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ELEMENTS OF CONTROL AND WARNING SYSTEMS FOR ASSESSING AN ENTERPRISE'S FINANCIAL CONDITION

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Purpose: The purpose of this article is to present a conceptual framework for assessing a company's financial condition using financial indicators that inform financial managers about potential deterioration in the enterprise's financial situation through a control-and-warning procedure.
Design/methodology/approach: The article proposes a system of financial condition metrics calculated on the basis of financial statements, which characterize the financial situation of the enterprise in the areas of profitability, liquidity, operational efficiency, and financing. These indicators are subsequently classified into stimulants, destimulants, and nominants, which when combined with statistical methods and dynamic analysis enable an evaluation of the company's performance in terms of improving or worsening financial condition. The article is interdisciplinary in nature, as it integrates elements of accounting, financial analysis, and statistics.
Findings: The study presents a conceptual model for the application of a financial indicator system within the control-warning procedure, which may serve as a foundation for the operationalization of the proposed solutions.
Originality/value: Formulation of the areas of application for the system of financial indicators (measures), classification of indicators into stimulants, destimulants, and nominants, definition of a control-warning procedure; the article could potentially be of interest to financial managers.
Keywords: financial analysis, system of financial condition measures, control-warning procedure.
Category of the paper: Research paper, Conceptual paper.

1. Introduction

In a market economy characterized by advancing globalization and intensifying competition, financial management preceded by financial analysis supported by modern information technologies has gained increasing importance, contributing to enhanced operational efficiency within enterprises. In financial analysis, selected financial ratios play

a pivotal role, forming a system of measures used to assess a company's financial condition and constituting the basis for diagnosing its financial situation.

To this end, one of the functions of the financial condition indicator system discussed in the article namely, the control-warning function is employed. This function classifies indicators into one of three categories (stimulants, destimulants, or nominants), defines desirable values of financial ratios, monitors their levels, and alerts managers to emerging threats associated with a deteriorating financial position of the enterprise.

Furthermore, the article outlines directions for improving and developing the system, aimed at broader use of benchmarking, scenario analysis, simulation, forecasting, and taxonomic methods.

2. Areas of application of the financial condition measurement system

The condition of an enterprise is defined as the organizational, technical, legal-economic, and financial state of an economic entity, which is influenced by favorable and unfavorable internal factors as well as external environmental parameters resulting from the functioning of the global market economy. One distinguishes the economic condition, the technical condition, and the financial condition of an enterprise. Changes in the functioning of an economic entity, resulting from management processes, imply changes in its condition and performance. Therefore, it is commonly said that an entity's condition may be better or worse. Enterprises that are unable to adapt to changing economic conditions and market requirements fall into financial difficulties, and their condition systematically deteriorates, potentially bringing them to the brink of bankruptcy. In contrast, enterprises in good or very good condition can freely meet all their obligations, implement both tangible and capital investment plans, adequately compensate employees, and provide dividends to asset owners or shareholders.

The state of technical and economic condition determines the financial condition (see: Accounting Lexicon, 1996) of the enterprise. Thus, financial condition is both a consequence and a determinant of the technical and economic condition of the enterprise.

The problem of measuring financial condition is extremely complex and may be approached in two ways:

1. through a set of financial measures,
2. through the use of a synthetic measure, i.e., an aggregate indicator that combines various individual measures.

Both types of measures belong to a set of indicators referred to as the system of measures of a company's economic condition. This system can operate in the following areas of application (see Kopiński, 1991, 1992):

1. informational-presentational,
2. structural-warning,
3. dynamic-forecasting,
4. simulation-analytical,
5. consulting decision-making,
6. synthetic-strategic.

