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**Behavioral Macroeconomics: The Problem of
Consumer Behavior for Economic
Development**

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Abstract

This research paper is devoted to showing the essence of behavioral macroeconomics where problems of consumer behavior can have an impact on the development of the economy. Firstly, in this paper, you will see the history of the development of behavioral economics and several theories such as Nudge, Endowment effect, Theory of Prospects which influence on decision making of consumer behavior. The last 20 years, the importance of a number of behavioral features has been accepted within macroeconomics. Where has this development led us? The insights from behavioral economics have led to important progress in our understanding of macroeconomic phenomena. Where representatives of behavioral macroeconomic theory, using realistic assumptions based on psychological and sociological observations, have developed models that explain the following six macroeconomic phenomena well: the existence of involuntary unemployment, the impact of monetary policy on output and employment, the inability to accelerate deflation under conditions of high unemployment, the prevalence of an inadequate level of savings at the time of entry into penance - this, excessive fluctuations in prices on the securities market in comparison with changes in fundamental market conditions and the continued existence of poor people with destructive behavior. In the spirit of Keynes's "General Theory," representatives of behavioral macroeconomic theory reconstruct the microeconomic foundations of macroeconomics, which new classics abandoned. The main conclusion of the article is that psychological and sociological factors, such as reciprocity, justice, identity, monetary illusion, loss aversion, illiteracy and postponing for the future, help explain the significant deviations of the real world economies from the model of competitive general equilibrium and implementation of latest innovation in

terms of predicting consumer behavior which is possible. Here, we will answer to question “Do Behavioral Biases Adversely Affect the Macroeconomy?”

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Chapter 1: Introduction

Behavioral economics is a relatively new science, having an interdisciplinary nature and located at the intersection of two sciences: psychology and economics. The economy is a living organism because it is controlled by people, or rather, an economic man. The rational and irrational components of our choice are transferred to the economy. Behavioral Economics is an area of the economy which examines the impact of emotional, social and cognitive factors on economic decision-making by institutions and individuals and the consequences of this influence on market variables (profits, prices, and allocation of resources). It is well known that the change in the forms of rationality as the fundamental postulate of the neoclassical theory is considered as one of the most important trends in modern science. The meaning of the relation between "rationality - irrationality," understanding how they influence the forms of economic activity changes radically. Scientists, based on the results of psychological research in decision-making, prove that people do not always behave rationally in their interests because of behavioral traits such as self-control problems, inability to distinguish between benefits and losses, difficulties in choosing between large sets of parameters, complex products, asymmetry in the perception of gains and losses, etc. In this regard, many results of the behavioral economy have become very relevant for the development of economic policy. Rationality is the ability to make the right decisions to your advantage. In the general, classical economy, the assumption of rationality means that in everyday life we compare all the emerging alternatives (on any question) among ourselves and then choose the best for us. Within the framework of behavioral economics, the methodological approach is initially associated with criticism

of rationality in human behavior, whose ability is limited by the inaccessibility of complete information and exposure to habits and emotions.

Thus, Researchers focus on two critical aspects of economic behavior:

- Non-rationality is a temporary, nonequilibrium state of the subject.
- Irrationality has systematic patterns that can be measured. Irrationality is the distance that separates us from perfection.

However, behavioral economics is more applicable on microeconomics. Therefore, the development of the economy at a macro level also have the impact of psychological features which argue the principles of conventional macroeconomics.

The objectives of the development of the discipline "Behavioral Macroeconomics" are the study of topics relevant to modern science and business practices, revealing how various psychological phenomena, emotions and group dynamics influence the adoption of economic decisions in a macro level. The objectives of the discipline "Behavioral Macroeconomics" are:

- Development of interdisciplinary methodological approaches;
- Disclosure of the directions of the interaction of the modern macroeconomics with the achievements of psychological science, the role of experiments in the modern macroeconomics;
- The possibility of introducing the identified patterns of human behavior in macroeconomic theory, considering various options for the practical application of behavioral theory;

- Development of recommendations and forecasts for various institutions (households, firms, states) on the basis of macroeconomic and psychological models. The study of the behavioral macroeconomics will contribute to a broader and more modern understanding of macroeconomic phenomena, taking into account their psychological component, developing skills in the use of specific economic and psychological patterns.

For that reason, I decided to take a topic which is about behavioral macroeconomics and the problem of consumer behavior for economic development, which the purpose is to help to understand that conventional macroeconomics is already the old way to accept it.

My research hypothesis: Do Behavioral Biases Adversely Affect the Macroeconomy?

My research questions are:

Do behavioral macroeconomics explain the problems that are in conventional neoclassical theory?

Does biases of consumer behavior a real problem for economic development?

Does behavioral economics using in real world practice?

Chapter 2: Literature Review

We can see that behavioral economy also has its development path through the history. In this chapter, it will be shown many types of research on developing the concept of the behavioral economy. The relevance of the mentioned sphere gives much scientific research that combines the

psychology and economy disciplines. The applied theory of macroeconomic behavior will also be discussed in this chapter.

History of development of Behavioral Economy

The first ideas of the behavioral economy are reflected in the writings of famous economists: Adam Smith (1723-1790), recognized as the founder of economics as an independent science. In *The Wealth of Nations* published in 1776, Adam Smith argued that economic behavior was motivated by self-interest. In 1759, Smith had proposed a hypothesis of human behavior that looks anything besides self-interested. In *The Theory of Moral Sentiments*, he declared that behavior was determined by the struggle between what Smith termed the “passions” and the “impartial spectator.” [1, 48]

Other scholars Marshall (1842-1924) - founder of microeconomic theory, John Keynes (1883-1946) - author of the theory of macroeconomics gave some statements where in the writings of these authors, the theory of rational "economic man" was formed where the purpose of whose activity is to obtain profit and income. The determining feature of the concept is "economic egoism," that is, the desire of the subject to maximize his benefit. The idea of an "economic man" dominated economic science for a long time, taking on new forms. The idea that the irrational beginning - the periodically arising waves of optimism and pessimism - determines the waves of the business cycle was first put forward by J. Keynes. However, deeper studies of the "herd feeling" were possible only at an interdisciplinary level. Because of this, the Keynesian theory facilitated formalization by models that implied too unrealistically high cognitive capabilities of the individual. As a result, new Keynesians in the dispute with the new classics put forward only provisions

on the rigidity of prices and nominal wages as opposed to their flexibility and the possibility of a rapid automatic transition to a new equilibrium. The other essential point - the complete rationality of individuals (and their expectations) - as an object of constructive criticism was not taken into account. The framework of this concept did not deter the researchers as long as they were economists of the business cycle, put forward for the first time by J. Keynes. (Avtonomov 1998) [2, p 48]

It would seem that the behavioral economic theory, born of a symbiosis of economics and psychology, can be seen as yet another example of a dominant trend in interdisciplinary research on social issues known as "economic imperialism." It is about the invasion of methods and concepts of economic science within the confines of related social disciplines. Politology and sociology, history and jurisprudence, anthropology and criminology, religious studies and demography have undergone such "colonization" (with uneven success). The use of the term "imperialism" as a metaphor speaks for itself, unambiguously pointing to the inequalities of the parties that come into interaction. Supporters of "economic imperialism" (G. Becker, J. Hirschleifer, E. Lézir, and others) are ready to recognize that other social disciplines have valuable observations, concepts, and analysis tools, but a standard conceptual framework for understanding various social phenomena is capable, according to their conviction, give only economic science.

However, in the behavioral economy, the nature of the interdisciplinary interaction is turned upside down: psychology plays the role of "metropolis," while the economic theory itself plays the role of "colonized" territory (Glaeser, 2004) [3,p 48]. More specifically, the analysis of economic phenomena (consumer behavior, investment decisions, resource allocation in

time, etc.) is conducted proceeding from the conceptual ideas developed by the psychological science and using the methods and concepts adopted in it. This inversion of roles is quite unusual for modern economic science with its "imperial" claims.

