"Stability of production and trading companies considering their economic security"

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# STABILITY OF PRODUCTION AND TRADING COMPANIES CONSIDERING THEIR ECONOMIC SECURITY

### Abstract

The economic security of any company depends on its solvency and financial stability. It is also affected by uneven economic development due to the global financial crises, the impact of the COVID-19 pandemic, increased competition from industrial and commercial companies, and military conflicts. Thus, it is necessary to assess the stability of companies as a basis for their economic security, taking into account the indicators of solvency and financial stability. The paper used systematization, comparative analysis, ranking, expert interview (in-depth interview), and Fishburne's method. First, the scheme of ensuring the financial stability and solvency of production and trading companies is proposed. Second, the evaluation indicators system is developed, and the rating scale of stability of production and trading companies is determined. According to the results, evaluation indicators were formed; some were calculated according to companies' financial statements and management accounting. Finally, to increase the efficiency of technical and economic parameters, areas for regulating the activities of companies and ensuring their stability were identified. According to an in-depth interview with experts, the sampled company received 69 points and corresponded to a sufficient level of stability. Factors that negatively affected the stability of companies' activities include quality indicators, namely compliance with standards, company image, digitalization, compliance with corporate culture, and personnel management policy.

### **Keywords**

financial stability, solvency, indicators, activity, economic security, companies

JEL Classification C91, M21, L81

# INTRODUCTION

The uneven development of the global financial sphere, crisis impact of the pandemic, intensified competition, and military conflicts increase the requirements for stable functioning of companies. Therefore, the financial stability of production and trading companies is the indicator that influences the choice of companies' development strategy.

Leading economists pay attention to the assessment of stability focusing on the following aspects: analysis of the impact of changes in investment strategies on the financial stability of companies; determination of the relationship between indexation, liquidity, and income-generating assets; and certain aspects of strategic management to ensure the stability and development of companies. However, such an essential aspect as a system of indicators for assessing the stability of production and trading companies, which should be considered when determining the economic security and stability of their activities, remains beyond attention. Problems and Perspectives in Management, Volume 20, Issue 1, 2022

# **1. LITERATURE REVIEW**

The stability in managing the economic security of a company means its state, which maintains a high level of security and continuous development. Therefore, the company's stability is the basis for its economic security.

Protecting a company from threats and risks is a leading research subject in many countries. Bogma et al. (2020) propose to use new information instruments to control the financial and economic security of companies. They suggested a mathematical model for identifying threats and predicting their consequences, identifying areas where enhanced control and monitoring of the level of the company's security are needed. However, Bogma et al. (2020) did not prove the expediency of forecasting according to the polynomial model.

Kahler (2004) focused on the risks posed by globalization. The study considered the factors influencing the state's economic security, but not the security of trading companies. Nesadurai (2006) studied the impact of globalization and regionalism on the country's development. A model of the ideal type of globalization-regionalism relationship based on strategic trade theory was identified. However, the partial aspect of assessing the stability of the trading company's economic security has not been studied.

An analysis of the impact of globalization on the economic security of countries is given by Wang (2004). However, its drawback is that the issue of economic security in the field of trade has not been considered. Kaiyrbayeva and Tursynbayeva (2018) investigated the identification of sources for threats to a company and the development of its economic security system. Ianioglo and Polajeva (2017) considered the issue of building a system of the company's economic security, which would ensure its sustainable development. However, they did not form a complete list of evaluation indicators that could calculate the company's stability and the level of its economic security. The conclusions of Shvaiba (2018) and Uktamov (2020) on the hierarchical development of economic security at any level deserve attention. At the same time, there are still unresolved issues regarding the generally accepted approach to the role of indicators

of the company's stability when considering its economic security. In particular, this concerns the production and trading companies.

A company's stability is its ability to withstand the negative effects of external and internal factors that affect its condition and development.

Economic stability has been studied by Kaldor (1976), Rodrik (2000), Dissart (2003), and Hopkins (2006). They considered the concept of economic stability by region and country in macrosystems. The relationship between the economic stability of regions and opportunities for their development was considered by Dissart (2003) and Hopkins (2006). Later, the emphasis on activities' stability shifted towards entrepreneurship and enterprises.

Indicators of financial stability and solvency are the basis for determining the level of a company's efficiency and stability as well as its economic security. Therefore, it makes it possible to build evaluation systems making informed management decisions in strategic planning (Bychikova & Lukyanova, 2010; Dombrovska, 2014; Piatnytska & Naidiuk, 2018). However, such assessment is incomplete to characterize the company's stability.

The concept of companies' financial stability, a prerequisite for long-term and sustainable development, has become widespread (Eshov, 2019; Cernavkis, 2020). In addition, along with the concept of companies' stability, the concept of stable and unstable equilibrium is used (Young et al., 2012). However, this approach is more inherent in the practice of social than commercial entrepreneurship.