Each of these areas can be used in all the modules into which the set of measures has been divided. The structural warning area presents the desired values of indicators of the economic condition, whether in the form of a plan, standards, expert (practitioner) suggestions, or structural ratios and defined permissible ranges for selected indicators. Based on such constructed desired indicator values, the system can emit warning signals when the condition of the enterprise becomes disrupted (unstable). Warning signals should also be triggered when the relationships between economic values or indicators considered natural, normal, or desirable are violated. This is the so-called active technique of monitoring the system's condition. It consists in the fact that when the condition of the entire system or its parts falls below an acceptable tolerance threshold, the system issues a warning signal and automatically determines, along the dendrite pathways, the route leading to the area responsible for the alarm state. There also arises the problem of quickly identifying the appropriate terminal node (condition indicator) within the hierarchical structure. In the structural-warning area, a major challenge is determining which states should be considered normal from the perspective of the observed indicators (i.e., the acceptable lower and upper indicator values). Moreover, in the constantly changing conditions of the enterprise's operation and in the context of economic imbalance, the acceptable lower and upper limits of condition indicators would have to be continuously adjusted.

However, based on meetings and business interviews, one may conclude that such a structural-warning subsystem could serve as a useful tool supporting managerial decision-making alongside the already functioning subsystem serving the informational-presentation area. In this area, interval statistics, forecasting techniques, and other statistical-mathematical methods are used, supported by modern information technology.

The dynamic-forecasting area enables the collection of data on individual indicators on a daily, monthly, quarterly, and annual basis, which creates time series. Based on statistically selected economic series characterizing the company's condition and their smoothing (using a creeping trend or other methods, such as logistic), the dynamic-forecasting area will allow for the identification of threats and unfavorable economic conditions for the company, the development of short-term warning forecasts (using the first and second differences method), taxonomic analysis of the database, and possible attempts at aggregation of time series using both the principal component method and the distance-from-the-development-pattern method. During periods of political transformation, with constant, significant changes from period to period in all economic parameters characterizing the company's operations,

the dynamic-forecasting subsystem could generate forecasts even those with a short-term horizon with a relatively large error. In this situation, the second type of forecasts generated by this subsystem, called warning or cyclical forecasts, have a greater chance of development. A certain stabilization of the economy has been observed recently, which may contribute to the increasingly bold use of statistical and econometric methods in forecasting business operations. For management purposes, two levels of indicator importance are distinguished:

A. Level I indicators, which primarily determine the financial condition of enterprises, should be monitored on an ongoing basis (at least once a month) by top management. This group includes the following indicators:
   1. net return on sales,
   2. net fixed asset productivity,
   3. total inventory turnover (days),
   4. receivables turnover (days),
   5. payables turnover (days),
   6. debt ratio,
   7. investment ratio,
   8. current liquidity ratio (level II).

B. Level II indicators, less important, include other indicators not listed in List A. The values of these indicators, as well as level I indicators, should be monitored by department managers within the company.

All indicators, regardless of level, are presented in the system according to a single standard. After entering the date (period) at the end of which the indicator value is to be calculated, it is necessary to specify whether it will be a planned or actual indicator. Next, the basis for comparison must be provided, which for an actual indicator can be the value of the indicator from the previous period, or the planned indicator value. For a planned indicator, only the value of the planned indicator from the previous period is provided. If selected, the indicator name and its value are provided, the formula used to calculate the indicator, the period for which the indicator was calculated, and information on whether the indicator is planned or executed, as well as whether it was calculated cumulatively or for the period. The user can change the convention, and the histogram will then present the indicator value for the selected periods of the analyzed year and the same periods of the previous year.

3. Classification of financial indicators into categories

The indicators presented in Modules 1 to 3 are divided into three categories based on the warning mechanism used (Kopiński, 2008; Kowalak, 2003):

1. Stimulants - those financial indicators whose increase represents a positive trend in the development of a phenomenon, e.g., profitability and productivity indicators. Simply put, if the value of these indicators increases, the company's financial condition is likely improving. Otherwise, an audible alarm is triggered and the indicator value is displayed in red as a warning of the company's likely deteriorating financial condition.
2. Destimulants - those indicators whose decrease represents a positive trend in the development of a phenomenon, e.g., turnover rates in days. Similarly, if the value of these indicators decreases, the company's financial condition is likely improving. Otherwise, a warning signal is triggered indicating the company's likely deteriorating financial condition.
3. Nominants - those indicators whose value should fall within a specific numerical range, namely the financial liquidity indicators of degree I, II, and III. If these indicators meet the specified conditions, there is no cause for concern and the financial condition is within the norm. However, if the indicator value rises above the upper limit or falls below the lower limit, a warning signal is sent that the company's financial condition is likely to be deteriorating.

