BEHAVIORAL FINANCE: CONCEPTUAL FOUNDATIONS AND DEVELOPMENT OF APPROACHES

ПОВЕДІНКОВІ ФІНАНСИ: КОНЦЕПТУАЛЬНІ ОСНОВИ ТА РОЗВИТОК ПІДХОДІВ

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This article examines the origins of behavioral finance and the influence on it of other fields of science, primarily behavioral economics, psychology, neurobiology, as well as traditional modern finance and behavioral science in general. The article also outlines the main findings and theories underlying behavioral finance, including a detailed explanation of the individual biases and irrational behavior identified. It is about, for example, misinterpreted randomness, bias, overconfidence, and lack of response that underlie this science, as well as the major theories. Behavioral finance has experienced explosive growth over the past half century as it has studied the impact of cognitive-psychological biases on investors' financial decisions. Behavioral finance, which takes into account the intricacies of human behavior, derives and formulates the most common biases or behavioral models, developing models that take into account the real economic entity with all its inherent irrationality.
Key words: *behavioral finance, behavioral economics, irrationality, efficient market theory, biases.*

В статье рассматриваются истоки поведенческих финансов и влияние на них других областей науки, в первую очередь поведенческой экономики, психологии, нейробиологии, а также обычных современных финансов и поведенческой науки в целом. В статье также излагаются ключевые выводы и теории, лежащие в основе поведенческих финансов, включая подробное объяснение выявленных индивидуальных предубеждений и иррационального поведения. Рассматриваемые предубеждения включают, например, неверно истолкованную случайность, предвзятое отношение к ней, чрезмерную уверенность и отсутствие реакции, которые лежат в основе этой науки, а также основные теории. Поведенческие финансы пережили стремительный рост за последние полвека, поскольку они изучали влияние когнитивно-психологических предубеждений на финансовые решения инвесторов. Поведенческие финансы, учитывающие тонкости поведения человека, выводящие и формулирующие наиболее распространенные предубеждения или модели поведения, разрабатывающие модели, учитывающие реальный экономический субъект со всей присущей ему иррациональностью.
Ключевые слова: *поведенческие финансы, поведенческая экономика, иррациональность, теория эффективного рынка, предубеждения.*

У статті розглядаються витоки поведінкових фінансів і вплив на них інших областей науки, перш за все поведінкової економіки, психології, нейробіології, а також звичайних сучасних фінансів і поведінкової науки в цілому. Також у статті викладаються ключові висновки і теорія, що лежать в основі поведінкових фінансів, включаючи докладне пояснення виявлених індивідуальних упереджень і ірраціональної поведінки. Розглянуті упередження включають, наприклад, невірно витлумачена випадковість, упереджене ставлення до неї, надмірна самовпевненість та недостатня реакція, що лежать в основі цієї науки, а також основні теорії. За останні півстоліття в області поведінкових фінансів спостерігалося неймовірне зростання, оскільки в ній вивчався вплив когнітивно-психологічних упереджень на фінансові рішення інвесторів. Поведінкові фінанси різко контрастують з гіпотезою ефективного ринку, оскільки вона приписує ринкову неефективність інвесторам, які не є абсолютно раціональними людьми, як стверджується в економічній теорії. У статті визначено, що поведінкові фінанси не виступають альтернативою або конкурентом класичної теорії фінансів, навпаки, поведінкові фінанси виступають доповненням і розширенням класичної теорії, даючи відповіді на питання або ж парадокси, на які класична теорія відповідей дати не могла. На сьогоднішній день відбувається масштабна автоматизація з використанням роботів практично всього спектру фінансових послуг, що вимагає створення алгоритмів для цих роботів, які на постійній основі враховують і адаптуються до постійно мінливих потреб людей і їх поведінки, і саме на цьому етапі важливу роль відіграють поведінкові фінанси. Поведінкові фінанси враховуючи тонкощі поведінки людини, виводячи і формулюючи найпоширеніші упередження або ж патерни поведінки, розробляючи моделі враховують реального економічного суб'єкта з усією властивою йому ірраціональністю – цей розроблений поведінковими фінансами інструментарій, що розглядається у статті, дозволяє запобігти майбутнім кризам і перебоям у функціонуванні нової економіки, підвищуючи при цьому швидкість прийняття і якість виконання рішень, а також їх відповідність реальним потребам споживачів.
Ключові слова: *поведінкові фінанси, поведінкова економіка, ірраціональність, теорія ефективного ринку, упередження.*