Abdi and Williams (2010), Perciun et al. (2014), and Mokeev et al. (2015) investigated the mechanism of self-regulation of companies' economic stability based on the method of their own conditions. This method involves the evaluation of only quantitative indicators without taking into account the qualitative ones. The peculiarities of companies' economic stability as a combination of economic stability and competitiveness (Husainova et al., 2019) are studied in an attempt to assess the qualitative characteristics of companies according to their competitiveness. Methodological approaches and practical recommendations for modeling the assessment of the financial stability of service companies are partially considered (Adrian et al., 2018; Drobyazko et al., 2020). Marketing components influence the company's stability (e.g., disruption of product supply), i.e., the stability assessment system should include qualitative characteristics. The method of fractal analysis using fuzzy sets is effective for the analysis of economic stability (Peters, 1996; Matviychuk et al., 2019).

Sotskova (2021) addresses the issue of assessing and forecasting the financial stability of an organization in a crisis. The proposed method of calculating the net assets and equity of an organization is taken into account. Its development gives a more objective assessment of the company's financial condition. However, this technique is designed exclusively for manufacturing companies.

Schinasi (2004) argues that the basis of stability is purely financial stability. Financial stability is defined as a continuum that changes over time and is consistent with combinations of financial components. Siganova and Kozhushkina (2014) and Dolgikh and Slepuhina (2018) proved that the company's financial stability is a synthesis of three components – financial stability, financial flexibility, and financial capacity. These studies proved that financial stability is the main characteristic of sustainable operation. However, this approach does not reveal the importance of other influencing factors (qualitative and quantitative).

Assessing the stability of companies is constantly in the spotlight. Anadu et al. (2020) investigate changes in the system of companies' investment strategies: from active to passive. They include analyzing the impact on companies' financial stability; indicating changes in investment strategies; determining the relationship between indexation, liquidity, and return on assets. Staicu (2018) considered the issue of the companies' success, particularly the need to ensure financial stability through a combination of different income flows. Eshov (2019) investigated the theoretical aspects of company value formation and factors of its increase, including financial stability. Betaneli et al. (2021) developed an information-analytical model to analyze and forecast companies' financial stability. Garbie (2016) considers some aspects of strategic management to establish the company's sustainability and development. However, in determining the level of the company's economic security and the stability of its activities, it is necessary to develop a complex system of indicators for assessing the stability of production and trading companies.

Accordingly, this paper aims to develop a system of indicators for assessing the stability of companies' activities on the example of a commercial company in Ukraine.

# 2. RESEARCH METHODS

The expert survey was conducted in five main stages. The first stage is the selection of experts and the formation of a group of respondents. In this case, an in-depth interview was conducted with a focus group formed at a company. As a result, ten middle and senior management experts and representatives of partners of Ukrainian companies were elected. The second stage is the formation of questions and/or questionnaires. The discussion concerned the assessment of main factors influencing the company's functioning. The system of indicators for assessing the stability of production and trading companies with 37 indicators was compiled and agreed. The third stage is working with experts who has ranked the compiled system of indicators. Unanimously, the financial bloc took first place in the rankings. The fourth stage is analyzing and processing expert assessments using financial and statistical information assessment and evaluation of quality indicators by points in a tabular form.

According to the descending series of estimates, Fishburne's rule is used. It is based on the significance of each studied indicator that forms a descending arithmetic progression. According to Fishburne's formulas, the advantages of calculating significance include: no need for complex automated calculations, a minimum number of experts (even one), and the absence of any restrictions on implementation. Problems and Perspectives in Management, Volume 20, Issue 1, 2022

# 3. RESULTS AND DISCUSSION

Based on the analysis of the leading scientific and theoretical approaches to the interpretation of companies' financial stability and the formation of its key indicators, the most common criteria for its evaluation are identified. They include a high level of solvency and liquidity; compliance of the structure of funding sources with the structure of assets; profit level; compliance of economic activity with regulatory indicators; analysis of sources of capital formation and their ratio; structure of sources of funds for the formation of stocks, costs (Bychikova & Lukyanova, 2010; Podolchak et al., 2017; Piatnytska & Naidiuk, 2018). Each following definition of financial stability is incomplete; thus, it cannot be an important basis for further management decisions. However, under complicated conditions due to the pandemic, the war in the East, intensified globalization and integration, increasing import dependence of industrial and trading companies, it is necessary to develop a system of indicators covering most factors influencing their activities. Therefore, it is vital to assess the stability of companies' activities and development.