The classification of indicators into three categories along with their brief interpretation is provided below.

Table 1.
Financial indicators and their interpretation

No.	Name	Interpretation	Type
1. Operational Efficiency Ratios			
1.1. Profitability Ratios			
1.1.1.	Return on Assets	Net profit attributable to one unit of assets engaged in the enterprise.	Stimulant
1.1.2.	Net Profit Margin	Share of after-tax profit in sales value; the profit margin generated by a given level of sales.	Stimulant
1.1.3.	Gross Profit Margin	Reflects pricing policy and profit generated by sales; independent of income-tax rate.	Stimulant
1.1.4.	Return on Equity	Rate of return on investment in the enterprise; higher value indicates stronger financial position.	Stimulant
1.1.5.	Return on Fixed Capital	"Return on capital." Indicates capacity for development and is a key measure of financial condition.	Stimulant
1.2. Productivity Ratios			
1.2.1.	Productivity of Net Fixed Assets	How much net revenue is generated by 1 PLN of net fixed assets.	Stimulant
1.2.2.	Productivity of Current Assets	How much revenue is generated by 1 PLN of current assets.	Stimulant
1.2.3.	Productivity of Liquid Assets	How much revenue is generated by 1 PLN of liquid current assets.	Stimulant
1.2.4.	Productivity of Total Assets	How much revenue is generated by 1 PLN of total assets.	Stimulant
1.2.5.	Sales per Employee	Sales revenue per employee; indicator of labour efficiency.	Stimulant

Cont. table 1.

1.3. Turnover Ratios			
1.3.1.	Inventory Turnover (days)	Average number of days needed to renew inventory to achieve sales.	Destimulant
1.3.2.	Material Inventory Turnover (days)	Average number of days material inventory remains in warehouses.	Destimulant
1.3.3.	Receivables Turnover (days)	Average number of days of sales for which receivables remain uncollected.	Destimulant
1.3.4.	Payables Turnover (days)	Average time of settling liabilities.	Stimulant
1.3.5.	Trade Payables Turnover (days)	Average duration of settlement cycle with suppliers.	Stimulant
1.3.6.	Inventory Turnover (times)	How many times inventory is renewed during the period.	Stimulant
1.3.7.	Receivables Cycle Ratio (times)	How many times receivables are renewed annually.	Stimulant
1.3.8.	Payables Cycle Ratio (times)	How many times payables are settled annually.	Destimulant
1.3.9.	Cash Cycle (days)	Time between cash outflow for liabilities and inflow from receivables.	Destimulant
2. Enterprise Financing Ratios			
2.1. External Financing Ratios			
2.1.1.	Equity Share in Total Capital	Share of equity financing the enterprise's assets.	Stimulant
2.1.2.	Share of Foreign Capital	Degree to which assets are financed with external capital.	Destimulant
2.1.3.	Debt Ratio	Engagement of foreign capital relative to equity; ability to cover debt with equity.	Destimulant
2.1.4.	Long-term Debt Ratio	"Debt ratio" or "risk ratio"; long-term obligations exceeding one year.	Destimulant
2.1.5.	Fixed Assets Coverage Ratio	Extent to which long-term obligations are secured with tangible assets.	Stimulant
2.2. Internal Financing Ratios			
2.2.1.	Gross Cash Flow	Simplified operating cash flow (based on gross profit).	Stimulant
2.2.2.	Net Cash Flow	Net surplus from operating activity.	Stimulant
2.2.3.	Net Debt	Short-term foreign capital not covered by receivables or cash.	Destimulant
2.2.4.	Debt Dynamics	Share of net debt in financial surplus; fraction of debt covered by cash flows.	Destimulant
2.2.5.	Investment Level	Extent to which fixed assets are renewed via investment.	Stimulant
3. Financial Liquidity Ratios			
3.1.	Current Ratio (Level III)	Degree to which short-term liabilities are covered by current assets.	Nominant
3.2.	Current Ratio (Level II)	Coverage of short-term liabilities with current assets excluding inventories.	Nominant
3.3.	Quick Ratio (Level I)	Coverage of short-term liabilities with cash and equivalents.	Nominant
3.4.	Working Capital in Days	Number of days of operations covered by working capital.	Stim./Dest.
3.5.	Value of Working Capital	Amount of working capital available.	Stim./Dest.
3.6.	Working Capital Coverage of Current Assets	Part of current assets financed with working capital.	Stim./Dest.
3.7.	Working Capital Coverage of Total Assets	Part of total assets financed with working capital.	Stim./Dest.

