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# BEHAVIORAL FINANCE: ESSENCE AND APPROACHES TO DEFINITION

# ПОВЕДІНКОВІ ФІНАНСИ: СУТНІСТЬ ТА ПІДХОДИ ДО ВИЗНАЧЕННЯ

*The article analyzes approaches to defining the essence of behavioral finance. The historical nature of the concept of "behavioral finance" and the main trends in its definition have been studied. The main areas of scientific knowledge of behavioral finance are highlighted, respectively, according to the psychological and economic approach. Evolutionary changes in the views of the scientific community regarding the concept of rationality of economic agents are considered. The interpretation of the concept of "behavioral finance" by domestic and foreign scientists was analyzed, the connection of behavioral finance with financial theory, practice and psychology as the basis for all definitions of their complex conceptualization was investigated. It was established that the main influence on the further development of behavioral finance is the failure of the neoclassical theory to explain a number of anomalies that are the result of irrational decisions. It has been proven that in connection with the growth of the trend of practical application of behavioral finance, the relevance of the study of the theoretical aspect of this direction of financial science is also increasing.*

***Key words:*** *finance, behavioral economics, behavioral finance, cognitive processes, heuristics, behavioral factors, globalization.*

*У статті проаналізовано підходи до визначення сутності поведінкових фінансів. Появу в економічній теорії такого напряму, як «поведінкові фінанси», по праву можна вважати значною і цікавою подією розвитку економічної науки за останні кілька десятиліть, основним завданням якого є пояснення особливостей прийняття фінансових рішень на основі поєднання теоретичних основ психології, з економічною та фінансовою теоріями Досліджено історичну природу поняття «поведінкові фінанси» та основні тенденції до їх визначення. Виділено основні області наукового пізнання поведінкових фінансів відповідно за психологічним та економічних підходом. Розглянуто еволюційні зміни поглядів наукової спільноти щодо концепції раціональності економічних агентів. Проаналізовано тлумачення поняття «поведінкові фінанси» вітчизняними та зарубіжними вченими, досліджено зв'язок поведінкових фінансів з фінансовою теорією, практикою і психологією як з основою для всіх визначень їх комплексної концептуалізації. Розмежовано поняття «поведінкова економіка» та «поведінкові фінанси», а також показано їх взаємозв’язок. Розкрито основні теоретичні складові сутності поведінкових фінансів та підходи до їх визначення. Виокремлено та систематизовано основні фактори впливу на виникнення поведінкових фінансів. Розкрито сутність основних базових категорій, які використовуються для визначення і пояснення особливостей ірраціональної поведінки економічних агентів під час прийняття фінансових рішень. Систематизуючи підходи вчених, взято за основу комплексне визначення поведінкових фінансів як фінансової теорії, яка досліджує процес прийняття рішень інвесторами на основі психологічних чинників та вплив цих рішень на стан фондового ринку. Встановлено, що головним впливу на подальший розвиток поведінкових фінансів, є неспроможність неокласичної теорії пояснити ряд аномалій, які є результатом нераціональних рішень. Доведено, що у зв’язку зі зростанням тенденції практичного застосування поведінкових фінансів зростає і актуальність дослідження теоретичного аспекту цього напряму фінансової науки.*

***Ключові слова:*** *фінанси, поведінкова економіка, поведінкові фінанси, когнітивні процеси, евристика, поведінкові фактори, глобалізація.*

**Target setting.** The emergence of the direction of "behavioral finance" in economic theory can rightfully be considered one of the most significant and interesting events in the development of economic science in recent decades. Research in the field of behavioral finance is gaining more and more popularity and relevance, makes it possible to take into account the psychological features and irrational nature of economic agents in the decision-making process for further economic and financial development.

Traditional financial science examines the financial market using models that are based on the principles of investor rationality. However, any market is characterized by constant fluctuations (from rapid jumps to declines), which proves the inconsistency of classic models with modern realities. In this regard, a new theory of behavioral finance was developed, which takes into account the peculiarities of human behavior and its influence on the state and development of the financial market. Understanding behavioral finance, which is the basis of investors' decisions, will allow to more effectively assess the real situation in the financial market, predict future changes and fluctuations, and prevent the destructive impact of excessive and insufficient reactions to market indicators.

**Analysis of recent research and publications.** Behavioral economics, as a separate branch of economics, emerged during the last three decades. Scientists such as A. Smith, D. Bentham, A. Marshall, K. Menger, W. Jevons, L. Walras, and others were engaged in the study of the essence of behavioral theory. The following researchers specialize in modern behavioral economics: D. Kahneman, A. Tverski, D. Katon, R. Schiller, D. Ariely, M. Alle and others. The application of behavioral economics in such areas as microeconomics, the financial market, and the investment market is mainly considered. The following scientists studied the essence of behavioral finance: B. Barber (Brad M. Barber), N. Barberis, T. Odean (Terance Odean), R. Thaler (Richard H. Thaler) and others. The emergence and development of economic psychology thanks to the works of G. Tard, J. Katoni, and L. Garai received recognition of the model of expected utility and the model of discounted utility. The essence of cognitive psychology was studied by A. Tverski and D. Kahneman.

