period bias, each key indicator is evaluated in dynamics (3–5 years) and compared against (a) industry averages, (b) direct competitors, and (c) internal targets. This step increases reliability by distinguishing structural issues from temporary fluctuations. When benchmarks are unavailable, quartile-based internal benchmarking across business units can be used.

3.3. DuPont decomposition

ROE is decomposed into profit margin × asset turnover × equity multiplier. In industrial firms, changes in ROE often stem from inventory policy, capacity utilization and financing costs; DuPont analysis helps identify which operational lever should be prioritized to improve stability.

3.4. Integral financial stability index (IFSI)

For managerial communication, the indicators can be transformed into a single integral score. We propose standardizing each metric to a 0–1 scale based on thresholds (normative or benchmark-based), then applying weights and aggregating: $IFSI = \Sigma(w_i \times s_i)$, where s_i is the standardized score of indicator i and w_i is its weight ($\Sigma w_i=1$).

Weights may be derived from expert judgment, analytic hierarchy process (AHP), or regression-based importance when historical data exist.

3.5. Bankruptcy-risk assessment

Bankruptcy-risk tools complement stability diagnosis. The Altman Z-score and simplified scoring models can be applied as screening mechanisms. However, analysts must adjust interpretation for local accounting standards, sector specifics and macroeconomic volatility. In practice, the output is used to categorize the enterprise into risk zones (low, moderate, high) and to define monitoring frequency.

ANALYSIS AND DISCUSSION

A comprehensive assessment is most effective when it is linked to the enterprise's operating cycle. Industrial firms typically convert cash into inventories, then into receivables and finally back into cash. Therefore, stability is strongly influenced by the cash conversion cycle, pricing power and cost discipline.

Liquidity ratios should be interpreted alongside inventory structure and receivable quality. A current ratio above the normative threshold may hide slow-moving inventories, while a low quick ratio can be acceptable for stable, contract-based production with predictable collections. Leverage indicators must be evaluated with interest coverage and currency exposure; higher debt levels can be sustainable when cash flows are stable and financing is long-term.

The integral index provides a concise managerial dashboard. For example, if profitability and interest coverage deteriorate while liquidity remains stable, the problem is likely operational (costs, pricing, capacity utilization). If liquidity deteriorates but margins are stable, the problem may be working capital (inventory, receivables) or a mismatch in debt maturity. Combining the IFSI with distress screening improves early warning and supports timely corrective actions.

Table 1. Key indicators for assessing financial stability in industrial enterprises

Block	Indicator	Interpretation	Typical managerial action
Liquidity	Quick ratio	Ability to repay short-term liabilities without selling inventories	Optimize inventories; renegotiate payables
Leverage	Debt-to-equity	Financial dependence on creditors	Rebalance funding sources; refinance; increase equity
Coverage	Interest coverage	Ability to service debt from operating profit	Reduce financial costs; improve operating profit
Profitability	ROA / ROE	Efficiency of asset and equity use	Improve margins; raise utilization; reduce idle assets

Cash flow	OCF to short-term debt	Cash sufficiency for debt repayment	Strengthen cash management; collect receivables faster

Note: thresholds should be adapted to sector norms and the enterprise's operating cycle.

Figure 1. Framework for financial stability assessment (conceptual)

Data & statements → Ratio system → Trends & benchmarks → Integral index → Risk screening

The framework begins with consistent financial data, then applies ratio diagnostics, dynamic and comparative checks, aggregation into an integral score, and finally distress screening to define risk zones and monitoring intensity.

CONCLUSION AND RECOMMENDATIONS

Financial stability assessment in industry should be treated as a multi-method process rather than explains through single indicators. The ratio system provides diagnostics, trend and benchmark analysis improves interpretability, DuPont decomposition identifies performance drivers, the integral index strengthens communication and monitoring, while bankruptcy-risk tools provide an early-warning function.

Practical recommendations for industrial enterprises include: (1) establish a stability dashboard based on the proposed indicator blocks; (2) monitor working capital policies (inventory, receivables, payables) as a priority stability lever; (3) evaluate capital structure decisions using interest coverage and cash-flow metrics, not only leverage ratios; (4) integrate the stability index into budgeting and investment approvals; and (5) use risk-zone monitoring to trigger corrective actions—cost reduction, inventory optimization, refinancing or equity strengthening—before solvency problems become irreversible.

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