However, demonstrating the empirical failure of this theory is the overriding goal of economists-behaviorists! Here interdisciplinary synthesis can no longer be built by ideas about human behavior, developed by the "conventional" (neoclassical) economic theory which is additional complexity. The interdisciplinary situations that have developed in economic science, on the one hand, and in psychological science, on the other, are fundamentally different. In economic theory, a situation of "monoparadigmality" has already been observed for a long time, when one of the theoretical approaches, the ¹neoclassical one, acts as the orthodox "mainstream" (mainstream). In contrast, the psychological theory remains in a state of "multi-paradigm": inside it, no dominant school has emerged, capable of claiming absolute leadership (in other words, the status of the mainstream). In the context of such a multiplicity of competing for research programs, it is natural to ask: which of them served as the main source of the "methods" and concepts "imported" for the behavioral economy? It would seem that the very presence in its title of the epithet "behavioral" refers us to "classical" behaviorism - one of the leading trends in the psychology of the 20th century, associated with the name of J. Watson. [4,p 48]

¹ Behavioral economists use ideas from psychology to better understand the traditional problems of economic theory. Such one-sided interaction with psychology is acceptable only if the economic theory is so weak that we need psychology to reconstruct our discipline, or if our traditional analytical tools cannot tell us anything about psychological phenomena. The economy is not so weak, and psychology is not so strong that economists should be satisfied with the application of psychology to the study of economic problems "(Glaeser, 2004, p. 408).)

Distinguishing the behavioral economics from the new topic - experimental economy is crucial. Although the feature that divides them is very conditional (depending on the nature of the problem studied, the same author can act as a behavioral economist or as an experimental economist), it still exists - at least, the theorists of the behavioral economics themselves insist on this (Tversky, Kahneman, 1986). [5, p 48] Of course, these approaches have much in common: both study the decision-making process; both use experimental methods for this; in both particular importance is attached to the results of laboratory tests. However, if the attention of the former focuses on the characteristics of individual behavior, then the second one is based on the results of interpersonal interaction of people. Moreover, if the former is more interested in cognitive and behavioral limitations of rationality as such, then the second is the possibility of overcoming these limitations through various institutional mechanisms (some or other sets of "rules of the game"). Reflecting the tensions between these sub-disciplines, the simultaneous award of the 2002 Nobel Prize in Economics was given to the most prominent representatives of the behavioral and experimental economy - the psychologist Daniel Kahneman and economist Vernon Smith. [6,p 48]

The predecessor of the "new" behavioral economy, which we are talking about, is the "old" behavioral economy of the 1950s and 1960s, associated with the names of such researchers as G. Simon and J. Catona. (Sent 2004) G. Simon was one of the first to talk about the unrealistic nature of psychological premises, from which the standard neoclassical models come (Simon, 1955). [7,p] He deserves credit for introducing the notion of "limited rationality" into the lexicon of economists to denote the whole range of constraints on the knowledge and computing abilities of people that do not allow them to

behave in the real world as predicted by the neoclassical theory (Simon, 1987b). [8,p]He distinguished three main tasks, the solution of which should be aimed at behavioral analysis (Simon, 1987a) [9, p 48]. Firstly, it is an empirical test of the assumptions of the neoclassical theory of human behavior and in those cases when they are inadequate, the formulation of observed patterns reflecting how it is constructed in real life. Secondly, the derivation of practical consequences for the functioning of alternative economic systems, various public institutions, and state policy. Thirdly, an empirical analysis of the form and content of utility functions available to individuals, which would make more accurate predictions about their economic behavior than is possible with neoclassical theory.² [10, p 48]

G. Katona was, apparently, the first to introduce the term "behavioral economics" (Katona, 1951). Like Simon, he considered the neoclassical a priori model of rational behavior unrealistic. "Unlike pure theorists," he wrote, "we should not from the outset assume that rational behavior takes place ... We should study economic behavior as it appears to us in reality. Describing and classifying various reactions, as well as the circumstances that generate them, we should always ask ourselves whether these reactions are entitled to be called "rational" and, if so, to what extent "(Katona, 1951). Psychological variables - motives, attitudes, expectations - should, in the opinion of the Catons, be viewed as "intermediaries" between the objective

2 Sent describes the differences in the attitudes of the neoclassical theory and the "old" behavioral economy: "If the mainstream economy came from a given utility function, then the" old "behavioral economy sought to discover empirical laws that described the actual behavior of people as accurately and adequately as possible. If the neoclassical approach directly linked rationality with the maximization of utility or profit, then the "old" behavioral economy tried to study the consequences of deviations of the observed behavior from the premises of the neoclassical theory. Also, if the mainstream economy proceeded from given alternatives and pre-known consequences, then the starting point for the "old" behaviorist approach was empirical data on the form and content of utility functions "(Sent, 2004, p. 742)

conditions in which economic agents place and the final decisions that they take under these conditions. When people define their expenditures, savings, and investments, such an "intermediate" variable has a huge role, and without them, our understanding of economic behavior is doomed to remain incomplete and defective (Katona, 1951). [11, p 48]

According to some estimates, articles published in the journal *Econometrics* have become the most cited work ever published in this magazine. No less important from the point of view of the popularization of behaviourist ideas were the works of the economist Richard Thaler that appeared around the same time, which gave a lot of empirical evidence of "suboptimality" of economic decisions made by economic agents - such as underestimation of opportunity costs, inability to abstract from non-returnable costs (sunk costs), lack of self-control, etc. (Thaler, 1980; Thaler, 1985). [12,p 49] [13,p49]

Both Tversky and Kahneman and Thaler saw their primary task in developing an empirically adequate theory of choice that would describe the observed processes of decision-making by economic agents. Inspired by their example, hundreds of economists and psychologists joined in the fascinating process of "deconstructing" the "standard" model of rational choice, looking for new and new gaps in it. The speed and ease with which the mainstream of economic science absorbed the ideas of the behavioral economy are entirely unexpected. So the problem is not only that Tversky and Kahneman correctly owned the apparatus of microeconomic analysis and could, therefore, turn to economists in their usual language. Perhaps equally important was the fact that the behavioral economy contributed to the status acquisition of "experimental science" by economic theory, helping it to get rid of the old inferiority complex before natural disciplines. It is likely that the rapid ascent of the

behavioral economy was mainly due to this: the process of research itself has now assumed forms typical of the exact ones. "Real" - sciences: design of the experiment; conducting laboratory tests; Comparison of experimental data with initial expectations. [14,p 49]

Nowadays the successors of old behavioral economics science are economists and psychologists. The Israeli-American psychologist Daniel Kahneman (Daniel Kahneman) is one of the founders of psychological, economic theory and behavioral finance and co-author of the theory of prospects. Nobel Laureate in Economics in 2002 "for the application of psychological methods in economic science, especially - in the study of the formation of judgments and decision-making under conditions of uncertainty." Another scholar who devoted many researchers to behavioral economics is Vernon Smith - founder of the experimental economy. Confirmed some economic prerequisites for irrational behavior based on experiments; has formed different approaches to understanding the origins of behavioral economic theory (the 1980s). He substantiated the role of the experimental method in behavioral economics. Dan Ariely (Dan Ariely) is an Israeli-American economist and psychologist and the researcher of the "ideal model" of the distribution of material goods. In 2008, the book published by Professor of Behavioral Economics "Predictably Irrational." It is believed that it was with her that the popularization of the behavioral economy began among the general public. Richard Thaler is an American economist, co-author of a series of works on the behavioral economy with Nobel laureate D. Kahneman.³

³ Also, he is an author of "nudge theory". Another his research topic was about the influence of emotions on the decisions of consumers in the market, the choice of the method of savings, mortgages, the choice of a pension fund which were in his first book - The New Behavioral Economics.