**Formulation of the goals of the article.** The purpose of the task is to define the essence, the main specific features, and accordingly, the definition of behavioral finance in modern market conditions.

**Presentation of the main material of the study.** Man has always been and remains the central figure of economic science, regardless of the type of economic relations studied [1; 2; 3]. The goal of all research is to find options for improving people's lives, increasing their comfort and level of satisfaction [1; 2; 5]. However, despite this, all economic studies overlook human qualities, considering a person as a rational subject of economic relations [1; 2; 5]. In order to take into account human behavior, economists over the centuries have created a certain formalized description, characterization of the main qualities and actions of economic agents in the process of interaction with other economic subjects [1]. During the last two centuries, scientists have tried to generalize and formalize the main regularities in the behavior of individuals. These attempts were reflected in the concepts of using the model of the so-called "economic man" [1; 2; 4].

The term "economic person" is applied to any subject who, in the course of his activity, interacts in various forms in market conditions with other subjects [1; 2; 3]. The creation of such a concept was due to the need to study the problem of choice and motivation in the process of financial and economic activity of subjects. At the same time, the purpose of the research was not the choice process itself, but the result of the choice, that is, the model of the "economic man" was not developed as a result of a special study of a person and his behavior on the market in various situations, but was introduced as an a priori assumption for the needs of building an economic theory [1; 2; 5].

The starting point in the creation of the model of "economic man" was the works of representatives of the English classical school, in particular Adam Smith. Scientists expressed an idea about the productivity of selfishness, provided that it is implemented within the framework of market relations [1; 2; 3]. The main theoretical provisions about the "economic man", developed by the scientist, were adopted by representatives of the classical school of economic science and do not lose their relevance to this day [1; 2; 4].

Examining the economic nature of man, A. Smith primarily singled out interests, motivating motives for economic and commercial activity, noting at the same time that the personal interest of an individual plays the main role in motivating his economic activity, and the material carrier of personal interest is monetary income (material profit) [4].

Over a period of more than two centuries, quite a large number of hypotheses clarifying the structure of the model created by A. Smith have been developed and proposed in economic theory. In particular, the ethical utilitarianism of D. Bentham, who believed that morality can be turned into an exact science, or into "moral arithmetic", was an important source of the emerging models of "economic man". D. Bentham based the human model on the desire for pleasure and the avoidance of suffering, assuming that an individual can quantitatively measure the size of any pleasure or suffering by representing them with a number. Then the person has only to choose the behavior that maximizes the arithmetic difference "pleasure minus suffering". Utilitarianism is an attempt to apply rational and evidential thinking to the area of morality. [1; 2; 3; 10; 13].

According to the theory of A. Marshall, the main motivating motive that most strongly and persistently affects people's behavior is "a certain amount of money, it is this defined and precise monetary measure of the most stable incentives in economic life that allowed economic science to overtake all other sciences that investigate a person" [1; 2; 4]. The main goal of the economic activity of the "economic man" in market conditions is profit maximization, namely permanent enrichment [1; 2; 4; 10; 13].

Thus, we can conclude that the common feature of the basic model of "economic man" in the above concepts is the absolutization of personal interest and the strengthening of rationalism in economic behavior. It was the rationality and logic of the "economic man" that allowed scientists to formalize his financial behavior using various mathematical models [1; 2; 4].

Further development of the "economic man" model was carried out by representatives of the "marginalist revolution": K. Menger, U. Jevons and L. Walras. In the theory of marginalists, a person appears as a utility maximizer. Behavior is no longer based on selfishness, but increasingly on economic rationality. The individual not only calculates, but also optimizes his benefit and his actions. At this stage, moral qualities cease to be of interest to researchers [1; 2; 3]. After the marginalist revolution, the formation of neoclassical economic theory began. At the present stage, neoclassicism is considered as the "main stream" (mainstream) of modern economic science. According to the provisions of neoclassicism, the model of "economic man" has the following main characteristics [1; 2; 3; 4; 5]:

– the existence of a set of advantages and limitations, in connection with which the action of an individual always takes place in a situation of limited resources and has the character of a choice;

– the ability to evaluate: the subject is always able to compare alternative goods, they are interchangeable for him (the principle "everything has its price" applies).

Over the past thirty years, economists have begun to actively research the psychological qualities of people and formed a new direction in economics – behavioral economics. Despite a number of conducted studies, this concept has not yet been fully disclosed and a clear definition of behavioral economics has not been formulated [5].

