

## THE ROLE OF BEHAVIORAL FINANCE IN ENTERPRISE MANAGEMENT

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The definition of the concept of "behavioral finance" has been given, the historical development of theoretical approaches to its definition has been represented. It has been emphasized that studying the concepts of behavioral finance, traditional finance is still the centerpiece, though the behavioral aspects of psychology and sociology are the integral catalysts within this field of study. It has been mentioned that the foundation of behavioral finance can be considered as the prospect theory, which states that managers are risk-seeking in the domain of losses and risk-averse in the domain of gains. The use of decomposition methods of prospect theory and the theory of expected utility, intended for decision analysis under uncertainty at Ukrainian enterprises have been proved to be reasonable.

*Keywords:* financial psychology, prospect theory, behavioral economics, irrational behavior, industrial enterprises.

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## РОЛЬ ПОВЕДІНКОВИХ ФІНАНСІВ В УПРАВЛІННІ ПІДПРИЄМСТВОМ

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**Діоба А. В.**

Наведено визначення поняття "поведінкові фінанси" та показано історичний розвиток теоретичних підходів до його визначення. Підкреслено, що поняття традиційних фінансів є центральним у цій галузі досліджень, при цьому поведінкові аспекти психології та соціології є невід'ємними складовими та слугують каталізаторами її розвитку. Зазначено, що теорія перспектив розглядається як основа поведінкових фінансів. Доведено, що на українських підприємствах доцільним є використання декомпозиційних методів теорії очікуваної корисності та теорії перспектив, які призначені для вирішення завдань обґрунтування та прийняття управлінських рішень в умовах невизначеності.

*Ключові слова:* фінансова психологія, теорія перспектив, поведінкова економіка, ірраціональна поведінка, промислові підприємства.

## РОЛЬ ПОВЕДЕНЧЕСКИХ ФИНАНСОВ В УПРАВЛЕНИИ ПРЕДПРИЯТИЕМ

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Дано определение понятия "поведенческие финансы" и представлено историческое развитие теоретических подходов к его определению. Подчеркнуто, что понятие традиционных финансов является центральным в этой области исследований, при этом поведенческие аспекты психологии и социологии являются неотъемлемыми составляющими и служат каталиторами ее развития. Доказано, что теория перспектив рассматривается как основа поведенческих финансов. Обосновано, что на украинских предприятиях целесообразно использование декомпозиционных методов теории ожидаемой полезности и теории перспектив, предназначенных для решения задач принятия управленческих решений в условиях неопределенности.

*Κλειεες οοα:* φινανσοια ψιολογία, θεωρία ηερσπεκτιυ, ηοεδενηεσκή εκονομία, ιρρατιονάλιο ηοεδενιο, ηρομησληνηε ηρηδρητία.

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Taking into account the overcoming of the global financial crisis consequences the management of industrial enterprises needs to apply the behavioral concepts. Behavioral economics studies the psychological and sociological factors that influence the decision-making process of individuals, groups, and organizations. Today's enterprise management needs to focus more acutely on why a manager makes this or that decision and whether behavior needs to be modified or adapted. If they can successfully accomplish this task, the company's planned results will be achieved. This determines the urgency of applying the behavioral methods in the finance decision-making processes at the industrial enterprises in Ukraine.



The results of complex analysis of the scientific literature suggest that many scholars and authors have given their own interpretation and definition of the behavioral economics. The works of researchers who have begun to examine the issue of behavioral finance include the ones by Ricciardi V. H., K. Simon, H. Shefrin, Thaler R. H., S. Mullainathan, M. Pompian, B. Bruce, Wakker P. P., D. Kahneman and others. However, despite the attained level of the scientific research of the field, the unique approach to decision-making providing productive enterprise activity on the basis of behavioral finance's methods is absent so far [1 – 11].

The purpose of the article is in theoretical and methodical justification of feasibility of using the methods of behavioral finance in enterprise management.

The emerging field of behavioral finance investigates the psychological and sociological issues that influence the decision-making process of individuals, groups, and organizations [1]. Discussions of behavioral finance appear in the literature in various forms and viewpoints. In the literature written on behavioral finance there are many different interpretations and meanings of the term. The selection process for discussing the specific viewpoints and definitions of behavioral finance is based on the professional background of the scholar [1].

Behavioral finance burgeoned when the advances made by psychologists came to the attention of economists [2]. H. Shefrin defines the concept of behavioral finance as the study of how psychology affects finance. Psychology is the basis for human desires, goals, and motivations [2]. However, it should be noted when studying the concepts of behavioral finance that traditional finance is still the centerpiece, though the behavioral aspects of psychology and sociology are the integral catalysts within this field of study. Therefore, applying the behavioral finance principles in the enterprise management should be based on the understanding of the concepts of psychology, sociology, and finance in order to become acquainted with overall concepts of behavioral finance [1]. As V. Ricciardi and Simon H. K. noted in their paper, behavioral finance attempts to explain and increase understanding of the reasoning patterns of managers, including the emotional processes and the degree to which they influence the decision-making process. Essentially, behavioral finance makes an attempt to explain the what, why, and how of finance, from a human perspective [1]. Thus behavioral finance can be commonly defined as "the application of psychology to finance". It studies the human side of financial decision-making.