Source: Author's own elaboration based on Gabrusewicz (2007) and Kopiński (1991).

Indicator presentation and alerts can be implemented in both automatic and conversational modes. In the automatic mode, after entering a date, indicator values are automatically reviewed. If economic conditions within the company have deteriorated, an audible signal is emitted, and the indicator appears in red. This should serve as a warning signal for the company's management and prompt them to take decisions aimed at improving the financial

situation in this regard. In the conversational mode, the user can select any indicator from a single-level or two-level menu and view its value for the most recent period. Furthermore, indicator values from previous periods are presented in a histogram or a double histogram, i.e., against the indicator's value from the previous year. Observing indicator values in the conversational mode is selective; it is not necessary to go through all the branches of the tree structure and review all indicators one by one. This allows complete freedom, and the indicator values should be derived based on the auditor's genuine need to assess the financial condition of the company.

Work on improving and modifying the system should progress toward a broader application of simulations, forecasting, and taxonomy in the following areas:

- the development of short-term forecasts for selected components of cash flows and financial indicators,
- the construction of warning mechanisms within the system based on indicator dynamics,
- the monitoring of the financial condition of business entities in comparison with their industry at the national or regional level,
- the formulation of alternative operational scenarios for the enterprise using the *What-if* rule, as well as Solver and Backsolver tools available in the Excel spreadsheet environment,
- the expansion of the system to include a Du Pont analysis module, sensitivity threshold analysis, and additional elements related to corporate financial management.

The financial condition system should be user-friendly, simple to operate, and highly reliable. Its installation and implementation require only a brief demonstration (training) aimed at familiarizing future users with the system’s functional capabilities. The system may be operated autonomously or integrated with the financial and accounting information system already in use within the enterprise.

4. Elements of an early warning system

The foundation of the early-warning subsystem within the financial condition assessment framework consists of calculated indicators typically used primarily for analytical and reporting purposes prepared, depending on informational needs, for daily (d), ten-day (l), monthly (m), quarterly (q), or annual (a) periods. The computed indicator values form time series whose elements correspond, for example, to individual months (monthly time series) or quarters (quarterly time series).

Financial indicators of an enterprise as previously noted which form time series may include:

- planned or target values,
- actual values,
- average indicators for the enterprise sector or a specific industry,
- indicators of competing firms operating in the market, or enterprises with a similar profile of production or services.

An important categorization of financial condition indicators for the purpose of implementing an early-warning procedure is the classification of indicators into *stimulants* and *destimulants*. These two groups differ in the way they influence the level of development of the evaluated objects, in this case enterprises. Stimulants exert a positive, stimulating influence on the enterprise, whereas destimulants have a suppressing or inhibiting effect on the degree of development achieved by the firm.

