

*Чем более точна наука, тем больше можно  
из нее извлечь точных предсказаний.*

*А. Франс*

# ЕКОНОМІКА ПІДПРИЄМСТВА ТА УПРАВЛІННЯ ВИРОБНИЦТВОМ

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## THEORETICAL PRECONDITIONS FOR FORMING THE COMPONENTS OF THE ENTERPRISE OVERALL SUSTAINABILITY

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The current crisis situation in the global and national economies draws attention to the problems of the enterprise economic sustainability. Therefore, an important issue now is to overcome the instability of the economic systems which requires identification and justification of the theoretical preconditions for solving the problem.

The article aims to study the theoretical preconditions for the enterprise sustainability and, on their basis, form the components of the enterprise overall sustainability.

It has been found out that modern economics focuses on the issue of the economic systems sustainability mainly within the theory of economic welfare. However, it has only made thorough research into the issues of financial and technical aspects of the market sustainability while the enterprise sustainability is a complex concept, which requires the use of a system approach.

The theory of economic welfare, the general systems theory, the theory of economic growth, information economics, the behavioral theory, the stakeholder theory and the theory of games have been proved to be the basic economic theories that are preconditions for developing the theory of the enterprise sustainability as an economic system. It was found that each of these theories considers some aspects of sustainability components.

The theoretical preconditions for the enterprise sustainability being generalized, a scheme of forming the components of the enterprise economic sustainability, including the financial, production and organizational sustainability, was devised.

Based on the analysis it was found out that financial sustainability can be defined as an operational indicator for the other types of sustainability, but it can be achieved only if the organizational and production sustainability is maintained. To conclude, ensuring the organizational sustainability in the medium term will allow an enterprise to increase the overall sustainability, avoid bankruptcy and survive in the times of crisis.

*Keywords:* enterprise sustainability, enterprise sustainability components, financial sustainability, production sustainability, organizational sustainability.

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## ТЕОРЕТИЧНІ ПЕРЕДУМОВИ ФОРМУВАННЯ СКЛАДОВИХ ЗАГАЛЬНОЇ СТІЙКОСТІ ПІДПРИЄМСТВА

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Сучасний кризовий стан світової і національної економіки звертає увагу на проблеми економічної стійкості підприємства. Тому актуальним на сьогодні є питання подолання нестійкості економічних систем, що потребує визначення та обґрунтування теоретичних передумов для його вирішення.

Метою статті є дослідження теоретичних передумов стійкості підприємства та формування на їх основі складових загальної стійкості підприємства.

Виявлено, що в сучасній економічній науці питання стійкості економічних систем розглядається переважно в межах теорії економічного добробуту. Проте в ній проведено лише глибокі дослідження питання стійкості ринку з фінансової та технічної сторони. Однак стійкість підприємства є комплексним поняттям, для якого необхідно використовувати системний підхід.

Обґрунтовано, що основоположними економічними теоріями, які є передумовами формування теорії стійкості підприємства як економічної системи, є теорія економічного добробуту, загальна теорія систем, теорія економічного зростання, інформаційна економічна теорія, поведінкова теорія, теорія стейкхолдерів та теорія ігор. З'ясовано, що кожна з цих теорій розглядає певні аспекти складових стійкості.

Узагальнивши теоретичні передумови стійкості функціонування підприємства, автори розробили схему формування складових економічної стійкості підприємства, серед яких виділено фінансову, виробничу та організаційну стійкість.

На основі аналізу встановлено, що фінансову стійкість можна визначити як оперативний індикатор для інших типів стійкості, але її досягнення є можливим лише за умови організаційної та виробничої стійкості. Отже, визначено, що забезпечення організаційної стійкості підприємства дозволить у середньостроковому періоді підвищити загальний запас стійкості, уникнути банкрутства та продовжувати існувати в періоди криз.

*Ключові слова:* стійкість підприємства, складові стійкості підприємства, фінансова стійкість, виробнича стійкість, організаційна стійкість.

## ТЕОРЕТИЧЕСКИЕ ПРЕДПОСЫЛКИ ФОРМИРОВАНИЯ СОСТАВЛЯЮЩИХ ОБЩЕЙ УСТОЙЧИВОСТИ ПРЕДПРИЯТИЯ

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Современное кризисное состояние мировой и национальной экономики обращает внимание на проблемы экономической устойчивости предприятий. Поэтому актуальным на сегодняшний день является вопрос преодоления неустойчивости экономических систем, что требует определения и обоснования теоретических предпосылок для его решения.