Formulation of the problem. Behavioral economics is currently the newest and most progressive area of economic thought. Although it only emerged as a separate science in the 1980s, it has already gained its place in economic theory. However, it attracted the most attention after the global financial crisis, when it became clear that the crisis phenomena in the world economy and new trends in consumer behavior cannot be fully explained by economic theories, based on the economic man model in its modern interpretation. Therefore, the economic community faces the task of modernizing and adapting the classical theory of finance to the changed conditions. Behavioral economics and behavioral finance have taken on this task. Behavioral finance combines several sciences: behavioral economics and other behavioral sciences such as neuroscience, psychology, etc. Since behavioral finance covers a broader spectrum of an economic agent's activities, the development of behavioral finance and a better understanding of it will prevent a repeat of the global financial crisis in the future, as well as prevent a number of other potential crises, improve analysis and understanding of the current state of the financial market, and more accurately predict its behavior in the future.

Analysis of recent research and publications. Economic theory is constantly evolving, and one of the most modern trends is behavioral economics. Since behavioral finance is an integral part of it, many scholars around the world devote their work to behavioral finance. The article analyzes the works of such scientists as Kahneman D., Tversky A., Fama E., Nedelsu and others. But some issues are understudied because behavioral economics and finance bring together several sciences that have gained significant development only in the last century.

Goal setting. The purpose of the study is to identify, consider and systematize the basic concepts of behavioral finance, as well as to study and analyze the state of the modern scientific literature on the topic.

Presentation of the main material of the study. In recent years, the topic of behavioral science has become increasingly popular, and modern authors often devote their work to it. For example, Dr. Naela Rushdi in her paper "A Systematic Review of the Literature on the Evolution of Behavioral Finance" compares the differences between traditional finance and behavioral finance [1]. Namely, that traditional finance is a knowledge base that summarizes concepts and theories based on the principle of rationality for financial decision-making. Standard finance theories are based on the fundamental concept that investors act cautiously and objectively in making their financial decisions. In addition, it is assumed that the individual investor behaves rationally, taking into account the associated risk and return. However, researchers in the field of psychology believe that financial decisions are often made irrationally. Thus, a new field of behavioral finance has emerged over the past few decades, designed to explain how personal, social, and psychological factors help individuals make financial decisions.

Behavioral finance is a promising field that has been developed using material from psychology and finance that attempts to explain the mysterious factor of stock market fluctuations. It is defined as "the study of the influence of social and psychological factors on asset prices." Behavioral and psychological ideas emerged as an application of economics to psychology that seeks to explain people's irrational financial decisions. It is a combination of psychology, sociology and finance. This article attempts to create a procedural study to provide a systematic overview of the evolution of behavioral finance theories and concepts. The study attempts to explain how the assumptions of standard financial theories fail to explain the various anomalies that have led to the development of behavioral finance.

What has remained constant throughout the development of economic thought is that the object of study is entirely rational, and it has been called "homo economicus," which means rational human being. However, over time this theory has run into contradictions, there has been more and more evidence that often the economic agent does not act rationally, but rather irrationally.

It is at this point that behavioral sciences such as cognitive psychology, evolutionary biology, and neuroscience actively come into play, explaining behavior and motives for human actions. The combination of the theories from these sciences and economics has given rise to a new branch of economic thought – behavioral economics and finance.

