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## Development of creative potential in the context of increasing the company's ability to adapt to the crisis

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■ **Abstract.** The economic efficiency and resilience of Ukrainian enterprises in the face of crisis depend on the adaptive capacity, creative capacity, and flexibility needed to promptly respond to changes in environmental factors, which emphasises the relevance of the study. The purpose of the article was a theoretical study and practical testing of approaches to the formation of adaptive capacity of the enterprise's crisis management, based on the use and development of the creative potential of the enterprise's staff. The results were obtained by using the following methods: scientific abstraction, comparison and generalisation methods for defining the essence of creative potential and its components, and establishing the sequence in assessing the enterprise's capacity to adapt to a crisis; analogy, general and specific methods for developing a structural and logical model of formation of the enterprise's adaptive capacity through the development of its creative potential. The article discussed the theoretical, methodical and applied aspects of formation of the triad of interrelated concepts "creative potential – adaptive capacity – crisis management". At the fundamental level, the essence of creative potential was investigated, taking into account the formation of this category at the intersection of two sciences: management and psychology. Five components of creative potential, viz. cognitive, characterological, emotional-volitional, motivational, and psychological, were identified. A structural and logical model of forming the adaptive capacity of an enterprise through the development of its creative potential was developed. A sequence of actions and the tools for assessing the enterprise's adaptive capacity in the crisis were established. Practical testing was carried out using the Argenti's A Score Model (A-score) that combined quantitative and qualitative indicators for crisis identification and allowed assessing the stage of the crisis and, accordingly, the level of adaptive capacity of an enterprise. A scientific and methodical approach to the formation and development of an enterprise's creative potential in the context of improving the capability of the enterprise to adapt to the crisis was proposed. The proposed structural and logical model of forming the adaptive capacity of an enterprise through the development of its creative potential contained a thorough description of measures, whose comprehensive implementation will allow increasing the adaptive capacity of the staff, which in turn will contribute to increasing the ability of the enterprise to adapt its main and auxiliary business processes to crisis conditions

■ **Keywords:** staff; Belbin team roles; financial analysis tools; adaptive capacity indicators; crisis management

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## ■ Introduction

The operation of enterprises in conditions of permanent economic and political instability calls for the need to use advanced innovative approaches in management. This is especially relevant for approaches that are aimed at accumulating creative ideas for solving production and economic problems, overcoming their consequences, and promoting adaptation and cooperation between management and subordinates for open interaction by setting benchmarks to overcome crises in the face of uncertainty. From this perspective, the ability to fluently adapt to the unpredictability and dynamism of the internal and external environment, and thus the economic efficiency and resilience of Ukrainian enterprises in the crisis, to some extent depend on the conditions that are created by management with the aim of formation, development and effective implementation of the staff's creative potential. Given the military-political crisis, the issue of developing effective measures for the formation and development of creative potential in the context of increasing the adaptive capacity of Ukrainian enterprises is particularly relevant.

The generally accepted approach is that of N.V. Bielikova & I.O. Hubarieva (2023), who believe that adaptive enterprise management systems are created to ensure maximum adaptation to the impact of factors of an unstable external environment and to correct the negative impact of internal environmental factors. This process ensures that enterprises are adaptable to any changes or conditions by changing their functions, structure, relationships, parameters, etc. to better adapt to the impact of external and internal instability factors. The authors studied the development of adaptive management systems that exhibit a sustainable performance in specific environmental conditions. These systems take into account adaptation mechanisms and implement algorithms for finding local extremes without predicting changes in the environment, based on information available about this environment at a given time. The generally accepted approach is that the enterprise's adaptive capacity is not only how to respond to events that have already taken place, but to a greater extent how to anticipate them; the fundamental features of this category are reliability, flexibility, and mobility. A more in-depth analysis by V. Grosul & T. Askerov (2019) made it possible to distinguish process, systemic, and targeted approaches in defining the category "adaptation" and thus, to interpret this category as a process of timely adjustment to unstable external business environment. This involves detecting the negative consequences of shortcomings in the enterprise management system in terms of ensuring the enterprise's sustainable performance and development in the long term, or adjusting the structure, resources, reserves, and management capabilities of the enterprise's adaptive potential in response to the impact of external factors.

With regard to creative capacity, I. Tanasiuk & S. Kirsho (2023) pointed out that staff creativity is formed under the two conditions of creativity development: economic

(to finance the participation in conferences and associations in order to facilitate sharing experience, expand creative spaces at the enterprise, and enhance through external information influences); and psychological (to contribute to the change from a reproductive-oriented to creative-oriented personality, ready for a transformational activity in the field of their profession, since the basis for the development of creativity is the cognitive, characterological, dynamic, emotional and volitional, motivational sphere). According to B. Batiuk & K. Hirniak (2024), creative solutions in human resource management in the difficult conditions of war ensure adaptability, resilience and innovation and become key factors in the enterprise survival. Creative HR management involves the development and implementation of agile work mechanisms (remote work, use of technology for virtual meetings and collaboration, creation of safe and accessible work centres away from combat zones) for psychological support, including stress management counselling and workshops. Enterprises should creatively overcome communication channel disruptions and re-establish communications, including the use of phone calls, SMS, encrypted messaging apps, and satellite communication.

O. Dzhur *et al.* (2023) argued that enterprise crisis management, as a choice of a new direction that changes people's minds, implements various means of communication inside and outside the enterprise, embodies the path of excellence and is a multi-level system. Crisis management tools are essentially the activation of new levels of human consciousness. This allows employees to implement their intentions and opens up unlimited possibilities for obtaining the power (potential) of the enterprise as a system. I.Yu. Lunkina (2024) proposed to apply a systematic approach to crisis management through the use of special technologies. To her mind, these include: first, the use of programme-targeted approaches to the developed management measures that should be implemented in a timely manner, since the time factor is crucial for successful crisis management; second, development and application of a system of anti-crisis criteria for assessing the quality of management decisions, which will allow making the right choice among possible alternatives of behaviour and performance.

Despite the significant attention of scholars to this issue, the problems of formation and development of creative potential in the context of increasing the ability of enterprises to adapt to the crisis remain unresolved. The purpose of the article was to develop a theoretical and methodical approach to the formation and development of creative potential, based on a structural and logical model of formation of the enterprise's adaptive capacity in the crisis through enhancing its creative potential. The practical testing was carried out using the Argenti A model (A-score) that combines quantitative and qualitative indicators of crisis identification and allows assessing the stage of crisis and, accordingly, the level of adaptive capacity of the enterprise.

## ■ Materials and Methods

The article used a wide range of scientific research tools. General scientific methods, such as analysis, synthesis, and generalisation were used at all stages of the research, from problem statement and objective formulation to conclusions. To define the essence of creative potential and its components, the article used the method of scientific abstraction, which allowed abstracting from general, often blurred signs of creativity, and focusing on those that are important from the perspective of their incorporation into the enterprise management system. Given that the highest level of abstraction is the formation of concepts (categories) and their components, the study substantiated the components of creative potential as a category to be considered at the intersection of management and psychology.

To develop a structural and logical model of formation of the enterprise's adaptive capacity through the development of its creative potential, the study used the methods of analogy, general to specific. This made it possible to structure the determinants of creative potential through identifying not only its components, but areas of its development as well; this also allowed specifying measures to ensure its development. To determine the sequence of actions and tools for assessing an enterprise's adaptive capacity in crisis, the author used the comparison and generalisation method that allowed taking into account the most well-known practices and methods of analysis and implementing an integrated approach to creation of an evaluation algorithm. It also prevented an information overload and duplication.

The results were based on the assumption that the change in creative potential affects the adaptive capacity and the likelihood of bankruptcy of an enterprise. The process involved three stages: shortcomings, mistakes and crisis symptoms. The method was based on assigning a certain score to each factor, and the scores were used to calculate the A-score. The study analysed the capacity of the enterprises, such as Private Joint Stock Company (PrJSC) Roshen, PrJSC Kharkiv Biscuit Factory, PrJSC Obolon, Limited Liability Company (LLC) Nova Poshta and Public Joint Stock Company (PJSC) Interpipe NTZ to adapt to crisis situations. Depending on the scores, the entity was assessed as; an enterprise with high adaptive capacity, which is successful in all areas of activity; an enterprise with medium adaptive capacity, which may face a crisis in the next five years; an enterprise with low adaptive capacity, which has serious difficulties in its financial and economic activities. The final stage of the assessment was the use of adaptability indicators with establishing their optimum values; identifying deviations of the calculated indicators from the optimum (standard) ones and the cause of the discrepancies, comparing the obtained levels with the planned ones, and implementing corrective actions.

Methods of formalisation and statistical research were used at the stage of practical testing, which was carried out using the Argenti method. This involved the use of data from statistical and financial statements of enterprises, annual management reports, which are publicly available

(Clarity Project, n.d.). This method combined quantitative and qualitative indicators to identify and assess the crisis. The research was conducted in compliance with Business integrity and ethics (n.d.). The qualitative indicators in the model described the management structure, relationships in the supervisor-subordinate system, the accounting system used, the terms of fulfilment (non-fulfilment) of contractual obligations, employee motivation and incentives, quick or slow response to changes in the external environment, etc. Quantitative indicators mainly characterised the financial aspects of the company's operations: financial independence, solvency, turnover of capital and its elements, and profitability. The use of tabular and graphical methods provided a clear presentation and visualisation of the results.

## ■ Results and Discussion

Consideration of the triad of interrelated concepts "creative potential – adaptive capacity – crisis management" showed that their interconnection is being studied at the theoretical level. The initial concept is creativity; unlike creative work that involves the creation of something fundamentally new, creativity determines the ability of a person to abandon stereotypical ways of thinking and identify new ways of solving problems. Creativity is a person's ability to think and behave in a non-standard way, to realise the value of their experience, to sense a problem, to identify it, and to look for ways of solving it. A. Serban *et al.* (2023) performed a comprehensive analysis of the correlation between cognitive ability and creativity, which proved that several conceptual and methodological moderators (e.g., cognitive ability measure, creativity measure, creativity domain, rating type) had a significant impact on the strength of the meta-analytic correlation.

B. Batiuk & K. Hirniak (2024) formed the determinants of creativity that affect the enterprise's HR management system. They included, according to the authors: corporate culture and leadership; development and training of employees; agility in work and work environment; communication and cooperation, and motivation. A relevant study by N.C. Devi (2024) suggested ways to improve the relationship between a leader and his or her subordinates through effective knowledge management strategies that foster employee creativity. A paradoxical leader who regulates knowledge-hoarding and promotes knowledge-sharing behaviours can effectively foster employee creativity.

I. Mykhalchuk & V. Stadnyk (2023) argued that the essence of creativity is revealed through the potentiality of human creative abilities that only manifest themselves under certain conditions, and through the productive use of the created value. Regarding the creativity of the economic system, it is exhibited as the capability of the management to create a favourable organisational space (motivational environment for creativity) for attracting professionally trained and creative individuals. These individuals should be capable of generating unique ideas in various functional areas of activity and transforming them into new value propositions in the form of goods and services that have

a positive public feedback and ensure the necessary efficiency of the business model of economic activity in the current and strategically forecasted business environment. The authors believed that the potential of creativity should be enhanced and effectively used to produce value offers that will be in demand by the market.

M. Benedek (2024) considered individual differences in creative achievements, as characterised by creative potential, to be the main principle of creativity. The author identified eight conceptual and methodological issues that need to be addressed when studying the relationship between creative potential and achievement. In his opinion, these include the proper assessment of creative achievement, scope and specifics of creative potential, forms of interaction and development dynamics, the role of mediation, creative behaviour, the impact of environmental factors, and the characteristics of the samples obtained.

These considerations, which are worth accepting, have formed a model of individual creative differences that form the structure and affect the interaction of the relevant components at different levels of creative potential, creative behaviour and creative achievements under the impact of environmental factors. In the classical sense, creativity functions in the management system should be aimed at improving organisational interaction (both within the enterprise and in relation to stakeholders) to generate new ideas in the context of building (improving) and implementing business processes and ensuring the effectiveness of teamwork in generating new ideas, their comprehensive critical analysis, and selection of the most promising ones, thus ensuring high adaptive capacity.

Creative potential is viewed at the intersection of management and psychology. Accordingly, on the one hand, the term can be attributed to the group of managerial and economic categories, and on the other hand, it belongs to the terminological apparatus used by modern psychologists. In terms of psychology, M. Quirin *et al.* (2020) structurally defined the creative potential of an individual by the main forms of manifestation of the human psyche, namely: cognitive and emotional-volitional processes, mental states, and qualities. When considering the creative potential of an individual in the context of his or her social role in the organisation, with the need to cooperate with other employees and implement teamwork skills in order to achieve the organisation's goals, the elements of creative potential should be supplemented by a motivational component on the part of management.

Given the fact that creative potential is considered an effective tool for crisis management, it is vital to develop approaches to the formation and development of creative potential in order to increase the staff adaptability in the context of forming the adaptive capacity of an enterprise. In this regard, Figure 1 shows a structural and logical model of forming the enterprise's adaptive capacity through the development of the creative potential of its employees. The model identified five components of creative potential in accordance with the above considerations: cognitive,

characterological, emotional-volitional, motivational, and psychological. For each component, the direction of development was defined and measures were specified, whose implementation will enable the enterprise to achieve the goal of increasing the staff adaptability.

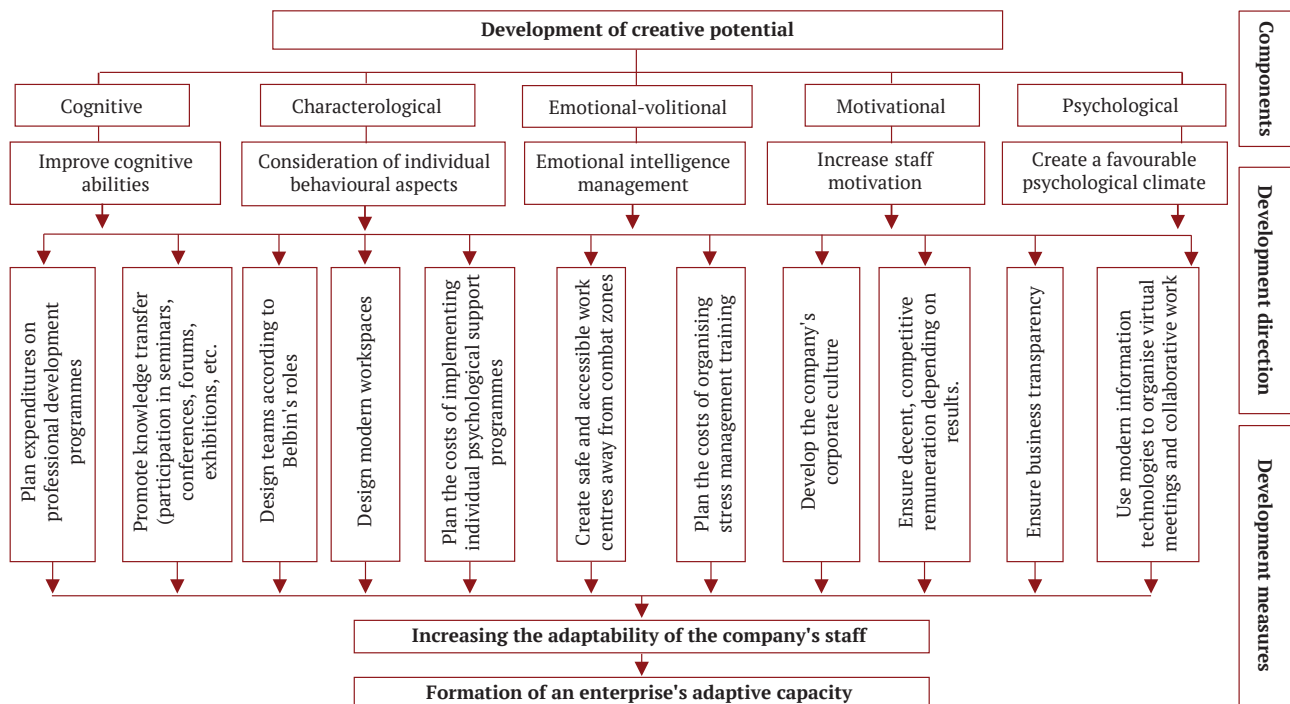
Improving the cognitive (mental) abilities of employees involves systematic work on implementing professional development programmes (trainings, webinars, professional development programmes, etc.), promoting various forms of non-commercial knowledge transfer (participation in seminars, conferences, forums, exhibitions, etc.). Such initiatives should not only concern senior managers, but also managers of various functional units at different levels. According to the study of team effectiveness by R.M. Belbin & V. Brown (2022), mental capacity or intelligence is not in itself a key factor in the success of an organisation, but rather a balance of behaviours. Teamwork is most effective when the team consists of people with different abilities, ways of thinking and personalities. In fact, the success of a team is driven by the ability to anticipate, take into account individual behaviour, and select the team members in such a way that they are not merely different but complementary. R.M. Belbin & V. Brown (2022) identified nine clusters of behaviours, or team roles, necessary to drive the team's progress. It is important to note that one person can combine several team roles: one role will be more prominent, while others will be less so.

The above study was continued by Z.T. Kosztyán *et al.* (2024), who argued that most enterprise's tasks and projects are implemented using agile, extreme or hybrid traditional methods. The matrix approach allows modelling team roles and synergy between employees. By extending the problem of synergy-based task and project planning, the model proposed by the author allows managing agile projects, taking into account the effect of synergy between employees and the difference between hard and soft skills. Practical testing of the method proved that positive synergy between employees can shorten project timelines and reduce project costs, while the best way to choose roles in the team is doing it autonomously. Designing modern workspaces ("workrooms", "Open space", "Activity Based Working" approach, etc.), creating safe and accessible work centres away from combat zones, using modern information technologies to organise virtual meetings and collaborative work will help to foster the development of not only the characterological, but also the emotional, volitional and psychological components of creative potential.

In terms of developing the motivational component, various incentives, both monetary and non-monetary forms, are acquiring particular importance. The development of the motivational component will be facilitated by enhancing corporate culture and ensuring business transparency for both external and internal stakeholders. In fact, transparency can be seen as a component of corporate culture, although their relationship is not entirely obvious. Corporate culture, the concept of which is determined by the organisation's mission and goals, as well as collective

and individual values, assists in maintaining the integrity of the organisation by creating its own standards of thinking and behaviour, helps people understand their place in the organisation, and strengthens their faith in the organisation's perception of ideals. The United Nations has developed a Module on Business integrity and ethics (n.d.) that recommends the documents, such as Code of Conduct or Code of Ethics, be published and in a clear manner communicated to each employee. Adhering to the principles of business transparency means that an organisation or

industrial enterprise, in particular, is willing to disclose information about the source of its raw materials, the quality and safety standards of its products, labour practices, environmental protection, etc. (Fig. 1). Business transparency, according to A. Bateman & L. Bonanni (2019), is becoming an urgent requirement of consumers who are willing to pay 2 to 10% more for the goods from "transparent" companies. Moreover, for potential employees it is one of the criteria for deciding on the choice of an employer at the stage of job search.



**Figure 1.** Structural and logical model of formation of the enterprise's adaptive capacity through the development of creative potential

Source: compiled by the authors

The concepts of adaptation and adaptive capacity of enterprises also require theoretical substantiation. According to V. Grosul & T. Askerov (2019), the process of adaptation facilitates the levelling of the negative impact of environmental factors and the use of internal capabilities to implement the efficient long-term development of the enterprise. The dynamic equilibrium of the system is maintained by the homeostasis ring, which ensures the stability of the internal environment under changing conditions of the external environment. According to N.V. Bielikova & I.O. Hubarjeva (2023), the loss of market share and the reduction in the value of share capital are the result of the inability to ensure a timely and adequate response to changes in environmental factors. These are the conditions for adaptation that is becoming an effective tool for an increase in the level of sustainability and efficiency of an enterprise. When building adaptive systems, it is vital to adhere to the following principles: differentiation (high level of complexity and a significant amount of diversity

of components requires a more complex adaptive management system); double loop management (both influence on the object of management and study of the patterns of system development); feedback (recording the characteristics of the object of management and their changes under the impact of management decisions through feedback channels). The position of I.I. Stets (2017) seems to be reasonable; he argued that the main principles of the enterprise adaptation process are: methodological (systematic; preventive impact on external threats; homeostasis); methodical (purposefulness; synergy; structural; economic efficiency); operational (economic monitoring; integrity; scientific validity; alternative and flexibility). In his opinion, the economic justification for the functioning of an adaptive management system at an enterprise is aimed at guaranteeing the rationality of costs and economic motivation of personnel to implement adaptation measures promptly and effectively. The author insisted on the expediency of assessing the adaptive capacity of an enterprise

by indicators of adaptability, the list of which may differ for different enterprises. The indicators include, first, calculation of acceptable and optimal values of adaptability indicators for the enterprise under study; second, calculation of the selected indicators and their comparison with optimal levels; determination of adjustment coefficients taking into account benchmarks and trends. First and foremost, adaptive capacity is characterised by a stable response of a business entity to the impact of environmental factors.