The requirements imposed on stimulants and destimulants can be formulated as follows (Kopiński, 1991; Siedlecka, 1996):

- for stimulants:

$$\forall\ (X_{sj} >= X_{rj}) \Rightarrow \omega_s\ \xi\ \omega \qquad (1)$$

$$X_{rj},\ X_{sj}$$

which signifies that the object ω_s dominates the object ω_r (or, equivalently, that the object ω_r is dominated by the object ω_s), a relationship that is conventionally denoted as $\omega_s\ \xi\ \omega_r$, provided that

$$Xsj >= Xrj \qquad (2)$$

where $X_{sj}$and X_{rj}can be interpreted as the value of the j-th indicator for two different objects (enterprises) or as the value of the j-th indicator for the same enterprise at different points in time,

- for destimulants:

$$\forall\ (Xsj <= Xrj) \Rightarrow \omega r\ \xi\ \omega s \qquad (3)$$

$$X_{rj},\ X_{sj}$$

There are also occasionally characteristics (indicators) whose impact on the level of development of objects is difficult to specify and often ambiguous. Several such enterprise indicators, included in the financial condition system within Module 3 (Table 1), have been classified under a dual category, meaning that within certain ranges they may be considered stimulants, while in other ranges they may be considered destimulants. The threshold values separating these subranges are difficult to determine. For control and early-warning purposes, only indicators that can be unequivocally classified as either stimulants or destimulants should be considered. Occasionally, in addition to the aforementioned groups of characteristics, another group so-called neutral characteristics is distinguished; these characteristics neither promote nor hinder development. In specific situations, such characteristics may be treated as stimulants.

To complement this classification, as noted earlier, the class of nominants is introduced. It should be recalled that nominants are indicators whose values should remain within a certain numerical range, thereby supporting the development of the enterprise. Each nominant has an established standard in the form of lower and upper threshold values. Examples of such indicators include liquidity ratios, for which both lower and upper limits are defined. If the calculated value of a liquidity ratio falls below the lower limit (established standard), it is considered that the enterprise faces a lack of liquidity, either in general or with respect to current assets excluding inventory. Conversely, if the calculated liquidity ratio exceeds the upper limit (established standard), the enterprise is experiencing excess liquidity, again either in general or in terms of current assets excluding inventory.

The classification of indicators (measures) into stimulants, destimulants, and nominants has been effectively applied to implement the control and early-warning function. Examples of enterprise financial indicators that belong to the stimulant category (see Table 1) include, for instance, the return on assets (ROA), return on equity (ROE), net fixed assets productivity ratio, and inventory turnover ratio (times)**.** Indicators that can be classified as destimulants include, for example, the total cost level ratio, the share of debt in total capital, net debt ratio, cash conversion cycle in days, and inventory turnover ratio in days**.**

5. Control and early-warning procedure

The properties of stimulants, destimulants, and nominants can be applied in the process of monitoring and generating early-warning signals. Accordingly, the control and early-warning procedure consists of the following steps:

1. First, establishing benchmark values for indicators classified as stimulants in the form of *lower threshold limits*, for destimulants in the form of *upper threshold limits*, and for nominants in the form of both *lower and upper boundary values*.
2. Second, comparing the calculated value of each indicator with the appropriate threshold depending on whether the indicator is classified as a stimulant or a destimulant, with the lower or upper limit respectively; in the case of a nominant, the indicator is compared first with the lower and subsequently with the upper boundary.
3. Third, issuing an early-warning signal if the indicator value falls below the lower threshold (in the case of a stimulant) or increases beyond the upper threshold (in the case of a destimulant). For nominants, a warning signal is generated when the indicator value either exceeds the upper boundary or falls below the lower boundary.