Homo economicus is a term used in economics and finance to refer to the rational human being suggested by classical financial theories such as the efficient markets hypothesis. Traditional financial theory views the "homo economicus" as an individual with sufficiently precise knowledge of those aspects of the environment that are relevant to himself or herself. Such an individual is described as follows: "it is assumed that this individual also has a well-organized and stable preference system and the computational skills to calculate, for the alternatives available to the individual, which of these will enable to reach the highest attainable point on preference scale." Thus, "homo economicus" are those people who are characterized by rationality and make optimal decisions regardless of external factors such as biases. As noted above, behavioral economics and, more specifically, behavioral finance criticize theories that support "homo economicus."

Many studies have shown that people are not as rational and consistent as economists thought, and that it is difficult for us to remain logically consistent [2]. Many studies have shed light on the claim that humans are not really "homo economicus" and have given a rapid boost to the field of behavioral finance, confirming the claim that psychological and cognitive factors are undoubtedly behind decision-making. Thus, given that irrationality and inconsistency are part of human nature and therefore present among humans, there remains a gap in classical financial theory that must be filled in the field of behavioral finance.

Daniel Kahneman and Amos Tversky are often recognized as the fathers and founders of behavioral finance. Daniel Kahneman is a Nobel Prize winner in the psychology of judgment and decision-making and in the behavioral sciences; Amos Tversky was a cognitive and mathematical psychologist specializing in 23 systematic cognitive biases and risk management. Although they initially pursued different research topics, in the 1970s they began working together and laid the foundations for the field. Their first steps were to adapt psychological decision theory experiments to real-world financial scenarios and to compare normative solutions to problems with the subjective responses to

those problems that they collected during the experiments.

D. Kahneman and A. Tversky jointly wrote several works that formed the basis of this direction, especially in the 1970s and early 1980s. Their first paper, "Belief in the Law of Small Numbers", published in 1971, discussed people's misconceptions about probability and representativeness of statistics, such as the belief that a random sample from a population is representative of that population. Two subsequent papers, "Subjective Probability: A Judgment of Representativeness" and "On the Psychology of Prediction," expanded on the topic of representativeness and explored the powerful role of representativeness bias in creating intuitive predictions. The two most important works followed in 1974 and 1979, respectively: "Judgment under Uncertainty: Heuristics and Biases," identified three fundamental heuristics people use to understand complex uncertain situations – representativeness, accessibility, and binding; "Prospect Theory: An Analysis of Decision under Risk" developed a new model of decision-making at risk to serve as an alternative to expected utility theory. Kahneman's work on prospect theory earned him the Nobel Prize in Economic Sciences in 2002 along with Vernon L. Smith (and almost certainly would have included Amos Tversky had he not died a few years ago). In a 1981 paper entitled "The Framing of Decisions and the Psychology of Choice," this duo introduced a phenomenon known as framing, which means that framing a particular problem in different ways for an individual affects the perception, decisions, evaluation of options and probabilities, and hence the outcome of the individual's decision on that problem [4].

The article "Behavioral finance and its impact on the poor financial performance of small and medium-sized enterprises" by P.V. Raveendra and others argues that decision-making is a rational process [5]. It would be irrational to claim that there would be no bias in rational decision-making. Investment decisions are no exception to this rule. As a rule, behavioral elements in an investment decision are ignored either in the stock market or when deciding on SME working capital or capital budgeting. The purpose of this article is to examine the various components of behavioral finance that will affect the poor financial performance of small and medium-sized enterprises (SMEs). The study is based primarily on the literature on behavioral finance and SMEs. The authors attempted to use the available literature on behavioral finance, low SME financial performance, and behavioral biases in investment decisions. After analyzing various research papers, the authors determined that behavioral components have a direct or indirect impact on SME financial decisions, which, in turn, affects SME performance.

T. Prince discusses the role of behavioral finance in the context of business cycles in his article "Behavioral Finance and the Business Cycle". In his work he raises the issue that despite centuries of economic research, economists and central banks still cannot predict recessions [6]. Part of the problem is that modern economics is based on the idea that consumers and politicians make rational decisions. Economic models are based on late economic performance, which exacerbates the problem of forecasting. Behavioral economics and finance are based on the assumption of mixed rationality; this means that many, if not most, decisions are not rational. In these disciplines, decisions are influenced by innate and usually unconscious cognitive biases. This suggests that tracking cognitive biases may provide a new way of determining the phases of the business cycle. This has the added advantage that behavior is a leading indicator of outcome.