The study by A. De Boon *et al.* (2023) identified specific aspects of adaptation in relation to sustainability transitions. These include the dual roles that access to finance and information can play; ownership status and ability to implement adaptation measures; state of mind; feelings of respect, appreciation and understanding; perceived levels of control and ownership; and considerations of global impacts. A. Cedergren & H. Hassel (2023) argued that adaptive capacity is manifested in a particular situation through specific adaptations made by the organisation, since the preconditions for adaptation exist even before the crisis. A better understanding of the preconditions necessary to adapt to the unfolding crisis is achieved by examining how adaptations were manifested during the

COVID-19 pandemic and the factors contributed have contributed to this adaptive capacity. Among factors favourable for adaptive capacity, the author identified a high level of trust between the roles and organisational levels; a polycentric organisational structure where departments work autonomously but still allow for a degree of centralised coordination; clear overall goals; the use of previous experience in recognising both minor and major crises, and active employee literacy.

D. Prokopowicz & M. Matosek (2023) classified crises according to the following criteria: first, the criterion of the crisis scale (crises affecting a single economic entity, or local, regional, international, continental and global crises); second, the scale of their impact on business entities and citizens; third, the level of diversity, complexity, nature of possible consequences as well as sources that cause them. The author believed that a common feature of crises is a high level of uncertainty, increased risk and unfavourable profit and loss balance. This calls for the need to assess the creative potential, which in turn will make it possible to assess the ability of the enterprise to adapt to the crisis. Table 1 shows the sequence of actions and the tools for assessing the enterprise's adaptive capacity in crisis.

**Table 1.** Sequence of actions and the tools for assessing the enterprise's adaptive capacity in crisis

Stage	Features, content and tools
First	Assessment of financial and economic state of the enterprise using the tools of financial analysis, express and fundamental diagnostics, diagnostics of the probability of bankruptcy; assessment of the degree of crisis; assessment of the creative potential of the staff
Second	Comprehensive study of environmental factors and level of competitiveness, analysis of markets and supply chains; strategic analysis; legal, legislative and regulatory framework; specifics of business insurance in the face of military hostilities
Third	Assessment of the enterprise's adaptive capacity in crisis (based on the calculation of adaptability indicators with setting their optimal values; detecting deviations of the calculated indicators from the optimal /normative ones and the cause of the deviations), comparing the obtained level with the planned one and implementing corrective changes

**Source:** compiled by the authors

Practical testing was carried out using the method proposed by J. Argenti (1976), which successfully combines quantitative and qualitative indicators for identification and assessment of a crisis. The Argenti A-score model is the most appropriate to use, as it allows identification of bottlenecks in the enterprise's operations. Given the fact that their accumulation leads to serious errors in the business entity's activities, there is a possibility to recognise the dangerous symptoms of a crisis in a timely manner. If the management does not address the problems in time, the company will be approaching a crisis. According to the Argenti's A Score Model, the main qualitative indicators that characterise creative capacity include the management style and characteristics of top management, the quality of management, as well as some non-financial symptoms, such as the quality of products or employee morale. Other dangerous symptoms include various kinds of "emergency" measures and frequent failures to fulfil obligations by a business entity. The model also includes indicators that specifically assess the response to changes in the environment and the level of adaptation to these changes.

According to the A Score Model, the study began with the assumption that a decline in creative potential leads to a decrease in adaptive capacity and subsequent bankruptcy; this process takes several years to complete. The process can be divided into three stages: shortcomings (companies facing a crisis have been demonstrating a number of shortcomings for years); mistakes (as a result of the accumulation of the previous shortcomings, the company may make a mistake that leads to bankruptcy); symptoms (mistakes made by the company determine the symptoms of impending insolvency, namely, deterioration of financial performance, hidden by "creative" calculations, and signs of acute shortage of funds). Each factor and each stage are assigned a certain score to calculate an aggregate indicator, viz. the A-score. Table 2 shows the indicators, calculated using the above method, for individual enterprises that belong to different industries (types of economic activity) for a more visual comparison. Depending on the scores obtained by the A Score Model, an entity may be assessed as either:

1) an enterprise with a high adaptive capacity, successful in all areas of activity (the score ranges from 5 to 40);

2) an enterprise with medium adaptive capacity, a crisis may occur in the next five years (the score is from 41 to 85); 3) an enterprise with low adaptive capacity and serious operational difficulties (the score is over 85).

**Table 2.** Results obtained using the A-score method to assess the adaptive capacity of leading Ukrainian enterprises in crisis, scores

Crisis stages	Recommended according to Argenti	PJSC Kharkiv Biscuit Factory	PJSC Interpipe NTZ	PrJSC Roshen	LLC Nova Poshta	PrJSC Obolon
<b>1. Disadvantages (high adaptive capacity)</b>						
1.1. Autocratic director	8	8	0	8	8	8
1.2. Chairman of the board of directors is a director (“combined duties”)	4	0	4	0	0	0
1.3. Inactive, uninvolved boards of directors	2	0	0	0	0	0
1.4. Internal contradictions within the board of directors (differences in knowledge, skills)	2	2	0	2	0	2
1.5. Weak financial director	2	0	2	0	2	0
1.6. Imperfect management structure	1	0	1	0	0	0
1.7. Deficiency of the accounting system: lack of budgetary control; lack of cash flow forecasts; lack of a cost management system	3 3 3	0 0 0	0 3 0	0 0 0	0 0 0	0 0 0
1.8. Slow reaction to changes in the environment, poor adaptation to the changes, such as emergence of new products or methods of labour organisation	12	0	0	0	0	0
Maximum possible score	40	10	10	10	10	40
“Passing score”	10	10	10	10	10	10
<b>2. Mistakes (average adaptive capacity)</b>						
2.1. Excessively high share of borrowed (raised) capital	15	15	15	0	15	0
2.2. Shortage of working capital	15	15	15	0	15	15
2.3. The enterprise has a large unfinished project (the failure of such a project is a serious danger for the enterprise)	15	0	15	0	15	15
Maximum possible score	45	0	45	0	45	45
“Passing score”	30	30	30	30	30	30
<b>3. Symptoms (low adaptive capacity)</b>						
3.1. Deterioration in financial performance	4	0	0	0	0	4
3.2. Taking “emergency” measures (increased borrowed funds, reduced wages, deterioration of employee motivation and incentives, curtailment of promising projects and programmes)	4	0	0	0	0	0
3.3. Non-financial signs of distress (deterioration in quality, fall in demand, decline in market share)	4		0	0	0	0
3.4. Final symptoms of the crisis (lawsuits, scandals, failures to fulfil obligations)	3	0	0	0	0	0
Maximum possible score	15	0	0	0	0	15
“Passing score”	4	0	0	0	4	4
The highest possible A-score	100	40	55	10	55	44

Source: compiled by the authors based on the financial statements of companies in the public domain (Clarity Project, n.d.)

The results of the calculations presented in Table 2 show that at the first stage of the process, characteristic of an enterprise with high adaptive capacity, are PrJSC Roshen (the sum of points is 10) and PrJSC Kharkiv Biscuit Factory (40 points); PrJSC Obolon (44 points), LLC Nova Poshta and PJSC Interpipe NTZ (55 points each) are at the second stage of the process, which is characteristic of an enterprise with medium adaptive capacity. The enterprises studied exhibited high and medium adaptive capacity, which positively characterises their economic activity and their creative potential is a significant success factor in the enterprise’s adaptation to the crisis.

**Conclusions**

Operation of enterprises in the face of a military-political crisis requires the development of a theoretical and methodical approach to the formation and enhancing the enterprise’s creative potential. The approach should be based on a clear and adequate to the current conditions structural and logical model of formation of the enterprise’s ability to adapt to the crisis by developing its creative potential. The study of literature sources proved that the determining factor in the formation of an enterprise’s adaptive capacity in a crisis is the creative potential of its staff. The importance of applying approaches related to the development of creative potential to other categories of employees should

not be underestimated. Consideration of creative potential through the prism of management and psychology provides a sound basis for identifying its components, whose development in the specified directions will increase the adaptive capacity of staff, which in turn will help to increase the ability of the enterprise to adapt all resources and processes to crisis conditions. The article used a wide range of research tools that allowed viewing creative potential as a boundary category that can be attributed to the group of managerial and economic categories and at the same time be considered from the standpoint of psychology.

The developed approach should not be limited to conceptual statements, but should include practical implementation, which was carried out using the Argenti A-Score method. The advantage of this method was the combination of quantitative and qualitative descriptors used to diagnose the crisis state and allow simultaneous assessment of the crisis stage and the level of adaptive capacity of the enterprise. The qualitative indicators describe the creative capacity (management style, characteristics of top management, quality of management, product quality, employee

morale, emergency measures and frequent failures to fulfil obligations by the business entity) and indicators that specifically assess the response to changes in the external environment and the level of adaptation to these changes. The calculation of the indicators using the described method for individual enterprises showed that the chosen business entities belong to two groups of enterprises: those with high adaptive capacity (PrJSC Roshen and PrJSC Kharkiv Biscuit Factory) and those with medium adaptive capacity (PrJSC Obolon, LLC Nova Poshta and PJSC Interpipe NTZ). Prospects for further research are the development of the author's own methodical approaches to assessing the development of creative potential and on this basis determining the degree (probability) of adaptation of enterprises to the crisis at different stages of its manifestation.

### ■ Acknowledgements

None.

### ■ Conflict of Interest

None.

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## Розвиток креативного потенціалу в контексті підвищення здатності підприємства адаптуватися до кризи

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■ **Анотація.** Ефективність господарської діяльності та стійкість підприємств України до кризи залежать від адаптивної здатності, креативної спроможності, гнучкості щодо швидкої реакції на зміну факторів зовнішнього середовища, що підкреслює актуальність дослідження. Метою статті було теоретичне дослідження та практична апробація підходів до формування адаптивної здатності управління кризами на підприємстві, на основі використання та розвитку креативного потенціалу його персоналу. Результати отримано за рахунок використання таких методів: наукової абстракції, порівняння та узагальнення – для визначення сутності креативного потенціалу та його складових, послідовності оцінки спроможності підприємства адаптуватися до кризи; аналогії, загального і особливого – при розробці структурно-логічної моделі формування адаптивної здатності підприємства шляхом розвитку його креативного потенціалу. У статті розглядалися теоретичні, методичні та прикладні аспекти формування тріади взаємопов'язаних понять «креативний потенціал – адаптивна здатність – антикризове управління». На фундаментальному рівні досліджено сутність креативного потенціалу з урахуванням формування цієї категорії на стику двох наук: менеджменту та психології. Виділено п'ять складових креативного потенціалу (когнітивна, характерологічна, емоційно-вольова, мотиваційна, психологічна). Розроблено структурно-логічну модель формування адаптивної здатності підприємства шляхом розвитку його креативного потенціалу. Визначено послідовність дій та інструментарій оцінки спроможності підприємств адаптуватися до кризи. Практичну апробацію проведено за допомогою методу Аргенті (А-рахунок), який поєднував кількісні та якісні індикатори діагностики кризового стану та дозволив оцінити стадію кризи та відповідно рівень адаптивної здатності підприємств. Запропоновано науково-методичний підхід до формування та розвитку креативного потенціалу в контексті підвищення здатності підприємства адаптуватися до кризи. Запропонована структурно-логічна модель формування адаптивної здатності підприємства шляхом розвитку його креативного потенціалу містила ґрунтовний опис заходів, реалізація яких на практиці в комплексі дозволить підвищити адаптивну здатність персоналу, що сприятиме підвищенню здатності підприємства адаптувати основні та допоміжні бізнес-процеси до кризових умов

■ **Ключові слова:** персонал; командні ролі Белбіна; інструменти фінансового аналізу; індикатори адаптивності; антикризовий менеджмент

## Use of scoring methods to evaluate investment projects

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■ **Abstract.** The purpose of this publication was to develop a scoring methodology for evaluating and ranking investment projects by their attractiveness and potential success, as well as to use this evaluation to identify more effective projects. The article provided a methodology for calculating possible risks for further use in project ranking. The article presented a simplified mathematical model for comparing investment projects and ranking them. The model can be used in the development of own evaluation methods. In this article, methods such as discounted cash flow, real options method, expert judgment, hierarchy analysis and Bill Payne's method were considered for start-up valuation. The key elements of the evaluation process were the determination of criteria and weighting factors. Criteria included important evaluation criteria (e.g., profitability, risk, strategic importance, social impact). Each criterion had a percentage weight based on relative importance, with weights summarised up to 100%. The article considered key aspects of effective investment with a focus on the need to minimise risks and strive for profit maximisation. The authors analysed various types of risks, which may include loss of funds due to project inefficiency or underestimation of the potential of promising investment opportunities. Attention was also paid to the investment environment in Ukraine, which has undergone significant changes as a result of the war in 2022-2024. The authors highlighted the shift in investment focus from traditional sectors, such as business centres and infrastructure, to the defence industry, and predict the economic recovery after the conflict ends. Scoring methodologies, quantitative and qualitative methods of investment project evaluation were considered

■ **Keywords:** risk minimisation; financial scoring; investment efficiency; market conditions; risk assessment

### ■ Introduction

As the complexity of economic conditions increases, so does the need to minimise risks and strive to maximise the return on investment. Risks can include both the possibility of losing money due to project inefficiency and underestimating the potential of promising investment opportunities. Investors face various types of risks, ranging from financial and technical problems to changes in political or market conditions. Minimising these risks and maximising returns become important tasks for any investor. This requires analysing and evaluating the risks and opportunities associated with each specific project. Anticipating possible difficulties and identifying ways to avoid or

mitigate them are key to ensuring a successful investment. The investment environment in Ukraine has undergone significant changes as a result of the war. Instead of demand for business centres, retail chains, infrastructure, or energy, defence-related projects are currently seeing the most development. Nevertheless, there is a general belief that Ukraine's post-conflict recovery is beginning. A significant amount of investment is also expected in the restoration, expansion and modernisation of infrastructure, industry, energy and other sectors.

If exclude the cases when entrepreneurs invest either in the development of their company or in business

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expansion, the most common types of financing for various projects are lending and venture capital investment (Venture capital investments, n.d.). Scholars M. Kostiukova & V. Haliasovskiy (2021) and I. Behal (2023) have extensively studied the challenges of using scoring methods for evaluating investment projects. Recent work has also been published by W. Wu (2023), S. Guang *et al.* (2024), and J. Xiao *et al.* (2024). The article emphasised the importance of improving the methodologies underlying ESG ratings, especially in the face of uncertainty, and suggested that integrating these approaches can improve the decision-making process for sustainability-oriented investors. Research of the issue of effective investment has been conducted by L. Mo (2023) and G. Babaei & S. Bamdad (2023). Other notable authors include S.S. Rawat *et al.* (2023). N. Chiadamrong (2024) considered approaches to the assessment of economic benefits from increasing the discriminatory ability of scoring models on which risk management is based. This author economically justified the costs of investment resources aimed at improving the models and their technical resources aimed at improving the models and their technical implementation in credit business processes.

It is predicted that after the war ends, Ukraine will begin an active process of economic and infrastructure recovery. This will open up new opportunities for investment in various sectors, including those that were most affected by the conflict. Investors are expected to find attractive business development and profit opportunities in Ukraine's recovering economic environment. Thus, effective investment in Ukraine will require careful analysis of risks and prospects, assessment of market trends and potential opportunities. Investors who are able to correctly assess and respond to changes in the investment environment will have a greater chance of success as Ukraine's economy begins to recover. Investments can be raised from entrepreneurs' own funds, venture capital investments, angel investments, crowdfunding, and bank loans (What is the difference..., 2018). It is important to minimise risks and choose strategies that maximise profits. Such strategies are important for finding new methods for their evaluation and management. The goal of this article was to create a practical and user-friendly scoring system for assessing and ranking investment projects based on their appeal and likelihood of success, and to apply this evaluation in determining whether to proceed with a more detailed analysis of specific projects.

## ■ Materials and Methods

The paper employed a comprehensive set of methods to evaluate start-ups, combining both quantitative and qualitative approaches. These methods included discounted cash flows (DCF), real options analysis, expert estimates, hierarchy analysis, and the Bill Payne method, all of which contributed to a more nuanced evaluation of investment opportunities. The core of the evaluation process revolved around two key components: criteria and weighting factors. Evaluation criteria typically encompass dimensions such

as profitability, risk, strategic relevance, and social impact, each of which was assigned a percentage weight based on its relative importance. The sum of these weights always equals 100%, reflecting the company's strategic priorities.

In addition to financial metrics, the evaluation system integrated non-financial criteria, recognising that the success of a start-up is influenced by factors beyond profitability alone. Weighted scores were calculated for each criterion, and used to rank the projects, providing a structured method for comparing competing investment options. The process of determining criteria and weights should be collaborative, involving key stakeholders to ensure that the evaluation framework aligns with the organisation's goals. This system must be flexible, with periodic reviews to adapt to changing priorities or market conditions. A wide range of financial methods were used to assess investment projects, including well-established techniques like Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period, Discounted Payback Period, Profitability Index (PI), Modified Internal Rate of Return (MIRR), Accounting Rate of Return (ARR), Real Options Analysis, Break-Even Analysis, and Cost-Benefit Analysis (CBA). Each of these methods had distinct advantages and limitations. For example, NPV provided a direct measure of the dollar value an investment is expected to generate, but it may not fully capture the flexibility of an investment under uncertainty, where real options analysis might be more applicable. IRR helped assess the return rate but may lead to conflicting decisions when comparing projects with different sizes or time frames.

Scoring methods, also referred to as capital scoring or project scoring, served as an essential tool in evaluating and ranking multiple investment projects. The key steps in scoring involved defining the evaluation criteria, assigning weights to each criterion, scoring each project against these criteria, and calculating the weighted scores to rank the projects accordingly. This ranking process provided a clear basis for decision-making, allowing companies to allocate capital to the most promising ventures. A multi-criteria, multi-method approach provided a more balanced view of potential investment opportunities, accounting for both financial performance and broader, strategic considerations. This comprehensive evaluation process not only enhances the decision-making framework but also allows businesses to optimise their capital allocation, ensuring that resources are directed toward projects with the best risk-return profiles, strategic alignment, and potential for long-term growth. Financial scoring was used to calculate a composite index that comprehensively demonstrates the state of a company's liquidity, solvency, profitability, and business activity. For example, it can be considered the methodology developed by YouControl (Financial scoring methodology..., n.d.) that calculates the FinScore index. This model takes into account several dozen empirically identified factors and used formulas to calculate a quantitative score for the company in question. In general, as with any scoring model, the Finscore index is calculated using the formula:

$$F = \sum_{i=1}^n F_i \times w_i, \quad (1)$$

where  $w_i$  – factor weight,  $0 < w_i < 1$ ;  $\sum_{i=1}^n W_i = 1$  (importance coefficient);  $F_i$  – the score obtained for a particular factor. The authors have proposed the following main components of the proposed methodology. It is a system for evaluating investment projects based on several factors. In it, the evaluation is divided into three main areas: team, market, and product, with each area containing certain criteria. This is how the system is set up and how the evaluation works. Factors are used for comparison: the evaluation is based on various key factors such as team composition, market conditions and product characteristics. Each factor has its own scoring criteria that reflect the quality or status of that factor for a particular project. Each factor is assigned a score from 1 to 3 based on predefined quality descriptions: least favourable condition (e.g., lack of experience or low market size); moderate or acceptable condition; most favourable or optimal condition (e.g., highly skilled team or high market demand). Some factors were assigned a factor, which is a weight that indicates the importance of the factor in the overall assessment.

## ■ Results and Discussion

The success of an investment project depends on several key factors. The competence and experience of the team play a crucial role in solving problems and adapting to challenges, which ensures the smooth implementation of the project. A thorough market analysis helps to identify the target audience, trends and competition, which gives an idea of the potential success of the project. It is necessary to assess the innovation and uniqueness of the product to ensure that it meets the client's needs and stands out from the competition. Assessing financial, technical, and legal risks is important to anticipate problems. Effective risk management strategies help reduce threats and increase the likelihood of project success.

Ukraine's investment environment has undergone profound changes due to the ongoing war with Russia, which began in February 2022. Prior to the conflict, Ukraine had been on a path of economic reforms and opening up to foreign direct investment, especially after the 2014 crisis. The war has created an extremely challenging environment for both Ukrainian and foreign investors. Despite these difficulties, there are emerging opportunities in specific sectors and a sense of optimism for future recovery. Ukraine's investment environment has shifted dramatically due to the war, marked by economic challenges and heightened risks. Opportunities exist in key sectors like infrastructure, energy, agriculture, and technology, particularly for those who are strategically positioned to participate in the post-war recovery and reconstruction efforts. The success of future investments will largely depend on the duration of the conflict, international support, and Ukraine's ability to implement reforms and rebuild its economy in the coming years.

Among the life stages of an investment project, there are several stages that begin with the formation of an idea

and end with the operation stage. Each of these stages plays an important role in the development of the project and requires a careful approach to achieve a successful outcome. Formation of the idea: the first stage is the emergence of an idea. At this time, the team identifies a need or opportunity for a new project. The idea can come from many sources – from internal company needs to external market opportunities. Preliminary analysis: once an idea has been generated, a preliminary analysis is conducted to assess its viability and potential benefit. This stage includes assessing the risks, cost, and potential impact on the organisation or market. Making a decision on implementation: after a successful analysis of the idea, a decision is made to implement the project. This includes deciding on funding, timing, and overall strategic benefits. Planning: the planning phase develops a detailed strategy for the project, including resource allocation, schedule, and milestones. Funding: once the plan is in place, the project needs to be funded. This stage may involve finding investors or tapping into the company's internal resources. Implementation: at this stage, the project becomes a reality, and work begins according to plan. Start of operation: when a project is completed, it is put into operation. This means that the project begins to deliver the planned results or benefits to the organisation or market.