The control-and-warning procedure can be applied within an enterprise provided that a normative database containing benchmark indicator values has been established. The issue of determining threshold values for indicators is not straightforward. Their specification may rely

on average indicator values observed across the national enterprise sector, within the specific industry in which the company operates, or on expert assessments and recommendations formulated by institutions and foundations that collect and analyse data pertaining to the manufacturing, service, and commercial sectors. An alternative method for establishing so-called thresholds that is, normative values of corporate indicators and for generating warning signals is the use of control charts applied in statistical quality control (see Siedlecka, 1996). In order to construct a chart for a time series, one determines, analogously to SQC procedures, a central line (γ) for the indicator at a level that is either predefined or empirically estimated as the threshold value, as well as control lines. These control lines run parallel to the central line at distances of k_1s and k_2s, where the distances depend on the random fluctuations of the indicator, measured by the calculated standard deviation (s). The safety level for a given time series representing the values of an indicator is defined as the value of the central line (γ) that determines the admissible indicator value, beyond which there is no need to generate warning signals. The control lines plotted at γ + s and γ + 2s are referred to as the first and second safety boundaries, respectively. A warning signal should be issued when $|x□ - \gamma| > ks$ (k = 1, 2, 3), indicating a threat of the first, second, or third degree. Another criterion for generating warning signals is the occurrence of two or three indicator values beyond the first boundary, or the appearance of a sequence of values located on one side of the safety level.

Signals generated by the warning system can also be attenuated or amplified through additional mechanisms. In the case of stimulants and destimulants, a warning signal may be triggered, for example, when the value of a stimulant-type indicator decreases three consecutive times (i.e., over three successive periods). If the indicator decreases only once or twice from one period to the next, such fluctuations are considered normal (so-called “random operational deviations”). For destimulants, this rule should be reversed: a warning signal should be generated only when there is a two- or three-period consecutive increase in the indicator’s value. In the case of nominants, the “tunnel” (or band) method may be applied, where the acceptable interval is defined as the arithmetic mean of the indicator increased by one standard deviation or by twice the standard deviation. This approach allows either reinforcing or weakening the intensity of warning signals sent by the system.

The fundamental method for analysing a time series involves examining the dynamics of indicators over a selected period. Measures of dynamics, which demonstrate the changes in current indicator values relative to the indicator's level in a chosen base period, may also be employed in the warning process. Depending on the choice of base, one distinguishes between measures of dynamics with a fixed base (single-base indices) and those with a moving base (chain indices). The most commonly applied measures of dynamics include the absolute change, the rate of change, and dynamic indices of financial indicators. Each of these measures may serve as a criterion for issuing warning signals.

The increment represents the difference between the value of a given measure in two distinct periods. If x_1 and x_2 denote the level of the measure (indicator) *X* in the current and base period respectively, the increment is expressed by the formula:

$$\Delta = x_1 - x_2 \tag{4}$$

The increment indicates by how many units the value of the measure has increased ($\Delta > 0$) or decreased ($\Delta < 0$) in the analysed period relative to the base period. It constitutes a dimensional measure, expressed in the same units as the indicator under examination. If the indicator is a stimulant, a positive increment is considered desirable, whereas a decrease constitutes grounds for issuing a warning signal. In the case of a destimulant, the procedure is applied in the opposite manner within the control-and-warning system.

The rate of increase is the relative increment of a measure expressed as a percentage, calculated using the following formula (Kopiński, 1992):

$$W = \frac{x_1 - x_2}{x_2} \times 100\% \tag{5}$$

where the notation remains the same as previously.

The rate of increase indicates by what percentage the level of the indicator in the analysed period is higher ($W > 0$) or lower ($W < 0$) than the level in the reference period. For a *destimulant*, a decrease in the rate ($W < 0$) is a desirable phenomenon and positively affects the financial condition of the enterprise, whereas an increase in the rate signals a deterioration of the financial situation. In the case of a *stimulant*, the opposite holds true a positive rate of increase is favourable.

An index is a measure expressing the ratio of numerical values of the same metric (indicator) in two different time periods. The index shows how many times the value of the indicator in the period under study is higher (or lower) than the value of that indicator in the base period. Indices are frequently expressed as percentages. If *X* denotes the indicator under analysis, with *1* designating the period under study and *0* the base period, then the index $I_{1/0}$takes the following form (Kopiński, 2008):

$$I_{1/0} = \frac{x_1}{x_0}, \tag{6}$$

where $x_1$and x_0 represent the values of the indicator *X* in the period under study and the base period, respectively.