The development of the behavioral economy in modern conditions is reflected in the works of Akerlof and Schiller "Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism."
[15,p 49]

Chapter 3: Concept of Behavioral Economy

The Theory of The Prospects

In the standard model of the information economy, the time and effort needed to solve problems are treated as costs. Behavioral researchers have studied in more detail how individuals make decisions in situations of increasing choice and complicating products. It was found that consumers use relatively simple "thumb rules", or "heuristics", that is, they ignore some possible options because of the large amount of labor-intensive information. In order to optimize the decision-making process in such situations, economic agents use heuristics, especially in times of shortage, when decisions need to be made quickly. In many cases this is an effective way to achieve an optimal solution. However, these "rules" can also mislead consumers. If consumers are able to evaluate and compare products, they often consider a limited number of variables, focusing mainly on price. In terms of complex products, important variables that can affect the total cost of using the product can be ignored. Firms sometimes complicate the process, deliberately belittling or even hiding properties that affect price changes, so as not to reduce the demand for their products. This phenomenon is commonly called "hidden attributes". For example, printer buyers do not seek information about the price of ink, although these costs are an important part of the cost of owning and operating copying equipment. Or they can make a reservation for a low-priced hotel room, and then discover relatively high rates for basic services that other establishments offer for free. It should be noted that in such cases, consumers who pay attention to hidden attributes when making decisions, gain additional

value if they cannot pay an inflated price for hidden properties. There is also a greater degree of uncertainty about the future when economic agents make borrowing, make savings and investment decisions. Traditional economic models suggest that consumers, faced with a choice problem with an uncertain outcome, assess the possible outcomes depending on the likelihood of their occurrence and make the choice with the greatest expected benefit, that is, maximize the expected utility. At the same time, consumers evaluate risky decisions in the appropriate order. Deviations in the behavior of economic agents explains the "theory of prospects" D. Kahneman and A. Tversky, associated with the decision in a risk environment. The basis of the theory of prospects is the three inherent properties of the valuation function of simple risky lotteries or chances: a) dependence on the starting position: the valuation of the action is determined relative to the starting position by analyzing the changes; b) Evasion of losses: in case of losses, the individual estimates the value of the choice as negative, in case of winnings, as positive; c) diminishing sensitivity: the marginal value of both gains and losses decreases with increasing size. This property is a distinguishing characteristic of both the valuation function and the probability weighting function. This model is based on three cognitive principles of consumer choice:

- The evaluation of possible consequences is carried out with respect to the neutral reference point, or the level of adaptation.
- The principle of reducing sensitivity works in assessing the dynamics of wealth.
- Principle of non-acceptance of losses. Consumers are willing to take on extra costs to avoid large losses, but are not ready to go to similar spending to achieve great success. Losses are experienced more than winnings. Scientists,

proceeding from the analogy with perceptual adaptation, believe that the decision-making will depend on the starting point (the previous state, about which the situation is assessed), that is, people will react differently to the same situations depending on whether they lose something or they win. A feature of the theory of prospects is that the reference point is very important when consumers evaluate the possible results. On this basis, the following conclusions are drawn: first, that a person is not able to estimate future incomes in absolute terms, estimates them in comparison with the usual level of income or with the level that has developed; secondly, at the same risk people are more inclined to maintain the achieved financial level than to increase it. On the basis of experimental data, D. Kahneman and A. Tversky derived the value function, which was determined in the deviation from the initial value. The curve is convex upward for wins and concave down for losses, which means a tendency to avoid risk in winnings and a risk appetite for losses, with the value function having a steeper slope in losses than with the winnings (Figure 1).

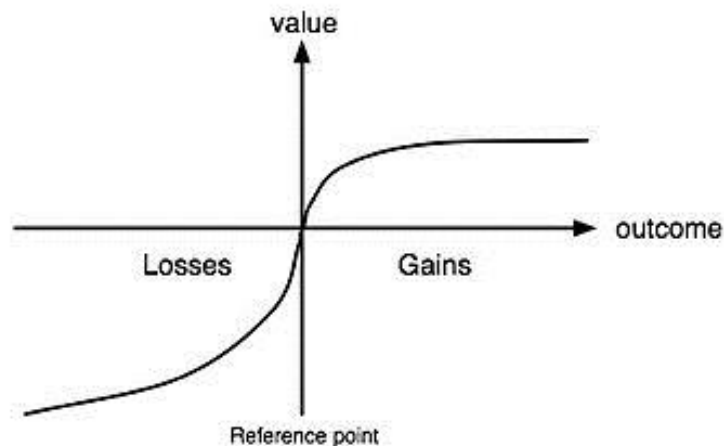


Fig 1 The utility function in the behavioral economy

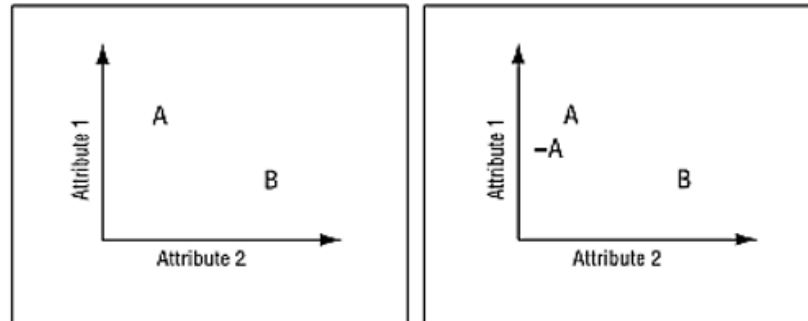
Source: Манахова И. В. Поведенческая экономика : учеб. Пособие

The asymmetry of perception of gains and losses is due to the fact that the human psyche perceives not so much the absolute value of its wealth as its change, and the pleasure of winning is less than the disappointment of defeat. Costs always seem to be more significant than equivalent income. Based on experimental research, the theory of prospects makes a paradoxical conclusion: people are more willing to take a greater risk to avoid costs than to get an additional premium at a high risk. For example, mass storage of cash in the form of cash, despite the recommendations for more rational use and support of the national economy, is explained by the natural sense of "non-taking costs", reinforced by the negative experience acquired in times of hyperinflation, voucher privatization and "financial pyramids". Understanding the point of reference can have a great practical impact on the choice of consumers. The theory of prospects also notes that consumers, when estimating probabilities, sometimes pay much more to shift from small risks facing them to their complete elimination than they are willing to pay for a similar reduction in risks that remain even at the minimum value. Moreover, it is peculiar for a person to fixate on his initial choice (armature effect), and then make decisions that are consistent with him. At the psychological level, such a mechanism serves as a self-defense against an awareness of the fallacy of the decision taken. Thus the initial choice can be casual, but the following line of behavior will be quite natural. [16,p49] This phenomenon D. Arieli calls arbitrary coherence.

Errors of representativeness

No less important effect - the effect of negative hook - is to present an additional choice option only for fixing the attention of the consumer (Figure

2) in order to impose the most profitable purchase for the seller. In the first variant, the consumer chooses the classical "price-quality" scheme, in the second, the consumer, as a rule, chooses case A from any variants since he has the antiprim (-A) with which he can compare his preferences.



1) Effect of with hook (left picture) 2) Effect negative hook (right picture)

Fig 2 The effect of anti-bait when choosing from several alternatives

Source: Манахова И. В. Поведенческая экономика : учеб. пособие

In other words, additional information can distract consumers from more important factors, and this can adversely affect consumer choice and make them take less advantageous decisions. In his new work, D. Kahneman proposed the concept of a "two-path" psychology of decision-making, which the author calls "System 1" (fast, intuitive, heuristic) and "System 2" (slow, rational, accurate). The first works automatically and very quickly, without requiring any special effort from the consumer, and does not produce a sense of intentional control; the second - accentuates the attention necessary for conscious mental effort, requires energy expenditure. The actions of the second system are connected, in the scientist's opinion, with a subjective

sensation of activity, choice, and concentration. The instinctive use of the first system leads to the fact that many decisions made are irrational, both from the point of view of formal logic and the consumer's activity of the individual himself. As a result, such phenomena as excessive optimism, overconfidence, availability, hindsight bias, are not just typical, but also mass phenomena, as in economic practice, and in everyday life. Another behavioral trait related to uncertainty is excessive self-confidence. Economic agents often believe that they are inclined to experience results from some actions that are better than the average expected result. For example, if it is said that 20% of customers have benefited from a particular product, they will be inclined to believe that they will definitely join this group. Ungrounded confidence, which is the consequence of a successful coincidence of a predictable result, scientists call "illusion of validity." An interesting moment in the selection process is the relative probability. In Fig. 3, depending on the context, the circles in the center seem different, although in reality they are exactly the same.