A large number of ideas and proposals require careful analysis and evaluation of their attractiveness before implementation. The analysis at the preliminary stages allows to identify potential problems and difficulties that may make it difficult to adequately evaluate the project. Solving these problems at an early stage helps to reduce risks and increase the chances of project success in the future. There are quantitative and qualitative methods for evaluating both investment projects and borrowers seeking assistance from either banks or investors. Qualitative methods can also be divided into expert and scoring methods (or ranking, evaluation by many criteria). Credit scoring systems are used almost everywhere in banks. However, they may differ in some nuances, but their main purpose is always to determine the integrity and reliability of a potential borrower. In a broader sense, scoring systems in banks are aimed at ensuring the successful operation of institutions both for personal loans and other lending options – commercial (business) loans, mortgages, car loans. Credit scoring in banks answers 2 main questions – how reliable and creditworthy a client is. Leading financial institutions are now using innovative developments that include artificial intelligence, processing of statistical data from customer databases using neural networks, blockchain, etc (Behal, 2023).

These systems operate as follows. Customer data is collected, which may include age, marital status, education, place of residence, credit history, place of work and position, number of children, and many other parameters, on the basis of which a mathematical model is built to establish a certain rating in points for each borrower. The higher the rating, the more likely the borrower is to successfully repay the loan to the bank. Accordingly, if the

rating falls below a certain threshold, the bank may either refuse to grant the loan or set more stringent conditions for repayment, collateral or guarantee, or interest rate. The most well-known systems are Fair Isaac Corporation (FICO) and VantageScore. Also, it should be noted that there are 2

areas of credit scoring, namely: application scoring, which assesses the client’s creditworthiness; fraud scoring, which assesses the likelihood of fraud. The main differences between lending and venture capital investment were presented in Table 1.

**Table 1.** Characteristics of differences between lending and investment

Characteristics	Crediting	Investing
Payment	When lending, you need to repay not only the amount borrowed, but also additional interest (which is often significant) for using these funds. The interest may be fixed or vary according to the market rate.	In an investment, capital is invested by an investor without the expectation of an immediate return. The investor expects to receive a share of the profits from the enterprise’s activities in the future.
Maturity dates	The borrower must make loan payments (capital and interest) in accordance with the terms of the agreement, which are usually specified in the contract. Violation of the terms may result in penalties or increased interest.	The investor expects to receive a return only after the company starts generating profits. The return on investment can be long and depends on the success of the business.
Bail/guarantee	When granting a loan, banks often require collateral (e.g., a pledge of property or a personal guarantee) to ensure repayment of the loan in the event of the borrower’s insolvency.	Investors usually do not require collateral or a guarantee, but may evaluate the business and analyse its potential before investing.
Impact on business	Creditors do not have any influence on the strategy or management of the company; they only provide financial resources under certain conditions.	Investors, as owners of a stake in a business, can have a certain influence on the development strategy and decision-making.
Terms of cooperation	After the loan is repaid, the relationship with the lender is terminated unless a new agreement is concluded.	Investors retain their stake in the business throughout the entire period of cooperation, can provide advice and be active participants in business processes.
Percentage of profit	The loan does not provide for the lender’s participation in the company’s profits; the lender receives only repayment of the borrowed funds and interest.	The investor receives a percentage of the company’s profits, which can be a significant amount if the business is successful.
Rules in case of bankruptcy	In the event of a borrower’s bankruptcy, the creditor has priority access to debt repayment, regardless of the financial condition of the company.	Investor’s risk losing their investment in the event of a company’s bankruptcy, but may have certain rights to the company’s assets in the event of liquidation.

**Source:** compiled by the authors

Both the first and the second methods use certain sets of factors about the client in their calculations and allow them to evaluate anyone by calculating the appropriate number of points to make a decision on whether or not to grant a loan. It should also be added that there are also “stop factors” in scoring methods, which are guaranteed to result in a loan being denied – these can be a prison sentence, outstanding (or past due) loans, or other factors (Financial scoring methodology..., n.d.). Thus, the above scoring model allows to form a certain rating of companies by assessing their financial stability. According to YouControl’s reports on the history of defaults of Ukrainian companies in 2015-2020, 55-61% of companies in the FinScore “D” group used to be bankrupt, while only 3-5% of companies were in the “A” group (Financial scoring methodology..., n.d.).

This means that any rating calculated using any scoring system is not a guarantee of success or failure, but is primarily a reflection of the probability of a positive or negative outcome (Efimova, 2021). Investment research does have its own peculiarities, especially when it comes to new projects and innovative ideas. There are several key aspects to consider. New project risk: new projects have no operating history, so their prospects may be uncertain. It is difficult for investors to assess whether the sales volume, the quality of the team, and the correctness of the calculations will be achieved. The need for additional analysis:

investors should carefully research new projects, paying attention to aspects such as the team, market potential, competitive advantages and go-to-market strategy. Innovation as a risk factor: innovative projects can be difficult to evaluate due to their uniqueness and unpredictability. Investors should be prepared for a high level of risk. Importance of research: investors should study the market, technological trends and other factors to make informed decisions (Early-stage valuation methods..., n.d.; Kostiukova & Haliasovskiy, 2021; Rawat *et al.*, 2023).

Investment research on new projects requires more in-depth analysis and risk-taking, but it can lead to high rewards in the future. In addition to scoring, a variety of quantitative methods are used to evaluate investment projects, which have their advantages and limitations. They are usually characterised by simplicity, speed, and versatility, but they also have certain disadvantages. One of the most common methods is DCF. This method involves determining the present value of a project’s future cash flows based on the time value of money. DCF is a powerful tool, but its use requires accurate forecasts of future revenues and expenses, which can be difficult in the case of a large number of external factors and risks (Brealey *et al.*, 2020). The authors also used the real options method, which allows to evaluate investment projects as financial options with the possibility of changing the strategy in the

future. This approach allows for a more flexible response to changing conditions and market risks, but requires complex mathematical calculations.

Other quantitative methods include cost sensitivity analysis, statistical methods, and others. Their main advantages are efficiency and the ability to obtain numerical results. However, such methods often do not take into account the human factor, the complexity of assessing external influences and risks, and require a large amount of data. The disadvantages of quantitative methods are the limited criteria taken into account in the evaluation and the tendency to rank projects by numerical indicators rather than by the quality of a particular project. The evaluation of investment projects using quantitative methods should be supplemented by quality and risk analysis, which allows for a more complete picture of the project's potential before making an investment decision.

Qualitative methods for evaluating investment projects, such as expert evaluation, hierarchy analysis methodology (HAM), Strategic Technology Assessment Review (STAR), and Industrial Research Institute Technique (IRI), have both significant advantages and disadvantages that should be considered. One of the main advantages is the use of expert experience and intuition. These methods allow the application of expert knowledge and experience, which is important for evaluating complex investment projects, especially those that involve innovation or technological challenges. Another advantage is the ability to assess risks and the human factor. Qualitative methods make it possible to consider risks associated with human factors, such as expert evaluations of potential problems or selecting the best way to implement a project. A further benefit is that these methods do not require large amounts of statistical information. Compared to quantitative methods, qualitative approaches can be effective even when there is insufficient data to build mathematical models.

Qualitative methods of evaluating investment projects have several drawbacks. Experts' assessments can be subjective and depend on personal experience and views, which can lead to unpredictable results. Depending on the complexity of the project, it can be difficult to find competent experts, especially for innovative technologies or markets. It is important to determine how competent an expert is in a particular field or project, as this can affect the reliability of the assessment. There is also a risk that experts may have personal interests or biases that may influence their evaluation of the project. The views of an influential expert can affect decision-making, which may result in the selection of suboptimal strategies or projects. In general, qualitative assessment methods are a useful tool to complement quantitative approaches, but their use requires careful analysis, control over subjectivity, and caution in selecting experts (Guang *et al.*, 2024).

Scoring methodologies, such as the Brooks Method, Bill Payne Method, Flagship Pioneering, Ioniq, M13, Rocket-internet, and others, are designed to evaluate investment projects based on a set of quantitative and qualitative

criteria. They provide an opportunity to combine different types of indicators and evaluation methods, which allows to get a comprehensive view of the project's potential. One of the main advantages of scoring methods is their ease of use. For example, they can be implemented in the form of questionnaires or rating scales, which simplifies the process of data collection and analysis. In addition, they can be customised to take into account specific regional characteristics, industry trends, or market conditions, making them more adaptable and effective in specific situations.

Scoring methods have certain drawbacks. A serious challenge is the difficulty of building a universal scoring model, as different projects may require different sets of criteria for evaluation. There is also a certain subjectivity in the assessment of some qualitative factors, as they can be interpreted differently by different evaluators. Despite these shortcomings, scoring methodologies remain an important tool for making decisions about project investments. They allow to systematise and analyse a large amount of data, providing an objective approach to determining the potential and risks of a project. To ensure the best results, it is important to constantly improve scoring models, taking into account specific conditions and circumstances in accordance with the market situation and industry requirements.

Among the existing ones, some methodologies attract attention for its fairly universal approach to evaluating new start-ups. This method is based on comparing the company in question with other already operating start-ups and adjusts the appropriate coefficients for key indicators to obtain a preliminary assessment of the new project. The main idea behind the methodology is that by comparing it to existing start-ups, one can understand the potential opportunities and benefits of a new project. This allows investors and market scouts to get a better idea of how a new start-up can fit into the existing ecosystem and how it can fulfil its goals. Evaluating a new start-up by comparing it to similar projects allows you to draw reasonable conclusions about its potential and competitiveness. Taking into account key indicators and adjusting coefficients allows for a more objective assessment, which contributes to making better decisions about investing in and developing start-ups.

The methodology was described in several stages. Several key criteria are selected that the investor and the team consider important for evaluating the start-up. These criteria can include parameters such as market size, team, technology, and potential profits. Other start-ups with similar characteristics are identified for comparison. These can be companies from the same industry or with similar products or services. The new start-up is then compared to these similar projects. After that, scoring is conducted. Each start-up is evaluated for each criterion, and points are assigned based on their importance. For example, if the team is considered the most important factor, more points are given to start-ups with a strong team. The total score is calculated by summing up the points for all criteria. This score determines the evaluation of the new start-up according to

the Bill Payne method. The authors proposed a simplified scoring methodology of the team, market, product, risk (TMPR), which allows for a preliminary assessment of the project by the investor. The simplified scoring methodology of the team, market, product, risk (TMPR) is an effective tool for preliminary assessment of an investment project. It is proposed to consider the main components of the proposed methodology:

1. Team: the quality and experience of the team is an important factor in the success of the project. A preliminary assessment of the management’s competence and ability to plan well, the effectiveness of team communication, and the level of motivation is required. To do this, it will not be superfluous to ask about previous experience, familiarise yourself with previously developed work procedures, schedules, and reports. A strong team is able to effectively solve emerging problems and adapt to changes, which ensures the successful implementation of the project.

2. Market: market assessment determines the potential demand for the product or service offered by the project. Investors analyse the size of the target audience, trends, and the competitive environment. The larger the market and the less competition, the more opportunities for project success. The best result is achieved if you have in-house competence in this area or access to up-to-date market research.

3. Product: the quality of the product or service is also important. It is necessary to evaluate the innovation, usefulness and uniqueness of the project proposal for future clients. A high-quality product ensures that it is differentiated from competitors and meets the needs of the target audience.

4. Risk: risk assessment allows you to predict possible difficulties and threats to the success of the project. It requires an analysis of financial, technical, legal and other risks that may affect the implementation of the investment project. Effective risk management and development of minimisation strategies are key success factors.

Together, these four criteria provide investors with a comprehensive view of the project’s potential and allow

them to make informed decisions about further investment. The calculation was based on the formula:

$$S = \frac{(\sum_{i=1}^3 c_i x + \sum_{j=1}^4 m_j y + \sum_{n=1}^6 p_n z) \times 1}{R}, \quad (2)$$

where  $c_i, m_j, p_n$  is the score of the corresponding parameter in points from 1 to 3;  $x, y, z$  – coefficients reflecting the importance of such blocks as “team”, “market”, “product”;  $R$  – risk coefficient.

To calculate the risk factor, it is necessary to accept the following classification:

1. Financial risks:

1.1 Credit risks: related to the possibility of losses due to non-payment or delayed payment of financial obligations by customers.

1.2 Liquidity risk: arises from uncertainty in the future prompt realisation of assets at the stipulated price.

1.3 Currency risks: caused by uncertainty of future movements of the national currency exchange rates against foreign currencies.

2. Technical risks:

2.1 Risk of cost overruns: the design and estimate cost may be exceeded due to the fault of many participants in the investment process.

2.2 The risk of untimely completion of the investment absorption period: arises due to changes in the composition of projects and disruptions in the supply of material and technical resources.

2.3 Risk of breach of contract: depends on the investor’s financial insolvency, changes in taxation conditions and other factors.

3. Operational risks:

3.1 Risk of sales of products, works, services: arises due to the possibility of narrowing of the sales market and loss of some consumers due to competition and the emergence of higher quality goods after the facility is put into operation.

For each of the risks, its significance is predicted according to the Table 2, and then the overall average risk value from 1 to 8 is calculated.

**Table 2.** Risk matrix

	Unlikely	Probable	Highly likely	Guaranteed
Low impact	1	2	3	5
Average impact	2	3	4	6
High impact	3	4	6	7
Catastrophic impact	4	6	7	8

**Source:** created by the authors based on M. Kostiukova & V. Haliasovskiy (2021)

The classification of risks includes several categories. Financial risks encompass concerns like credit risks, where customers may delay or fail to meet payment obligations, and liquidity risks, which relate to uncertainties about how easily assets can be converted to cash at expected prices. Technical risks involve potential cost overruns from errors by project participants and delays in project completion due to issues like disrupted material supply chains.

Operational risks focus on market dynamics, such as losing customers or facing stiffer competition, which could affect product or service sales after a facility becomes operational. Each risk is assessed for its significance, and an overall risk factor is calculated based on its likelihood and impact using a matrix. The risk matrix categorises risks based on both their likelihood and impact. The likelihood ranges from “Unlikely” to “Guaranteed”, while the impact

levels span from “Low” to “Catastrophic”. Risks are rated on a scale from 1 to 8, where higher scores indicate more significant risks. For instance, a “Guaranteed” event with

“Catastrophic impact” is rated 8, representing the highest possible risk. The system of scoring investment projects was considered (Table 3).

**Table 3.** Proposed scoring system for investment project evaluation

		Factors for comparison			Score		Coefficient
Number of scores		3	2	1	min	max	
Team	Availability of a team	All the necessary specialists	Majority of specialists	Specialists should be sought in the labour market	1	3	0.4
	Quality of the team	Successful experience and reputation in implementing similar projects	Unconfirmed experience	No experience	1	3	
	Motivation of the team	Confidence in success, willingness to participate with their own funds in significant amounts	Confidence in success, not ready to invest	No guarantee of success, not ready to invest	1	3	
Market	Volume of the market	1 billion euros and more	100 million euros and more	up to EUR 100 million	1	3	0.3
	Market growth	More than 10% for the year	From 5 to 10% per year	Up to 5% per year	1	3	
	Competitive environment	Highly competitive market	Moderate level of concentration	Existing oligopoly	1	3	
	Availability of sales channels	There is an extensive network to implement	There are sales channels, but in small numbers	There are no sales channels, the issue has not been finalised	1	3	
	Expected liquidity of investments	High liquidity, the project can be closed without significant financial losses	Medium liquidity, the project can be closed with financial losses not exceeding 50% of the investment	Little liquidity or complete loss of investment in case of project failure	1	3	
Product	Demand	It is needed often; it is needed by everyone	Needed by certain categories of people	Only a small segment of the population needs it	1	3	0.3
	Competitive advantage and product uniqueness	The product is unique or superior to similar ones by some criteria	The product is better than its analogues in some of the criteria	The product is not fundamentally different from the existing ones	1	3	
	Ability to produce the product	The ability to start production in a short period of time (0-6 months)	The ability to start production in an average (6-12 months) period of time	1 year or more to start production	1	3	
	Production profitability	Profitability is above 50%	Profitability from 10 to 50%	Profitability is less than 10%	1	3	
	Availability of test samples	Test sample	The test sample is being finalised	There is no test model, only a theoretical idea	1	3	
	Ability to implement the technical component of the project	Possibility	The need for minor research	Extensive research to confirm theoretical calculations	1	3	
Calculating the minimum and maximum possible number of points:					4.5	13.5	

**Source:** compiled by the authors

The lowest possible score, taking into account the risk, can be 0.56, and the highest 13.5 points. This calculation allows an investor to make a quick preliminary analysis of a start-up relative to others before spending time and resources on in-depth project research, further communication with project initiators, development of a feasibility study, and other stages. A.O. Scott *et al.* (2024) believe that traditional methods of assessing and managing credit risk,

such as credit scoring and historical data analysis, are no longer sufficient to meet the complex challenges of financial markets to meet the complex challenges of financial markets. Advanced risk management solutions offer more robust and dynamic tools to identify, assess and mitigate credit risk. One of the key advances in this area is the integration of big data and machine learning algorithms. N. Chiadamrong & P. Suthamanondh (2024) considered

multi-objective problems under uncertainty where financial gain and risk from uncertainty are trade-offs. The authors use chance-constrained programming to defuzzification and solve uncertain optimisation problems under a given confidence level. R. González-Pozo *et al.* (2024) reviewed a proposal to improve the ESG methodology used by rating agencies. In other words, they discuss the challenges faced by financial investors in the context of global uncertainty and growing interest in sustainable investments, with a focus on environmental, social and governance (ESG) indicators. ESG indicators are increasingly being used as a tool to assess companies' sustainability practices. However, the methodology of these indicators, which are often provided by rating agencies, can be unclear, making it difficult for investors to make decisions.

M. Caldeira & F.H. Pereira (2022) focused on ESG, while V. Kobets (2022) incorporated MCDM with automation and J. Cao & F. Xu (2022) used entropy-based fuzzy logic for high uncertainty environments. All three studies focused on investment decision-making, using advanced methodologies (ESG scoring, MCDM with robotic advisors, and fuzzy TOPSIS) to optimise responsible and informed investment choices. The research is applied to a variety of industries, illustrating the versatility of decision support systems across sectors. V. Kobets & O. Berehovyj (2022) presented a software-based solution to assess the attractiveness of investment projects. Their work highlights the technical aspects of developing assessment tools that can assist stakeholders in identifying viable projects. The authors focus on integrating diverse economic indicators to enhance decision-making processes, underscoring the role of ICT in streamlining investment evaluations.

Ecological transition through the green investment financial tool (GIFT). L. Becchetti *et al.* (2022) delved into the integration of ecological factors in investment assessment by proposing the GIFT. By prioritising ecological metrics, the GIFT approach represents a response to global calls for greener investment practices. This approach is especially relevant in the context of the ongoing ecological transition, as it helps align investment strategies with sustainable development goals (SDGs). The study highlights the need for tools that not only assess financial returns but also evaluate the environmental impact, offering a dual-benefit framework for investors. Fuzzy multi-criteria evaluation for investment projects E. Aliyev *et al.* (2022) introduced a multi-criteria evaluation methodology based on fuzzy logic. This technique is particularly valuable for projects with multiple competing criteria where subjective judgment plays a role. The fuzzy evaluation method provides a more flexible and nuanced decision-making model, which is especially beneficial in environments with ambiguous or incomplete data. This work contributes a novel mathematical framework for investment project evaluation, addressing both quantitative and qualitative factors and enhancing the robustness of investment decisions. The authors discussed their advantages, such as ease of use, speed and versatility, as well as

disadvantages, including the limited criteria considered in the evaluation and the tendency to rank projects by numerical indicators. The authors emphasised the importance of careful analysis of risks and prospects, assessment of market trends and potential opportunities for successful investment, which are the main focus of the article.

Quantitative methods, such as DCF and the option pricing method, are powerful tools, but they require accurate forecasts and can be difficult to use due to external factors and risks. Qualitative methods, such as expert judgment and hierarchy analysis, allow for human factors and intuition, but can be subjective and depend on the experience and opinions of experts. The authors emphasise that to obtain the best results, it is important to combine quantitative and qualitative methods to ensure a comprehensive approach to the evaluation of investment projects. The article discussed the methods used to evaluate new startups. The classification of risks and principles of their calculation are considered. A simplified scoring methodology of the CRPR is proposed, which allows investors to evaluate four main criteria of an investment project: team, market, product, and risk. The authors proposed a formula for calculating the scoring, which includes an assessment of these criteria and a risk factor. The article provided valuable insights for investors seeking to understand and evaluate investment projects in a changing economic environment, with a focus on the Ukrainian context.