One of the conditions for maintaining the appropriate level of the company's economic security is its evaluation and development of management decisions. The activity of any company is multidimensional and requires the consideration of a large number of indicators. Accordingly, it needs such indicators to cover all aspects of a company without duplicating each other. Therefore, the indicators will have different "weight": indicators that characterize the financial sphere, and the stability of activities are more important (significant) in the evaluation system. Solvency and financial stability characterize the economic security of trading companies. Among others, they include:

 The current liquidity ratio (total liquidity ratio) provides the most informative company description. If its value is less than one, it is considered bankrupt, can be liquidated, or its property can be sold. The current liquidity ratio shows how much of the company's current liabilities can be repaid by mobilizing all current assets. A significant excess of current assets over short-term liabilities indicates that a company has a sufficient amount of free resources formed from its own sources. From the creditors' point of view, this situation is more acceptable as it strengthens their confidence in debt repayment. However, given the company's efficiency, the significant accumulation of inventories, diversion of funds into receivables leads to a slowdown in the turnover of funds and, therefore, to a decrease in profits. The optimal value is in the range from 1.0 to 3.0. The normative value is  $1 \div 3$ , but the value of  $2 \div 3$  is more desirable. An indicator below the norm indicates a solvency problem, as the current assets are not enough to meet current liabilities. This leads to a decrease in confidence in the company by creditors, suppliers, investors, and partners. In addition, solvency problems lead to an increase in the cost of borrowed funds and, as a result, to direct financial losses (Financial Analysis online, 2020).

- 2) The ratio of absolute liquidity (monetary solvency) demonstrates the readiness of a company to liquidate short-term debt immediately. It is calculated as the ratio of the most liquid assets to short-term liabilities. The amount of funds is a kind of insurance reserve intended to cover short-term cash imbalances. Since the money does not bring income to the company, their size should be maintained at a safe minimum. The optimal limits of this indicator [0.2; 1.0].
- 3) Rapid liquidity ratio is calculated by a narrow range of current assets if the least liquid part inventories are removed from the total value. The quick liquidity ratio shows how much it will be possible to repay current liabilities based on the assumption that inventories have no liquidation value at all. The approximate value of this coefficient is in the range of 0.6 ÷ 0.8.
- 4) The ratio of equity and debt capital is the ratio of debt to equity (it shows how much borrowed funds a company has attracted per hryvnia invested in the assets of own funds).
- 5) The coefficient of autonomy shows the share of own funds in the total amount

of funding sources. This financial ratio is used to assess the company's dependence on external financing sources, the possibility of carrying out activities without additional borrowing, and the extent to which own funds can cover the company's financial liabilities.

- 6) The coefficient of maneuverability of equity shows what share of the company's own funds is in mobile form. The coefficient of maneuverability of equity depends on the company's nature (0.2 ÷ 0.5): in capital-intensive industries, its regulatory level should be lower than in material-intensive. The higher the coefficient of maneuverability, the better the company's financial condition.
- 7) The ratio of current assets to own funds shows what part of the company's current assets is formed from equity. The higher the borrower's own funds share in covering current assets, the safer it is for the lender to enter into loan agreements.

8) The financial leverage ratio reflects the company's capital structure and, to some extent, the risk of the capital structure. The indicator that reflects the level of additional return on equity due to different parts of the use of borrowed funds is called the effect of financial leverage (Financial Analysis online, 2020).

Table 1 presents the coefficients of solvency and financial stability as well as their thresholds.

The system of assessing the company's reliability involves both quantitative and qualitative indicators. Accordingly, a list of evaluation indicators has been formed, which can be used to assess the company's stability from different angles (internally and externally). The ranking of indicators according to the level of significance was carried out by expert analysis. They determined the place of each indicator in the system of 37 indicators with the involvement of ten experts in the field of trade of different levels of responsibility. As a result, indicators are summarized by the level of their significance (Table 2).

Que affinite and	Interval						
Coemcient	Critical	Low	Sufficient	Desirable			
General (coverage)	0÷0.49	0.5 ÷ 0.79	0.8 ÷ 0.99	1.0 ÷ 3.0			
Absolute liquidity	0 ÷ 0.09	0.1 ÷ 0.19	0.2 ÷ 0.24	0.25 ÷ 0.50			
Quick liquidity	0÷0.2	0.21 ÷ 0.64	0.65 ÷ 0.79	0.8 ÷ 1.0			
The ratio of own and debt capital	0÷0.3	0.31 ÷ 0.59	0.6 ÷ 0.79	0.8 ÷ 1.0			
Autonomies	0.0÷0.1	0.11 ÷ 0.24	0.25 ÷ 0.49	0.5 ÷ 1.0			
Maneuverability of own capital	0 ÷0.09	0.1 ÷ 0.19	0.2 ÷ 0.5	More than 0.5			
Provision of current assets with own funds	0 ÷ 0.05	0.06 ÷ 0.19	0.1 ÷ 0.2	0.2 ÷ 1.0			
Financial leverage	0.81 ÷ 1.0	0.46 ÷ 0.8	0.25 ÷ 0.45	Less than 0.25			
Financial stability	0÷0.69	0.7 ÷ 0.84	0.85 ÷ 0.99	More than 1.0			