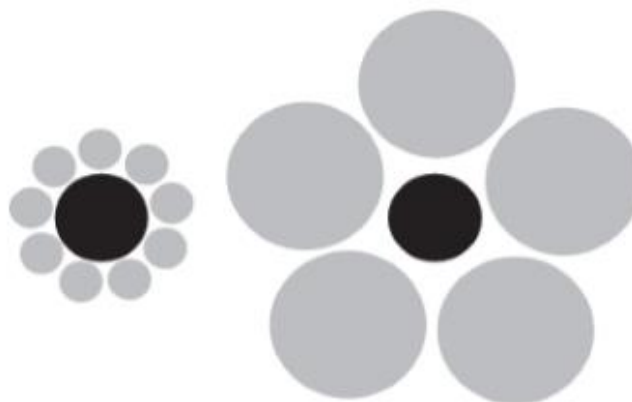


Fig. 3. Illustration of the principle of relativity in the selection process

Source: Манахова И. В. Поведенческая экономика: учеб. пособие

Behavioral researchers emphasize that this is how consumers make choices. The effect of relativity is closely related to the demonstration effect of consumption, in order to "keep up with the Joneses", consumers often imitate neighbors, friends, and television stars. As a result, consumers demand for goods not only in accordance with their functional qualities, but also their symbolic value. For a product with a sign value, the material component becomes less significant, the moral obsolescence occurs much faster than its physical wear, hence the intensity of its consumption increases. Scientists have found that people are more actively making purchases with electronic cards, they are easier to part with virtual money than with cash. Neuroeconomists note that credit cards parasitize on the dangerous shortage of the human brain. This defect is associated with emotions that tend to assess the immediate benefit (the purchase of a new thing) disproportionately high compared to future problems (high interest rates). Feelings are excited by the prospect of immediate reward, in such a situation a person is not able to deal with the long-term financial consequences of the decision. The emotional brain blocks information about interest rates, debt repayment, or loan costs. As a result, such areas of the brain as the island of Reilly do not react to operations in which credit cards are involved. Without resistance, people give in to impulses and make spontaneous purchases, making debts. The widespread use of credit cards reveals the irrationality of human behavior. Consumers make a choice every day from several alternatives, and each, in principle, can assess the possible consequences of decisions. People face constant trade-offs between today's consumption and consumption in the future; Moreover, the situation in which they are today depends largely on the choice made in the past.

Standard economic models of intertemporal decision making assume that consumers choose the value of current and future consumption by discounting, which is consistent with two periods of time, regardless of when the consumer makes estimates. Behavioral economics argues that consumers value the present more highly than other periods. Hence, short-sighted decisions are made regarding savings and loans. These consumers can, for example, take a small loan today at a higher interest instead of a larger loan in a year at a lower discount rate. Or, on the contrary, to open a deposit of 100 thousand for one year against 110 thousand in two years, which means a lower discount rate for one year (9%). This phenomenon calls "hyperbolic discounting." Such discounting has serious consequences for consumers, which means that they can make different decisions today, which will be regretted in the future. Consumers most affected by hyperbolic discounting tend to have larger amounts of debt than others. They probably face problems of self-management due to slowness and inertia, when a change in equilibrium requires efforts at present to gain more benefits gradually in the future.

Framing Effect

Studying the mechanisms of economic decision making, D. Kahneman and A. Tversky come to the conclusion that in practice the psychological frames exert a strong influence. The "framing effect," or framing effect, suggests that when a person faces a choice between identical problems, but one of them is described in a positive light, and the other in a negative light, the solution may have the opposite character. People respond to different signals and contexts. The effect of the frame in a certain way can induce consumers to evaluate the choice from a certain point of reference and see the results of

their choice in the ratio of "profit" or "loss." By providing a choice with the default option, you can prompt consumers to select this option, because "by default" becomes the reference point. Recent studies of pension savings have shown how the effect "by default" affects the results of pension savings at all stages of the life cycle, including participation in savings plans, asset allocation and the allocation of pension savings. For example, joining a Russian co-financing program requires writing an application and a personal application to the pension fund. This leads to the fact that many do not participate in this program, although the conditions are quite profitable, 50% per annum does not offer any bank. A possible explanation of the framing effect is that the framing changes the reference point of the decision making so that the final gain or loss is perceived differently and the risk vector changes. So, in the conditions of positive framing - this is avoidance of risk, and with negative framing - on the contrary. Hence the conclusion that emotions play an important role in the decision-making mechanism. People respond to different signals and contexts. Some experimental studies show that the availability of credit cards causes them, a neurotic dependence on consumers, and is associated only with purchases. Consumers ask for help in the fight against impulsive expenditure and in the development of self-control. Economists are trying to find ways to compensate for this behavior, using data on neuroimaging to create techniques and incentives that help people to restrain irrational impulses and make more rational decisions. D. Arieli describes several methods for reducing the cost of credit cards: the method of "ice glass" (home remedy for impulse spending - freeze the card in a glass of water, then wait for it to fall); blogging debtors on the Internet: automatic balance of credit cards. It is suggested that banks introduce credit cards of a new type, with an integrated self-control mechanism that limits

consumer impulses: in the product category, in a period of time, in each store. Exceeding the limit is punished with penalties: own internal tax, long-term deposit, charitable contribution, sending a message to the spouse, etc. It is necessary to introduce so-called "governors" for expenses in analogy with the method of regulating traffic speed on the roads, which will help consumers set an independent credit limit in an optimal way. Behavioral economics is based on the axiom of partial, but essential misunderstanding by individuals of the laws of market functioning, which is especially evident in periods of crisis phenomena. Individuals perceive only a small part of the total volume of information because of the complexity of the world economy. Therefore, despite the desire, they cannot exercise the optimal choice prescribed by the theory. However, agents are ready to correct their rules of behavior by the method of "trial and error."

Peculiarities of decision-making under conditions of risk and uncertainty

The problem of risks is actively investigated both in foreign and domestic scientific literature. M. Friedman and L. Savage (1948) [17,p49] investigated this problem economically, and then D. Kahneman, A. Tversky, P. Slovik (1979) studied this problem in the framework of behavioral and experimental economics. For research in this area in 2002, the Nobel Prize in Economics was awarded. At every stage of the development of society, there are various types of risks caused by the uncertainty of the situation in one or another area of economic activity, which is generated by the spontaneity of processes or the underestimation of the growing contradictions in society. For example, transformations in Russia are so rapid that consumers are not yet aware of the inevitability of risk-taking into

their lives. The urgency of researching the risks of consumers increases for several reasons:

- insufficient attention to the problem of consumer risks in the economic literature;
- Sharp deformations in the structure of income, consumption and savings of the majority of the Russian population;
- ignoring the world trends in the field of setting social standards, regulating labor relations;
- Weak legal framework for protecting consumer rights and the underdevelopment of consumerism.

The aggravation of the problem of consumption risks in the new conditions of the information economy requires the creation of an effective consumer risk management system. When developing measures to reduce and prevent these risks, it is important to take into account their economic content. The content of economic risks should be considered from the positions of general and specific. There are various interpretations of risks, reflecting the complexity and versatility of the phenomenon described and revealing the essence of all types of risks, including consumer ones. In general terms, risk is an economic category that expresses attitudes toward achieving a certain degree of success (failure) in the realization of its goals by a business entity, taking into an account controlled and uncontrolled factors of activity. Often risk is understood as the probability of occurrence of an event. In case of such an event, three economic outcomes are possible: negative (loss, damage, loss), zero, positive (win, chance, gain). This probability can be taken into account by ordering the expected impacts according to the probability of their occurrence. The risk is characterized by a unity of

objective and subjective principles. On the one hand, it is engendered by objective factors and exists independently of people's will and consciousness. On the other hand, the risk is connected with the choice of certain alternatives by a specific person, which carries the stamp of individuality, psychological make-up, personal motives. The emergence of risk is caused by the probabilistic nature of many processes, unforeseen, accidental circumstances, the multivariate nature of economic relations, into which the subjects of economic activity enter. The propensity of subjects to risk, in addition to their qualities, depends on the following factors:

- the actions of other business entities operating in the external environment;
- the availability of resources (it is believed that the more a person has a larger income, the less he is sensitive to risk and bolder to risky situations);
- information (incomplete, constantly changing or inaccurate information reduces the willingness to take risks).