Целью статьи является исследование теоретических предпосылок устойчивости предприятия и формирование на их основе составляющих общей устойчивости предприятия.

Выявлено, что в современной экономической науке вопрос устойчивости экономических систем рассматривается в основном в рамках теории экономического благосостояния. Но в ней проведены лишь глубокие исследования вопросов устойчивости рынка с финансовой и технической стороны. Однако устойчивость предприятия является комплексным понятием, для которого необходимо использовать системный подход.

Обосновано, что основополагающими экономическими теориями, которые выступают предпосылками формирования теории устойчивости предприятия как экономической системы, являются теория экономического благосостояния, общая теория систем, теория экономического роста, информационная экономическая теория, поведенческая теория, теория стейкхолдеров и теория игр. Выяснено, что каждая из этих теорий рассматривает некоторые аспекты составляющих устойчивости.

Обобщив теоретические предпосылки устойчивости функционирования предприятия, авторы разработали схему формирования составляющих экономической устойчивости предприятия, среди которых выделили финансовую, производственную и организационную устойчивость.

На основе анализа установлено, что финансовую устойчивость можно определить как оперативный индикатор для других типов устойчивости, но достигнуть её можно только при условии организационной и производственной устойчивости. Таким образом, определено, что обеспечение организационной устойчивости предприятия позволит в среднесрочной перспективе повысить общий запас устойчивости, избежать банкротства и продолжать существовать в периоды кризисов.

*Ключевые слова:* устойчивость предприятия, составляющие устойчивости предприятия, финансовая устойчивость, производственная устойчивость, организационная устойчивость.

In recent years, the problem of implementation of the concept of sustainable development of the society is one of the most pressing issues for the international community, which requires identification and justification of the theoretical preconditions for solving it. The aim of sustainable development is only achievable through ensuring sustainability of the elements, struc-

tures and systems, phenomena, processes and relationships. The crisis is causing instability of the economic systems at any level – from an enterprise and industry to the national and world economy as a whole. However, the crisis situation is a rule and precondition for development, the fact that highlights the theories of economic systems sustainability (Fig. 1).