## ■ Conclusions

The article presented a simplified mathematical model for comparing and ranking investment projects, which can be used to develop customised evaluation techniques. Effective investment has become increasingly important in modern economic conditions, emphasising the need to minimise risks and maximise returns. The investment environment in Ukraine has undergone significant changes due to the war, with defence-related projects receiving the greatest attention and development. It is generally expected that Ukraine will recover after the conflict ends, leading to significant investment in infrastructure, industry, energy, and other sectors. Effective investment in Ukraine will require careful risk analysis, market trend assessments, and evaluations of potential opportunities. The article compared two main types of project financing: lending and venture capital investment. Their differences were highlighted in terms of repayment conditions, collateral requirements, impacts on business, and profit distribution. The life cycle of an investment project consists of several stages, from idea formation to realisation, each playing a crucial role in the project's success.

The proposed scoring methodology evaluates and ranks investment projects based on their attractiveness and potential for success, aiding decision-making for further project development. This methodology involves four key components for evaluating a project's success: team, market, product, and risk. A competent and experienced team is essential for problem-solving and adapting to

changes. Market assessment identifies demand, audience size, and competition to evaluate growth potential. Product quality, innovation, and differentiation are vital for attracting and retaining customers. Thorough risk analysis anticipates challenges and develops effective mitigation strategies. Several areas for further research were identified. Refining the scoring model by incorporating additional criteria and dynamically adjusting weights based on sector trends or macroeconomic factors could enhance its effectiveness. Expanding its scope by applying the model to various contexts, such as emerging technologies or sustainable development projects, could assess its adaptability across sectors. Comparative studies with other established

evaluation methods could offer insights into its predictive accuracy and highlight areas for improvement. Longitudinal studies could track the long-term success of projects selected using the model to evaluate its validity. Integrating machine learning algorithms could enhance the model's ability to analyse large datasets, identify patterns, and improve the accuracy of investment evaluations.

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#### ■ Conflict of Interest

None.

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## Використання скорингових методик для оцінювання інвестиційних проектів

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■ **Анотація.** Метою дослідження була розробка бальної методики оцінки та ранжування інвестиційних проектів за їх привабливістю та потенційною успішністю, а також використання цієї оцінки для виявлення більш ефективних проектів. У статті наведено методику розрахунку можливих ризиків для подальшого використання при ранжуванні проектів. Представлено спрощену математичну модель для порівняння інвестиційних проектів та їх ранжування. Модель може бути використана при розробці власних методів оцінки. У статті розглянуто такі методи, як дисконтований грошовий потік, метод реальних опціонів, метод експертних оцінок, аналіз ієрархій та метод Білла Пейна для оцінки стартапів. Ключовими елементами процесу оцінки були визначення критеріїв та вагових коефіцієнтів. Критерії включали важливі показники оцінки (наприклад, прибутковість, ризик, стратегічна важливість, соціальний вплив). Кожен критерій мав вагу у відсотках на підставі відносної важливості, а загальна вага могла досягати 100 %. У статті розглянуто ключові аспекти ефективного інвестування з акцентом на необхідності мінімізації ризиків та прагненні до максимізації прибутку. Проаналізовано різні види ризиків, які можуть включати втрату коштів через неефективність проекту або недооцінку потенціалу перспективних інвестиційних можливостей. Увагу приділено інвестиційному середовищу в Україні, яке зазнало значних змін внаслідок війни у 2022-2024 роках. Авторами підкреслено зміщення інвестиційного фокусу з традиційних секторів, таких як бізнес-центри та інфраструктура, до оборонної промисловості та прогнозовано відновлення економіки після завершення конфлікту. Розглянуто скорингові методології, кількісні та якісні методи оцінки інвестиційних проектів

■ **Ключові слова:** мінімізація ризиків; фінансовий скоринг; ефективність інвестицій; ринкові умови; оцінка ризиків

## Management of sustainable development of companies through the prism of corporate reporting in accordance with the requirements of CSRD and ESRS

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■ **Abstract.** The concept of sustainable development is gaining more and more importance in business management, as it involves the creation of a management system that will balance the economic, ecological and social directions of its development. The newest tool for achieving such a balance is the Directive on Corporate Reporting on Sustainable Development. However, the perception of its requirements is not unambiguous due to the insufficient level of understanding of their significance. The purpose of the study was the transfer of knowledge on the introduction of the latest tool for managing sustainable business development – the formation of corporate reporting in accordance with the requirements of CSRD and European standards for the formation of corporate reporting on sustainable development (ESRS), which will allow attracting larger-scale ESG investments, which are critically important for the reconstruction of the country and achieving ambitious goals to preserve the environment and improve the quality of life. The research was carried out according to the triangulation approach, the application of which involved the use of several methods for the analysis of the normative and legal field for the formation of corporate reporting on sustainable development, namely: analysis and synthesis, comparative and critical analysis, content analysis, bibliographic method and generalisation method. CSRD and ESRS adopted by the European Financial Reporting Advisory Group (EFRAG) are reviewed and briefly characterised. The measures taken by EFRAG regarding the gradual transition from voluntary to mandatory reporting under CSRD and ESRS requirements are highlighted. It has been argued that CSRD and ESRS are a critical step towards a more sustainable business landscape. By harmonising reporting practices and improving the quality of disclosed information, these business sustainability management tools will empower stakeholders to make informed decisions, promote positive change and contribute to a just and sustainable future

■ **Keywords:** corporate reporting; climate ambitions; management system; business transparency; sustainable business development

### ■ Introduction

The sustainable development of companies is under threat. Understanding the criticality of the situation, investors are ready to invest on a large scale, but only if they can prove that the business complies with ESG principles and sustainability requirements, which can only be verified

if the data in corporate sustainability reporting is fully disclosed. This is what contributed to the creation by international organisations of a regulatory framework for corporate reporting, namely the introduction of the Directive of the European Parliament and of the Council

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No. 2022/2464 (2022) and the European Sustainability Reporting Standards (ESRS) (Commission Delegated Regulation (EU) No. 2023/2772, 2023), which should demonstrate the process of creating added value by companies in terms of different time periods and reflect not only financial indicators but also social, environmental and governance aspects of activities. Therefore, in the latest annual Ukraine 2023 enlargement package factsheet (2023), the European Commission provided recommendations for Ukraine's implementation of Directive of the European Parliament and of the Council No. 2022/2464 (2022) into national business reporting practices (Bezverkhyy, 2024). The need to implement Directive of the European Parliament and of the Council No. 2022/2464 (2022) was also emphasised by a group of Ukrainian scholars. In particular, K. Bezverkhyy (2024) proposed two approaches to the implementation of Directive of the European Parliament and of the Council No. 2022/2464 (2022) in Ukraine: an approach based on the direct implementation of ESRS (Commission Delegated Regulation (EU) No. 2023/2772, 2023), such as IFRS (International Financial Reporting Standards..., 2013); an approach that involves the development of separate national standards for sustainability reporting, taking into account the main provisions of ESRS (Commission Delegated Regulation (EU) No. 2023/2772, 2023), as was the case when developing the National Accounting Regulations (Standards) (Order of the Ministry of Finance of Ukraine No. 73, 2013) with the relevant methodological recommendations for their application. S. Korol *et al.* (2022) investigate the stages of application of European sustainability reporting standards in the European Union and propose approaches for further implementation of Directive of the European Parliament and of the Council No. 2022/2464 (2022) in the national reporting practice in Ukraine.

The issue of the need to implement Directive of the European Parliament and of the Council No. 2022/2464 (2022) is also being actively discussed by foreign scholars. Austrian researchers K. Hummel & D. Jobst (2024) focused on the distinctive features of the requirements of Directive of the European Parliament and of the Council No. 2022/2464 (2022) and the dual materiality approach, where "impact" refers to the environmental impacts associated with the sustainable development of a company's activities (impact materiality), while "risks and opportunities" refer to the financial risks and opportunities of a company arising from sustainable development issues. Representatives of the Spanish scientific community B. Giner & M. Luque-Vílchez (2022) emphasise the "new" institutional actors in setting sustainability reporting standards. Brazilian scientist S. Machado (2023) emphasised that achieving the quality of sustainability reporting should not be a race, but an individual approach to the formation of each section of sustainability reporting is required. The team of Italian authors G. Pigatto *et al.* (2023) carried out a critical analysis of the Directive of the European Parliament and of the Council No. 2022/2464 (2022), and S. Vi-

tols (2023) expressed opposition to its implementation. The rather different attitudes to the implementation of Directive of the European Parliament and of the Council No. 2022/2464 (2022) indicate a low level of understanding of its significance and the need to intensify the transfer of knowledge of the requirements for corporate sustainability reporting, which was the purpose of this study.

The purpose of the article was to transfer knowledge on the introduction of the latest tool for managing sustainable business development – corporate reporting in accordance with the requirements of CSRD (Directive of the European Parliament and of the Council No. 2022/2464, 2022) and ESRS (Commission Delegated Regulation (EU) No. 2023/2772, 2023), which will allow attracting larger-scale ESG investments, which are essential for the recovery and development of Ukraine's economy, as well as achieving ambitious goals for environmental protection and improving the quality of life. Based on this goal, the main objectives of the study were: a comprehensive analysis of the regulatory framework for corporate sustainability reporting; identification of the requirements of the NFRD (Directive of the European Parliament and of the Council No. 2014/95/EU, 2014) and sustainable business development management – corporate reporting in accordance with the requirements of the CSRD (Directive of the European Parliament and of the Council No. 2022/2464, 2022) and their comparative analysis; justification of the effectiveness of corporate reporting in accordance with the requirements of CSRD (Directive of the European Parliament and of the Council No. 2022/2464, 2022) and ESRS (Commission Delegated Regulation (EU) No. 2023/2772, 2023) as a tool for managing sustainable business development.

## ■ Materials and Methods

The study was based on the regulations of the European Financial Reporting Advisory Group, in particular, Directive of the European Parliament and of the Council No. 2022/2464 (2022) and ESRS (Commission Delegated Regulation (EU) No. 2023/2772, 2023), Voluntary reporting standard for SMEs (VSME) (Bevilacqua & Del Prete, 2023) and The Exposure Draft European Sustainability Reporting standard for listed small medium-sized enterprises (ESRS LSME) (EFRAG, 2024).

The study was conducted using a triangulation approach, which allowed a comprehensive analysis of the regulatory framework for corporate sustainability reporting using various research methods. The descriptive method of research played a key role at the stage of preliminary familiarisation with the legal acts regulating the formation of corporate sustainability reporting. The descriptive method allowed to collect and describe the main characteristics of the documents under study, focusing on their key aspects without in-depth analytical intervention. This was useful for creating the initial knowledge base necessary for the research. The method of systematisation was used to organise the regulations on corporate reporting adopted by the European Commission by the periods of adoption

and implementation. A comparative analysis was used to compare the requirements set out in different regulations, such as the NFRD and the CSRD. This method made it possible to clearly identify the differences between the two documents, as well as to identify trends in the evolution of regulatory requirements. The comparison made it possible to understand what innovations in the CSRD are intended to improve the practice of corporate sustainability reporting compared to the NFRD. Content analysis was used for a detailed study of European standards for corporate sustainability reporting. This method helped to identify the main areas of focus in the standards and systematise the information that is important for corporate sustainability reporting. Critical and comparative analysis played an important role in assessing the strengths and weaknesses of the corporate reporting regulations and in making sure that the European sustainability reporting standards are an effective tool for managing sustainable business development rather than a burden.

To create a general picture of the requirements for corporate sustainability reporting by SMEs, a synthetic method was applied, which allowed combining the results of various analyses (comparative, content analysis and critical) into one holistic picture, thus providing an opportunity to better reveal the overall context and vision of the interrelationships between various aspects of mandatory and voluntary European sustainability reporting standards for SMEs. The bibliographic method was useful in compiling a list of references that became the basis for this study. The method of synthesis allowed to synthesise all the results obtained, forming a single view of the problem under study. Because of the triangulation approach, a deep and comprehensive understanding of the regulatory framework for corporate sustainability reporting was achieved, which will contribute to further improvement of this area.

## ■ Results and Discussion

Issues related to corporate reporting as a tool for managing sustainable business development are discussed in scientific publications, in speeches by scientists, experts and representatives of consulting organisations. With the entry into force of the CSRD (Directive of the European Parliament and of the Council No. 2022/2464, 2022), they have intensified significantly due to the significant difference from the NFRD requirements and the need for companies to report greenhouse gas emissions in Scope 1, Scope 2 and Scope 3. As a result, the debate has formed two conditional poles – supporters and opponents of the introduction of CSRD and ESRS. Some are trying to prove the importance of CSRD in forming the much-needed information support for making informed management decisions on sustainable development of companies, while others, on the

contrary, emphasise that CSRD requirements are burdensome, imposed, and potentially less desirable than the sustainability management system organised by companies.

However, this is not the only reason that generates “against” CSRD and ESRS. S. Antonini & J. Gomez-Conde (2024) focus on the pressure of CSRD as an instrument of supranational regulation of non-financial reporting and an endogenous factor of influence on the economic security and competitiveness of companies. The authors emphasise that the CSRD, unlike the NFRD, does not provide for voluntary but mandatory compliance with its requirements when companies prepare integrated reporting. The CSRD clearly states its intention not only to regulate non-financial reporting, but also the environmental policy of companies. It practically requires companies to implement an environmental management system (Ukraine 2023 enlargement..., 2023). The researchers emphasise that CSRD and ESRS are not ideal for ensuring flexibility, responsiveness and adaptability of companies, which can lead to unintended organisational consequences and losses. S. Yoon *et al.* (2024) and K. Hummel & D. Jobst (2024) also argue against the new corporate reporting rules, as CSRD and ESRS have serious implementation problems due to: lack of financial reporting frameworks; forward-looking disclosure requirements; triple burden of costs for GHG measurement, verification and audit.

Recognising the importance and gaps in CSRD and corporate reporting standards, global leaders such as the US, China, the UK, Singapore and others are trying to create their own standards for integrated reporting. The main goal of their introduction, namely unification, globalisation and creation of a transparent information base for assessing the environmental, social and economic benefits of each business participant, will not be achieved. Therefore, determining the reliability of indicators for achieving ambitious goals under the Paris Climate Agreement (Law of Ukraine No. 1469-VIII, 2016) will continue to be problematic, and the introduction of motivational tools to mitigate environmental impacts, such as ESG investing, as noted by A. Tkachenko *et al.* (2023), the carbon emissions trading system (CETS) and the green certificate trading system (TGC), as emphasised by X. Guo *et al.* (2024), will continue to be insufficiently effective. Nor will the introduction of a border carbon adjustment mechanism (BCA) make sense, as C. Bellora & L. Fontagné (2023) point out. To verify the correctness of this hypothesis, the requirements defined by the CSRD and ESRS should be considered in more detail. The ESRS includes two general standards (ESRS 1 and ESRS 2) and ten thematic standards (ESRS E, ESRS S, ESRS G, etc.) covering a range of sustainability issues, from general principles to specific environmental, social and governance issues (Table 1).

**Table 1.** European standards for the formation of corporate sustainability

Thematic standards			Cross-cutting (Commission Delegated Regulation (EU) No. 2023/2772.
Environment (group of standards ESRS-E).	Social sphere (group of standards ESRS-S).	Corporate governance (group of standards ESRS-G).	

Table 1. Continued

ESRS-E1. Climate change.	ESRS-S1. Own workforce.	ESRS-G1. Governance, risk management and internal control.	ESRS 1. General requirements.
ESRS-E2. Pollution.	ESRS-S2. Workers in the value chain.	ESRS-G2. Business conduct.	ESRS 2. General disclosures.
ESRS-E3. Water and marine resources.	ESRS-S3. Affected communities.	ESRS-G3. Business conduct.	At the stage of adoption, sectorial standards.
ESRS-E4. Biodiversity and ecosystems.	ESRS-S4. Consumers and end-user.	ESRS-G4. Sustainability material impacts risks and opportunities.	Standards for small and medium-sized enterprises.
ESRS-E5. Resource use and circular economy.			

**Source:** compiled by the authors based on ESRS-E1 (2022), ESRS-E2 (2022), ESRS-E3 (2022), ESRS-E4 (2022), ESRS-E5 (2022), ESRS-S1 (2022), ESRS-S2 (2022), ESRS-S3 (2022), ESRS-S4 (2022), ESRS-G1 (2022), ESRS-G2 (2022), ESRS-G3 (2022), ESRS-G4 (2022), ESRS 1 (2023), ESRS 2 (2023), Commission Delegated Regulation (EU) No. 2023/2772 (2023)

The ESRS E1-E5 standards outline the requirements for disclosure in corporate sustainability reporting of environmental aspects ranging from climate change to pollution, water and marine resources, and from biodiversity and ecosystems to resource use and the circular economy (Muller, 2024). This means that each company must review its current business model for compliance with climate neutrality requirements, both in terms of business impact on the environment and climate change threats, and report on the entire value chain. The ESRS S1-S4 standards define the requirements for structuring corporate sustainability reporting in terms of human resources, training and career development, salaries and gender equality, and occupational health and safety. The easiest way to demonstrate this is to use the example of ESRS S2 Workers in the value chain.

To the “perimeter” ESRS S2 requires corporate sustainability reporting to disclose information not only on employees working at the upstream end of the value chain (in particular, in the supply chain), but also on employees working at the downstream end of the logistics, retail, franchise networks and joint ventures. ESRS S2 also addresses the use of so-called precarious labour by contractors, i.e., the work of employees on short-term contracts, part-time or subcontracted work, the use of informal workers, etc. According to ESRS S2, companies must also report on how they ensure the confidentiality of complaints and the anonymity of complainants, legal protection of employees and gender equality. According to ESRS S2, companies now have to disclose information on all identified cases of violations of the UN Global Compact principles in supply chains, all serious human rights violations and incidents that occurred during the reporting period on human resources management (Chalyy, 2024). The ESRS E and ESRS S standards define the requirements for disclosing environmental and social aspects in corporate sustainability reporting in some detail. They are subject to a highly discretionary materiality assessment. They are complemented, i.e., the linking element, by information on corporate governance, the requirements for which are regulated by ESRS G. ESRS requires disclosure of information in corporate reports

aimed at helping users understand the company’s strategy and management approaches. ESRS G2 covers a list of requirements for reporting on business ethics and integrity measures, including anti-corruption policies, whistleblower mechanisms and compliance programmes. ESRS G3 requires disclosures about risk management practices, internal controls and the identification and management of ESG risks. And the ESRS G4 standard contains requirements for transparency in reporting, including disclosure of sustainability data, reporting processes and compliance with reporting standards (Bezverkhyi, 2024).

Among the general standards, the ESRS1 standard requires special attention, which requires disclosure of all material information about the company’s impacts, risks and opportunities related to sustainable development and climate change threats in corporate reporting. To be useful for management decision-making, the information must be relevant, reliable, and understandable and fairly represent the situation with regard to the sustainable development of the business over the short, medium and long term. ESRS2 requires disclosure of information on the description of the scope of activities, management system, company strategy (Strategy, Business Model, and Value Chain (SBM-1), measurable goals, performance parameters (methods and assumptions for their calculation, identification, and verification) (MDR-M: parameters related to key aspects of sustainability), stakeholder interests (SBM-2: Stakeholder interests and perspectives), risks, opportunities (IRO-1: Description of procedures for identifying and assessing key impacts, risks and opportunities) and the monitoring process. This means that all the requirements defined by ESRS2 are mandatory for companies to apply when preparing corporate sustainability reporting.

As for the sectorial standards, it should be noted that they are still at the stage of development, and therefore it is not possible to describe them even briefly. In this regard, the only thing that can be noted is that the CSRD has clearly defined the sectors for which standards are to be developed. These include energy, metallurgy, transport, agriculture, land use, etc. The Exposure Draft European

Sustainability Reporting standard for listed small medium-sized enterprises (ESRS LSME) (EFRAG, 2024) and the Voluntary reporting standard for SMEs (VSME) require special attention (Bevilacqua & Del Prete, 2023). The authors note that the ESRS LSME regulates the preparation of corporate reports by small and medium-sized enterprises (SMEs) that participate in financial markets. The VSME ESRS apply only to micro, small and medium-sized companies that are not members of any European stock exchange or public organisation, but that voluntarily wish to report on sustainable development. The distinguishing feature of the ESRS LSME and VSME ESRS is their very simple structure, which prevents SMEs from being overwhelmed by corporate sustainability reporting requirements. The VSME ESRS includes three modules: Basic Module; Narrative: Policies, Actions, and Targets (PAT) Module; and Business Partners (BP) Module.

The core module consists of 12 disclosure requirements and requires corporate reporting to cover a standard set of indicators in the following categories: Environment, Social Issues and Business Conduct. It contains minimum requirements and a shortened list of sustainability indicators. The Policies, Actions and Goals module includes five qualitative disclosure requirements necessary to understand the company's approach and method of sustainability management. The Business Partners module is designed to support SMEs in collecting information on the sustainability performance of business partners, investors and creditors, i.e., along the value chain. These 11 disclosure requirements are additional to the information in the previous two modules and contain a combination of quantitative and qualitative requirements (Muller, 2024). By the end of 2024, EFRAG is also expected to approve the Voluntary European Standard for Sustainability Reporting for SMEs (Parokinna, 2023), which should be useful for micro, small and medium-sized companies that are not listed on any European stock exchange and are not public organisations, but wish to submit sustainability reports on a voluntary basis.