Decisions are made by people usually in the absence of complete information and certainty. In such a situation, there is a risk that the desired result will not be achieved. The risk of the consumer's actions is connected with the possibility of making dangerous decisions and creating a risk in the process of executing these decisions, since any solution is realized under conditions where the first part can be considered deterministic, the second part is random, and the third one is undefined. The randomness and uncertainty of the conditions and situations can lead to negative deviations and deviations, and the more the share of random and uncertain decision-making conditions, the higher the risk of making and implementing dangerous decisions. At various stages of a person's life, these or other risk situations prevail. In the working age, the risk of job loss, deterioration in the financial situation, reduction of social

status for economic reasons, in the pension age, risks of hunger and poverty due to low incomes may increase. In the conditions of the Russian economy, which is characterized by a high degree of uncertainty, it is difficult to predict the development of events for the near future, not to mention the prospect of predicting the trend of changing factors during the life cycle of a person, which implies the impossibility of unambiguous anticipation of the expected result and risk occurrence. [18,p 49]It is especially important to take into account the uncertainty factor and the role of time in consumer decisions about saving. Savings are directed to the future. At the heart of every decision are future benefits. At the heart of every decision are future benefits. This stay in time has two trivial consequences: the past is irreversible, and the future is uncertain. Uncertainty must be distinguished from risk. At risk events are subject to the stated probability distribution and the spectrum of future events is known. With uncertainty, on the contrary, the spectrum of future events is not exactly known, hence the determination of the probability of an outcome is impossible. With uncertainty, the probability distribution of occurrence of certain events is unknown. The estimated net profit is calculated on the basis of pessimistic, optimistic and intermediate estimates. Ranked series of options and their acceptability are checked in terms of their sensitivity to changes in living conditions. Depending on the individual attitude toward risk, people make decisions that they personally consider correct. Depending on the different attitude of consumers to risk, several types can be distinguished:

A) risk-taking - people who are at risk, easily at risk (assuming that the winnings may be less than the initial contribution);

b) Risk-Neutral - individuals who are neutrally related to risk (counting on the expected gain);

c) Riskophobes are opponents of risk (they invest funds that are strictly less than the expected income). Each subject of consumption is to some extent able to identify the risks to which it is exposed. However, not all risks can be managed independently. In many cases, the risk is when external circumstances require it. At the same time, most agents do not expect to get a big gain, but only try to avoid losses. Often this leads to the choice of a slower but more reliable option. To analyze the decision-making of economic agents in a risk situation, the criteria "maximin" and "minimax" are applied. The criterion "maximin" implies the disinclination of the person making the decision to risk. This person will assume the worst outcome, which must be taken into account with each option. Choosing the option that brings the maximum benefit of the minimally estimated benefits for all projects. Under the "minimax" criterion, the maximum losses of various variants are evaluated and the one whose maximum losses are the lowest is chosen. The following characteristics are inherent in the risk:

- uncertainty of the external environment;
- the need to choose a solution from a number of alternatives;
- the possibility of obtaining an ambiguous result;
- peculiarity of the behavior of subjects. Risk as an economic category is understood as contradictory multi-level relationships between economic entities in the context of uncertainty about the alternative choice of solutions to achieve a satisfactory result, provided that possible control over the risk situation. Depending on various factors, different types of risks arise at different levels, differing in the degree of impact on the consumer and the consequences. We can distinguish economic, financial, social, natural and technogenic, (geopolitical), information risks. The largest group consists of economic risks that correlate with economic causes of their occurrence, they

include the risks of loss of basic income, unforeseen expenses, property, lost profits, etc. Specific features of risks are due to the multifaceted nature of man, the unity of the biological, social, economic, consumer began. The realization of all aspects of human life is hampered by a variety of internal (heredity, abilities, financial position) and external (natural, economic) factors, leading to losses or gains.

Chapter 4: Behavioral Macroeconomics

Macroeconomics had been for a long time to return where a behavioral turn in macroeconomics appeared novel. Thus, Macroeconomics started as a behavioral discipline where included behavioral elements for more than half of its history. Macroeconomic phenomena were explained psychologically by 2 economists Fisher (1928) and Pigou (1929) where Fisher described and analyzed the effects of money illusion and Pigou saw shifts in profit expectations as a driving factor of business cycles since they influenced investment. In that theory, expectations are driven by waves of optimism and pessimism and expectation errors. The idea about expectations which might be an exogenous factor that influences macroeconomic conditions can also be found in The General Theory of John Maynard Keynes (1936).⁴ [19, p 50] Katona (Katona 1951; 1975) was another significant behavioral macroeconomist. Katona obtained the doctorate in experimental psychology, however, devoted most of his academic life to the study of macroeconomic issues: inflation, aggregate consumer spending and saving, and the formation of expectations. In contrast to Keynes, Katona's work was mainly empirical

⁴ M. Roos European Journal of Economics and Economic Policies: Intervention, Vol. 14 No. 2, 2017, pp. 186–199, Behavioral and complexity macroeconomics

and culminated in the establishment of consumer and business confidence indexes first in the US and now in many other countries. Katona was the first who performed repeated representative surveys among consumers and firms on their economic expectations and attitudes and thus made aggregate economic expectations measurable. Despite his merits for the empirical research on macroeconomic expectations, Katona is not well-known among macroeconomists. This neglect by macroeconomists can be explained by the way Katona processed his empirical findings theoretically. He did not want to develop an abstract economic theory about aggregate consumer behavior in the way traditional economists typically do it. Katona, instead, tried to formulate a new low-level theory that organized his empirical observations with the aid of some concepts that are well established in psychology (Wärneryd 1982). He also highlighted that consumers often do not make decisions, but, instead, follow habits, and that subjective factors or intervening variables are crucial for predictions of economic behavior. Katona never claimed that he had developed a complete theory of consumer behavior similar to economic theories, but what he did achieve is some macro-psychological theory of consumer behavior which is not readily compatible with traditional economic models. The biggest achievement in exploring the applied behavioral economics in Macro context is written by George Akerlof – Behavioral Macroeconomics and Macroeconomic Behavior. The “new” macroeconomics theory was a step forward in at least one respect: price and wage decisions were now based upon explicit micro-foundations. However, the behavioral assumptions were so primitive that the model faced extreme difficulty in accounting for at least six macroeconomic phenomena. Sometimes logical inconsistency with critical assumptions of

the new classical model led to outright denials of the phenomena in question; in other cases, the explanations offered were merely tortuous.

In the late 1960's. The new classics saw the same shortcomings of the microeconomic foundations of macroeconomics as I did. They were irritated by the lack of rigor in Keynes's theory. And the new classics refused it. They then arranged a festive fire, publishing a paper entitled "After the Keynesian Macroeconomic Theory" (Lucas, Sargent (1979)) [20,p 50]. In the 1970s. The new version of the macroeconomic theory that they created became generally accepted. Like its predecessor - the neo-classical synthesis - the new classical macroeconomic theory was based on the model of general competitive equilibrium. However, unlike the supporters of the neoclassical synthesis, the new classics insisted much more strongly that all decisions - households regarding the consumption and supply of labor, firms relative to output, employment, and prices, as well as negotiations between employees and firms on the size of wages - correspond to the maximizing behavior. Thus, the new classical macroeconomic theory abandoned the premise of the rigidity of nominal wages. The existence of unemployment and economic fluctuations of the new classics was first explained by the imperfection of information, and then by technological shocks. The new theory represented a step forward in at least one respect: now decisions on prices and wages were based on explicit microeconomic grounds. However, the behavioral prerequisites were so primitive that the model encountered enormous difficulties in explaining at least six macroeconomic phenomena. In some cases, the logical incompatibility of the key prerequisites of the new classical model led to a direct negation of the phenomenon under consideration; in others, the proposed explanations were simply inconclusive. These six phenomena include:

- **The existence of involuntary unemployment.** In a new classical model, an unemployed person can easily get a job, agreeing only on a somewhat smaller amount than an equilibrium salary; so involuntary unemployment no longer holds.

- **Impact of monetary policy on output and employment level.** In the new classical model, monetary policy is inefficient for changing output and employment levels. Since changes in the supply of money are completely predictable, prices and wages change proportionately; the real wage and relative prices are constant. Consequently, the monetary policy does not have any impact on real indicators of the functioning of the economy.

- **The failure of deflation to accelerate in conditions of high unemployment.** A new classical model gives the "accelerating" Phillips curve with a single value of the natural rate of unemployment. If unemployment falls below this natural level, inflation accelerates. If unemployment exceeds the natural level, then the rate of inflation is constantly decreasing.