According to the American psychologist D. Cato, economics without psychology cannot successfully study the most important economic processes, just as psychology without economics cannot study the most important aspects of human behavior.

However, proponents of behavioral economics examine the subject of economic theory with its natural human qualities. Herbert Simon Memorial was one of the first critics of the idea that people have an unlimited ability to process information. He proposed the term "bounded rationality". The limited capabilities of the human brain and the limitation of time make it impossible to solve complex problems optimally. However, the standard model ignores these limits. The main object of study of behavioral economics is boundaries rationality of economic agents. behavioral models, studied in this area, most often combine achievements psychology with neoclassical economic theory, covering a number of concepts, methods and areas of research [1; 2; 5].

In turn, the essence of behavioral finance is revealed directly through financial relations that arise between organizations, legal entities and individuals, as well as directly between citizens regarding the attraction, redistribution and investment of financial resources in accordance with the needs of interested parties. However, it must be recognized that the investment component in the formation of financial interests, assets and liabilities of the participants of such agreements is dominant, since social and psychological factors of human activity contribute to a more accurate study of the main motives of the population's behavior.

At the same time, the state is increasingly clearly positioning itself as an active or passive subject of behavioral finance, as evidenced by the course and features of the latest financial crisis in various countries [1; 2; 7; 11].

Analyzing the interpretation of the concept of "behavioral finance" by scientists, it is worth noting that this concept is characterized from different angles. The connection of behavioral finance with financial theory, practice and psychology is the basis for all definitions of their complex conceptualization (Table 1).

Table 1

**Systematization of approaches to interpretation the concept of "behavioral finance"**

| | | |
|---|---|---|
| As an alternative to the study of the financial behavior of investors | Behavioral finance contributes to the development of financial theory by including aspects of human behavior in the financial model | B. Barber, T. Odean [8] |
| | Behavioral finance is a science that examines the influence of psychological phenomena on financial behavior | H. Shefrin [8] |
| | Behavioral finance studies the process of making financial decisions, both individual and collective | M. Pompian [8; 16] |
| As an alternative to the theory about the influence of investor behavior on the state of the market | Behavioral finance is a psychological decision-making process for determining and predicting the state of financial markets | R. Olsen [8; 17] |
| | Behavioral finance is a part of financial theory that examines the systematic impact of decision-making processes on the financial market in order to explain irrational investor behavior that is not captured by traditional rational, existing models | R. Kishore [8; 18] |
| | Behavioral finance is a science that investigates the influence of psychological factors on the development of financial markets | R. Felicia [8; 19] |
| As a doctrine about the influence of behavioral factors on the decisions of investors and the reflection of these decisions on the functioning of the market | Behavioral finance as a discipline examines the influence of psychology on the behavior of financial professionals and the subsequent effect on the markets | Martin Sewell [8] |
| | Behavioral finance integrates individual behavior and market phenomena using theories of finance and psychology | Hubert Fromlet [8; 20] |
| | Behavioral finance is a field of finance that studies the influence of social cognitive and emotional factors on decision-making by specific individuals and institutions, the consequences of this influence on market changes (prices, allocation of resources, profit) | E.B. Dorin [8; 21] |

As an alternative to the theory of rational expectations:

– the basis of behavioral finance is the limitation of arbitrage and the use of the principles of psychology, i.e., behavioral finance analyzes events that occurred with the limited effect of the principles of individual rationalization (R. Thaler and N. Barberis [8; 10; 11; 13; 14]);

– it is a paradigm that studies financial markets using broader models than those based on utility theory and arbitrage assumptions, i.e., limiting arbitrage and using the principles of psychology is the basis of behavioral finance (J.R. Ritter [8; 9; 13]);

– Behavioral finance offers an alternative approach to the basic assumptions of finance, including: investor behavior is "normal" rather than rational; the market is inefficient; investors form portfolios according to the rules of behavioral portfolio theory, in which risk is not weighted by beta, and future returns are determined not only by risk (M. Statman [8; 9; 10; 12]);

– Behavioral finance is a scientific direction that synthesizes classical theories and new concepts of analysis, modeling and forecasting of capital market dynamics, which take into account unpredictable manifestations of irrationality (E. Kovalenko [8; 9; 15]).

As mentioned above, the basis of behavioral finance is the limitation of arbitrage and the use of the principles of psychology, that is, behavioral finance analyzes events that took place with the limited effect of the principles of individual rationalization [8; 9; 11].

Summarizing all of the above and systematizing the approaches of scientists, we take as a basis a comprehensive definition of behavioral finance as a financial theory that examines the process of decision-making by investors based on psychological factors and the impact of these decisions on the state of the stock market.

Based on the analysis of domestic and foreign works, two groups of behavioral factors are distinguished that affect the state of the financial market depending on the psychology of their influence on investor behavior.