Table 1. Coefficients of solvency and financial stability

### Table 2. Indicators for assessing the stability of production and trading company

Designation	Indicator	Rank	Characteristics
$R_1$	General coverage ratio	1	The indicator indicates the amount of current assets per unit of liability
R <sub>2</sub>	Absolute liquidity ratio	2	Assessment of the possibility of payment for short-term liabilities in accordance with agreements. Determines the share of short-term liabilities that the company can repay shortly without waiting for payment of receivables and the sale of other assets. Theoretically, the coefficient value is considered sufficient if it exceeds 0.2÷0.3. In practice, the values are much lower. Thus, this indicator cannot immediately lead to negative conclusions about the company's ability to repay its debts immediately because it is unlikely that all creditors of the company at the same time would put forward their claims. Too high a value of absolute liquidity indicates the irrational use of financial resources
R <sub>3</sub>	Rapid liquidity ratio	3	Shows how much of the company's current liabilities can be repaid from the most liquid working capital: cash and cash equivalents, financial investments and receivables. This indicator demonstrates the company's ability to pay for current liabilities with timely settlements with debtors. Theoretically, the value of the coefficient is considered sufficient if it exceeds 0.6

Designation	Indicator	Rank	Characteristics
R <sub>4</sub>	Coefficient of autonomy	4	Estimation of the level of financing of activity at own cost. Defined as the ratio of the own general funds to the balance sheet total. The greater the value of the coefficient, the less dependent the company is on external sources of funding (> 0.5)
R <sub>5</sub>	Ratio of own and debt capital	5	It is equal to the ratio of the company's liabilities to the value of its own funds. As a rule, restrictions for the coefficient of dependence: $KP/V \le 1$
R <sub>6</sub>	Own capital maneuverability ratio	6	Characterizes the degree of mobility of the company's own funds relative to the total amount of capital. The desired value is 0.2-0.5
R <sub>7</sub>	Ratio of current assets to own funds	7	The ratio of current assets to own funds indicates the company's ability to finance current assets from its own funds. Values greater than 0,1 are acceptable. In the case of a lower value, it is necessary to raise additional funds to eliminate gaps in the payment calendar.
R <sub>8</sub>	Financial leverage ratio	8	Reflects the ratio of long-term loans and the company's own funds. The financial leverage ratio characterizes the company's dependence on long-term liabilities (Financial Analysis online, 2020). Its increase indicates an increase in the financial risk of a company
R <sub>9</sub>	Return on assets (or current assets)	9	Return on assets (ROA) shows the efficiency of using the company's assets to generate profits. The high value of the indicator indicates the company's good performance. There is no single normative value of the indicator. It is necessary to analyze it in dynamics, i.e., comparing the values of different years for the study period. In addition, it is necessary to compare the value of the indicator with the corresponding values of direct competitors (which have approximately the same amount of assets or income)
R <sub>10</sub>	Coefficient of financial stability	10	The coefficient of financial stability reveals the share of stable sources of funding in their total volume (usually the desired level is 0.85)
R <sub>11</sub>	Compliance with legal requirements	11	Characterizes the company's compliance with legal requirements (complaints, lawsuits)
R <sub>12</sub>	Compliance with technical characteristics of products according to EU standards	12	Characterizes the compliance of technical characteristics of products with EU standards
R <sub>13</sub>	Stability of tax legislation	13	Characterizes the frequency of changes in tax legislation
R <sub>14</sub>	Market availability (entry barriers)	14	Demonstrates the possibility and assessment of the potential emergence of new market participants that will create competition with existing participants
R <sub>15</sub>	Use of templates	15	Characterizes the use of templates by a company
R <sub>16</sub>	Attracting new means of payment	16	Characterizes the company's use of the latest means of payments in the field of service sector
R <sub>17</sub>	Compliance with the requirements for candidates for senior managerial positions	17	Necessary education, work experience, and reputation
R <sub>18</sub>	Disclosure of trade secrets by company employees	18	Indicates the correctness of contracts with employees and the availability of regulations on the security of trade secrets
R <sub>19</sub>	Violation of contractual terms with business partners	19	The level of information transparency of the company's cooperation with partners
R <sub>20</sub>	Level of staffing and their professionalism	20	Characterizes the compliance of professional qualification level, education, practical experience of staff with requirements of jobs, compliance of the actual number of staff with the required size or the planned number of the staff list. Characterizes the competence and understanding of employees of their responsibilities
R <sub>21</sub>	Adherence to proper working conditions at the company	21	Characterizes the compliance of working conditions specified in the employment agreement (contract)
R <sub>22</sub>	Sufficiency of the ratio of wage growth and labor productivity	22	Shows the effectiveness of wages. A slight excess of wages is justified in terms of achieving strategic goals of economic growth