- **The prevalence of undersavings by the time of retirement.** In the new classical model, individuals make decisions about how much to consume and how much to save in order to maximize the intertemporal utility function. Therefore, the level of savings determined privately should be close to optimal. However, individuals tend to be disappointed by their level of savings and the lack of social insurance programs. It is widely believed that in the majority of people, insufficient savings are realized. As a result, programs to stimulate savings to become extremely popular.

- **Excessive price fluctuations in the securities market compared to their fundamentals.** The new classical theory suggests that prices on the securities market reflect fundamental market conditions, that is, the discounted value of future cash flows.

- **The stubborn persistence of a self-destructive underclass.** The list of macroeconomic issues that need to be explained includes the issue of the causes of poverty because the problem of income distribution belongs to the field of macroeconomics. Neoclassical theory suggests that poverty is the consequence of a lack of basic stocks of human and other capital. This theory cannot explain the persistent extreme poverty, as well as the widespread incidence of drug and alcohol abuse, illegitimate children, single-parent families, strong dependence on social benefits and crime.

Asymmetric Information

Asymmetric information is a situation where important information is available to one market participant, and other stakeholders are not. When analyzing a market with high competition, usually, an abstract model with all the conventions inherent in it is created. It is assumed that in this market information is distributed symmetrically, i.e., all participants have the same access to it. Uncertainty is completely absent, which makes it possible to use available means and resources in the most effective way. But in real life, there is no perfect competition model. There is asymmetry of information and uncertainty - lack of information about possible future events. In economic theory, there are different points of view at the expense of uncertainty. Supporters of the neoclassical school believe that it prevents economic agents from behaving rationally and is an obstacle to the effective use of resources. But there is another point of view, according to which the possibility of the

market is precisely the ability to use information that was initially inaccessible to many. A similar point of view was held by F.A. Hayek, who argued that the benefits only appear if the information is initially not available to everyone; an entrepreneur who has the information gets the opportunity to make a profit for a period of time until the full access to the information is obtained by other economic agents in the market. According to neoclassicists, the asymmetry of information is one of the reasons for the fiasco (market insolvency). What is the reason for this? Because of the asymmetric information, externalities (externality effects) appear, representing the benefits or costs received by the participants in the transaction that were not specified at the time of the conclusion of the transaction. [21,p 50]

Involuntary Unemployment

Recall that neoclassical theory does not recognize the existence of forced unemployment, because it believes that any unemployed person can find work by offering his labor at a price lower than the market. Keynes, on the other hand, believed that involuntary unemployment was a consequence of sustained restrictions on demand in the labor market. J. Akerlof complements the Keynesian theory with arguments for the behavioral plan, for example, the theory of incentive pay, noting that factors such as "labor morale, justice, insider or asymmetric information, give employers a substantial reason to pay more than the minimum amount that can attract them. incentive payment is higher than the labor market that cleanses, so jobs are rationed, and some workers cannot get them. "It is these employees who are forced to work without work." J. Akerlof explains these factors by the fact that the relationship between the employer and the employee is based on a mutually beneficial basis: the firm pays employees a high salary, and employees meet a

firm fidelity to the firm's interests. The merit of J. Akerlof is the development of the problem of information asymmetry. In his opinion, the asymmetry of information can lead to opportunistic behavior among workers, and increased earnings act as a disciplinary measure. Workers can spend less effort according to how much their payment is less than what they think is fair. The "insider-outsider" model allows explaining the phenomenon of involuntary unemployment through the actions of insiders (employed workers), which prevent the company from hiring outsiders with lower wages. "Conspiracy of insiders against outsiders compels many firms to pay labor above the market level".

The effectiveness of Monetary policy

The central thesis of the new classical economic theory is that monetary policy, to the extent that it is completely predictable, does not affect the volume of output or the level of employment. Since the changes in the supply of money are completely predictable, rational subjects that establish nominal prices and wages change them in the same proportion, leaving real indicators (output and employment level) unchanged. However, this hypothesis of new classics does not correspond to empirical facts. The main achievement of the behavioral macroeconomic theory is the demonstration that, under reasonable behavioral assumptions, monetary policy has an impact on real indicators. Almost rational price rigidity remains sufficient for monetary policy to be very effective. This conclusion was demonstrated by J. Akerlof in the context of the model with effective wages and monopolistic competition. When setting prices, some firms adhere to the "thumb rule" and do not change prices after the shock of demand (caused by a change in the supply of money). The losses of firms using the "thumb rule" due to the inability to

adjust prices after a change in the money supply are first-order losses (insignificant), while the impact of monetary shock on output in this economy is first-order (or significant) with the scale of this shock. In conditions of monopolistic competition, it is possible to calculate the second derivative function of the profit of each firm at a price; as a result, if the firm establishes an optimal price, the profit will be zero. Consequently, any deviation from the maximizing price profit leads to losses that turn out to be small, i.e., the second order in comparison with the magnitude of this deviation. However, if the deviations from the optimum of a large number of firms are similar, for example, they all slowly adjust prices following the change in the money supply, then the real cash balances-the money supply deflated by the price level-change by a value of the first order in comparison with the situation of the fully optimal pricing. In turn, this change in cash balances causes a change in aggregate demand, output and first-level employment.

The Phillips Curve and the Nairu

Considering the Phillips curve as one of the important macroeconomic dependencies, J. Akerlof expresses doubts about the hypothesis of the natural rate of unemployment. He writes: "With a very low unemployment rate, the Friedman-Phelps forecast of accelerating inflation seems to be very probable and empirically justified, but I doubt the applicability of this theory in conditions of high unemployment" . Numerous empirical studies confirm the fact that nominal wages are harsh in the downward direction. Keynes' assumption that workers resist a reduction in nominal wages was due to his intuitive understanding of psychology. The theory of perspectives asserts that individuals evaluate the changes in conditions from the point of view of subsequent gains or losses, comparing them with a certain initial level

(nominal wage serves as such a starting point). The facts indicate that individuals are paying more attention to avoiding losses than getting any winnings. In conditions of low inflation, there is a long-term choice between output and inflation, if nominal wages are reduced reluctantly. The imitational model with inter-sectoral shocks, the refusal of some firms to reduce nominal wages and realistic parameters suggests that in conditions of very low inflation rates at low growth rates of labor productivity, the choice between inflation and unemployment is very difficult. For example, a continuous reduction in the rate of inflation from 2% per year to zero leads to an increase in the unemployment rate by about 2 percentage points. The construction of the Phillips curve based on the US data of the Great Depression period, corresponding to the described simulation model, yields similar results. In contrast, a comparable standard imitation model of the natural level of unemployment indicates the acceleration of deflation in the 1930s, which is not true. An alternative behavioral theory proceeds from the fact that, since inflation is not evident at low rates, the expected future price changes are not taken into account when negotiating the level of wages. Demonstration by the representatives of the behavioral macroeconomic theory that the costs of very low inflation are consistently high unemployment and a small amount of output has important implications for monetary policy.

Undersavings

The wide prevalence of underaccumulation of pension funds. It is generally accepted that the financial assets of most households are significantly smaller than necessary to maintain consumption after retirement at an unchanged level. According to the new classical economic theory, too large or too small savings are impossible, as is involuntary unemployment - this directly

contradicts the assumptions of the model. Since savings result from the maximization of utility, in the absence of external effects, they must be fully adequate. However, representatives of the behavioral macroeconomic theory have developed theoretical tools and strategies for conducting empirical studies that make it possible to understand the causes of such inconsistent behavior in time. The main theoretical innovation is the recognition of the fact that individuals can maximize the utility function, different from the one that reflects "real well-being." After recognizing this difference, the concept of "too small savings" becomes meaningful. To formalize the difference between the utility function describing the actual behavior in the savings area and the utility function that measures the level of welfare caused by such behavior, it is proposed to use the hyperbolic discounting function that is used in the study of the intertemporal choice of the amount of savings. Unlike the exponentially decreasing discounting function, which is standard for neoclassical theory, the hyperbolic function assumes that the discount coefficients used in estimating the choice between consecutive periods decreases with increasing time horizon. Individuals use high discount rates in assessing options that require an immediate victim to be paid in the future and lower discount rates when this victim is to be brought in the future. Thus, individuals allow for a choice that implies a deferral of remuneration, provided that the victim's sacrifice is also postponed, but do not agree to defer payment in the short term. Since current consumption is more important than future consumption, individuals save their savings from day to day. The hyperbolic function is in good agreement with the empirical data. The concept of hyperbolic discounting was used as the basis for a program of research of behavior and policy in the field of savings. The result of small changes in incentives for savings, the introduction of tax incentives is a powerful positive impact on well-being. If

firms decide to implement a savings plan that allows employees to transfer a certain percentage of their wages to non-taxable accounts, employees automatically become participants. Along with the popularity of social insurance and other programs that "force" consumers to save, the best evidence of the insufficiency of savings is the fact that after retirement, individuals tend to reduce consumption significantly. And this reduction is uneven among different individuals. More affluent individuals with high incomes, reduce consumption to a much lesser extent. This result is difficult to explain using a standard life cycle model based on exponential discounting.