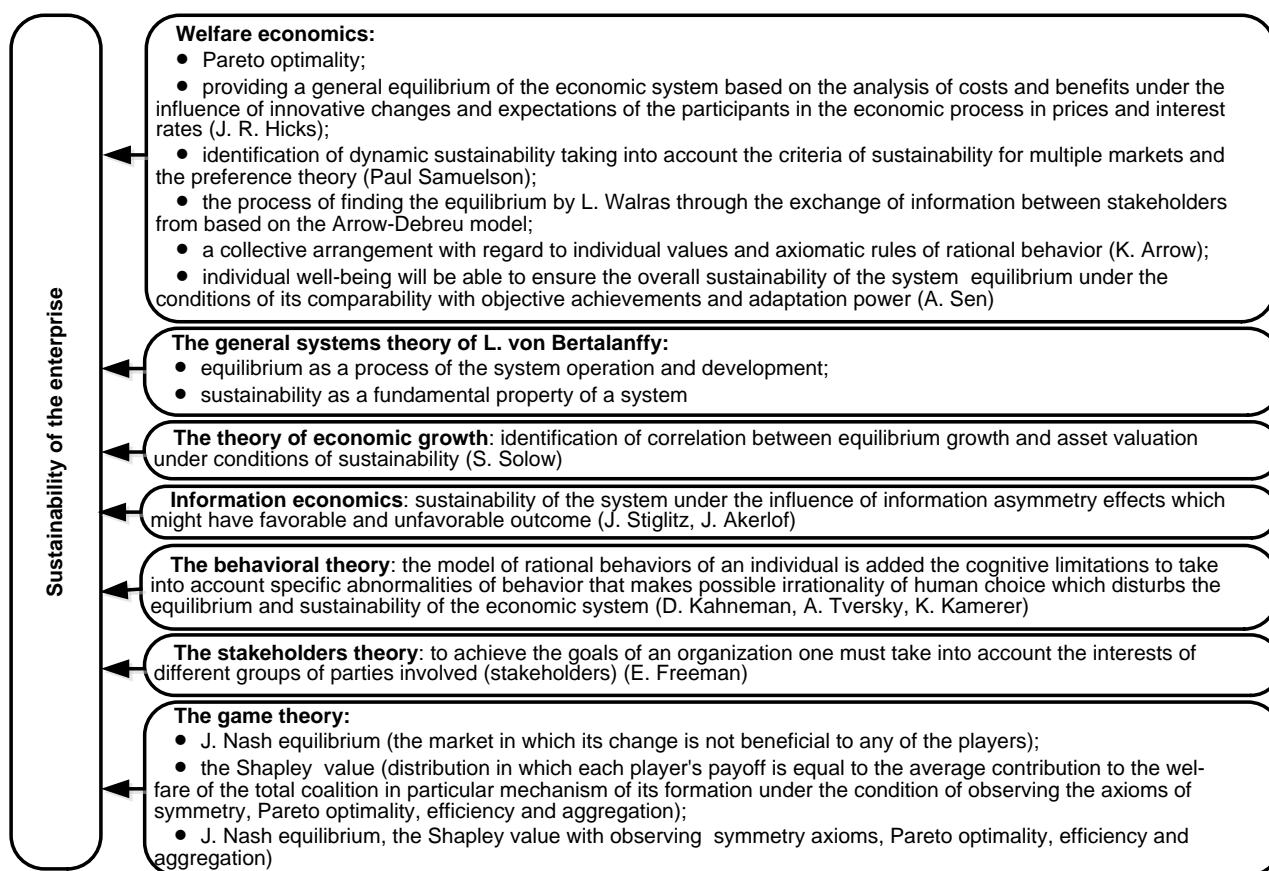


Fig. 1. Theories of sustainability of the enterprise as an economic system

The issue of sustainability of the economic systems has long been a subject of research of eminent scientists. The names of K. J. Arrow, G. B. Kleiner, P. Samuelson, A. Sen, R. Solow, J. Stiglitz, E. Freeman, J. Hicks [1 – 9] are worth mentioning in this article. Based on the results which they achieved one can determine the theoretical principles of the enterprise sustainability. However, the issue of forming components of the overall sustainability of the enterprise as an economic system remains open.

Therefore, the purpose of the article is to study the theoretical preconditions of the enterprise sustainability and, on their basis, identify the components of the enterprise overall sustainability.

The 20th century is marked by the emergence of the general economic equilibrium theory and economics of welfare which investigated the issue of sustainability in the economy. Under this theory a fairly extensive research was undertaken into the financial and technical aspects of the market sustainability [10], i.e. in relation to the economic processes (parameters of the supply and demand movement to the equilibrium point in the classical market model of L. Walras and neoclassical models). In most cases, attention was paid to the financial sustainability of the economic system, and not to a comprehensive study of the economic sustainability according to the system approach positions.

It is known that the concept of sustainability was borrowed from the systems theory and introduced into the economic science when the economic objects started to be perceived as complex and diverse economic systems. The founder of the first generalized system conception in modern science is considered to be K. L. Bertalanffy. The scientist noted that during its life cycle the system constantly moves from one state to another. The impulse to change, including development can be generated inside the system and caused by external factors. This constant change, the dynamics of states (not just their sum) reflects the behavior of the system, in other words its functioning in time [11, p. 15–21]. Only sustainable systems can actually exist. The phenomenon of sustainability is

a fundamental property of systems that characterizes their ability to exist [12, p. 86–87].

The nature of the system approach [11; 12] suggests in particular that the system is a set of sustainable states preferred to achieve its objectives, which are expressed through the system functions. If the objects in the system are the means for achieving a goal (tendencies), the functions of the system should differentiate properties by being oriented to a defined goal (tendencies). Thus, the functioning of the system is the realization in time and space of its functions, during which the system reaches a certain result, i.e. effect [11, p. 22]. Therefore, the sustainability of the system is its sustainability in achieving the objectives set for a specific period of time.

With the development of the theory of welfare sustainability is associated with convergence at the end of a process that was described by a system of differential equations to a point of equilibrium, which is consistent with the principle of Pareto optimality for all market participants.

However, the economy as a complex, multidimensional, dynamic and controversial area of human activity cannot have a single universal principle adhered to by the economic processes taking place in the economy itself and at the level of its structural elements – enterprises. An important issue is the equilibrium trajectory of the economy, characterized by maintaining optimal proportions of consumption and investment, economic progress, obedience to ecological balance etc. Lack of interpersonal comparisons of utility, focusing on the financial component of sustainability without taking into account the topicality of information on unequal opportunities and needs of individuals and other components of organizational sustainability, and sustainability of the production process showed the weakness of the Pareto principle.