The authors have grounds to state that the requirements for corporate sustainability reporting have been practically regulated. Ukraine, which aims to become a full-fledged member of the EU in the coming years, urgently needs to implement the above standards to ensure that businesses can attract ESG investments, restore and develop the country's economy, and achieve the ambitious goals set by the Nationally determined contribution of Ukraine (n.d.) that ESRS and CSRD are two different but related tools for managing the sustainable development of companies and building corporate reporting. The main goal of their introduction is to unify corporate reporting by combining financial and non-financial reporting into a single package of company reports and thus ensure transparency of information on the materiality of business impact on the environment, its risks and opportunities (IRO).

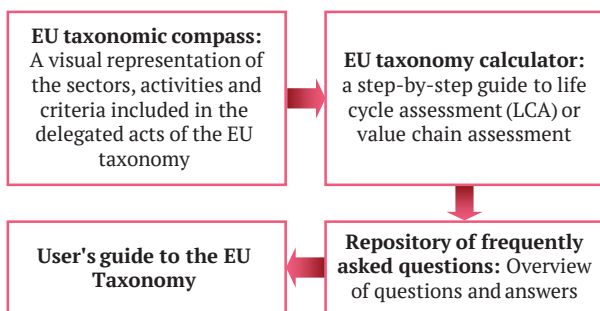
The transition to the application of ESRS is not straightforward, and the European Commission has decided that ESRS will be phased in in four stages, starting from

1 January 2024 for companies that are currently subject to reporting under the NFRD and companies with a total balance sheet of more than EUR 20 million and net turnover of more than EUR 40 million. EUR (reporting in 2025 based on 2024 data); 1 January 2025 for large companies not currently subject to the NFRD; 1 January 2026 for small and medium-sized enterprises (excluding micro-enterprises), as well as small and non-complex credit institutions and insurance companies (Commission Delegated Regulation (EU) No. 2023/2772, 2023). Companies falling into this category will have the option of not reporting on sustainability issues under the CSRD until 2028, if they provide an explanation in their annual report as to why they have chosen not to do so; 1 January 2028 for non-EU companies with annual net turnover at the consolidated or individual level exceeding EUR 150 million. EUR for each of the last two financial years, and which have a relevant EU subsidiary (which is either a large EU company as defined above or an EU company listed on a regulated market and is not a micro-enterprise) or branch in the EU with an annual net turnover exceeding EUR 40 million in the previous financial year (Directive of the European Parliament and of the Council No. 2022/2464, 2022). The first phase of CSRD and ESRS implementation has already begun. However, experts fear a repeat of the situation that occurred with the previous recommendations on disclosure of information in corporate reporting (in particular, with the NFRD, which, due to its incompleteness and imperfection, has not proven to be effective in ensuring sustainable development).

The requirements of the CSRD and ESRS are more stringent, as, unlike the NFRD, they require companies to provide more complete, qualitative and detailed information on the activities of companies "off the balance sheet"; reporting by companies on the principle of "dual materiality", which includes reporting on both risks and impact of sustainability issues on the company, as well as on the impact of companies on the environment and society; disclosure of "gross indirect greenhouse gas emissions in metric tons of CO<sub>2</sub> equivalent under Scope 3", which cover a wide range of emissions beyond the direct control of companies, including upstream purchases, sold offsets, and other emissions. (The new European..., 2023); linkage between financial and sustainability information, its clear structure and readiness for digitisation; definition of a circular business transformation indicator recommended for use by the World Business Council for Sustainable Development (WBCSD) in the Circular Metrics Landscape Analysis (2018), which will allow companies to understand their circular performance and monitor progress. The Council is convinced that CSRD and ESRS are a step forward in reporting, as they provide for the reporting of a company's carbon footprint with a focus on the value chain, with a clear and logical distinction between Scope 1, Scope 2 and Scope 3.

The CSRD and ESRS requirements for disclosure of information under Scope 1 are to form information support capable of providing an understanding of the company's direct impact on climate change. When disclosing

information under Scope 1, the company must provide a brief description of its business model and strategy, focusing on their impact on achieving the ambitious goals set for reducing carbon emissions generated by the company during its business activities. Reporting should contain not only quantitative and qualitative information, but also retrospective and prospective information. The reporting should reflect both “declared emissions in previous years” and “emissions expected in future years”, which will ensure disclosure of information on the intensity of greenhouse gas emissions in dynamics. For Scope 2 disclosures, the information provided in the reporting should provide an understanding of the company’s indirect impact on climate change due to energy consumption, regardless of whether it is purchased externally or not. For Scope 3, the company’s reporting should include information on greenhouse gas emissions that occur in the value chain outside the company. Therefore, simple carbon calculation tools will not help. To facilitate the use of the ESRS, EFRAG has created the EU taxonomy navigator, which offers four tools to help companies navigate the CSRD, ESRS and EU taxonomy (Fig. 1).



**Figure 1.** Navigator of the taxonomy of sustainability reporting by companies according to CSRD and ESRS requirements

**Source:** compiled by the authors based on EU taxonomy navigator (2022)

Understanding the complexity of the transition to corporate reporting under the new rules, EFRAG has provided temporary relief (during the first three years) for companies that cannot obtain information from their value chains (however, provided that they can explain why this information is not available and how they will obtain this information in the future). The formation of corporate reporting under the requirements of the CSRD and ESRS should not be considered as burdensome as researchers emphasise. They are achievable if a clear algorithm for their implementation is developed. Most Ukrainian companies still form their strategies on issues that are more traditional – customer needs competition dynamics, economic trends, technological achievements, etc., giving issues of sustainable development secondary importance. The adoption of the CSRD and ESRS emphasises the importance of implementing sustainable business practices, as well as increasing the transparency and reliability of corporate reporting. Therefore, companies that comply with CSRD and ESRS regulatory requirements will be able to confi-

dently and purposefully manage the trajectory associated with sustainable business development in the near future. The introduction of CSRD and ESRS is discussed by a wide range of scholars, each of whom, during their research, gives preference to the approaches that they consider to be priority. In particular, A. D’Angiò *et al.* (2022) conducted a study of CSRD and ESRS using a stakeholder approach, thanks to which the authors managed to prove that integrated reporting is a corporate practice of publicly reporting a company on the economic, environmental and social consequences of its activities, as well as its contribution to sustainable development, which provides internal and external stakeholders with the opportunity to have a clear idea the company’s approaches to sustainable development, as well as the legitimacy of its activities (Lehenchuk, 2024).

M. Markova-Karpuzova *et al.* (2024) in their research were guided by the digital transformation approach, which allowed scientists to substantiate that corporate reporting plays a crucial role not only in making informed management decisions regarding the sustainable development of companies, but also in risk management and enhancing stakeholder engagement in sustainable development projects. The authors emphasise that in the context of digital transformation, corporate reporting data can become a fundamental basis for creating digital platforms to highlight information regarding the sustainable development of companies, existing risks and opportunities. M. Farkas & R. Matolay (2024) preferred the intellectualisation approach, since the formation of integrated reporting for CSRD and ESRS requires large-scale data processing, which will encourage companies to use artificial intelligence (AI), Decision Support System (DSS) and other digital systems capable of providing data collection and analytics, as well as making management decisions, etc. The authors emphasise that the formation of corporate sustainability reporting is also important because of their strategic and financial significance in making management decisions. Only C. De Villiers *et al.* (2024) openly speak out “against” the use of AI in the preparation of corporate reporting for CSRD and ESRS, arguing that this can lead to “green laundering” – a phenomenon that is extremely unacceptable under any conditions. G. Nicolo *et al.* (2024) approach the issue of greenwashing from a slightly different perspective, focusing on cases of reflecting undocumented evidence of sustainable development measures in reporting, as well as companies resorting to greenwashing depending on the degree of voluntary disclosure of information on sustainable development in reporting.

According to the theory of voluntary disclosure, as noted by D. Zhang (2022), organisations with better sustainability performance are more likely than those that perform worse to voluntarily disclose information about the actual nature of their activities. Regarding the voluntariness of disclosure, B. Awuah *et al.* (2024) have a different opinion. The experience of previous years (in the absence of a single global legally binding standard for corporate sustainability reporting) indicates numerous cases of greenwashing. To

understand the impact of the degree of voluntariness on the disclosure of sustainable development information in corporate reporting, it is necessary to understand in more depth the factors that influence corporate behavior and disclosure practices. E. Donner *et al.* (2024), C. Consolandi *et al.* (2024) argue that one way to prevent the occurrence of greenwashing is to transition from voluntary to mandatory sustainability reporting. However, under such conditions, as noted by E. Donner *et al.* (2024), the pressure on business is increasing. Active discussions among scientists and practitioners regarding the introduction of CSRD and ESRS indicate a low level of understanding of the significance of these guidelines and resistance to the perception of their requirements. Changing attitudes to CSRD and ESRS is possible only with the activation of the transfer of knowledge on the formation of corporate sustainability reporting, which was taken as the goal of this study. The study was carried out using a triangulation approach, the application of which involved the use of several methods for analysing the regulatory and legal field for the formation of corporate sustainability reporting, which, unlike existing ones, made it possible to analyse the regulatory and legal field for the formation of corporate sustainability reporting from different points of view and thus prove the feasibility of forming corporate reporting according to the requirements of CSRD and ESRS.

## ■ Conclusions

In the process of the study, an attempt was made to convey to representatives of Ukrainian business the need for corporate reporting on sustainable development. It was emphasised that with the adoption of the CSRD, which, unlike the NFRD, provides for the need for companies to report on the carbon footprint of their activities in the areas of Scope 1, Scope 2 and Scope 3, two conditional poles were formed – supporters and opponents of the CSRD and ESRS. Some of them prove the importance of the CSRD in creating information support necessary for making informed management decisions in ensuring the sustainable development of companies, while others, on the contrary, argue

that its requirements are quite burdensome for business, and therefore will have negative consequences for business.

The polarity of the attitude of scientists and business representatives towards the introduction of the CSRD and ESRS indicates a low level of understanding of the significance of these guidelines and resistance to the perception of their requirements. These obstacles to the introduction of CSRD and ESRS can be eliminated if the transfer of knowledge on the formation of corporate sustainability reporting is activated. To fully substantiate the effectiveness of CSRD and ESRS as a tool for managing sustainable business development, a triangulation approach was used, which, unlike existing ones, allowed analysing the regulatory and legal field for the formation of corporate sustainability reporting from different perspectives using different research methods and thus proving the effectiveness of the formation of corporate reporting according to the requirements of CSRD and ESRS. Only corporate reporting formed according to the requirements of CSRD and ESRS is able to provide evidence of compliance by business with ESG principles and sustainability, and therefore, attract ESG investments, which are extremely necessary to achieve the ambitious goals of transition to clean technologies and a carbon-neutral economic model. The vast majority of Ukrainian companies still form their corporate reporting on sustainable development using traditional approaches – customer needs competition dynamics, economic trends, technological achievements, etc., giving issues of sustainable development secondary importance. The adoption of CSRD and ESRS emphasises the importance of implementing sustainable business practices, increasing transparency and reliability of corporate reporting. Therefore, the implementation and introduction of CSRD and ESRS in Ukrainian practice is a challenge that cannot be ignored.

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## ■ Conflict of Interest

None.

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## Управління сталим розвитком компаній через призму формування корпоративної звітності за вимогами CSRD та ESRS

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■ **Анотація.** Концепція сталого розвитку набуває все більшого значення в управлінні бізнесом, оскільки передбачає створення такої системи управління, за якої збалансовано узгоджуватимуться економічний, екологічний та соціальні напрями його розвитку. Новітнім інструментом досягнення такого збалансування є Директива щодо корпоративної звітності зі сталого розвитку (CSRD). Проте сприйняття її вимог не однозначне через недостатній рівень розуміння їх значимості. Метою дослідження став трансфер знань із запровадження новітнього інструменту управління сталим розвитком бізнесу – формування корпоративної звітності відповідно до вимог CSRD та Європейських стандартів з формування корпоративної звітності зі сталого розвитку (ESRS), що дозволить залучити більш масштабні ESG-інвестиції, критично важливі для відбудови країни та досягнення амбітних цілей зі збереження довкілля та покращення якості життя. Дослідження здійснено за триангуляційним підходом, застосування якого передбачало використання кількох методів для аналізу нормативно-правового поля з формування корпоративної звітності зі сталого розвитку, а саме: аналізу та синтезу, компаративного та критичного аналізу, контент-аналізу, бібліографічного методу та методу узагальнення. Розглянуто та коротко охарактеризовано прийняті Європейською консультативною групою з фінансової звітності (EFRAG) CSRD та ESRS. Наголошено на вжитих EFRAG заходах щодо поступового переходу від добровільного до обов'язкового звітування за вимогами CSRD та ESRS. Обґрунтовано, що CSRD та ESRS є критично важливим кроком на шляху до більш сталого бізнес-ландшафту. Завдяки гармонізації практик звітності та підвищенню якості розкритої інформації ці інструменти управління сталим розвитком бізнесу нададуть можливість стейкхолдерам приймати обґрунтовані рішення, сприяти позитивним змінам і робити внесок у справедливе стійке майбутнє

■ **Ключові слова:** корпоративна звітність; кліматичні амбіції; система управління; прозорість бізнесу; сталий розвиток бізнесу

## Operation and use of exchange-traded investment funds

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■ **Abstract.** The application of traditional portfolio theory and classical methods of financial mathematics, which still represent the optimisation of an investment portfolio, is often unattainable for a wide range of investors. Therefore, the goal was to investigate the latest tools and fund approaches to investing. A comparison between the selected financial instruments had been made using systematic analysis. Information platforms (Google finance) have been used to obtain input data. The article examined the functioning and use of exchange-traded investment funds as an integral part of any modern economic system, without which an efficient allocation of resources is impossible. The index approach to investment, its advantages and disadvantages had been proposed and considered. The issues of predicting the movement of prices of financial instruments in the stock markets and forecasting their profitability had been identified. The article analysed the main investment directions, which can be used to form an investment portfolio. The financial instrument proposed and considered is the exchange-traded investment funds, which combine the best features of stocks and mutual funds, namely, equity funds, as an alternative to the traditional approach to the formation of an investment portfolio, and the opportunity to participate in the realisation of a complex investment process through a single transaction. The article considered opportunities for investment in the global financial markets in Ukraine, according to the S&P 500 and Nasdaq indices. The practical value of this study is to facilitate the search for new ideas for investing, suitable for beginners and professional investors and traders

■ **Keywords:** investment; stock market; financial instruments; stock indices; types of mutual investment funds

### ■ Introduction

The stock market is not only a place where investors can provide themselves with a steady passive income and thus support the economic situation, but also one of the main branches of trade. The development of the stock market is directly linked to the overall position of the national economy, the achievement of economic goals, and the evolution of the domestic financial market and banking system. A wide range of financial instruments and opportunities for earning money in the financial markets does not provide significant guarantees for the safety of savings for investors who do not aim to develop in this area or do not have sufficient knowledge. The stock market offers innovative instruments that can be used to effectively hedge financial investments, i.e. reduce the operational risks of financial assets, namely investing in exchange-traded funds (ETFs).

According to the researchers I. Morhachev *et al.* (2020), who compared investment funds with pyramid schemes,

mutual funds are also a type of pyramid scheme, but they can be created on the basis of sustainability principles that are opposite to the rules of fraudulent pyramid schemes. This contrast allows to develop sustainability principles for real business projects to create investment funds. The scholars S. Esh & A. Honcharenko (2020) in their work came to the conclusion that stock exchange markets play an important role in the modern economy of the country, ensuring the mobilisation of investment resources and their allocation in accordance with the directions of development. Business activity generates liquidity for investors, issuers and financial intermediaries. This helps investors to build an effective investment portfolio of securities. The researchers O. Vinichenko & M. Hrybkova (2021) noted that the impact of hedge funds on the global economic system is threefold. This is due to the influence of hedge funds on the growing global economy, which also effects the

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activities of hedge funds, allowing non-professional traders to take advantage of the opportunities available in the world. The authors N. Krasnikova & O. Benenson (2019) analysed and determined that shares of ETFs have a number of advantages over ordinary shares of corporations and over units of ordinary mutual funds.

J.C. Bogle (2015), an American investor, stated that the winning investment strategy is to buy shares of all national companies listed on the market at the lowest price. In this way, it is guaranteed to receive almost all the income generated by issuers: in the form of dividends and through the growth of the value of shares, and notes that the best way to implement this strategy is to invest in a fund that has such a portfolio of shares and encourages never to leave it. L. Ostapiv (2021) studied the work of the iPlan investment company and its community. The problems and peculiarities of the use were covered by the investment channel UkrInvestClub and Ukrainian speaker O. Tyhomyr (2023). Despite the significant achievements of these scientists, the nature and timing of the application were not sufficiently clarified. The aim was to define the nature of the financial instrument described by the combination of the term ETF and to find out the reasons for its rapid spread in the post-crisis global financial market.

## ■ Materials and Methods

This study used several approaches to analyse the functioning and performance of ETFs, such as the Vanguard S&P 500 ETF and the Invesco QQQ Trust, which are focused on the key stock indices NASDAQ Composite and S&P 500. The main emphasis was placed on comparing the long-term dynamics of these ETFs and their compliance with the general trends of market indices. Literature sources were analysed, namely, a systematic review of scientific articles, analytical reports and publications on ETFs was conducted to identify the key factors that affect their functioning. Using a systematic approach, the article clarified what an ETF financial instrument is, the history of its emergence, its spread in the post-crisis period, and its relevance. Based on this material, the article identified positive aspects for choosing this instrument and certain limitations of its use. The article compared different types of ETFs by the key indicators (high-risk, low-risk, regional, global ETFs).

Exchange data on the volume of transactions, pricing and liquidity of ETFs were used to assess their performance. The systematic analysis allowed to compare existing indices that are calculated taking into account the overall performance of stocks and other assets that make up their composition and therefore serve as benchmarks for assessing the state of a particular market or sector. The NASDAQ Composite and the S&P 500 are the two flagship indices of the US economy with the highest growth rates. These two indices are targeted at investors with different risk tolerances and long-term financial goals. Quantitative analysis: data on ETF prices, historical returns,

volatility, and their correlation with the NASDAQ Composite and S&P 500 indices were analysed. Using the replication method, two ETFs were selected that fully duplicate the selected indices. These are Vanguard Index Funds – Vanguard S&P 500 ETF and Invesco QQQ Trust on the Nasdaq index. Correlation analysis: the relationship between ETF returns and changes in the NASDAQ Composite and S&P 500 indices was assessed. This allowed to assess how effectively the funds reflect changes in the major market indices. Portfolio simulation: an online service for analysing investment portfolios to simulate what a portfolio would look like in three years based on selected ETFs was used.

The following tools were used for the analysis. Financial platforms: data on historical prices and yields of ETFs and indices were obtained from platforms such as Google finance (2024a; 2024b). Portfolio analysis websites: the Portfolio Visualizer (Tools for better investors, n.d.) portfolio simulation platform was chosen, by collecting statistical data and organising it on an analytical website, the authors were able to summarise and compare what a portfolio would look like if invested in certain assets. The first stage involved collecting data on historical prices, yields and other indicators of ETFs, as well as data on the NASDAQ Composite and S&P 500 indices. At the second stage, the data was analysed to identify trends, patterns and performance of ETFs compared to the indices. At the third stage, a simulation of the investment portfolio was conducted using the Vanguard S&P 500 ETF and the Invesco QQQ Trust to estimate potential returns in three years.

## ■ Results and Discussion

Stock markets are an integral part of any modern economic system, without which an efficient allocation of resources is impossible. And the issues of anticipating the price movements of financial instruments in the stock markets and forecasting their profitability were of interest to capital market theorists and practitioners. A universal type of financial instrument emerges on the market – exchange-traded funds (ETFs), which are a type of securities traded on an exchange and act as a certificate for a portfolio of shares, bonds, and stock exchange tokens. The history of ETFs dates back to 1989, when the first ETFs began trading on the US market. Initially, ETFs were available only to large institutional investors – investment banks, hedge funds and insurance companies. The ETF boom at the end of the 20th century allowed non-professional market participants to take advantage of them, and the instrument quickly became popular among individual investors. According to Barclays, the main investment group, (What is an ETF?..., n.d.) by 2007, about 60% of ETF trading was carried out by individual investors. The main countries where individual investors include ETFs in their portfolios are the United States, Germany, the United Kingdom, Switzerland and France. In the United States, individual investors account for 50-60% of total assets under management in ETFs, while in Europe this figure is much lower, at 10% to

15%, but institutional and individual investors around the world still use this mechanism.