Asset Market

"General theory ..." Keynes served as a source of modern behavioral approach to finance regarding asset markets. Securities markets are too volatile and, also, too sensitive to the emergence of new information. This approach to the securities market differs from the efficient markets model, in which stock prices reflect the present value of future profit, adjusted for risk. Numerous studies conducted by American economists questioned the rationality of participants in the securities market, the hypothesis of the effectiveness of markets. Such facts are the so-called "soap bubbles" widespread on the securities markets, the "riddle" of premiums for shares (the premium per share is the difference between the market and nominal price of shares) - for 200 years the yield of the shares was significantly higher than the yield of bonds, and other examples. J. Akerlof, relying on empirical facts from the American economy of the 20th century, points out that asset markets are important not only on their own - they affect the economy at a macro level through at least three channels. First, the value of assets determines the amount of wealth and thereby the volume of consumption. Secondly, the price of existing assets

compared to the price of new capital affects investment, since investments can be considered as arbitration between the purchase of a new drop on the commodity market and the acquisition of assets similar to those available on the securities market. Thirdly, the value of assets determines the probability of bankruptcy of firms. Firms close to the state of bankruptcy, face difficulties or impossibility of borrowing and, consequently, refuse profitable investment projects.

Poverty and Identity

The next macroeconomic phenomena had been concluded by analyzing the reasons for the persistent inequality (in income and social status) between the white majority and the Negro minority of the US population. The problem of sustainable poverty and poverty is treated not to them in the socio-class, but in the socio-racial aspect. Neoclassicism treats poverty as a consequence of the low initial level of human and resource capital, and nothing says about the connection between permanent and deep poverty with factors of social degradation⁵. [23,50]The author believes that it is possible to understand the self-destructive behavior of a significant part of the "black" population of the US only taking into account the psychological factor, like self-identification, and the role of decisions that the individual takes as to who he should be. In the theory of poverty, J. Akerlof, disadvantaged races or classes are put before a difficult choice: either choose "self-identification with a dominant culture" and encounter (with greater probability) a negative attitude towards oneself from the family, close ones and friends who remain outside this culture, or identify with a historically determined alternative, which for many minorities

⁵ Kolstad, Hans. "The Welfare State System Confronted with the Human Rights Principle." Social Development Issues, vol. 37, no. 2, Lyceum Books, Inc., May 2015, p. 1.

is counterculture. In the latter case, "self-realization" will mean "self-destruction," since the requirements of the counterculture are economically and physically debilitating behavior. The theory of "self-identification of the minority poor", considered by J. Akerlof as an integral part of the behavioral macro theory, implies a different social policy than that which follows from the standard neoclassical theory, suggesting that if the price is raised, ie, the severity of punishment for the crime committed, then crime will decline. However, prisons are full, and crime does not stop. According to Akerlof, "... the prison itself is a school of countercultural self-identification and, consequently, a fertile ground for future crimes." Therefore, measures to prevent crime are much more effective: drug treatment, rehabilitation programs and public works for "street" adolescents, an increase in the cost of school education in areas with the Negro poor, the cost of additional teachers and personal work but the correct self-identification, etc.

Conclusion

Behavioral economics is a new perspective direction of research, which in many respects has changed the face of modern economic science. Although most of the formal models used by economists continue to be built on the basis of the principle of perfect rationality, the behavioral economy has presented numerous empirical evidence of how deviantly the behavior of people in real life deviates from it. In many respects, thanks to it, experimental methods of analysis have widely penetrated economic research, which it was impossible to think about half a century ago. She has identified and described a variety of cognitive and behavioral anomalies to which limitedly rational individuals are exposed. This coup was carried out by her in normative economic analysis, where she rejected the traditional anti-

paternalist attitude for economists. However, contrary to the initial impression, the attitude of the behavioral economy to the conventional rational choice model is far from unambiguous. It rejects it as a descriptive theory, but retains it as a normative ideal, the approach to which is regarded as an unconditional benefit. The most effective means to achieve this goal is the establishment of a more detailed guardianship of the state over society. In this sense, the situation with the idea of perfect rationality is very similar to the situation with another basic idea of neoclassical economic theory - perfect competition. Modern economists likewise tend to reject the model of perfect competition as an adequate description of the economic reality, but likewise tend to accept it as a normative standard, on which they urge the state to orient. History, as we see, is repeated.

Thirty years have passed since the beginning of the revolution in the theory of economic growth, which subsequently affected the entire microeconomic theory. At present, the new microeconomic theory is a standard part of all postgraduate study programs, which is studied for one year out of two. Recognition of the new macroeconomic theory took place more slowly; however, the revolution takes place here too. If there is any division of economic theory, which should be behavioral, then this is a macroeconomic theory. In this article, I showed that reciprocity, fairness, identity, monetary illusion, loss aversion, gregariousness and delay for the future help explain the significant deviations of the real world economies from the model of general competitive equilibrium. From my point of view, the main conclusion of the article is that the macroeconomic theory should be based on similar behavioral aspects.

To date, the most significant contribution to behavioral economics has been

The theory was introduced by Keynes's "General Theory." Almost in all his works, Keynes considered psychological factors (for example, consumption) to be market failures and irrationality (for example, when speculating on the securities market). Immediately after the publication of his book, economists adopted the Keynesian economic theory. They recognized this theory because they were able to express it in the corresponding mathematical form inherent in the classical economic theory (Hicks (1937), Patinkin (1956)). [24,p 50] [25,p 50] A modern behavioral economic theory has rediscovered to us the wild side of macroeconomic behavior.

Recommendation

As we see one of the fundamental problems was the asymmetry information. Let's discuss the mechanism of reducing this phenomenon.

You can create a situation in which consumers will be able to protect themselves beforehand from the acquisition of low-quality goods and services. It should be noted that asymmetric information can arise not only in the market of goods, but also in the market of insurance services, the labor market, the market of borrowed funds, etc. Perhaps the most common way to reduce the asymmetry of information is market signals, or, in other words, information about the economic good transferred from the seller to the buyer. The author of the idea of market signals is the 2001 Nobel Laureate American economist Michael Spence. What is a market signal? Here we can strongly say that the first thing that comes to mind is an advertising. But advertising does not provide a reduction in asymmetry, since it can also refer to a quality and low-quality product. Therefore sellers need to submit not an ordinary, but an effective market signal, i.e. a signal that high-probability sellers of goods of high quality, rather than low, can supply. Also, the market signal can serve

as the appearance of the product - quality seams on clothes, good furniture finish, aesthetic appearance of food products, etc. - correspond to a higher quality of the product itself; Diplomas and certificates on the labor market; reputation of the seller, etc. Michael Spence analyzed such a signal in the labor market as education. In what way can the employer know about the quality of the goods purchased by him, i.e. labor services? How to recognize a more skilled worker among a multitude of low-skilled workers? After all, the appearance of the applicant in an interview is not easy. Expensive suit, neat appearance, high-quality make-up, correctly delivered speech, etc. nothing says about the professional skills of a person who came to get a job. Education in M. Spence's model is an effective market signal. It speaks about the capabilities of the future worker, since capable people often graduate from universities, institutes, colleges, etc. Thus, employers when hiring new employees have the opportunity to reduce or avoid asymmetric information that arises in the labor market with the help of such a market signal, as an education. Also, as market signals can be considered guarantees and obligations. Usually, only those firms that produce high-quality goods provide long-term guarantees and assume that ensuring such obligations will not become very frequent. And firms that produce goods of poor quality, on the contrary, are not interested in guarantees with long terms, which, in this case, will surely have to be satisfied. Hence, guarantees can be regarded by buyers as signals about high quality of the goods and they will be ready to pay more for the goods sold with guarantees. Increases the effectiveness of the market signal combination of guarantees of the company with its positive reputation. The promise of a little-known firm guarantees does not create confidence in the consumer that he buys a quality product.