The ideas of V. Pareto, F. Edgeworth and K. Wicksell were further developed and detailed in the studies of John R. Hicks [9; 13, p. 29–46], who, considering the conditions of the system sustainability, assigned the leading role to the income and substitution effects [9; 13, p. 39–41]. The scientist claimed that "sustainability

of equilibrium requires that the slightest deviation of the systems from that condition lead to the action of the forces that seek to redress the balance" [9]. J. R. Hicks explained the perturbations that put the system out of balance by two reasons, innovation irregularity and lack of coincidence between expectations of the economic action participants relative to prices and interest rates and their real levels. The analysis of costs and benefits plays the leading role in the study of the scientist.

Criticizing V. Pareto and A. Marshall for insufficient analysis of demand based on partial equilibrium schemes, J. R. Hicks points to the need to consider the relationships between individual economic processes which is one of the problems of the general equilibrium [9]. Having noticed the imperfections of the studies of economic systems sustainability based on their financial component, J. R. Hicks draws attention to production sustainability, which is characterized by continuous improvement of the technological process and availability of innovation. However, it is still ensured by financial sustainability without taking into account the need to establish interconnections between economic processes and interests of each individual participating in these processes. Organizational sustainability is considered only in terms of the existence of production processes sustainability, which makes it impossible to provide the overall equilibrium and operation sustainability in crisis situations.

Paul Samuelson [13] questioned the definition of a dynamic process, showing through building an appropriate dynamic model that conditions suggested by J. R. Hicks cannot be considered as necessary and sufficient to ensure sustainable equilibrium of dynamic systems. In his writing on welfare economics Paul Samuelson [13, p. 5–28; 14, p. 143–164] extended the sustainability criterion in the case of multiple markets, arguing that the social welfare function should work with the generalization of the indifference curve in space that any choice has.

Paul Samuelson proposed his own definition of dynamic sustainability in the case of linear systems, which is associated with the excess demand derivatives regarding the creation of necessary and sufficient conditions for sustainability [4; 13]. Dynamic sustainability of the economic systems by P. Samuelson shows the importance of interconnections and interaction between its elements, but this approach is rather narrow, as organizational and production sustainability is realized only at the stage of interoperability of several markets aimed to achieve financial sustainability, which depends on changes in market prices trends.

Therefore, with the development of the theory of economic welfare there appears a necessity to solve the problem of economic equilibrium, taking into account not only financial sustainability of the economic system, but also different variants of behavior of consumers and producers. The Arrow-Debreu model [15] specifically describes the process of finding equilibrium by L. Walras through the exchange of information between participants. It does not consider producers and consumers in isolation but it rather sees them in interaction as elements of a system that includes the need to provide productive and organizational sustainability of the economic system. In this model, relative prices, volumes of supply and demand are determined simultaneously. The Arrow-Debreu model involves several participants in production, firms-manufacturers and firms-consumers operating in a competitive environment and not affecting the level of prices of goods. Partners have different goals: the goal of producers is to earn profit and the goal of consumers is to satisfy the needs [16], the combination of which provides sustainability of operation not only for the present situation, but also in the medium term.

In their model K. J. Arrow and G. Debreu applied the Nash's theorem [17; 18, p. 15–19] about the solution concept of a non-cooperative game involving two or more players and showed the equivalence of the notions of competitive equilibrium and the equilibrium of the game involving  $n$  players, which is one of the solutions to the problem of collective arrangement, interconnections between the participants in the process and their interests. Applying the game theory to ensuring sustainability of the system makes it possible to optimize the desired result for each player of the game and achieve the greatest efficiency of joint activities. However, the Arrow-Debreu model, which includes the importance of ensuring the sustainability of information between the parties of the production process and the need for collective arrangement,

hardly takes into account the interests of individual members, which could cause the effects of information asymmetry, and result in the violation of interactive communication through conflict situations that undermine the organizational sustainability of the enterprise.

Afterwards, K. J. Arrow and L. Hurwitz [19] have shown that a nonlinear system has "global asymptotic stability" when the excess demand functions are differentiated and homogeneous in the zero degree by prices, besides, they must obey the Walras' law, and all goods must be sufficiently endowed with the property of gross interchangeability. The economic sustainability is correspondingly provided by financial (price characteristics) and production sustainability, taking into account the elements of organizational sustainability, which thus are only considered as the factors of indirect influence on the overall result.