This paper presents this approach. It is based on a proprietary cognitive distortion model that identifies the financial signature of economic entities. This concept is the sum of two key cognitive biases: the status quo bias and the control illusion bias; these are, measures of innovation and value added and, respectively, gross profit and resource use or the level of indirect costs to the consumer or the manager.

Behavioral finance is actively used in the analysis of crises and their causes. In their article, G. Byrd, V. Du and T. Willett examine the European crisis in terms of the confrontation between behavioral finance and the efficient market hypothesis. The eurozone crisis between 2009 and 2015 provides an opportunity to test whether financial markets fully reflect the characteristics associated with the efficient market hypothesis, or whether behavioral approaches that focus on excessive pessimism and bias also provide insight into how markets work. This article tested several important aspects of market behavior [7]. In particular, it investigated the extent to which significant changes in risk premiums among countries facing a crisis were related to news. It also investigated whether the effects of good and bad news were symmetric. The authors also investigated whether changes in risk premiums in Greece affect risk premiums in other countries in an asymmetric and biased way. It was found that while there is strong evidence that financial markets often perform efficiently during a crisis, there are also important deviations from this model that are consistent with the behavioral approach. The findings of the paper suggest that both efficient and behavioral approaches are useful when trying to understand how markets work.

But it is not only past crises that interest researchers. For example, in his article, E. Vasileo examines the coronavirus crisis in terms of behavioral finance and market efficiency and raises the question

of whether fear drives the market in the current environment. This study examines the performance of U.S. stock markets during the COVID-19 outbreak using a fundamental approach to financial analysis, a continuous growth model, and a behavioral model incorporating a Google-based index [8]. The author compares published news and U.S. stock market performance during the COVID-19 outbreak and shows that health risks were significantly underestimated and/or ignored in some periods. The Efficient Market Hypothesis (EMH) assumes that prices include all available information at any given time, but analysis shows that the systemic factor, health risk, has not always been rationally factored into stock prices. The tests confirmed the assumption that the market was not effective during the period under consideration. For this reason, the author uses the Coronavirus Fear Index (CFI) based on Google search results and, using Granger causality, provides empirical evidence that fear affects the S&P500 and, using the GARCH model, shows that fear negatively affects the performance of the US stock market.

The article by K. Oprean and K. Tanasescu examines the capital markets of developing countries [9]. The authors believe that the general consensus among financial experts lately is that it is becoming increasingly difficult to understand how the economy as a whole works. Although efficient market theory can be considered an ideal model for interpreting market behavior, it has begun to lose ground, and the rationality hypothesis has failed to explain the excessive volatility in returns and trading volume recorded in both developed and emerging capital markets. Adding a behavioral finance perspective to the equation can help better understand how market agents will respond. This paper examines factors that may explain the evolution of trading volume in two emerging capital markets (Romania and Brazil). This article analyzes the effect of both investors who base their trading behavior on rational expectations and investors who exhibit behavioral errors as independent variables on trading volume as the dependent variable. The analyzed period covers four years, from June 2009 to June 2013, and includes the daily values of the most important indices traded in both markets, i.e., BET for Romania and IBOVESPA for Brazil, as well as the daily trading volume for each of the two indices. The results show that trading is influenced by irrational investor behavior. Thus, the rationality hypothesis can be rejected for both capital markets.