Table 2 (cont.). Indicators fo	r assessing the stability of p	production and trading company
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Designation	Indicator	Rank	Characteristics
R <sub>23</sub>	Socio-economic situation in the country	23	Reflects the possibilities of company development depending on the stability, positive or negative changes in the socio-political situation of the country
R <sub>24</sub>	Income and purchasing power of the population	24	Purchasing power determines the solvency of the population, which depends on wages, other incomes, fluctuations in retail prices, taxes. It is largely related to the pricing of most goods and services. Characterizes the state of secured demand for trade companies
R <sub>25</sub>	Company image (psychological factor)	25	Positive image of the company promotes access to borrowed funds, attracting qualified personnel, establishing strong partnerships, trust and development of state agencies, increasing consumer loyalty to products
R <sub>26</sub>	Company's investment attractiveness	26	Characterizes the internal and external capabilities of the object for potential investors to attract and use investment resources for its development and to maximize the economic effect
R <sub>27</sub>	Import dependence of the company	27	Displays the share of resources received from abroad in the total resources
R <sub>28</sub>	Labor productivity	28	Characterizes the efficiency of the company's personnel
R <sub>29</sub>	Compliance with corporate culture	29	Characterizes the ability of the company's management to mobilize the initiative of employees and improve business communication between them
R <sub>30</sub>	Security level	30	Shows the physical and moral security of employees, ensuring the security of property and financial resources, ensuring favorable external conditions for development
R <sub>31</sub>	Labor mobility and activity	31	Characterized by the absence of obstacles to such mobility
R <sub>32</sub>	Anti-corruption	32	Familiarization of employees with anti-corruption instruments and the ability to control the activities of employees
R <sub>33</sub>	Compliance with ISO standards	33	Characterizes the compliance of activities with the requirements of ISO standards
R <sub>34</sub>	Compliance with environmental standards	34	Characterizes the compliance of activities with the requirements of environmental standards
R <sub>35</sub>	Regional multiplier of economic policy	35	Indicates the relationship between regional supply and demand
R <sub>36</sub>	Training of employees	36	Characterizes the availability of training programs for employees, incentives to improve personal development
R <sub>37</sub>	Level of economic activity of the population	37	Characterizes the level of participation of the population of the surveyed age in the labor force. Calculated as the ratio (as a percentage) of the economically active population aged 15-70 to the total population of the specified age or population according to the relevant socio-demographic characteristics.

Table 2 (cont.). Indicators fo	<sup>r</sup> assessing the stability o	of production and trading company
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The consistency of experts' opinions is assessed by the concordance coefficient (Grabovetsky, 2013) (Table 3).

### Table 3. Indicator value

Designation	Indiantau	Indicator level					
Designation	Indicator	Critical	Low	Sufficient	Desirable		
	Values	of quantitativ	ve indicators				
$R_1$	General coverage ratio	0÷0.49	0.5 ÷ 0.79	0.8 ÷ 0.99	1.0÷3.0		
R <sub>2</sub>	Absolute liquidity ratio	0÷0.09	0.1 ÷ 0.19	0.2 ÷ 0.24	0.25 ÷ 0.50		
R <sub>3</sub>	Rapid liquidity ratio	0÷0.2	0.21÷0.64	0.65 ÷ 0.79	0.8 ÷ 1.0		
R <sub>4</sub>	Coefficient of autonomy	0.0÷0.1	0.11÷0.24	0.25 ÷ 0.49	0.5 ÷ 1.0		
R <sub>5</sub>	Ratio of own and debt capital	0÷0.3	0.31 ÷ 0.59	0.6 ÷ 0.79	0.8 ÷ 1.0		
R <sub>6</sub>	Own capital maneuverability ratio	0÷0.09	0.1 ÷ 0.19	0.2 ÷ 0.5	More than 0.5		
R <sub>7</sub>	Ratio of current assets to own funds	0÷0.05	0.06 ÷ 0.19	0.1÷ 0.2	0.2 ÷ 1.0		
R <sub>8</sub>	Financial leverage ratio	0.81 ÷1.0	0.46 ÷ 0.8	0.25 ÷ 0.45	Less than 0.25		
R <sub>9</sub>	Return on assets, %	0÷9	10÷24	25 ÷ 69	More than 70		
R <sub>10</sub>	Coefficient of financial stability	0 ÷ 0.69	0.7 ÷ 0.84	0.85 ÷ 0.99	More than 1.0		