The theory of economic growth developed by the Nobel Memorial Prize laureate R. Solow [13, p. 2 252–2 293; 16] has great importance for determining the principles of economic sustainability as it provides a method to compare and discuss the manner of equilibrium in the economic system. One of the achievements of the theory of economic growth by R. Solow became the correlation of balanced growth with asset valuation under the conditions of sustainability. Investigating this problem the scientist concluded that the main cause of instability of economy in the Harrod-Domar model is a fixed value of capital intensity, which reflects the strict correlation between the factors of production – labor and capital. In the Solow model the savings rate has meaning only before the economy gets on the path of sustainability of economic growth. But when the growth is balanced, it depends on the future rate of population growth and technological progress. In other words, financial sustainability is ensured through achieving production sustainability to support effective enterprise development. Despite the fact that R. Solow emphasized the important role of human capital and social institutions, organizational sustainability, as the ability to ensure dialectics of interaction between stakeholders, sustainability of communication and decision-making equilibrium, is barely seen in the structure of the overall sustainability of the economic system.

With the development of the theory of economic welfare the Nobel Memorial Prize laureate K. J. Arrow [1; 13, p. 337–382] came to the conclusion that "if we continue the traditional understanding of rationality as maximization of some kind, the problem of achieving social maximum based on individual preferences is the issue that was central to the economy of welfare" [1]. The scientist stressed that the public good is made up of individual desires that is typical of the economic system, where consumers are free to choose goods and workers can choose an occupation (*laissez-faire*) [1].

K. J. Arrow [1] formulated axiomatic rules of rational behavior and demonstrated that no process of collective decision making conforms to the four characteristics (the Pareto optimality principle, transitivity, independent third-party alternatives, absence of a dictator). According to the Arrow theory of impossibility, there is no democratic social welfare function, which provides a link between individual preferences and public choice – the process by which individual vision is transformed into a collective decision and at the same time meets four specified requirements.

Thus, K. J. Arrow was one of the first scientists who stressed the importance of organizational sustainability to achieve overall equilibrium and economic welfare, taking into account the interests of each individual, but full resolution of this issue has not been found.

In general, the theoretical preconditions for the economic sustainability were mainly based on the understanding that every single individual holds and follows only his/her personal interest and maximization of utility functions. That respectively caused the necessity for a more detailed study of the overall sustainability components, among which organizational sustainability is less explored and consists in the need to take into account peculiarities of the economic behavior of each stakeholder interested in the final result, their interaction in the absence of perfect information, the possibility of aggregating individual preferences under the conditions of the available constraints of the environment.

M. Fleurbaey [20], analyzing approaches to measuring social welfare, including non-market aspects of well-being and sustainable development issues, concluded that the economic theory of welfare further developed in a variety of ways, including the theory of social choice, an approach from the standpoint of

opportunities, research on happiness and its factors, together with the development of philosophy of social justice and psychology [20].

Thus, the views on subjective well-being have been developed in the welfare theory. Psychological studies have revealed one important fact, the importance of which is often underestimated in the economic literature – multidimensionality of subjective well-being [20]. Besides, it can be noted that the cognitive state of the individual and affects of the forms of behavior have a direct impact on sustainability of the economic system. The fact that subjective well-being can be measured, does not mean that it should be used as a measure in assessing welfare and in assessing organizational sustainability. Criticism of utilitarianism of A. Sen and John Rawls showed that subjective adaptation is able to hide the objective inequality [20], which is a problem for sustainability of equilibrium in the system. In addition, the scientists consider the alternative welfare theory in its hedonistic version and in terms of satisfaction, given the fact that we should pay attention to the individual cognitive evaluation of one's life.

A. Sen also offers a possibility of rejection of precise numerical index calculation and development of partial arranged individual situations based on individual arrangement [20]. That is, subjective well-being will be able to ensure the overall sustainability of the system equilibrium under the conditions of its comparability with objective achievements and adaptation power through an organizational component.