M. Nedelsu in their research article "Risk Management in a Crisis". The authors write that numerous analysts and researchers blame easy credit, the proliferation of complex securities, or improper regulation for the crisis, but these reports provide only a partial and limited explanation [10]. Behavioral finance, focusing on personality and social psychology, can provide a more holistic explanation and impact on risk management. This study analyzes the impact of psychological pitfalls on crisis decisions and their implications for risk management. The analyzed data were collected during the observation of 378 subjects, participants of the National Program "School of managers" in Romania. The results show that in a critical situation, more than 85 percent of decisions are emotional and less than 15 percent are rational. In addition, only core values influence decision-making during a crisis, even if it is irrational or does not minimize risk. With this in mind, managers involved in risk management, especially financial risk management, must be aware of their emotional reactivity and find and apply pragmatic criteria for action appropriate to the particular moment.

Ukrainian households are also the subject of interest of researchers. L. Shkvarchyuk and R. Slavyuk undertook to evaluate the peculiarities of financial behavior of households as one of the main factors of the country's competitiveness, dividing the households' expenses into fixed and variable elements and considering each element separately [11]. The analysis is based on the data of the State Statistics Service of Ukraine and covers the period 2001–2017. The chi-square criterion was used to check the selected data. The high propensity of households to consume stimulates an increase in the domestic market within the country, which is also an important indicator of the competitiveness of Ukraine, which is characterized by a high share of savings in household income. The situation in Ukraine shows a large positive impact of savings on the development of the local financial market. Ukrainian households tend to accumulate savings in order to create a system of financial security for themselves in anticipation of future economic downturns. As in many Central and Eastern European countries, Ukrainian households keep most of their savings in foreign currency and in bank deposits. This distribution has proven to be resilient to changes in the expected returns on the assets in question. The marginal propensity of Ukrainian households to purchase non-financial assets is low, but relatively stable. The domestic crisis of 2014–2016 caused significant changes in the financial behavior of Ukrainian households. The post-crisis period of 2017 has not yet brought significant changes in the financial behavior of Ukrainian households. As in the past, households today keep a large amount of cash outside the banking system, with the largest share of households' non-financial assets held in foreign currency.

As mentioned earlier, behavioral finance emerged from the intersection of behavioral economics, traditional finance and psychology with neuroscience. There are 3 key concepts on which behavioral finance is built, and it is important to consider each component separately.

1. **Cognitive psychology**, because traditional finance is very much focused on the concept of risk, of course risk can be quantified, but often investors use their personal perception of risk, which can be distorted by the personality of the investor. However, they quantify and analyze risk itself only on an ad hoc basis, using sophisticated tools such as return bias or beta-testing. In traditional finance, risk is a mathematical phenomenon. It does not take into account how an investor perceives risk from a psychological perspective and the unique context of their situation and experience, they see risk as something external, when in fact it is a concept that helps people understand and cope with the uncertainties and dangers of life, and each person perceives it differently. Thanks to discoveries in cognitive psychology, behavioral finance can view risk as a multifactorial phenomenon with different dimensions, including probability and size of loss, perception of fairness, trust or fear. Understanding cognitive dissonance, temporal preferences, and other behaviors has been very valuable for behavioral finance research.

2. **Behavioral economics** has become the most important building block of behavioral finance because it identifies inconsistencies in human behavior and classical economic theory about utility and the rational analysis of available alternatives. It has identified some elementary behavior patterns used in financial decision-making, such as binding effects or some significant anomalies such as hyperbolic discounting, discounting inconsistent with expected profits and expected losses as well as smaller and larger outcomes, forecasting bias, and many other patterns. They represent a valuable challenge to traditional finance, which focuses on time and the future, and can help create and test models that predict prices, profits, cash flows, or dividends in light of how the time dimension is evaluated and how choices are made in this regard. Behavioral economics shows very clearly that people are definitely not and may not even be "logical machines" [12].