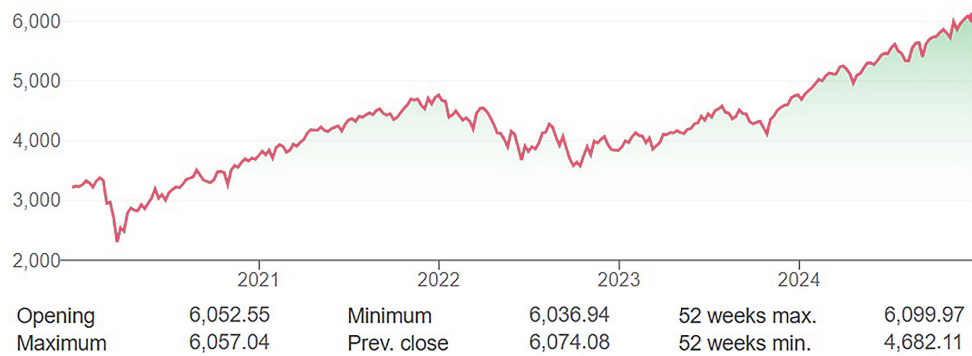
One of the driving factors behind the popularity of mutual funds is the broadening of the term mutual funds, which provides investors with a wide range of options. The first mutual funds focused primarily on the stock market. Established in 1993, the oldest and largest fund, SPDR S&P 500, is based on an index with assets of, as the name suggests, \$127 billion (Kunin, 2014). It is a modified version of the index contract based on the shares of companies included in the S&P 500 index of the New York Stock Exchange. Between 2000 and 2022, assets under management increased 24-fold (an average annual growth rate of 33%). The total number of ETFs traded in the major markets of the United States, Europe and Asia exceeds 4,700 organisations (Balchunas, 2022). ETFs not only cover almost all types of assets available on the global stock market and represent the interests of investment funds, but also provide individual investors with the opportunity to participate in the implementation of complex financial strategies through a single transaction. Some ETFs provide individual investors with the opportunity to make trades and invest in falling stock indices, while others offer global exposure to specific sectors of the global economy, such as the SPDR Dow Jones Global Real Estate ETF (ETF ticker: RWO).

One of the most important positive aspects of investing in ETFs is the ability to diversify by any asset class, industry, region and currency using ETFs, which helps reduce volatility risk and potentially improve investment performance. ETFs allow investors to invest in the financial markets of specific countries (the United States, Europe, Asia, etc.) or specific market segments (stocks, bonds, commodities) by purchasing only one financial asset rather than buying several individual instruments. Another positive aspect is low management costs. ETFs are based on the principles of index investing, which offer low management fees comparable to those of mutual funds or common funds: from 3% per annum of the net assets of an exchange-traded index fund (ETF). Financial investments are highly liquid. ETFs can be bought and sold throughout the day on the exchange on which the ETF is listed and traded, and ETF quotes may be provided on a regular basis. ETFs are bought and sold through Standard Bank or online banking. The availability of managed ETF assets is important. Unlike mutual funds, the asset structure of ETFs is published daily. Transaction opportunities are also an important positive aspect of investing, as ETFs can be bought and sold like ordinary shares, with available stops and limits, and leveraged buying. Conventional indices and mutual fund shares do not have this option. It is possible to build a variety of investment portfolios, regardless of the initial investment size. Prices for a single ETF share range from USD 300 to USD 800, allowing even individual investors with small amount of capital to build a balanced portfolio without the need to use other complex strategies or instruments (Kunin, 2014).

Some limitations that arise when using ETFs should be considered. For example, transaction costs. Each trade with ETFs is subject to mandatory brokerage and exchange commission. When some ETFs are not liquid, there may be a large spread between the purchase and sale price. When choosing an ETF, it is necessary to take into account its weight. A limitation is the difference in the structure of the ETF and the market index. Funds often include some giant stocks, which can eat up a disproportionate share of the market, and their performance will have a proportionately large impact on the performance of the portfolio. It may also include companies that are not attractive to investors but meet the fund's criteria and are included in the index. As a result, the volatility of the funds remains and diversification is reduced. Before investing in a fund, it is important to carefully study the composition of the index and the corresponding ETF. There are taxation issues, the main reason for which is the payment of dividends. Most of the presented brokers only care about taxation on foreign liabilities.

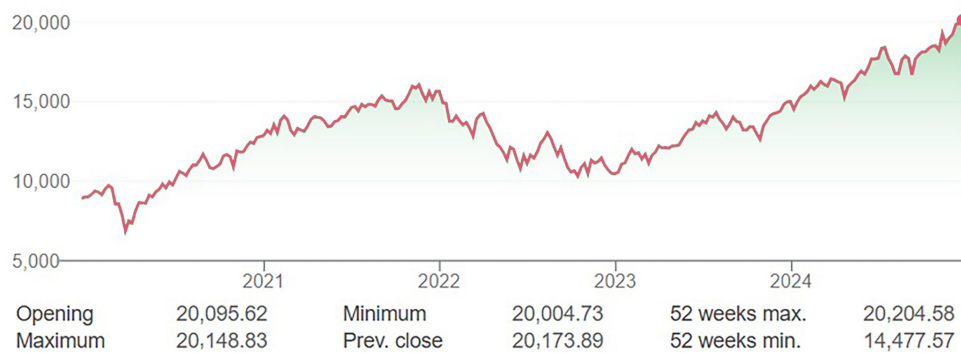
It is impossible to understand the characteristics and features of an ETF without understanding the characteristics of the offer and the legal basis on which the issuer operates the instrument. ETFs that reproduce a certain index (DAX, S&P 500, MSCI Emerging Markets, DJIA) act as ETF issuers and are freely traded on the stock market, just like ordinary shares and other securities. In the United States, the vast majority of assets in ETFs are held by funds that are regulated by the Securities and Exchange Commission under the Investment Company Act of 1940. However, mutual funds lose many of their inherent functions when they are registered. Investment funds can be organised in the form of an investment trust. In the European stock markets, ETFs are issued in accordance with the UCITS (Commitments for Collective Investment in Transferable Securities) Directive (Chen, 2024). The characteristics of the funds issued under the directive are that they are open to individual and institutional investors, have close supervision of assets, strict risk management rules and standardised behavioural procedures for cooperative management. It is suggested to consider the most popular ETFs on the S&P 500 and Nasdaq indices, namely VOO – Vanguard S&P 500 ETF and QQQ Invesco QQQ Trust ETF. Figure 1 analysed the performance of the S&P 500 index, a stock index comprising 503 shares of 500 selected public companies traded on US stock exchanges with the largest capitalisation. The list is owned and compiled by Standard & Poor's.

The chart showed the growth over the past 5 years, which is  $5,477.08 + 2,535.32$  (86.18%). The NASDAQ Composite is a stock index composed of common stocks and similar financial instruments of all companies traded on the NASDAQ Stock Exchange as shown in Figure 2. Often referred to simply as "NASDAQ" or "NASDAQ index". It has been calculated since 1971, with an initial value of 100 points.



**Figure 1.** The state of the S&P 500 index

Source: Google finance (2024a)

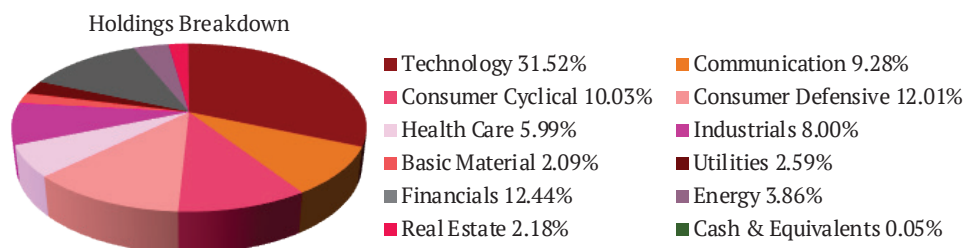


**Figure 2.** The state of the NASDAQ index

Source: Google finance (2024b)

The chart showed the growth over the past 5 years, which is  $17,822.72 + 9,816.48$  (122.61%). The ETF called Vanguard Index Funds, an ETF created and managed by The Vanguard Group, Inc. The fund invests in the public equity markets of the United States. The Fund invests in equity securities of companies operating in a variety of sectors. The Fund invests in equities of large-capitalisation companies. It seeks to track the performance of the S&P 500 Index using a full replication technique. Vanguard Index Funds – Vanguard S&P 500 ETF was established on 31 August 1976 and is based in the United States. This investment aims to track the performance of the Standard & Poor’s 500 index,

which measures the return on equity investments (Seeking Alpha, 2024a). One unit of this ETF costs USD 501.27. Figure 3 showed how much of the money will be invested and in which sector. Table 1 showed how much money was invested in individual companies. When an ETF is purchased, it automatically invests in 6.96% of Microsoft shares, 6.30% of Apple shares, etc. In total, 34.07% is invested in the top 10 companies. In addition to these companies, there are 407 other companies, but only a very small portion of the funds is invested in them. Compared to the index itself, the ETF has returned 85.71% and the index 86.18%, which is roughly the same as the index itself over 5 years.



**Figure 3.** Breakdown of holdings of Vanguard Index Funds ETFs

Source: Seeking Alpha (2024a)

**Table 1.** Top 10 holdings of Vanguard Index Funds ETFs

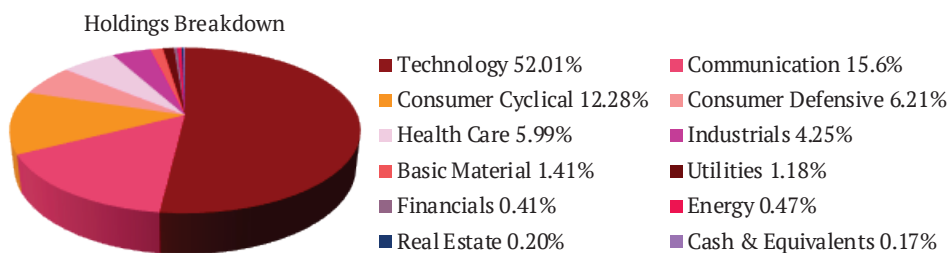
Top 10 holdings	
Microsoft Corp	6.96%
Apple Inc	6.30%
NVIDIA Corp	6.11%
Amazon.com Inc	3.64%
Meta Platforms Inc, class A	2.32%
Alphabet Inc, class A	2.29%
Alphabet Inc, class C	1.94%
Berkshire Hathaway Inc, class B	1.70%
Eli Lilly and Co	1.48%
JPMorgan Chase & Co	1.32%
Total of	34.07%
Number of holdings 507	507

Functions as of 31.05.2024

Source: Seeking Alpha (2024a)

This example showed an ETF called Invesco QQQ Trust, Series 1, which is an ETF established by Invesco Ltd. The fund is managed by Invesco Capital Management LLC. The fund invests in public equity markets in the global region, in shares of companies operating in the energy, real estate, materials, industrials, consumer staples, healthcare, information technology, communications, and utilities sectors. It invests in large-cap equities. It aims to track the

performance of the NASDAQ-100 index using a full replication technique. The Invesco QQQ Trust, Series 1 was established on 10 March 1999 and is located in the United States. The investment seeks results that generally correspond to the price and yield performance of the NASDAQ-100 Index (Seeking Alpha, 2024b). One unit of this ETF costs USD 481.00. Figure 4 showed how much of the money will be invested and in which sector.



**Figure 4.** Breakdown of holdings of the Invesco QQQ Trust ETF

Source: Seeking Alpha (2024b)

Table 2 showed how much money is invested in individual companies. One ETF purchase automatically invests 8.70% in Microsoft shares, 8.46% in Apple shares, and so on. In total, 50.48% is invested in the 10

largest companies. Compared to the index itself, the ETF’s return is 157% and the index’s return is 122.61%, which is better than the return of the index itself over a five-year period.

**Table 2.** Top 10 holdings of the Invesco QQQ Trust ETF

Top 10 holdings	
Microsoft Corp	8.70%
Apple Inc	8.46%
NVIDIA Corp	8.05%
Amazon.com Inc	5.22%
Broadcom Inc	4.93%
Meta Platforms Inc, class A	4.63%
Alphabet Inc, class A	2.80%
Alphabet Inc, class C	2.70%
Costco Wholesale Corp	2.54%

Table 2. Continued

Top 10 holdings	
Tesla Inc	2.45%
Total of	50.48%
Number of holdings	103

Functions as of 26.06.2024

Source: Seeking Alpha (2024b)

Compared to the Vanguard S&P 500 ETF, the QQQ Invesco QQQ Trust ETF’s share of giant stocks is larger and should proportionally have a greater impact on the portfolio’s performance. The results were summed and compared to find out what a portfolio invested in these assets could

look like over 3 years (2021-2024), assuming that the dividends received are reinvested, the initial investment value is \$600, and \$600 is added to the account quarterly (Table 3). The first example was VOO – Vanguard S&P 500 ETF, and the second was QQQ Invesco QQQ Trust ETF.

Table 3. Results of portfolios invested in Vanguard S&P 500 ETF and QQQ Trust ETF

Metric	Results of portfolios	
	Example portfolio 1	Example portfolio 2
Opening balance	600 USD	600 USD
Ending balance	11,976 USD	12,644 USD
Annualised return (CAGR)	140.18%	144.02%
Time-weighted rate of return (TWRR)	12.08%	11.85%
Weighted average rate of return (MWRR)	14.67%	18.01%
Standard deviation	17.02%	21.57%
The best year	28.78%	54.85%
The worst year	-18.19%	-32.58%
Maximum drawdown	-8.78%	-14.97%
Max. Drawdown (excluding cash flows)	-23.91%	-32.58%
Sharpe ratio	0.61	0.51
Sortino coefficient	0.93	0.76

Source: Tools for better investors (n.d.)

VOO – Vanguard S&P 500 ETF \$600 invested on 1 January 2021 will be worth \$11,976 as of 31 May 2024, representing a total return of 47.66%. Over this period, the portfolio has returned 140.18% per annum, with 26 out of 41 months, or 63.41% of months, being positive. The best year for the portfolio was 2021 with a return of 28.78%, and the worst year for the period was 2022 with a return of -18.19%. The maximum drawdown of the portfolio was 8.78% from 1 April 2022 to 30 April 2022 with a recovery time of 2 months. The risk-adjusted portfolio return, as measured by the Sharpe ratio, was 0.61 (Tools for better investors, n.d.).

QQQ Invesco QQQ Trust ETF \$600 invested on 1 January 2021 will be worth \$12,644 as of 31 May 2024, representing a total return of 46.60%. Over this period, the portfolio has returned 144.02% per annum, with 25 out of 41 months, or 60.98% of months, being positive. The best year for the portfolio was 2023 with a return of 54.85%, and the worst year for the period was 2022 with a return of -32.58%. The maximum drawdown of the portfolio was 14.97% from 1 April 2022 to 31 May 2022 with a recovery time of 2 months. The portfolio’s risk-adjusted return, as measured by the Sharpe ratio, was 0.51 (Tools for better investors, n.d.) All calculations are approximate to illustrate how ETFs function and are used in the global market.

Market research had shown that Kinto was the first investment company to include Ukrainian ETFs in the

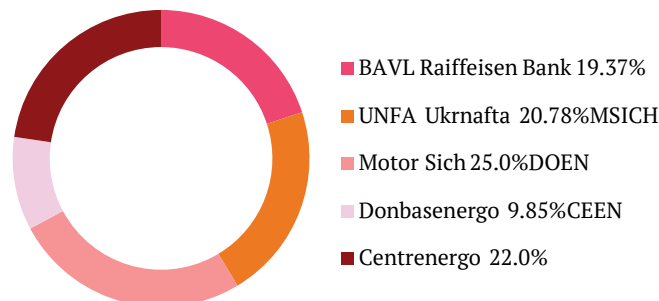
Ukrainian Stock Exchange Index in 2011, issuing investment certificates of the fund (Kinto, n.d.). The Ukrainian Exchange Index Fund (ticker: KUBI) is a unique project of the Ukrainian stock market. It is the first fund whose securities are freely traded on the stock market in the form of ordinary shares. The principle of operation of the Ukrainian ETF is similar to that of a classic exchange-traded index fund. The structure of the fund (Fig. 5) almost exactly copies the structure of the index basket of the Ukrainian Stock Exchange, which consists of the following Ukrainian companies. The last corporate reporting activity dated back to 2017, with only one company paying dividends (Corporate reporting..., 2018).

For the further development and emergence of innovative financial instruments that can be used to effectively hedge investments in Ukraine, it is necessary to create a favourable investment environment in the country: acceptable and reliable investment conditions, investor interest, and standardised investment regulation processes. When most beginners enter financial markets, their eyes are immediately focused on specific stocks, such as Microsoft Corp or Apple Inc. Practice often shows that such attempts to choose specific stocks often fail, as there is no complete information on the activities of certain companies. As a result, in the second half of the twentieth century, the index approach to investing became very popular.

The scholars under consideration cover different aspects of this topic, but they note the advantages that can be agreed upon. Financial markets are constantly evolving, and ETFs have become an important tool for investors in the global

context. This article focused on the performance of ETFs, in particular the Vanguard S&P 500 ETF and the Invesco QQQ Trust, and their interaction with key indices, the NASDAQ Composite and the S&P 500.

Ukrainian stock index structure



**Figure 5.** Structure of the Ukrainian equity index

**Source:** Kinto (n.d.)

As A. Tkachenko *et al.* (2019) stated, there is no full range of financial instruments, no mature regulatory and legal framework, and securities traded on the stock market are not backed by appropriate investor risk hedging mechanisms such as ETFs. The analysis of C. Smith (2023) emphasised that the S&P 500 represents a wide range of sectors, from technology to financials to healthcare, providing better diversification than some highly specialised indices such as the NASDAQ. The research by M.C. Ferrell *et al.* (2020) confirmed that ETFs have become one of the fastest growing segments of the financial market. The growing popularity of ETFs is explained by their simplicity, liquidity, and reduced management costs compared to traditional investment funds. Moreover, K. Thune (2024) provided fundamental information about ETFs and index funds, exploring their evolution and key characteristics. He drew attention to how these instruments have transformed the investment market due to their low costs and transparency. As R. Wild (2021) noted, ETFs provide investors with access to a wide range of assets and new investment ideas. N. Krasnikova & O. Benenson (2019) determined that shares of ETFs have a number of advantages over ordinary shares of corporations and are quite attractive for investment purposes. According to S. Nandal & A. Kumar (2021), this approach to investing is particularly important in comparison to active funds, which are often associated with higher costs and unpredictable returns.

In particular, I. Morhachev *et al.* (2020) highlighted a contrast that allows developing firmness principles for real business projects to create investment funds. S. Esh & A. Honcharenko (2020) noted that stock exchanges play an important role in the modern economy of the country, providing investors with the opportunity to build an effective investment portfolio of securities. One of the key aspects of using ETFs is their ability to adapt to changing market conditions. They allow investors to react quickly to market fluctuations, making them attractive to traders and institutional investors. For example, J. Bowes & M. Ausloos (2021)

emphasised that ETFs show a variety of risks and returns, depending on the investment strategy and market conditions. ETFs continue to evolve and adapt to the needs of investors, offering a wide range of investment opportunities. Modern ETFs allow not only investing in traditional assets such as stocks and bonds, but also in more complex instruments such as commodities and indices based on new technologies. E. Balchunas (2022) noted that such innovations make ETFs more attractive to investors who seek to diversify their portfolios. A study by J. Ferringer (2021) showed that the implementation of technologies such as artificial intelligence into ETF management processes can significantly improve their efficiency. Investors using these technologies can not only analyse data but also adapt their investment strategies in real time, which increases the possibility of achieving financial goals. O. Vinichenko & M. Hrybkova (2021) noted that hedge funds allow non-professional traders to take the opportunities available in the world. While ETFs offer numerous opportunities, there are also risks, in particular market risks, that can significantly affect their performance. Studies by A. Dumitrescu *et al.* (2023) highlighted that while ESG ETFs have the potential for high returns, their performance does not often reach the level of standard indices due to additional ethical and environmental limitations. K. Saha *et al.* (2022) noted that economic conditions, political instability, and regulatory changes can affect the ETF market.

Through innovative portfolio analysis platforms, investors can simulate their investments and assess potential outcomes. Using portfolio simulation sites allows investors to understand how ETFs can impact their overall investment strategy over the long term. In this article, a more applied analysis was conducted, the results of which showed that investing in indices allows you to invest in a fairly wide range of companies. The results of this analysis suggested that ETFs play an important role in the modern investment environment. They not only provide access to a variety of assets, but they can also optimise risks and

portfolio returns by spreading risks and diversifying the investment portfolio. The selected funds have shown positive dynamics over a three-year period and capital growth, which proves the suitability of investing in ETFs.

## ■ Conclusions

Exchange-traded investment funds are a type of securities that are traded on an exchange and act as a certificate for a portfolio of shares, bonds, and stock exchange tokens. It is concluded that portfolio investing is understood as the investment activity of investors, which involves investing in several investment objects instead of one, thereby generating a certain diversified set of them. It is justified that financial markets, including stock markets, as their segment in modern conditions are characterised by volatile, stochastic, crisis downturns of various nature. The application of traditional portfolio theory and classical financial and mathematical methods, which are portfolio optimisation based on the criterion of a given ratio of expected return to risk, leads to a common and typical failure. ETFs can increase portfolio diversification, simplify the search for new investment ideas, provide easy and inexpensive access to international markets, and enable innovative strategies and portfolio management techniques to protect against market volatility.

Innovative ETF instruments, which marked the beginning of the rapid growth of the ETF industry, gave investors an impetus to expand the possibilities and the very term of

mutual funds. By making a visual analysis of popular ETFs on the S&P 500 and Nasdaq indices, namely VOO – Vanguard S&P 500 ETF and QQQ Invesco QQQ Trust ETF, one can clearly see what an investment fund consists of, which part of the giants' shares is larger and should proportionally have a greater impact on the portfolio's performance. It is made a conclusion that in 2024, ETFs not only cover almost all types of assets available on the global stock market and represent the interests of investment funds, but also provide individual investors with the opportunity to participate in the implementation of complex financial strategies through a single transaction. The research of the Ukrainian stock market shows that there are certain problems in its operation. As a result, the Ukrainian securities market has not fully fulfilled its function of aggregating supply and demand for securities, attracting investment capital and directing it to the most efficient sectors and types of economic activity. The limitations discussed in the article, namely the process of taxation of the result of investing on foreign exchanges in investment funds (ETFs) in Ukraine, are a prospect for further research on the choice of broker.