In his studies, A. Sen developed the concept of opportunities that has become an essential part of the theoretical substantiation of alternative indicators of social and subjective well-being [6; 20] and finding the limits of the Pareto principle [6] in its focus on financial performance to achieve the overall equilibrium. It is the question of equality and justice, which, according to the scientist, requires comparison of well-being of different people and their freedom, which reveals the need to study the motivation causing preferences [6]. Motivation should promote human development and establishment of social justice for sustainable development of the society and ensuring sustainability of future generations by preserving economic opportunities [5]. Organizational sustainability of the society is a key factor in sustainable development of current and future generations. So, owing to the research by A. Sen, the aim of achieving the overall economic sustainability has become not just producing financial results satisfying the state of the system at some point, but ensuring sustainability in the long term by organizing interactive communication and meeting the interests of each individual. However, this approach to understanding sustainability of the enterprise as an economic system is not comprehensive as it does not take into account the information component of organizational sustainability and its connection with financial and production sustainability. At this point it is important to value freedom and information about available opportunities.

Economic data depends on the conscious actions of economic agents, their interests and cognitive skills. J. Stiglitz and G. Akerlof showed that economic information is endogenous, that is formed in the process of communication of the individuals [21]. Sustainability of the system, in particular, is under the influence of the information effects the asymmetry of which can produce both favorable and unfavorable outcome.

Information flaws can result from lack of necessary data, its inaccuracy, deficit, distortion compared with expectations etc. In addition, the role played by the actors who regenerate information, perceive and transmit it, is important to maintain organizational sustainability of the enterprise. As noted by J. Stiglitz, "actions (including choice) transmit information, market participants are aware of this and it affects their behavior" [7]. Therefore, it is obvious that asymmetry of information that undermines sustainability of the economic system, is caused by the actions of the participants in the market processes.

Information capacity of the market affects its sustainability as an economic system. Its necessary condition is not only comparability of recent responses to possible benefits to a counterpart received by purposeful creation and (or) the use of asymmetric information, but also his awareness of the possibility and reality of such action [21]. Thus, organizational sustainability should provide a high information capacity of the enterprise as an entity of the market relations, contributing to its sustainable operation through reliability of information and signals entering the system, increa-

sing the number of deals and benefiting from them both for subjective and social well-being.

According to the theory of information economy, system sustainability also depends on the objectification and verification of information that exists in the system and is regenerated by its entities. Information characteristics of the enterprises also influence the characteristics of their operation. In addition to that, organizational structure is to provide information capacity of the enterprise to achieve a favourable level of financial and operational performance. In other words, organizational sustainability allows taking into account possible decline in financial and industrial sustainability and finding ways to improve them through the established mechanism of interactive communication. However, in this context, organizational sustainability of the enterprise is considered from the standpoint of rational behavior of individuals in an effort to achieve effective results without taking into account the subjective interests of individuals.

Balance, in particular, reflects the desire of economic agents, and, in fact, as well as the information has psychological nature [21]. The system has dynamic relationships which ensure its sustainability, and can both be beneficial and disrupt the stable operation.

The behavioral theory deals with the development of formalized models of individual behavior in various situations of choice in the process of their experimental and empirical testing [22].

The behavioral theory raises the issue of the normative and positive research into the decision-making process that affects the organizational sustainability of the enterprise. In addition, an extensive empirical analysis of the decision-making procedures performed by an individual, group, or enterprise, identifying typical behaviors, goals and options of action in complex situations investigated in the theory of rational choice started to be carried out.

By putting forward the prospect theory, D. Kahneman and A. Tversky [16; 23] found out that a person is not able to estimate future revenues in absolute terms, but only compared to the usual level of income or the level that has emerged. The scientists have concluded that, at equal risk, people are more likely to preserve the achieved financial level than to increase it. Costs always seem to be more important than the equivalent income.

In other words, at the enterprise level, in accordance with the principles of the behavioral theory, sustainability is also often evaluated based on indicators of financial sustainability to ensure their sustainability and possible increase in the long run. However, financial sustainability is able to characterize the overall economic sustainability only in the short term. Ensuring sustainability of the enterprise in the long run is possible, provided organizational and production sustainability are maintained.

However, cognitive theories, like the prospect theory, are only models of decision-making and cannot fully reflect the economic behavior of individuals, as they only solve some of the problems of ensuring organizational sustainability, proposed by the participants in research (surveys, experiments, etc.) and do not include connections with the organization of the production process.