3. **Evolutionary biology and neuroscience** study the human brain and how it has changed throughout human development. The most important and valuable contribution of neuroscience and evolutionary biology to the development of behavioral sciences in general and behavioral finance in particular is the insight they bring to the understanding of the relationship and interaction between emotion and cognition. As mentioned above, traditional finance views emotion as a contributing factor to bad decisions, suggesting that removing emotion from the decision-making process should lead to better decisions – using rational, structured logic should yield better results. It is certainly true that sometimes emotions do lead to poor decisions in financial and other areas, and this is also a major focus of behavioral finance. Current theories of decision-making tend to emphasize that decision-making is dominated by the frontal cortex. However, neuroscience views the brain as a highly complex biological system in which all parts work together and support each other's functions. The main conclusion is that emotions usually play the leading role in decision-making, while the cognitive function is auxiliary – it is the basis of care, since emotions are inseparable from other functions, and therefore "the mind is powerless without emotions" [12]. Emotions dominate the process of perception and provide the context for experiences that are necessary for the mind to work and help it categorize and simplify the world. These discoveries of neuroscience are of great importance to behavioral scientists because they show that neither the classical idea of "economic human" nor its more modern versions are correct interpretations of the human mind and decision-making process, and thus demonstrate the need for theories that embrace these key findings to give meaning to human decisions in finance.

In the study of behavioral technologies the concept of "efficient market hypothesis" is very common, because it is the main competitor of behavioral financial model, this hypothesis is adhered to by all financial economists in the world in recent years. Therefore, it is very important to consider this hypothesis and how it differs from behavioral finance. It is important to add that behavioral finance does not act as an alternative or substitute for GER, but rather complements it.

The Efficient Market Hypothesis (EMH), developed by E. Fama in 1970 and has been at the center of financial theory for more than 30 years. E. Fama defines an efficient market as one in which asset prices always reflect all available information [13]. These assumptions rule out the possibility that expected returns based on currently available information could be higher than the expected equilibrium returns in the market. Thus, market efficiency theory is based on three pillars of thinking.

The first pillar assumes that investors react rationally; in other words, investors analyze, evaluate, and make decisions rationally. In this case, emotions are not taken into account. The second pillar is based on the irrationality of some investors, but the interconnectedness and randomness of their transactions negate each other. Thus, the value of assets remains unchanged. Finally, the third pillar is arbitrage between irrational and rational investors. Indeed, irrational investors meet rational investors in the market; naturally, a compromise arises to return to normal valuation.

In addition to the basics of market efficiency, E. Fama identifies three degrees of market efficiency (Fig. 1).

The first is a weak form of efficiency in which stock prices cannot be predicted based on past prices,

fundamental analysis can provide above-average returns.

The second is the semi-strong form (semi-strong efficiency); it assumes that stock prices react very quickly to new publicly available information, and neither technical nor fundamental analysis can be relied upon to produce above-average returns over the long term.

The third form of efficiency is high efficiency, in which all public and private information is included in the price of the asset. Thus, in this case it is in no way possible to use hidden information, such as through insider trading, because all information is available on the market and is included in the price of the asset.

However, despite the large amount of research and empirical evidence in support of this theory, there are also problems with its validity, both empirical and theoretical. Over the years, many anomalies have emerged that call into question the key principles of the hypothesis. The growing number of anomalies and exceptions in the theory of efficient markets has been one of the main reasons for the emergence of behavioral finance, which offers compelling reasons to believe that financial markets are in fact inefficient, and attempts to explain these anomalies by the irrational aspect of human behavior, the influence of prejudice, flaws in Reason, and the like. Thus, behavioral finance is actually an extension of traditional finance to the point where it meets the natural and cognitive sciences to see that it can explain the anomalies found in traditional finance theory and use them to allow investment professionals to make better decisions in their daily practice.

The next important aspect of behavioral finance is the set of underlying biases that arise in every decision. There are six basic types of traps or biases that investors fall into: prospect theory, heuristics, misinterpreted chance, herd bias, overconfidence, complacency, and insufficient reaction.

To begin with the theory of perspective, the authors of which are D. Kahneman and A. Tversky, also the founders of behavioral finance, for which they received the Nobel Prize in Economics in 2002. Prospect theory argues that people make decisions based on benefits and losses rather than outcomes, set benchmarks, and make appropriate decisions [15]. People evaluate benefits and losses differently. Prospective theory elaborates on the fact that when faced with risky choices that lead to profit, investors have a strong aversion to risk and therefore prefer less risky but less profitable decisions. On the contrary, when investors are faced with risky choices that lead to losses, they tend to take much more risk if it allows them to cut their losses. In other words, it can be said that this alternative theory of choice, in which different values are assigned to benefits and losses rather than outcomes, in which decisions are related to the probability of an event, may be subject to fundamental biases and heuristics.