From the very beginning, behavioral finance has benefited mainly from experimental research questioning the existence of the rational economic man. Economics traditionally conceptualizes a world populated by calculating, unemotional maximizers that have been dubbed Homo economicus. Thaler R. H. observes, that the standard economic framework ignores or rules out virtually all the behavior studied by cognitive and social psychologists [3]. M. Pompian emphasizes, that stemming from neoclassical economies, Homo economicus is a simple model of human economic behavior, which assumes that principles of perfect self-interest, perfect rationality, and perfect information govern economic decisions by individuals. Like the efficient market hypothesis these versions share the core assumption that humans are "rational maximizers" who are purely self-interested and make perfectly rational economic decisions [1; 3].

Thus it can be concluded that the benefits of using the concept of rational economics are the following: it makes economic analysis relatively simple; it allows economists to quantify their findings, making their work more elegant and easier to digest. If humans are perfectly rational, possessing perfect information and perfect self-interest, then perhaps their behavior can be quantified [4].

Nobel Memorial Prize winner H. Simon was an early critic of the idea that people have unlimited information-processing capabilities. He suggested the term "bounded rationality" to describe a more realistic conception of human problem-solving ability [1; 3]. Thaler R. H. marks two factors contributed to the success of behavioral finance: financial economics generated sharp, testable predictions about observable phenomena; high-quality data are readily available to test these sharp predictions [3].

Behavioral finance is now represented in almost every leading academic department of finance. Some universities, such as the University of Mannheim in Germany, have established institutes dedicated to the subject [5]. The Social Science Research Network has a separate newsgroup devoted to behavioral and experimental finance. Behavioral papers are now routinely presented at every major academic finance meeting. The articles devoted to behavioral topics are winning Best Paper awards. Two notable examples are the Smith Breeden Prize and the William F. Sharpe Award [2].

E. Elgar noted in his paper that the foundation of behavioral finance can be considered as the prospect theory [6]. It deals with the idea that people do not always behave rationally. This theory holds that there are persistent biases motivated by psychological factors that influence managers' choices under conditions of uncertainty. Prospect theory considers preferences as a function of "decision weights", and it assumes that these weights do not always match with probabilities. Specifically, the prospect theory suggests that decision weights tend to overestimate small probabilities and underestimate moderate and high probabilities [1]. It was the first descriptive theory that explicitly incorporated irrational behavior in an empirically realistic manner, at the same time being systematic and tractable. It was the first rational theory of irrational behavior. A theory combined empirical realism with theoretical soundness and instability [7].

Contemporary enterprises are increasingly applying behavioral concepts. In recent years the list of international financial services firms that incorporate behavioral finance has grown a lot. Enterprise activity is associated with uncertainty and risk. Therefore, it is reasonable to use decomposition methods of the prospect theory and the theory of expected utility, intended for decision analysis under uncertainty. Prospect theory demonstrates that if managers are faced with the possibility of losing money, they often take on riskier decisions aimed at loss aversion (though they may sometimes refrain from investing altogether). They tend to reverse or substantially alter their revealed disposition toward risk [1].

One of the main methods of measuring individual exposure to risk is to build a utility function. Utility theory is one of the most important elements of a general risk theory. It allows to evaluate options for management decision for further development and implementation at the industrial enterprise. For the application of utility theory there should be methods needed for establishing a quantitative relationships between the factors that affect the results, and having expert information

for constructing the utility function. These conditions are not always carried out, that imposes certain restrictions on the utility theory using.

The design process is complex and almost always includes multiple interactions with the target system, to understand what the requirements really are. Utility functions can be specified at various levels of detail, from qualitative graphs to precise quantitative functions. The right level of detail is generally obtained at the end of an iterative process, in which utility functions are successively refined. The construction of utility function is made by a specialist in theories of decision-making based on the knowledge of the person who makes decisions as well as experts, and qualified professionals. Management decision will affect business income, so the analysis should apply utility function of income. The main and most time-consuming utility theory procedure is the construction of utility functions, which allows evaluating alternatives.



Based on the analysis results of the main theoretical approaches to expect utility industrial enterprises income for building its schedule the Friedman – Savage utility function should be used, its general form according to the utility theory axioms can be represented as follows [8 – 10]:

$$\max_{A_i \in A} \left[ \bar{u}(A) = \int_K u(K) f\left(\frac{K}{A}\right) dK \right],$$

where  $u(K)$  is a multidimensional utility function;

$K$  is a dot in the criteria space;

$f\left(\frac{K}{A}\right)$  is a density function conditional distribution of criterion evaluations of  $A$  alternatives.

It states that people are risk-seeking in the domain of losses and risk-averse in the domain of gains. While decisions motivated by loss aversion and non-constant risk aversion are consistent with rationality, the observation that very rare events are overweighed is irrational since it violates the linearity of probabilities and hence the independence axiom. Moreover, overestimating small probabilities can lead to a violation of state dominance [9; 11].

This paper states that behavioral finance makes an attempt to explain and improve people's awareness regarding the emotional factors and psychological processes of individuals and entities that invest in financial markets. Behavioral finance scholars and investment professionals are developing an appreciation for the interdisciplinary research that is the underlying foundation of this evolving discipline. The needs in computer system design of the utility function in a multidimensional space are designated in this paper. The directions for further research are developed by finance academicians and practitioners in order that industrial enterprises management could use these principles in practice.

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