					Indica	tor level				
Designation	Indicator	Critic	al	Low		Sufficien	t	Desirab	Desirable	
	Conditional	value of	quali	itative indicato	ors					
R <sub>11</sub>	Compliance with legal requirements	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>12</sub>	Compliance with technical characteristics of products according to EU standards	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>13</sub>	Stability of tax legislation	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>14</sub>	Market availability (entry barriers)	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>15</sub>	Use of templates	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>16</sub>	Use of new means of payment	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>17</sub>	Compliance with the requirements for candidates for senior managerial positions	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>18</sub>	Disclosure of trade secrets by company employees	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>19</sub>	Violation of contractual terms with business partners	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>20</sub>	Level of staffing and staff professionalism	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>21</sub>	Adherence to proper working conditions at the company	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>22</sub>	Sufficiency of the ratio of wage growth and labor productivity	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>23</sub>	Socio-economic situation in the country	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>24</sub>	Income and purchasing power of the population	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>25</sub>	Company image (psychological factor)	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>26</sub>	Company's investment attractiveness	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>27</sub>	Import dependence of the company	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>28</sub>	Labor productivity	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>29</sub>	Compliance with corporate culture	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>30</sub>	Security level	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>31</sub>	Labor mobility and activity	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>32</sub>	Anti-corruption	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>33</sub>	Compliance with ISO standards	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>34</sub>	Compliance with environmental standards	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>35</sub>	Regional multiplier of economic policy	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>36</sub>	Training of employees	No	1	Sometimes	2	As a rule	3	Yes	4	
R <sub>37</sub>	Level of economic activity of the population	No	1	Sometimes	2	As a rule	3	Yes	4	

### Table 3 (cont.). Indicator value

The amount of scores for each of the indicators of financial stability and solvency and the main factors influencing the level of economic security of the company is calculated according to Fishburne's rule (Podolchak et al., 2017; Fishburne, 1978):

$$k_{i} = \frac{2(N-n+1)}{N(N+1)},$$
(1)

where  $k_i$  is the maximum score for the *i*-th indicator, *n* is the significance of the indicator (from

1 to 37), *N* is the total number of indicators (37).

Fishburne's rule considers that nothing is known about the level of indicators' importance, except that they are arranged in descending order of importance (Table 4).

Accordingly, the desired level will be the value of Fishburne's test. In the column of critical value, the paper will write the value of the maximum level divided by 4.

Designation	Indicator	Fishburne's criterion	Score	
R <sub>1</sub>	General coverage ratio	1	0.05263	5.263
R <sub>2</sub>	Absolute liquidity ratio	2	0.05121	5.121
R <sub>3</sub>	Rapid liquidity ratio	3	0.04979	4.979
R <sub>4</sub>	Coefficient of autonomy	4	0.04836	4.836
R <sub>5</sub>	Ratio of own and debt capital	5	0.04694	4.694
R <sub>6</sub>	Own capital maneuverability ratio	6	0.04552	4.552
R <sub>7</sub>	Ratio of current assets to own funds	7	0.0441	4.41
R <sub>8</sub>	Financial leverage ratio	8	0.04267	4.267
R <sub>9</sub>	Return on assets (or current assets)	9	0.04125	4.125
R <sub>10</sub>	Coefficient of financial stability	10	0.03983	3.983
R <sub>11</sub>	Compliance with legal requirements	11	0.03841	3.841
R <sub>12</sub>	Compliance with technical characteristics of products according to EU standards	12	0.03698	3.698
R <sub>13</sub>	Stability of tax legislation	13	0.03556	3.556
R <sub>14</sub>	Market availability (entry barriers)	14	0.03414	3.414
R <sub>15</sub>	Use of templates	15	0.03272	3.272
R <sub>16</sub>	Use of new means of payment	16	0.03129	3.129
R <sub>17</sub>	Compliance with the requirements for candidates for senior managerial positions	17	0.02987	2.987
R <sub>18</sub>	Disclosure of trade secrets by company employees	18	0.02845	2.845
R <sub>19</sub>	Violation of contractual terms with business partners	19	0.02703	2.703
R <sub>20</sub>	Level of staffing	20	0.0256	2.56
R <sub>21</sub>	Adherence to proper working conditions at the company	21	0.02418	2.418
R <sub>22</sub>	Sufficiency of the ratio of wage growth and labor productivity	22	0.02276	2.276
R <sub>23</sub>	Socio-economic situation in the country	23	0.02134	2.134
R <sub>24</sub>	Income and purchasing power of the population	24	0.01991	1.991
R <sub>25</sub>	Company image (psychological factor)	25	0.01849	1.849
R <sub>26</sub>	Company's investment attractiveness	26	0.01707	1.707
R <sub>27</sub>	Import dependence of the company	27	0.01565	1.565
R <sub>28</sub>	Labor productivity	28	0.01422	1.422
R <sub>29</sub>	Compliance with corporate culture	29	0.0128	1.28
R <sub>30</sub>	Security level	30	0.01138	1.138
R <sub>31</sub>	Labor mobility and activity	31	0.00996	0.996
R <sub>32</sub>	Anti-corruption	32	0.00853	0.853
R <sub>33</sub>	Compliance with ISO standards	33	0.00711	0.711
R <sub>34</sub>	Compliance with environmental standards	34	0.00569	0.569
R <sub>35</sub>	Regional multiplier of economic policy	35	0.00427	0.427
R <sub>36</sub>	Training of employees	36	0.00284	0.284
R <sub>37</sub>	Level of economic activity of the population	37	0.00142	0.142
	Total		1	100

### Table 4. Score values of indicators

Next, the paper finds the interval (i):

$${}^{3} = \frac{Max.score - Min.score}{4}.$$
 (2)

The score value for the "low" level is equal to the score value of the critical level increased by an interval. The value of the permissible level is equal to the desired value reduced by an interval (Table 5).