According to heuristic theory, decision makers use heuristics to avoid the risk of loss in uncertain situations. Heuristics are shortcuts that the brain creates to simplify the decision-making process, and they are increasingly common in today's rapidly changing society. These reductions can range from innate processes that an investor may not be aware of, to consciously chosen rules that aid in decision-making. Heuristics allow people to accelerate their decision-making process compared to rationally processing the information available. In general, these heuristics are useful and necessary when time is limited, but sometimes they lead to distortions.

Using heuristic simplification can lead people to make predictable, suboptimal decisions when dealing with difficult and uncertain situations [15]. The reason why heuristics are relevant to the study of behavioral finance is simple – modern trading and financial markets are becoming increasingly dynamic, complex and opaque, with many times more information than can be processed, and reaction speed has become a crucial element of successful trading. In this case, the heuristic is important for rapid decision making, but it must be carefully studied and practiced to avoid bias and lead to suboptimal results. Also, and very interestingly, traditional finance assumes that financial decisions are made based on rational data analysis using statistical and mathematical tools and, therefore, does not consider the use of heuristics in investor decision making. However, the evidence suggests that this assumption is often wrong, so heuristics need to be studied and understood both to understand the decision-making processes of other market participants and, most importantly, to optimize one's own decision-making process.

Another mistake many investors make is to pay too much attention to random events and conclude

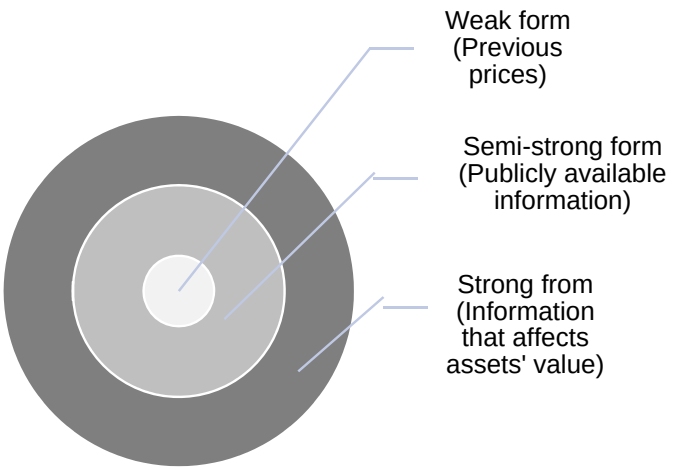

Figure 1. Forms of market efficiency

Source: [14]

that there are causal factors behind these random events, which is called the representativeness heuristic. In addition, investors are constantly getting investment ideas from various sources such as the media, brokers, magazines, and websites. Without the ability to know, analyze and master the fundamentals of all companies, investors may be tempted to invest in securities that are unknown but provide them with much better opportunities than those in their portfolios. Investors fall into the herd trap of simply following what others are doing in their investment decisions.

Conclusions. The research suggests that whether behavioral finance is seen as a challenge or an addition to the traditional finance paradigm, it has become an increasingly important force in the financial debate. By creating a bridge between traditional finance and psychology, behavioral finance has been able to explain and sometimes correct some anomalies in standard finance theory and has initiated a major shift in understanding of behavior in financial markets. In the last century, the efficient market hypothesis has demonstrated its inability to fully capture the actions of economic agents that ultimately lead to economic failures. The development of behavioral finance was triggered by various phenomena that were increasingly evident in and influencing investor behavior: overconfidence, herd behavior, overreaction or underreaction, and so on.

The future field of research is a better understanding of processes in the human brain, the development of a wider range of biases and behaviors, and their successful incorporation into economic models in order to create a representation as close to the real world as possible, which will then help humanity in preventing future crises.

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