## ■ Acknowledgements

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## ■ Conflict of Interest

None.

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## Функціонування та використання біржових інвестиційних фондів

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■ **Анотація.** Застосування традиційної портфельної теорії і класичних методів фінансової математики, ще представляють собою оптимізацію інвестиційного портфеля, виявляється часто недосяжним для широкого кола інвесторів. Тому, метою було дослідити новітні інструменти та фондові підходи до інвестування. За допомогою системного аналізу проведено порівняння між обраними фінансовими інструментами. Для отримання вхідних даних було використано інформаційні платформи (Google finance). У статті досліджено функціонування та використання біржових інвестиційних фондів, як невід'ємну частину будь-якої сучасної економічної системи, без якої неможливий ефективний розподіл ресурсів. Запропоновано та розглянуто індексний підхід до інвестування, його переваги та недоліки. Визначено питання передбачення руху цін фінансових інструментів на фондових ринках і прогнозування їх прибутковості. У статті проаналізовано основні інвестиційні напрями, за якими можливо здійснювати формування інвестиційного портфеля. Запропоновано та розглянуто фінансовий інструмент – це біржові інвестиційні фонди, що поєднують в собі найкращі риси акцій та пайових інвестиційних фондів, а саме взаємних фондів, як альтернативу традиційного підходу до формування інвестиційного портфеля, та можливості брати участь у реалізації складного інвестиційного процесу за допомогою однієї операції. Розглянуто можливості для здійснення інвестицій на світових фінансових ринках в Україні, за індексами S&P 500 та Nasdaq. Практична цінність даного дослідження полягає в полегшенні пошуку нових ідей для інвестування, підходить для початківців та для професійних інвесторів і трейдерів

■ **Ключові слова:** капіталовкладення; фондовий ринок; фінансові інструменти; біржові індекси; типи біржових інвестиційних фондів

## Formation of competitive advantages and maintaining the level of competitiveness of the business entity in the context of the development of the latest economic model

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■ **Abstract.** In the context of increasing competitive pressure as a result of globalisation processes, finding new ways and methods to improve one's competitive advantages is a critical issue, especially for Ukrainian producers. The main purpose of the article was to study the ways and methods of forming competitive advantages for Ukrainian enterprises, as well as to study the methods by which an enterprise can maintain a sustainable level of competitiveness. The methods of data and information analysis, cross-sectional analysis, descriptive analysis, and regression analysis were used in the course of processing the scientific material. The authors assessed approaches to substantiating competitive prerogatives and achieving a front-loaded sustainable level of competitiveness in the current economic environment. The concept of competitiveness, competitive advantages and views of various scholars on this term were studied. The author's vision of this term was formed on the basis of the previously analysed definitions. The methods and ways by which Ukrainian entrepreneurs can increase their level of competitiveness were presented. The ways in which sustainable competitive advantages can be achieved in the context of the newest economic model were considered. The article analysed the benefits that an enterprise will receive if it manages to implement and ensure its competitive advantages by improving energy efficiency, labour productivity, appropriate use of resources and formation of a well-thought-out and balanced strategy of behaviour in the market, as well as strategies and tactics of interaction between the enterprise and its main counterparties. The practical value of the work lies in updating and applying the topic of the work to the realities, which is an important factor in the formation of competitive advantages

■ **Keywords:** strategic management; economic efficiency; entrepreneurial activity; competitive analysis; resource management; globalisation; economic potential assessment

### ■ Introduction

As of 2024, the market situation can be characterised as one of constant movement and changes in the external environment, along with volatile consumer demand and the presence of a large number of enterprises of various forms of ownership. This is accompanied by increased uncertainty and risk. In order to remain competitive in the market, businesses need to monitor and respond to all

changes and movements in the competitive environment in a timely manner. This is necessary in order to be able to respond in a timely and adequate manner to the challenges that the organisation may face, as well as to maintain and secure its sustainable position in the market and preserve its competitive advantages. Globalisation processes, business consolidation and the formation of new

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multinational corporations are gaining momentum. Previously established methods of competition may become partially or completely ineffective. Therefore, improving and developing new ways and methods of competition is becoming an urgent issue.

Many scholars have studied and improved knowledge about competitiveness. The problems of competitiveness have been studied by such scholars as O. Dudnyk & Y. Sahachko (2020) and N. Yevtushenko & A. Zazimko (2021), who argued that competitiveness is a key factor in the success of modern enterprises. These scholars emphasised that in order to achieve a high level of competitiveness, it is necessary not only to introduce the latest technologies, but also to pay attention to human capital development and effective resource management. These authors believed that the competitive advantages of an enterprise are crucial factors for its success in the market. They noted that these advantages can be achieved through innovation, high quality products and services, and effective cost management.

A popular area of research is to increase the level of competitiveness of an enterprise through systematic efforts to strengthen its competitive advantages. In particular, M. Bezpartochnyi *et al.* (2021) emphasised that enterprises should develop and implement strategies that will allow them to maintain and increase their market share. Constantly changing conditions and challenges should be taken into account, and competitive advantages should be studied as the basis for developing a strategy for tourism enterprises. It is also noted that it is important to constantly monitor competitors and the market, which allows enterprises to quickly adjust their strategies and maintain leadership positions. It is necessary to study the multifaceted nature of the concept of enterprise competitiveness and the need for an integrated approach to management and development. The point of view of V. Khmurova & V. Kulinich (2023), K. Tokar (2024) and N. Strochenko & O. Kovaleva (2024), who noted that to ensure competitiveness, it is necessary to combine innovative technologies, high quality standards and efficient use of resources. These authors also noted that enterprises should focus on the needs and expectations of consumers to meet current demand and anticipate future market trends. Research on the issue of enterprise competitiveness and the relationship between competitiveness and economic clustering of activities can be found in the works of foreign scholars such as V.O. Herasymova & E.O. Riezanov (2020), K. Kovtunen-ko *et al.* (2021) and S. Wang *et al.* (2024). The purpose of the work was to study such concepts as competition and competitive advantages of an enterprise. In particular, the article examines how competitive advantages are affected by current trends and the situation in the world.

## ■ Materials and Methods

The official statistical reporting of the National Bank of Ukraine (NBU) was used as a source of information for this article (Review of the..., 2023; Supervisory statistics, n.d.). Financial reports and studies of international and

Ukrainian scientific associations, reports of international economic forums, graphs and visual information from scientific research were analysed (Financial Club, 2020; Lanvin & Monteiro, 2023; Researches, n.d.). The authors also used information from articles and research papers (Kuznetsova & Penova, 2019; Yevtushenko & Zazymko, 2021; Khmurova & Kulinich, 2023). These sources allowed to comprehensively cover the research topic and provide an objective analysis of various aspects related to the competitiveness of enterprises. Information verification methods such as source reliability assessment were used. The reliability of each source and the credibility of the authors were assessed. When a source contained references to other works, an additional check was made to ensure that the information was cited correctly. To ensure accuracy, cross-checking was used to compare information from different sources and reduce the risk of using unverified data and inaccurate information. This method proved effective in situations where primary sources were difficult to find.

Other methods of data and information analysis were used in writing the article. Factor analysis was used to identify the main factors that influence the level of competitiveness and competitive advantages of an enterprise. Cluster analysis was used to analyse and group information into specific clusters. This helped to identify patterns and trends, to form and combine information, and to find differences between individual clusters. The method of comparison was to compare the competitiveness of Ukrainian and European enterprises, taking into account external and internal factors. This was necessary in order to determine the position of Ukrainian business and to select methods by which to maintain a sustainable level of competitiveness of enterprises in Ukraine. The study presented data in the form of tables and graphs. This was done using descriptive analysis to visualise trends and dynamics of changes. Tools for sorting, filtering, and visualising data were also used. Textual data analysis was used to create structured reports and graphical interpretations of the results.

Regression analysis of the data was used in the course of writing the paper, in particular, to determine the dependencies that may have an impact on the competitiveness of the enterprise. Correlation analysis was used to determine the correlation between different aspects of competitiveness and between competitiveness indicators. Data decomposition was conducted, which in turn helped in the analysis of data obtained from various sources. Trend analysis was used to understand and predict various trends and tendencies in the development of competitiveness of a modern enterprise. Synthesis was used to combine the information from various sources to create a holistic picture of the phenomenon and to draw conclusions based on it.

## ■ Results and Discussion

It is necessary to familiarise yourself with the term's competitiveness and competitive advantage. Competitiveness has a wide range of definitions. Competitiveness should be considered only in the context of the enterprise's field

of activity. For the most part, competitiveness is derived from the term capacity to compete. Competition is a rivalry among market participants for the most favourable conditions for the production, sale of their products and services or the purchase of necessary goods and services at the most attractive prices, as well as for the possibility of obtaining the highest level of profit. This leads to the following definition of competitiveness. Competitiveness is the ability of an individual market participant to ensure a stable position for its organisation through the efficient use of available resources and finances, the ability to comprehensively assess the actions of its closest competitors and respond to them adequately and in a timely manner. Competitiveness can also be understood as the ability to build a business reputation in the field of activity in order to obtain the most favourable conditions for operation and the highest profits.

The competitiveness of an enterprise's products is equally important in shaping its competitive advantages. The main difference between the competitiveness of an enterprise's products and its overall level of competitiveness is that the products are evaluated primarily by con-

sumers. The level of competitiveness of an enterprise is determined by the results of its activities and the use of available resources in comparison with other market participants (competitors). Based on this, the competitiveness of a product can be defined as the degree of compliance and ability of an enterprise's products to meet the needs of the target consumer group in a particular market within a certain period of time. For this purpose, it is necessary to take into account the most important product characteristics for this market: technical, environmental, economic or any other specific characteristics. For the correct formation of competitive advantages, it is also necessary to distinguish between the following concepts: parameters of enterprise competitiveness and competitiveness indicators. Competitiveness parameters can be defined as quantitative characteristics of the product properties of a particular enterprise, which take into account the specifics of the industry in which the enterprise operates. Competitiveness parameters can be divided into components, including: economic, technical and regulatory. The competitiveness parameters are shown in Figure 1.

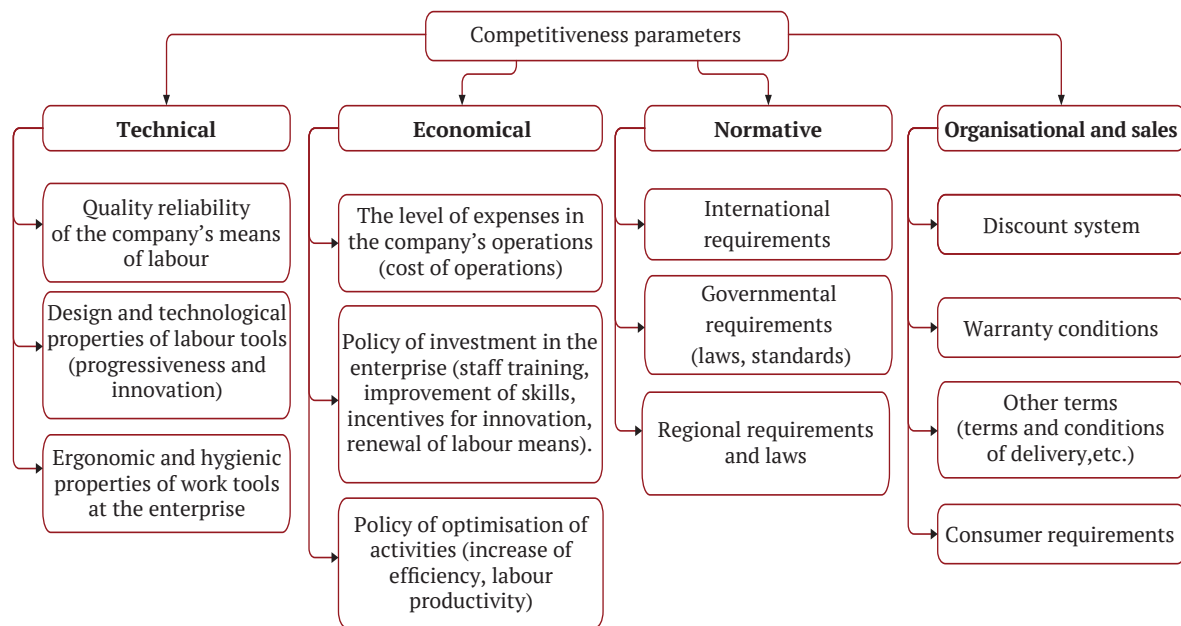


Figure 1. Parameters of competitiveness

Source: compiled by the authors

It is worth considering each of these parameters in more detail. The technical parameters of competitiveness can be described as: a set of technical and physical characteristics of a certain product, which in turn take into account the specifics of a particular industry in which the company operates, as well as a number of product characteristics that are intended to meet the need for the use of this product. The technical parameters of competitiveness can be described as: a set of technical and physical characteristics of a particular product. These characteristics include the specifics of the industry in which the enterprise

operates, as well as the characteristics of satisfying the needs in the process of using this product. Competitiveness indicators can be described as a certain set of criteria that can be used to quantify the competitiveness of a particular product or service. These criteria are based on the previously discussed competitiveness parameters. For a qualitative assessment of competitiveness indicators, it is advisable to develop a special matrix that can be used to form a competitive profile, which makes it possible to assess the main competitors by key factors. Competitive advantage has a number of definitions, which are detailed in Table 1.

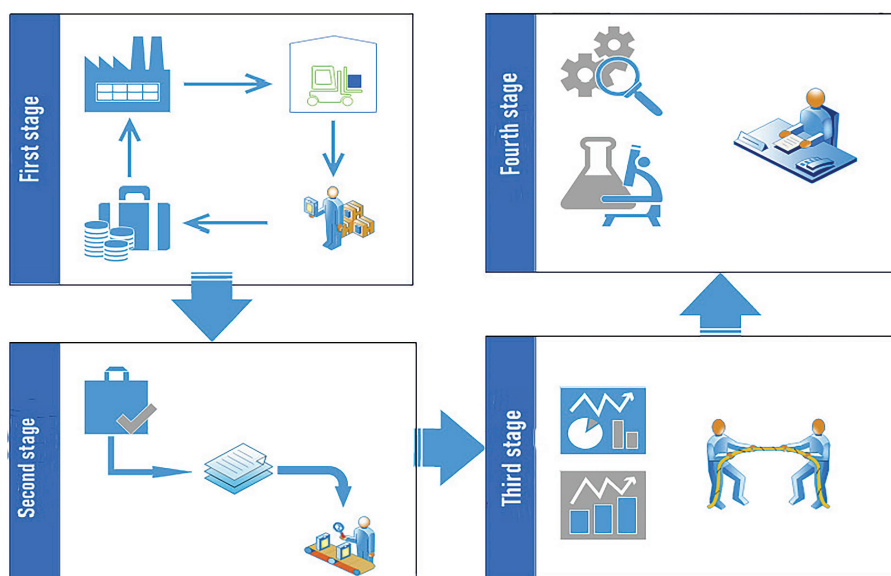
**Table 1.** Definition of the term competitive advantage

Author	Definition
V. Khmurova & V. Kulinich (2023)	Competitive advantage in production is the ability of a particular organisation to improve its competitive position, as well as the ability to adapt its activities to the formed or chosen strategy, as well as the ability to respond quickly to changes in the market environment, the ability to adequately choose an effective policy of dealing with major competitors. Competitive advantage is the ability to stay ahead of competitors through the skilful implementation of key factors in the market.
L.I. Halas (2021)	A competitive advantage is a factor or property that enables an enterprise to successfully realise advantages over its direct competitors.
N. Yevtushenko & A. Zazymko (2021)	Competitive advantages of an enterprise are its areas of activity, assets and strengths that open up ways for it to dominate its competitors and are strategically important in the process of its competition with its main competitors.
S.V. Tsyutsyupa (2020)	Competitive advantage is a set of measures aimed at improving and increasing the efficiency of a particular enterprise, changing to more favourable market conditions or weakening the main competitors of the enterprise.
I. Kuznetsova & A. Penova (2019)	Competitive advantages of an enterprise may be considered a certain set of resources available to the enterprise, including: labour, raw materials, technological, managerial and information resources, as well as methods and ways of using these resources by the enterprise to gain advantages over its competitors, and at the same time the ability to combine these resources available to the enterprise to expand the capabilities of the enterprise.
The author's approach	Competitive advantage is a set of resources, methods and techniques, as well as their combinations, which open up opportunities for an enterprise to compete effectively with its competitors. In other words, it is the strengths of an enterprise that distinguish it from its competitors in the market.

Source: compiled by the authors

Competitiveness and its competitive advantages can be defined through four successive stages. These stages are visualised in Figure 2. The first stage can be characterised as the stage when an enterprise focuses all its efforts on consolidating its market position and increasing its output. The main goal at this stage is to gain a customer in the market and retain it. The next stage (second) is the stage when the company standardises its products and tries to meet the standards already set by stronger competitors or market leaders. The main goal at this stage is to meet the generally accepted standards in the market or in a certain external environment, which allows to achieve a more stable position. After that, at the third stage, the company

gains enough strength to set the rules of the game on its own. At this stage, the company can ignore the previously established standards or set its own level of standards that other market participants need to meet. This stage is reached when the company has a significant market share and a strong position. The last (fourth) stage is the pinnacle of development. At this stage, the enterprise becomes either the strongest player in the market or is included in a limited circle of the strongest. At this stage, the enterprise has considerable control and can dictate the rules of the game that the less powerful market participants must follow. To stay at this stage, an enterprise should focus on management and innovation.



**Figure 2.** Stages of competitiveness and the impact of an enterprise on the market

Source: compiled by the authors

Competitive advantages are resources unique to each company that enable it to achieve a dominant position over its competitors. For enterprises, their competitive advantages can be divided into internal and external sources of formation. Internal sources of competitive advantage include those that can be directly influenced by the company. These include internal resources (labour, financial), the company's strategy and tactics, management methods, etc. External resources are those that are beyond the company's direct control but also affect the overall level of competitiveness. The company has no direct influence on such competitive advantages, but can realise them with

the help of internal competitive advantages. These competitive advantages can be described as those that create more meaningful values for the consumer of the company's products. This, in turn, contributes to the ability to more fully meet the needs of these same consumers. It is these competitive advantages that influence and stimulate the further development of the enterprise and the search for new internal competitive advantages, and at the same time give the enterprise a more stable position in the market. These two groups of sources by which an enterprise forms its competitive advantages are described in more detail in Table 2.

**Table 2.** The essence of competitive advantage and its composition: internal and external sources of formation

<b>Competitive advantage</b>	<b>The essence of competitive advantage and its composition</b>	
<b>1</b>	<b>2</b>	
<b>Internal sources of formation of competitive advantages of the enterprise</b>		
Management	Efficiency of building and functioning of the enterprise management (control) system, i.e. efficiency of interaction and influence of the enterprise management within the organisation. These include the effectiveness of the policy of managing available resources, procurement and sales policy of the enterprise, efficiency of production process management, quality control of products (services) at the enterprise, effectiveness of the system of motivation of the enterprise's personnel.	
Organisation	The adequacy and thoughtfulness of the company's organisational structure and its relevance to the actual situation in a given period of time, as well as its structuredness and adaptability.	
Economic	Profitability of activities, profitability, availability and ease of attracting financial resources, and the solvency of the enterprise, which follows from all of the above.	
Production	Opportunities to increase staff productivity and reduce the cost of production, efficient use of the company's fixed assets, and availability of all necessary production resources.	
Technological	Effective use of existing technologies and achievements of scientific and technological progress, technological flexibility.	
Innovative	Opportunities for the development and implementation of new technologies, development of new products and know-how, the overall level of innovation of the enterprise.	
Qualifications	The creativity of the company's personnel, their qualifications, skills and the overall level of activity in the organisation. The propensity of the staff and its individuals to develop and implement innovations.	
Geographic	Location of the enterprise in the geographical space, i.e., availability of transport arteries, proximity to human and material resources, availability and proximity to sales channels, compliance of geographical features with the type of activity of the enterprise, etc.	
Hereditary	Competitive advantages that a certain group has. These are traditions of behaviour, national peculiarities, market culture, historically developed methods of doing business, etc.	
<b>External sources of formation of competitive advantages of the enterprise</b>		
Information	The ability to collect, accumulate and process information, access to data or the ability to analyse industry development and trends in a particular area of development, trends in certain markets, the ability to collect information about consumer behaviour and preferences, competitors, and the general level of information availability.	
Communication	Availability and ease of use of information channels to disseminate information about products and services, opportunities to receive feedback from consumers, cost of using information channels.	
Qualitative	The level of product quality and consumer perception.	
Market-based	Market conditions prevailing in the market, the number of competitors, the severity of competition, and the existence of the phenomenon of unfair competition in the market.	
Pricing	The level of price competition in the market, as well as the availability and ability to adjust prices for products in the market	
<b>Constructive</b>	<b>Product characteristics (technical, design)</b>	
<b>1</b>	<b>2</b>	
Image	The image of the company among its consumers, investors and competitors, the presence of a recognisable brand and general perceptions of the company, or the presence of a properly formed positive opinion about the company.	
Service	Service level and quality, availability of warranty service and other additional related services	
Sales	The overall demand for products, the availability of tenders for a particular type of product, and the ability to distribute products on the market	

Source: compiled by the authors

Internal and external competitive advantages should work in combination to maximise efficiency, as this is the only way to achieve the maximum effect of the existing advantages. Most modern businesses focus their attention on the following competitive advantages, such as brand name recognition and awareness, flexibility in the use of resources, the ability to reduce costs, and close relationships with profitable customers. Let's look at each of these specific advantages in more detail.