In particular, according to the principles of the theory of stakeholders to achieve the goals of the organization one should pay attention to diverse interests of different stakeholders, representing a certain type of informal coalition [24, p. 52]. In his book "Strategic Management: A Stakeholder Approach" [8] R. E. Freeman proposed the idea of studying the company, its internal and external environment as a set of parties interested in its activities, the interests and demands of which must get attention and be satisfied by the managers of the firm. In other words, from the standpoint of the theory of stakeholders production sustainability of the enterprise can be achieved through the organization of sustainable interactive communication and relationships between stakeholders and their groups. Thus, the enterprise should focus on providing organizational and production sustainability, which will enable the achievement of desired financial results. However, the theory of stakeholders does not identify the ways to address this issue.

To achieve the enterprise sustainability it is important to ensure interaction between economic agents, optimal conflict resolution and equilibrium decision-making. It is, therefore, advisable to pay attention to formal concepts of the analysis of the game theory – J. Nash equilibrium, the Shapley value with observing symmetry axioms, Pareto optimality, efficiency and aggregation, etc., which is the basis for organizing a sustainable interactive communication between individuals, firms, states.

Thus, the analysis of the fundamental economic theories which are preconditions for the formulating of the theory of sustainability of the enterprise as an economic system, showed that each of them studies some of its components. Therefore, to study the complex nature of the enterprise sustainability it is necessary to consider these components in unity and interaction.

While agreeing with the opinion of J. Kornai [25], the authors believe that the system should be regarded as a relatively isolated in space and relatively sustainable (from the point of view of a social observer) in time part of the surrounding world, which (again, from the point of view of a social observer) simultaneously has the properties of internal integrity and external diversity.

Building on the basic principles of the system paradigm, G. Kleiner, noted that "despite the fact that J. Kornai considered the national economy to be a typical object of his paradigm, the system paradigm, undoubtedly, should be expanded to the rest of its levels, to the microlevel in particular. A natural object for the system approach is an enterprise" [3, p. 52]. The company, due to G. Kleiner, is a specific organization that provides systematic production of goods or services to sell them outside the organization and reproduce the resources [2, p. 124].

In other words, due to the principles of the system paradigm sustainability of the enterprise should be regarded in conjunction with its components in accordance with the aim of the enterprise and its operation process.

Operation of the enterprise is characterized by interdependence between some combination of factors of production and the highest possible amount of output per unit of time at a given level of technical knowledge described by the production function [26, p. 131–138]. Factors of production are normally labour and capital, used to manufacture goods, the sale of which is aimed at obtaining a financial result. From the economic point of view, means and objects of labour, labour itself and its results are of general functionality to be a commodity that is to have the property to satisfy someone's need for some payment [27], creating value added and added utility. It is, therefore, advisable, having summarized the theoretical principles of sustainability of the enterprise, to show the process of formation of the economic sustainability components of the enterprise (Fig. 2).

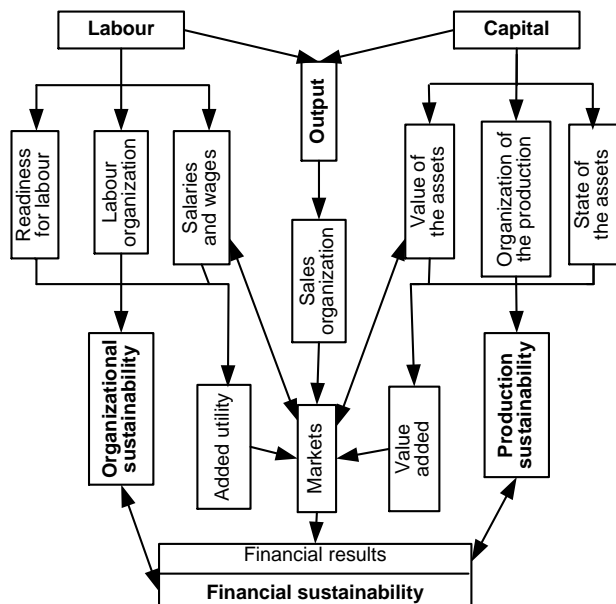


Fig. 2. Formation of the economic sustainability components of the enterprise

Each stakeholder of the enterprise is interested in the production to be effective. The effectiveness of the enterprise operation depends on the cost of factors used for production, and the value of the output. The relationship between the cost of production and the output is described by the production function illustrating the interdependence between the combination of factors of production – labor and capital. To achieve effective results at each step it is necessary to ensure sustainability of the processes, structure, interactions and so on.