Dynamics indices are particularly applicable to:

- describing the dynamics of phenomena, where the measure of dynamics expresses the ratio of the level of a given phenomenon in two different periods the reference period and the period under examination. Depending on whether dynamic indices are calculated for individual units within a population or for the entire set of such units, one distinguishes between individual dynamic indices and aggregate dynamic indices. If the dynamics of the aggregate index reflects positive developmental trends within the economic entity, there is no justification for issuing warning signals.

- description of dynamics of phenomena, where the dynamic measure determines the ratio of the level of a phenomenon in two different periods: the observed period and the base period. Depending on whether the dynamic indices are calculated for individual units of a given population or for the entire set of units**,** individual dynamic indices and aggregate dynamic indices are distinguished. If the dynamics of an aggregate index correspond to positive trends in the development of an economic entity, there is no basis for issuing warning signals

The previous discussion has focused on the methodology of early-warning systems based on actual, empirical values of enterprise indicators calculated for historical and current periods and recorded as time series. It is also possible to attempt constructing a forward-looking early-warning system by employing a forecasting mechanism. The purpose of the predictive warning is to provide timely information about potential future adverse changes in the enterprise's condition, as expressed through its indicators. As a result, early-warning forecasts constitute a specific type of prediction: they do not concern the future absolute values of selected enterprise indicators that characterize its condition, but rather the fact that these indicators will exhibit declining trends relative to the values observed at the time of the forecast. This approach applies to indicators classified as stimulants, for which a positive state is associated with increasing values. Conversely, for indicators classified as destimulants, warning signals should be issued based on forecasted values that are expected to increase, indicating a potential deterioration in the enterprise's condition.

The values of indicators expressed dynamically, i.e., through time series, typically result from the combined effects of two components: a trend and a random factor; occasionally, a third component appears in the form of periodic fluctuations. Consequently, attempts are made to establish criteria for issuing warning signals based on smoothed time series of indicators, which have been stripped of random fluctuations and represented using a trend function. In this approach, the analysis of sequences of first and second differences of the trend function is employed (see Siedlecka, 1996), limiting warnings to genuinely significant threats, indicated by the persistence of negative differences for at least two periods. If the first differences are negative, this implies a decline in indicator values, which is undesirable in the case of stimulants.

Generally, the first differences alone do not allow for predictions regarding the future behavior of an indicator. However, based on the second differences computed from the trend function, a change in sign from positive to negative allows for the anticipation that the indicator, estimated using this function, will eventually decrease after reaching its maximum.

The enterprise indicator system presented in this study, in addition to its analytical, reporting, and informational functions, can also perform important early-warning functions, alerting management (see Wierzbiński, 1998) to adverse trends or processes that necessitate preventive actions. Furthermore, the indicator system can serve a confirmatory role, reinforcing

management in the implementation of the existing strategy and even supporting decision-making that contributes to the improvement of the enterprise's overall condition.

6. Conclusions

The assessment of a company's financial condition involves demonstrating the development of financial ratios derived from the financial statements, which characterize the enterprise's operations, financial performance, liquidity, profitability, and asset equity structure for the year under review in comparison with two or more preceding years.

The calculated ratios, together with the applied control-and-warning procedure, make it possible to identify symptoms of an unfavorable financial situation that may threaten the entity's ability to continue operations and to achieve satisfactory financial results. Consequently, deteriorating values of specific indicators (stimulants, destimulants, and nominants), when detected sufficiently early during the financial year, may serve as the basis for undertaking appropriate preventive actions aimed at averting further deterioration of the enterprise's financial condition.

A system of financial condition measures based on classical financial ratios calculated from financial statements can continuously perform functions that reinforce managerial commitment to the current strategic direction or prompt modifications in the enterprise's operations. Moreover, it may support the adoption of decisions that contribute to improving the company's financial condition.

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