Another way to reduce the asymmetry of information is government intervention. Here the ideas of the behavioral economy proved to be extremely attractive for the current politicians of many countries, and from very different parts of the ideological spectrum. So, B. Obama actively used them during his election campaigns, and becoming the president of the United States; he repeatedly referred to them in his speeches. Time Magazine named a group of his closest advisers a "behaviorist dream team" whose goal is "to transform the country," based on the development of the behavioral economy (Grunwald, 2009).[26,p 50] One of the main propagandists of the "nudge" policy, K. Sunstein, was appointed by President Obama as the head of the Information and Regulatory Division of the US Department of the Budget Control, where he supervised the regulatory activities of all US federal executive bodies. (Through the preliminary control of this, as it is unofficially called, "the regulator king," any decisions being prepared in the presidential administration must be overlooked.) British Prime Minister D. Cameron also has a sustained interest in the ideas of behaviorists. Within the framework of his Cabinet, he created a special unit - the Behavioral Policy Development Group, and the main guru of the behavioral approach, R. Thaler, was invited to serve as an informal adviser (Wintour, 2010)[27,p 50]. According to Cameron, the behavioral policy of "pushing" is an excellent mechanism, "by which you can convince citizens to choose what is best for them and society" (Basham, 2010). [28,p 50] Thus, the distance between the promotion of behaviorist normative recommendations and the first attempts at their practical implementation turned out to be extremely short. In the past, the new theoretical ideas of economists could take hold of the minds of politicians and the general public, the time was usually much longer.

References

1. Ashraf, Nava, Colin F. Camerer, and George Loewenstein. (2005) "Adam Smith, Behavioral Economist." *Journal of Economic Perspectives*, 19 (3): 131-145.
2. Avtonomov V.S. "Model of man in economics" (1998) – СПб. :
Экономическая школа
3. Glaeser E.L. Psychology and the Market // *American Economic Review*. (2004) Vol. 94. No. 2. P. 408–413.
4. Watson, J. B. (1913). Psychology as the behaviorist views it. *Psychological Review*, 20(2), 158– 177.
5. Amos Tversky; Daniel Kahneman (1986), *The Journal of Business*, Vol. 59, No. 4, Part 2: The Behavioral Foundations of Economic Theory, pp. S251-S278.
6. https://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2002/press.html
7. Simon H.A. A Behavioral Model of Rational Choice // *Quarterly Journal of Economics*. 1955. Vol. 69. No. 1. P. 99–118.

8. Simon H.A. Behavioral Economics // The New Palgrav / ed. by J. Eatwell, M. Milgate and P. Newman. N.Y.: W.W. Norton, 1987b.
9. Simon H.A. Bounded Rationality // The New Palgrave / ed. by J. Eatwell, M. Milgate and P. Newman. N.Y.: W.W. Norton, 1987a.
10. Sent E.-M. Behavioral Economics: How Psychology Made Its (Limited) Way Back Into Economics // History of Political Economy. 2004. Vol. 36. No. 4. P. 735–760
11. Katona G. Psychological Analysis of Economic Behavior. N.Y.: McGrawHill. 1951.
12. Thaler R. Toward a Positive Theory of Consumer Choice // Journal of Economic Behavior and Organization. 1980. Vol. 1. No. 1. P. 39–60.
13. Thaler R. Mental Accounting and Consumer Choice // Marketing Science. 1985. Vol. 4. No. 1. P. 199–214.
14. Tversky A., Kahneman D. Rational Choice and the Framing of Decisions // The Journal of Business. 1986 Vol. 59. No. 4. Part 2. P. S251–S278.
15. G. A. Akerlof and Robert J. Shiller (2009). Animal Spirits: How Human Psychology Drives the Economy and Why It Matters for Global Capitalism. Princeton, NJ: Princeton University Press. 230 pages
16. Tversky A., Kahneman D. Rational Choice and the Framing of Decisions // The Journal of Business. October, 1986. Vol. 59. N 4. Part 2: The Behavioral Foundations of Economic Theory. P. 251>278.
17. Milton Friedman and L. J. Savage, (1948), The Utility Analysis of Choices Involving Risk, Journal of Political Economy, 56, 279
18. Манахова И. В. М23 Поведенческая экономика : учеб. пособие для студентов специальности 38.05.01 Экономическая безопасность, специализация «Экономико-правовое обеспечение экономической безопасности» / И. В. Манахова. – Саратов : Саратовский социально-

- экономический институт (филиал) РЭУ им. Г. В. Плеханова, 2017. – 120 с.
19. M. Roos, *European Journal of Economics and Economic Policies: Intervention*, Vol. 14 No. 2, 2017, pp. 186–199, Behavioral and complexity macroeconomics
20. R. Lucas and T. Sargent *Quarterly Review*, 1979, issue Spr, No v. 3, no. 2
21. Худокормов А. Г. Указ. соч. С. 42
22. Худокормов А. Г. *Экономическая теория: новейшие течения Запада: учеб. пособие*. М.: ИНФРА-М, 2009. С. 41.
23. Kolstad, Hans (2015) “The Welfare State System Confronted with the Human Rights Principle.” *Social Development Issues*, vol. 37, no. 2, Lyceum Books, Inc., p. 1.
24. Hicks, J. 1937. Mr Keynes and the ‘classics’: a suggested interpretation. *Econometrica* 5, 147–59.
25. Patinkin, D. 1956. *Money, Interest and Prices*. New York: Harper and Row
26. Grunwald M. How Obama Is Using the Science of Change // *Time Magazine*. 2009.
27. Wintour P. David Cameron’s ‘Nudge Unit’ Aims to Improve Economic Behaviour // *The Guardian*. 2010. 9 September.
28. Basham P. (2010) *Are Nudging and Shoving Good for Public Health? A Democracy Institute Report*.

Bibliography

- Akerlof G. and Robert J. Shiller (2009). *Animal Spirits: How Human Psychology Drives the Economy and Why It Matters for Global Capitalism*. Princeton, NJ: Princeton University Press. 230 pages
- Ariely D. *Predictably Irrational*. Harper: Harper Collins Publishers, 2008.
- Kapeliushnikov, R. I. Behavioral economics and new paternalism [Text] : Working paper WP3/2013/03 / National Research University “Higher School of Economics”. – Moscow : Publishing House of the Higher School of Economics, 2013. – 76 p.
- Katona G. *Psychological Analysis of Economic Behavior*. N.Y.: McGrawHill. 1951.
- Samson, A. (Ed.)(2014). *The Behavioral Economics Guide 2014* (with a foreword by George Loewenstein and Rory Sutherland) (1st ed.). Retrieved from <http://www.behavioraleconomics.com>
- Samson, A. (Ed.)(2015). *The Behavioral Economics Guide 2015* (with an introduction by Dan Ariely). Retrieved from <http://www.behavioraleconomics.com>
- Samson, A. (Ed.)(2016). *The Behavioral Economics Guide 2016* (with an introduction by Gerd Gigerenzer). Retrieved from <http://www.behavioraleconomics.com>.
- Samson, A. (Ed.)(2017). *The Behavioral Economics Guide 2017* (with an introduction by Cass Sunstein). Retrieved from <http://www.behavioraleconomics.com>
- Tversky A., Kahneman D. Rational Choice and the Framing of Decisions // *The Journal of Business*. 1986 Vol. 59. No. 4. Part 2. P. S251–S278.
- Манахова И. В. М23 Поведенческая экономика : учеб. пособие для студентов специальности 38.05.01 Экономическая безопасность, специализация «Экономико-правовое обеспечение экономической безопасности» / И. В. Манахова. – Саратов : Саратовский социально-

экономический институт (филиал) РЭУ им. Г. В. Плеханова, 2017. –
120 с.