Brand awareness and recognition is more common in more developed countries. This is because, with a large number of manufacturers and significant competition in a saturated market, it is quite important for a company that the user recognises the company's products at a glance by the logo. For a Ukrainian manufacturer, this competitive advantage is lower due to a certain backwardness from the developed world. Flexibility in the use of resources is an important area, as flexibility in any aspect is very important in environment of constant change. Manufacturers in developed countries are ahead of Ukrainian producers. As of 2024, Ukrainian producers are increasingly paying attention to this area. Ukrainian producers have a greater advantage over European producers because of their ability to cut costs when business is down. This advantage was gained due to the emergency conditions faced by both producers and the country. As of 2024, Ukrainian producers are losing out to European ones in terms of close ties with profitable buyers. In a time of war, all ties are rather conditional. However, under the new conditions, prospects may open up for Ukrainian producers.

It can be argued that in order for a competitive advantage to have the maximum possible effect in a competitive struggle, it must meet the following requirements: be clearly focused, sustainable, unique, and innovative. Each of these requirements should be considered in more detail. When forming advantages, the goal must be clearly defined and which part of the market it is aimed at (target audience). It is understood that a targeted advantage, although it has limitations in terms of the consumer it is aimed at, gives a more tangible result than one that does not have a clearly defined consumer. A competitive advantage should be formed with a view to a certain period of time. Achieving such a result takes time. A competitive advantage must be unique and difficult to replicate. Such uniqueness can ensure the longevity and sustainability of an enterprise in the market. It is difficult to replicate and will not allow competitors to easily implement their analogues. As of 2024, innovation is quite important in the modern world, as the modern world is primarily about innovation and technological progress. In order to achieve the best results in the market, a company should implement new ideas.

To complement all of the above, it is worth focusing on the sustainability of competitive advantage. The phenomenon of having a competitive advantage cannot guarantee and ensure a manufacturer's success in the long run. According to the level of sustainability, competitive advantages can be divided into: competitive advantages with a

low level of sustainability (low-order advantages), sustainable competitive advantages (higher-level advantages).

Low-level advantages are unstable and easily copied by competitors. They are short-term, which does not guarantee the company a stable, confident market positioning and financial success. Sustainable competitive advantages are unique and formed for the long term. These are the so-called strategic level advantages that are the basis of competitiveness of business entities and ensure their long-term market leadership. The degree of sustainability of a competitive advantage is determined by the sources of its formation and the possibilities for their continuous improvement and expansion. Sources of low-level competitive advantage are mainly focused on the external environment, which is dynamic and unpredictable. Significant changes in the competitive environment led to the loss of such advantages by enterprises (Kohut, 2023).

Building sustainable competitive advantages is critical to the long-term success of businesses in economy. To achieve this, it is necessary to focus on several key aspects: innovation, high-quality resource management, and continuous improvement of products and services. It is important for a company to adapt to changes in the market environment. In the new economic model, where innovation is a key success factor, businesses must invest in research and development (R&D). The introduction of new technologies, development of new products, and improvement of existing processes allow businesses not only to meet current market needs, but also to anticipate them.

As an example, let's consider the technological breakthroughs that occurred during the twentieth century. As of the mid-20s of the 21<sup>st</sup> century, technological growth is shifting more from a technological breakthrough to a stage of expanding technological variability. This gives no reason to believe that what worked before will work as effectively in the future. In the realities of the full-scale invasion of Russia, in addition to the current innovation challenges that have emerged during the first 20 years of the 21<sup>st</sup> century, Ukrainian producers also face the issue of integration into new European conditions and markets. This is complicated by the conditions of a full-scale war. However, it should also be noted that the situation that emerged during the first 20 years of the 21<sup>st</sup> century is not hopeless. It can be argued that with the appropriate use of available resources and a different set of actions, enterprises and the country as a whole can become stable and successful. An example of this is Israel, which, despite being in a state of permanent war at the beginning of its existence and the constant threat of war with all its neighbours, managed to become a fairly strong country. Ukraine and Ukrainian enterprises should take this experience into account when building strategies and tactics for market behaviour.

As of 2024, both theoretical scientists and management practitioners argue that the issue of competitiveness is coming to the fore due to the rapid development of the latest technologies and business methods. One illustration of innovative strategies is the use of digital technologies

to optimise business processes. Automation of production, the introduction of artificial intelligence for data analysis, and improved customer service allow businesses to reduce costs, increase productivity, and respond quickly to changing customer needs. Efficient use of available resources is another important element of building sustainable competitive advantage. This includes not only material resources but also human capital. Businesses should invest in training and development of their employees, creating conditions to improve their skills and motivation. It is important to optimise logistics processes and ensure effective supply chain management. Reducing logistics costs and ensuring an uninterrupted supply of materials allows businesses to remain competitive in the market.

To maintain competitive advantage, businesses must constantly improve their products and services. This may include improving product quality, expanding the range of products, introducing new services, and enhancing customer service (Dudnyk & Sahachko, 2020; Leskiv *et al.*, 2022). The marketing strategy also plays an important role, as it should be aimed at creating and maintaining a positive image of the company. A high level of customer trust and loyalty is one of the key factors that ensures the long-term competitiveness of an enterprise, and at the same time, effective adaptation to changes in the market environment. As of 2024, the market environment is characterised by a high level of dynamics and unpredictability. An important component of sustainable competitive advantage is the ability of an enterprise to quickly adapt to changes. This may include flexibility in production processes, the ability to quickly change the product range, and effective risk management.

Businesses must constantly monitor the market, analyse competitors' actions and respond to new challenges. The use of modern information technologies and data analysis tools allows businesses to obtain the necessary information for decision-making. To maintain their competitiveness, companies should use a comprehensive approach that includes strategic planning, optimisation of internal processes and innovative solutions. It is important to develop and implement strategic plans that take into account both short-term and long-term goals.

Ukrainian enterprises did not pay attention to many things until the 20s of the 21<sup>st</sup> century. Because of this, Ukrainian producers will have to catch up with their European competitors and go through the same path as Ukraine's neighbours. This lagging behind the national producer is clearly visible in the statistical reports of the international competitiveness forum, in particular, in Figure 3. The Global competitiveness index covers 141 countries and aims to measure the national competitiveness of countries in relation to each other. The reports of this forum quite clearly define the position of a particular country as a set of institutions and policies. It also takes into account a certain range of factors that affect the competitiveness of a national producer and its level of productivity.

As of 2023, Ukraine's economy was ranked 64<sup>th</sup> out of 134 in the Global competitiveness index. Considering Ukraine's neighbouring countries, which mostly have much more modest resources, it is safe to say that this is a very poor result. For example, Poland ranks 37<sup>th</sup>, Slovakia 36<sup>th</sup>, and Romania 54<sup>th</sup>. If to look at the countries of the former Soviet Union, the situation is no better. Ukraine is ahead of the Baltic states: Estonia, which ranks 20<sup>th</sup>, Lithuania, which ranks 31<sup>st</sup>, and Latvia, which ranks 33<sup>rd</sup>. The Ukrainian producer is also outpaced by such countries as Armenia (55<sup>th</sup> place) and Georgia, which is ranked 46<sup>th</sup> in this list. Thus, Ukraine and its producers are losing not only in the regional competitiveness race, but also in the post-Soviet space. Below are mostly African countries and underdeveloped countries of the world, which in turn indicates that Ukrainian producers will have to significantly accelerate their development and pay more attention to their level of competitiveness in order to stay in the market and compete with other countries.

According to statistics, Ukraine's average score is 79.69 points. One of the best results was achieved in 2007 (69<sup>th</sup> place), and the worst was in 2011 (89<sup>th</sup> place). This suggests that throughout the entire period of independence, Ukrainian producers have not been very concerned about their competitiveness, having an undemanding Russian market. As of 2024 and beyond, increasing the level of competitiveness will be the main task of Ukrainian enterprises. There is the investment index shown in Figure 4. The investment index shows the position of Ukrainian producers compared to their competitors.

The best investment index in Ukraine was in 2007-2008, after which there was a significant deterioration in the investment climate. This dip occurred in the 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2008, which can be explained by the financial crisis of 2008. After that, the economy began to recover until 2011, when this indicator reached the level of 2008 and amounted to 3.3 points, slightly higher than the level of 2008 (3.1 points). From 2011 to 2013 (before the start of Russia's hybrid war against Ukraine), investment sentiment deteriorated. This can be explained by crises in the world and institutional crises in the country. The lowest level (1.81 points) was in late 2013 and early 2014. This can be explained by the events related to the annexation of Crimea by Russia and the start of the hybrid war in Donbas.

Since 2015, the financial sector has been mostly growing, which is a positive indicator. According to the NBU statistics in Figure 5, the financial market in Ukraine has grown by almost UAH 600 billion over five years. In Ukraine, the financial services market is largely concentrated in the hands of banks. This can be explained by several factors. After the collapse of the USSR, the financial system was very unstable, and it is much easier to control banks than a large number of small financial intermediaries. As of the end of the first quarter of 2020, 75 banks were registered in Ukraine, concentrating UAH 2,096 billion in assets, which is 88.2% of the total financial assets in this market, com-

pared to UAH 278 billion spread across 2,136 non-bank financial intermediaries. It is easier for banks to attract resources due to state guarantees and appropriate control and availability of reporting, which allows a potential depositor to monitor the position of a particular bank, if he

has the appropriate knowledge. An equally important factor is that financial intermediaries have long been viewed with distrust by society. For more details on the development of the financial services market, see Figure 5. Total assets of the financial market of Ukraine.



Figure 3. Global competitiveness index

Source: compiled by the authors based on B. Lanvin & F. Monteiro (2023)

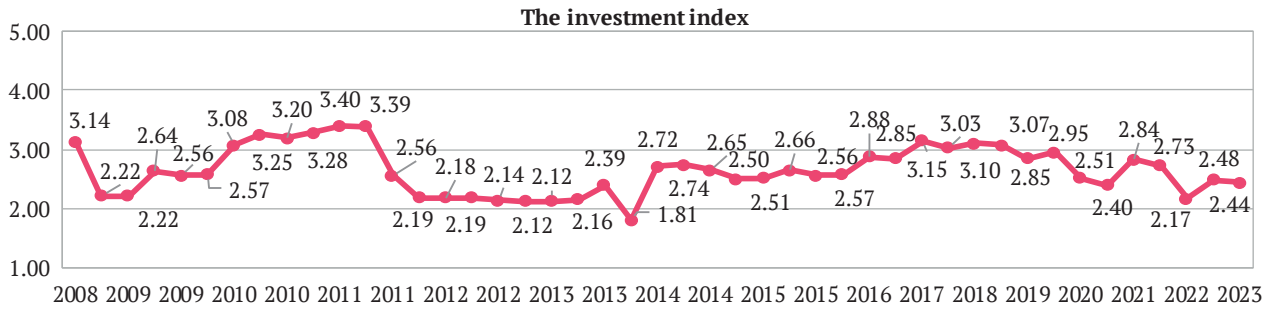


Figure 4. Investment index

Source: compiled by the authors based on Financial Club (2020), Researches (2024)

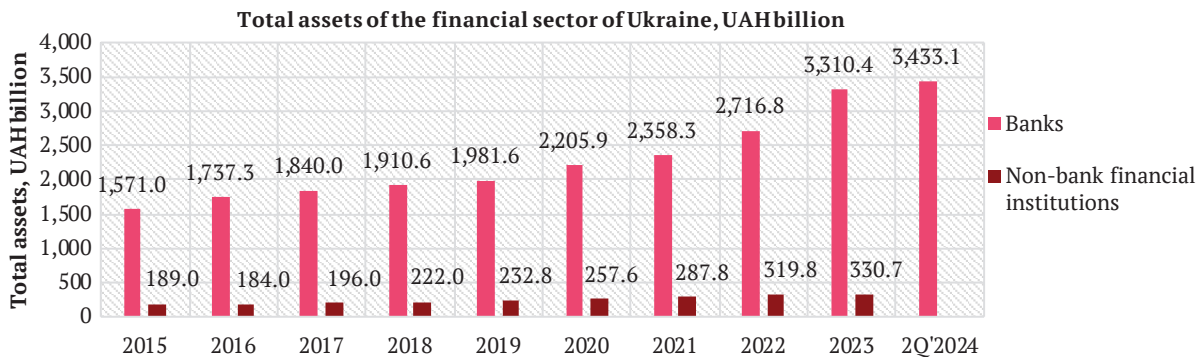


Figure 5. Total assets of the financial market of Ukraine

Source: compiled by the authors based on Review of the non-banking financial sector (2023), Supervisory statistics (n.d.)

Authors N. Yevtushenko & A. Zazimko (2021), when studying the competitiveness of an enterprise, focused on competitive advantage, and believed that competitive advantage is a value of an enterprise that can be measured on a qualitative or quantitative basis. In part, it can be agreed with, but these statements are rather brief. At the same time, this concept was also studied by O. Dudnyk & Y. Sahachko (2020), but their research is more focused on the e-commerce sector. The authors believed that competitiveness is the ability of a particular enterprise to maintain its position in a particular market, make a profit, have a positive image in the eyes of consumers, and have competitive advantages. According to K. Tokar (2024), the main area that enterprises should focus on is the correct assessment of the level of competitiveness and its analysis. There is no agreeing with the author that this is the most important thing, since the data obtained without proper interpretation and use will not be able to produce the desired effect. K. Tokar (2024) believed that the competitiveness of an enterprise is determined by such aspects as labour productivity, cost and price levels, the impact of such environmental factors as fiscal, economic and monetary policies of the state, exchange rate, investment climate and cyclical fluctuations of the economy. The author's statements are valid, as each of these factors has a significant impact on the overall competitiveness of the organisation. N. Strochenko & O. Kovaleva (2024), in their

study, defined competitiveness as the ability to effectively operate and maintain market positions, as well as achieve results and make a profit. However, this statement does not reflect the multifaceted nature of the concepts under study. In their works, the authors V. Vlasenko *et al.* (2021) defined competitiveness as a set of unique tangible and intangible assets of an enterprise, the ability to strategically manage and a set of competitive advantages, focusing on competitive advantages. V.I. Rozhko & D.D. Aloslyn (2024) believed that an enterprise should focus on the strategic aspect of managing competitive advantages. It is possible to agree with the scientists, since it is not enough to have a competitive advantage, since over time and with the help of competitors, the existing competitive advantage without appropriate development will cease to provide an advantage over competitors.

Authors Y. Kovtunenکو & Y. Kolisnichenko (2024), in their work focused on the assessment of competitiveness, as well as on the methodology of such analysis. The authors classified methods and ways to analyse the competitive advantages of an enterprise. According to the authors of K.V. Kovtunenکو *et al.* (2021), competitiveness is a multifactorial concept that may have different factors depending on the market and time, but the authors define this concept as a complex concept determined by a combination of different factors. The authors of this research do not fully agree with the definition of competitiveness as a competition for

a customer with other competitors. Competition for a customer is the goal of achieving a certain level of competitiveness by an enterprise. The authors focused on the factors that affect competitiveness, as well as on their definition, which is an important component for achieving results in the formation of competitive advantages of the enterprise.

V.O. Herasymova & E.O. Rezanov (2020) believed that competitive advantage and competitiveness is a multifactorial issue. The authors noted that it is competition that determines the direction and nature of enterprise development. This statement can be partially disagreed with, as this statement will not work in all cases. If the company is a major player in the market, then the development and strategy of the company may affect competition and dictate market trends. Competitiveness should be assessed at all stages of the company's development. In this respect, this statement is valid, as different stages are characterised by different capabilities of the enterprise and different goals. It should be noted that competitiveness should also be assessed in the event of significant changes in the external environment. In her study, S.V. Tsiutsiupa (2020) noted that competitive advantage can only be assessed by comparing it with another similar one. This author believes that the level of competitiveness is the main reflection of the efficiency of its activities. Only partially can to agree with this. Competitive advantage can be gained not only by efficient operations, but also by finding innovations.

To determine the level of competitiveness of an organisation more clearly, the analysis of the company's internal characteristics should be carried out and evaluated in accordance with the general criteria and characteristics of similar enterprises in two variations. In the first case – in accordance with the closest competitors. In the second case – in accordance with the most successful and prosperous enterprises in the relevant industry. This approach will provide the necessary information to formulate the company's strategy and tactics for successful participation in the competition. It is possible to extend the analysis to at least less successful enterprises in the industry in order to understand what exactly prevented them from achieving success (Dudnyk & Minenko, 2020; Dyvak *et al.*, 2023). Continuous analysis of performance, monitoring of competitors and market trends allows timely adjustment of strategies and tactics. Effective management of financial resources also plays an important role, ensuring stability and the ability to invest in development. Ensuring sustainable competitive advantage requires a comprehensive approach that includes innovation, efficient resource management, continuous improvement of products and services, and the ability to adapt to a changing market environment. This allows companies not only to maintain but also to enhance their competitiveness.

## ■ Conclusions

The article conducted a thorough analysis of methods and ways of forming competitive advantages and achieving a

sustainable level of competitiveness of enterprises in the modern economy, taking into account the processes of globalisation. The concepts of competitiveness and competitive advantages of enterprises were defined. Various scientific approaches to these terms were considered and the author's own definition is proposed. Based on the analysis of works and studies of scientists, the importance of introducing innovations and technologies to increase the competitiveness of enterprises was substantiated.

The article discussed the challenges that emerged during the first quarter of the 21<sup>st</sup> century and intensified with the beginning of Russia's full-scale aggression against Ukraine. Practical methods of increasing competitiveness, such as improving energy efficiency, labour productivity, rational use of resources and development of effective strategies for market behaviour, had been formed. The main attention was paid to the different stages of development of competitive advantages of enterprises, from the initial consolidation of market positions to setting their own standards and reaching the peak of market power. The importance of management and innovation to maintain a high level of competitiveness was emphasised.

The study conducted confirm that in the new economic model, in order to achieve and maintain a sustainable level of competitiveness, enterprises must quickly adapt to changes in the external environment. This should happen through the introduction of innovation and efficient use of available resources. It is also important to consider various sources of competitive advantage, both internal and external. Internal sources include managerial, organisational, economic, production, technological, innovation, qualification, geographical and hereditary factors. External sources include information, communication, quality, market, price, design, image, service and sales aspects.

An effective combination of internal and external sources of competitive advantage is critical to maximising results. For Ukrainian enterprises, in the context of a full-scale invasion of the Russia and economic instability, this means focusing on competitive advantages such as brand recognition, flexibility in the use of resources, the ability to reduce costs, and establishing close ties with profitable customers. The authors predicted that the issue of competitiveness and the formation of competitive advantages will remain relevant in the future. The impact of innovations and technologies on the level of competitiveness of an enterprise requires a more in-depth study. A promising area of research is the study of the formation of competitive advantages in the post-war period in the context of the newest economic model.

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## ■ Conflict of Interest

None.

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## Формування конкурентних переваг та підтримання рівня конкурентоспроможності суб'єкта господарювання в умовах розвитку новітньої моделі економіки

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■ **Анотація.** В умовах збільшення тиску конкурентної боротьби як наслідок процесів глобалізації, знаходження нових шляхів і методів покращення своїх конкурентних переваг є критично важливим питанням, особливо для українського виробника. Основною метою статті було дослідження способів та методів формування конкурентних переваг для українських підприємств, а також дослідження методів, за допомогою яких підприємство зможе підтримувати стійкий рівень конкурентоспроможності. Під час роботи було застосовано методи аналізу даних та інформації, перехресний аналіз, описовий аналіз та регресійний. Авторами дана оцінка підходів щодо обґрунтування конкурентних прерогатив і досягнення фронтального усталеного рівня конкурентоспроможності в сучасних умовах господарювання. Було досліджено поняття конкурентоспроможності, конкурентні переваги та погляди різних науковців на цей термін, а також сформовано авторське бачення цього терміна на підставі проаналізованих раніше визначень. Було наведено методи та способи, за допомогою яких український підприємець у 2024 році може підвищити свій рівень конкурентоспроможності. Було розглянуто шляхи, за допомогою яких можна досягти стійких конкурентних переваг в умовах новітньої моделі економіки. Було проаналізовано переваги, які отримує підприємство, якщо йому вдасться впровадити та забезпечити свої конкурентні переваги шляхом підвищення енергоефективності, продуктивності праці, доцільного використання ресурсів та формування продуманої та зваженої стратегії поведінки на ринку, а також стратегії та тактики взаємодії підприємства з його основними контрагентами. Практична цінність роботи полягає в оновленні та накладанні теми роботи на реалії, що при формуванні конкурентних переваг є важливим фактором

■ **Ключові слова:** стратегічний менеджмент; економічна ефективність; підприємницька діяльність; конкурентний аналіз; управління ресурсами; глобалізація; оцінка економічного потенціалу

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