According to Fig. 2 it is advisable to distinguish financial, operational and organizational components as parts of the economic sustainability of the enterprise, which are also discussed in the works of such scholars as I. V. Gontareva, T. A. Dyakova and A. B. Oleynik [28 – 30]. The indicators of financial sustainability reflecting the financial position of the enterprise, availability of the equity capital and performance, are widely used nowadays. However, financial sustainability is achieved through the operation of the enterprise management system and ensuring sustainability of its production cycles. In addition, production sustainability is the organization and utilization of production capacity based on the volume, composition and availability of the necessary resources, equipment and its actual usage, ensuring production of goods of the appropriate quality and quantity to achieve the required level of return.

To increase labour productivity, the interest of participants of the production process in its result, interactive communication of the enterprise stakeholders it is necessary to ensure organizational sustainability that allows structural elements of the enterprise to effectively perform their functions for quite a long time and addresses the needs of internal stakeholders of the enterprise.

Thus, the sustainability of operation of the enterprise is the ability of the enterprise as an economic system to keep the equilibrium state by ensuring its resistance and adaptation to changes in the external and internal environments due to the presence of certain financial, production and organizational sustainability of the enterprise to achieve its effective development.

Analysis of the sustainability components proves that financial sustainability is the most affordable and easy indicator for measuring, but it characterizes a short-term sustainability due to significant volatility (tendency to price changes) of the markets. Organizational sustainability is closer to the medium term. Production sustainability is the most inertial as it changes under the influence of different factors. Therefore, financial sustainability can be defined as an operational indicator for other types of sustainability, but it is achieved only under the condition of organizational and production sustainability.

Therefore, further research will be focused on the organizational sustainability of the enterprise, as in a negative investment climate due to relatively small investments, it can increase the overall sustainability, avoid bankruptcy and survive in times of crisis.

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## **CONSOLIDATION OF THE ESTIMATES OF VALUE ADDED AND THE BALANCED SCORECARD OF AN ENTERPRISE**

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Consolidation and harmonization of such approaches to strategic management as economic value added (EVA) and the Balanced Scorecard (BSC) is a challenging problem to be solved in the valuation of a company. This compliance is usually made by simple inclusion of EVA in the financial component of the performance system. However, this solution does not give a synergistic effect of the combination of the two approaches into a single system, mutually reinforcing positive characteristics of each method.

The aim of the article is to determine the structure of EVA and BSC consolidation interconnections in the company's value strategic assessment.

EVA is a strategic benchmark in enterprise management, a reference to the interest of investors in the business. BSC includes parameters and indicators that characterize four aspects: the aspect of the client, i.e. customer satisfaction in key segments of the food market; the internal business aspect, i.e. identifying processes that can provide a company with exclusive competitive advantage; the aspect of innovation and learning, i.e. the processes that enable the company to achieve further improvement; the financial aspect, i.e. assessment of the company by investors, owners and senior management.

A generalized scheme of consolidation of EVA and BSC was proposed, which makes it possible to: a) determine the financial performance indicators that reflect the key cash flows between consumers and the internal processes of the company; b) thoroughly form the guidelines for company development, i.e. strategic goals and objectives of the improvement of the technical and technological base, training personnel or maybe closing production, merging it with another business or selling it; c) assess EVA taking into account data on intangible resources that are generated in the work with consumers and in the internal processes.

Division of the aggregate intangible assets into three components was grounded: goodwill relating to the client component of the BSC; intellectual property rights relating to internal processes of the BSC; structural capital, which correlates with the development of the BSC personnel.

*Keywords:* balanced scorecard (BSC), economic value added (EVA), consolidation, intangible assets, valuation.

## **КОНСОЛІДАЦІЯ ОЦІНОК ДОДАНОЇ ВАРТОСТІ ТА ЗБАЛАНСОВАНОЇ СИСТЕМИ ПОКАЗНИКІВ ПІДПРИЄМСТВА**

**Попов О. Є.  
Сердюкова І. В.**

Консолідація та узгодження таких підходів до стратегічного управління, як додана вартість (EVA) та збалансована система показників (BSC), є актуальним завданням, що вирішується в процесі оцінювання вартості підприємства. Таке узгодження, як правило, здійснюється простим включенням EVA у фінансову компоненту системи показників. Однак за такого вирішення проблеми не виникає синергетичного ефекту від поєднання двох підходів у єдину систему взаємного посилення позитивних властивостей кожного методу.