A person's experience of the situational or operational significance of objects (phenomena) of the past, present and future is the first group of behavioral factors to which emotional processes belong [6; 10; 11; 12; 13; 14]. Emotional processes arise under the influence of impulse or intuition, which contributes to decision-making based on feelings, rather than rational calculation, therefore it is very difficult to level their influence [1; 2; 8]. Participants of the stock market, wanting to control their emotions, are not always able to do so. In this case, it is worth detecting them and adapting to their action.

Having analyzed scientific research on the emotional factors of the stock market, M. A. Lipych suggests including self-confidence, stability of beliefs and self-control in this group [8].

V. De Bondt (De Bondt) discovered that people tend to make market forecasts based on a simple extrapolation of the trend. At the same time, the narrow confidence interval that they give to their own predictions indicates their self-confidence. The confidence interval in the conducted studies was also non-central, that is, the optimal forecast did not reflect the average value between the optimistic and pessimistic forecast [22].

Such scientists as K. Danyil, D. Hirshleifer, and A. Subrahmanyam examined pricing in the securities market under the influence of self-confidence, and it was found that this emotion in investors causes excessive market reactions [8; 9; 13].

B. Barber and T. Odean testified that self-confidence leads to excessive trading volume in the stock market. In particular, the return of traders who made the largest number of transactions in the market was lower than the average market return. It was found that men are more self-confident than women, trade 45% more and therefore have lower returns compared to women [1; 2; 9; 11; 13].

Self-confidence is necessarily enhanced by the action of the following effects:

– optimism, consists in the fact that most people express unrealistically positive views about their capabilities. It has been experimentally studied that more than 90% of respondents predict the completion of tasks earlier than they complete their execution when planning;

– self-attribution, consists in the fact that participants of the stock market regard their successes as the result of their own skills, and failures as a coincidence, that is, how the investor's confidence changes, depending on the profitability of their own investments;

– prediction consists in the fact that after the occurrence of an event, it seems to a person that he knew about the occurrence of this event, and therefore is able to predict the future event. Scientists have found a strong influence of this effect on portfolio decisions of investors, in particular regarding the placement of assets [8].

The second group of behavioral factors is cognitive psychology, which studies the principles of organizing cognitive processes and differences in how a person perceives, interprets, and uses his experience [6; 8]. Decision-making is based on the theory of perspectives and heuristic simplifications. If new information contradicts a person's beliefs, the individual will try to avoid the unpleasant feelings by ignoring the information and seeking support for his own beliefs.

According to the theory of prospects, in the stock market, investors tend to evaluate the results of risky transactions, but not by the final result, but by the number of wins and losses, necessarily comparing them to a certain limit. Accordingly, there is a reassessment of desired results and fears of losses.

D. Kahneman and A. Tversky developed the theory of perspectives, creating a cumulative theory of perspectives. The function of the cumulative theory reflects the value of subjective probabilities when making not individual, but multiple decisions [23].

In contrast to the theory of expected utility, the theory of prospects proves that an individual's risk appetite changes depending on whether he feels he is in the field of gains or in the field of losses. This effect is called diversified risk appetite.

Heuristic simplifications consist in solving a problem based on a rough calculation, without using the necessary mechanisms to obtain reliable results. Investors resort to heuristic simplifications when making quick decisions and in connection with the need to operate with a large amount of data. Forming conclusions based on heuristics leads to systematic errors.

We cannot but agree with the opinion of M. A. Lipych, that the comprehensive approach to the systematization of the concept of "behavioral finance" as a financial theory, which examines the process of decision-making by investors based on psychological factors and the impact of these decisions on the state of the stock market, is the most complete and covers all the essential features of this concept [8; 9; 11; 13].

**Conclusions.** The hierarchical unity of subsystems and markets in the economic macrostructure allows behavioral finance to be interpreted as a specific part of the expolar (that is, informal, to a large extent, unofficial) economy [1; 2; 7; 9; 11; 14]. Therefore, it can be argued that behavioral finance is based on self-management (for individuals) and is combined with the latter on compliance with the restrictive norms of regulatory acts (for legal entities).

Traditional financial science examines the financial market using models based on the principle of investor rationality. However, the presence of booms and busts in the market proves the inconsistency of classical models with modern realities [1; 2; 8; 9; 11].

With the help of behavioral finance, it is possible to influence the development of modern financial technologies, the development of which comprehensively contributes to the development of the digital economy. The behavior of subjects, the influence of psychological factors on it, the use of financial logistics, allows to have the maximum influence on the development of the financial market.

In our opinion, when implementing any financial technologies, it is necessary to take into account the behavior of market subjects. Behavior that can be both rational and irrational and that is an important factor in the implementation of certain technologies.

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