For each of the qualitative indicators, the following conditional scores are accepted:

- yes (available, always, fully) 4;
- as a rule (mostly, quite complete) 3;
- sometimes (in some cases) 2;
- no (never, in no case) 1.

The integrated indicator of the trading company's stability is calculated on the appropriate scale (Table 6).

According to calculations, the researched company (Silpo-Food Ltd.) scored 69 points and corresponded to a sufficient level of stability. Thus, the

Designation	Indicator	Critical	Low	Sufficient	Desirable
R <sub>1</sub>	General coverage ratio	1.316	2.632	3.947	5.263
R <sub>2</sub>	Absolute liquidity ratio	1.28	2.56	3.841	5.121
R <sub>3</sub>	Rapid liquidity ratio	1.245	2.489	3.734	4.979
R <sub>4</sub>	Coefficient of autonomy	1.209	2.418	3.627	4.836
R <sub>5</sub>	Ratio of own and debt capital	1.174	2.347	3.521	4.694
R <sub>6</sub>	Own capital maneuverability ratio	1.138	2.276	3.414	4.552
R <sub>7</sub>	Ratio of current assets to own funds	1.102	2.205	3.307	4.41
R <sub>8</sub>	Financial leverage ratio	1.067	2.134	3.201	4.267
R <sub>9</sub>	Return on assets (or current assets)	1.031	2.063	3.094	4.125
R <sub>10</sub>	Coefficient of financial stability	0.996	1.991	2.987	3.983
R <sub>11</sub>	Compliance with legal requirements	0.96	1.92	2.881	3.841
R <sub>12</sub>	Compliance with technical characteristics of products according to EU standards	0.925	1.849	2.774	3.698
R <sub>13</sub>	Stability of tax legislation	0.889	1.778	2.667	3.556
R <sub>14</sub>	Market availability (entry barriers)	0.853	1.707	2.56	3.414
R <sub>15</sub>	Use of templates	0.818	1.636	2.454	3.272
R <sub>16</sub>	Use of new means of payment	0.782	1.565	2.347	3.129
R <sub>17</sub>	Compliance with the requirements for candidates for senior managerial positions	0.747	1.494	2.24	2.987
R <sub>18</sub>	Disclosure of commercial secrets by company employees	0.711	1.422	2.134	2.845
R <sub>19</sub>	Violation of contractual terms with business partners	0.676	1.351	2.027	2.703
R <sub>20</sub>	Level of staffing	0.64	1.28	1.92	2.56
R <sub>21</sub>	Adherence to proper working conditions at the company	0.605	1.209	1.814	2.418
R <sub>22</sub>	Sufficiency of the ratio of wage growth and labor productivity	0.569	1.138	1.707	2.276
R <sub>23</sub>	Socio-economic situation in the country	0.533	1.067	1.6	2.134
R <sub>24</sub>	Income and purchasing power of the population	0.498	0.996	1.494	1.991
R <sub>25</sub>	Company image (psychological factor)	0.462	0.925	1.387	1.849
R <sub>26</sub>	Indicator of company's investment attractiveness	0.427	0.853	1.28	1.707
R <sub>27</sub>	Indicator of import dependence of the company	0.391	0.782	1.174	1.565
R <sub>28</sub>	Labor productivity	0.356	0.711	1.067	1.422
R <sub>29</sub>	Compliance with corporate culture	0.32	0.64	0.96	1.28
R <sub>30</sub>	Security level	0.284	0.569	0.853	1.138
R <sub>31</sub>	Labor mobility and activity	0.249	0.498	0.747	0.996
R <sub>32</sub>	Anti-corruption	0.213	0.427	0.64	0.853
R <sub>33</sub>	Compliance with ISO standards	0.178	0.356	0.533	0.711
R <sub>34</sub>	Compliance with environmental standards	0.142	0.284	0.427	0.569
R <sub>35</sub>	Regional multiplier of economic policy	0.107	0.213	0.32	0.427
R <sub>36</sub>	Training of employees	0.071	0.142	0.213	0.284
R <sub>37</sub>	Level of economic activity of the population	0.036	0.071	0.107	0.142

Table 5. Distribution of scores by levels (values)

### Table 6. Rating scale of stability of production and trading companies

Name, class	Sum of scores	Level
Very high stability, A ++	85-100	High level of stability
High stability, A +	70-84	High level of stability
Sufficient stability, A	55-69	Sufficient level of stability
Acceptable stability, B ++	40-54	Sufficient level of stability
Satisfactory stability, B +	25-39	Sufficient level of stability
Low stability, B	10-24	Low level of stability
Instability, C	Lower than 10	Low level of stability

stability of activities can be maintained at the appropriate level by regulating quality indicators. This requires:

- to monitor the requirements of legislation and changes in tax policy of the state;
- to adhere to the control regime concerning the technical specifications of products according to EU standards, ISO standards, environmental standards;
- to create conditions for the use of the latest payment systems;
- to use templates, which will also weaken market entry barriers;
- to inform timely about compliance with the requirements for candidates for management positions;
- to introduce a system of control over the protection of trade secrets and contractual terms of a closed nature;
- to introduce incentives to improve employees' skills, salaries, and productivity.

Ensuring the effective development of industrial and commercial companies in Ukraine requires constant assessment of the stability of their activities.

Until recently, the stability of production and trading companies has been assessed exclusively by financial evaluation indicators. On the one hand, most researchers believe that the stability of companies is assessed solely on the basis of financial indicators. On the other hand, Sytnyk et al. (2021), exploring the issue of company value in strengthening the role of intangible factors in its formation, developed a two-tier system of value indicators based on the approach of stakeholders. An attempt was made to use qualitative indicators. However, the drawback of this attempt is the insufficient number of qualitative indicators in the evaluation system. Sytnyk et al. (2021) used a questionnaire method. The advantage of this method is the ease of evaluation. However, a questionnaire does not cover the whole set of questions for evaluation. Therefore, this paper used the method of in-depth interviews. This method increases the accuracy of evaluation and covers qualitative indicators that characterize the company's stability.

The literature review mentions groups of authors that have dealt with this issue. Agreeing with these authors on the relevance and importance of financial valuation indicators, this study proposes a different approach. Taking into account the shortcomings of the considered works, a system of indicators for assessing the stability of production and trading companies has been formed and tested. The application of Fishburne's rule and a method of in-depth interviews gave a fairly accurate assessment of the stability of Silpo-Food LLC, which corresponds to 69 scores and a level of sufficient stability. The results obtained made it possible to identify the main directions and measures for the regulation of quality indicators for assessing the company's stability. The proposed evaluation method offers higher detailed evaluation and higher accuracy. Moreover, this new method of expert survey contributes not only to the evaluation but also the simultaneous formation of recommendations in the analysis process.

The main difficulties in using this method may be:

- formulating the company's research needs;
- limited time for comprehensive research and testing.

The prospects for further development include improving the system of assessing the company's economic security and stability, identifying threats and risks, and selecting effective recommendations for management.

# CONCLUSIONS

The study aimed to develop and test a system of indicators for assessing the company's stability, which includes a set of indicators of financial stability and solvency and other indicators that correspond to other aspects of a company. According to the goal of the study, a list of 37 indicators was compiled, the

most important of which are indicators of financial stability and solvency. In addition, a method of assessing the stability of production and trading companies was formed and tested on the example of Silpo-Food LLC. The method of assessing the activity's stability in the system of economic security of production and trading company concerns:

- 1) indicators for assessing the stability of activity of the production and trading company;
- 2) substantiation of score values of indicators;
- 3) distribution of scores by levels (values);
- 4) formation of a rating scale for company's stability and the application of Fishburne's rule;
- 5) determination of the integrated indicator of activity's stability.

Such a systematic approach will help ensure the effective development of industrial and commercial companies in Ukraine.

According to estimates, the studied company scored 69 points, which corresponds to a sufficient level of stability. It is determined that the company's stability can be maintained and increased by regulating quality indicators. Accordingly, recommendations have been made to improve its condition, such as implementing control systems (protection of trade secrets, changes in the state's tax policy, compliance with the specifications of products according to EU standards). In the context of digitalization of all spheres of life, additional research is required, which may be related to staffing, cooperation with contractors (using templates), and further digitalization (online payment, ordering through online selling sites, etc.).

### **AUTHOR CONTRIBUTIONS**

Conceptualization: Anatolii Mazaraki. Data curation: Tetiana Zubko. Formal analysis: Anatolii Mazaraki. Funding acquisition: Tetiana Zubko. Investigation: Tetiana Zubko. Methodology: Tetiana Zubko. Project administration: Anatolii Mazaraki. Resources: Tetiana Zubko. Software: Tetiana Zubko. Supervision: Anatolii Mazaraki. Validation: Tetiana Zubko. Visualization: Tetiana Zubko. Writing – original draft: Tetiana Zubko. Writing – review & editing: Tetiana Zubko.

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