Стопански факултет

Социално-икономически анализи

Книга 2/2021 (20)

DOI: 10.54664/DJGN6124

Maya Tsoklinova*

THE MODEL OF BOUNDED RATIONALITY: A NEW METHODOLOGICAL TOOL OF ECONOMIC THEORY

Abstract: The main purpose of this article is to study and analyze the economic behaviour of market participants in real conditions, and to outline the very natural trait of individuals to show bounded rationality. The theoretical framework of bounded rationality is presented, and a comparative analysis is carried out between the neoclassical theory of rational behaviour and the concept of quasi-rational economic agents according to behavioural economics. Special emphasis is placed on the correlation between the decision-making process and the concept of limited rationality. This article confirms the thesis that the model of the rational economic individual is not the best model. Research in this area proves that this model has great imperfections, but, at the moment, the empirical material is still not enough to create another, newer and practically applicable model of behaviour of the real economic person, which is characterized by bounded rationality.

Keywords: neoclassical theory; economic behaviour; bounded rationality; model; economic choice.

Introduction

The article is focused on the analysis of the economic behaviour of market participants and the following problem areas:

1. Whether the neoclassical behavioural model is practically applicable, established as a standard through which the individual behaviour in the market is analyzed;
2. The economic agents are completely rational, as described by the neoclassical economy;
3. The theoretical foundations of bounded rationality are laid, and the economic agents are defined as quasi-rational, with an emphasis on the behavioural elements in the decision-making process.

Herbert Simon's name is associated with the study of the concept of *bounded rationality*, especially in relation to economic activities in the decision-making process[1]. Economics pays serious attention to the factors that influence the decision-making process. Based on classical and neoclassical economic theories, economic conditions, including commodity prices, financial resources and prices of production factors, are of the utmost importance for the decision of economic entities to consume and/or produce. Perhaps through neoclassicism, attention began to be paid to the individual traits of the character of economic decision-makers. In particular, the neoclassical school of economics focuses on the subjective feelings of economic agents and outside market factors that influence them in the decision-making process concerning an economic activity.

According to classical economic theory, economic agents are always characterized by rational behaviour, which is a prerequisite for maximizing the economic activity they perform. This rational

* **Maya Tsoklinova** – Associate Professor, PhD, University of Forestry (Bulgaria), Department of Economics and Management of Natural Resources, e-mail: malenna85@yahoo.com

[1] **Simon, H.** *Models of My Life*, Cambridge, MA: The MIT Press, 1996, originally published: New York: Basic Books, 1996.

behaviour is inherent in everyone in the market. In addition to the above, rational behaviour is not influenced by external factors; it is a constant characteristic of economic behaviour. In this way, classical economic models build the vision of the rational economic man, who does not make mistakes and is not influenced by behavioural traps.

The theoretical views of economic theory that explain the irrational behaviour of market participants, are becoming quite different. Behavioural economics updates the classical economic models, and pleads for putting the economic subjects in real conditions. Also, behavioural economics refutes the classical claim of permanent rationality in the behaviour of economic agents, and introduces the concept of bounded rationality. The latter means that economic agents do not always act rationally. This means that permanent rationality does not exist in the current economic situation[2].

Conceptual Framework of the Theory of Bounded Rationality

The theory of bounded rationality is associated with the name of Herbert Simon who devoted most of his career to the study of human behaviour. In his works, attention is focused not so much on economic processes and phenomena as on the economic agent him-/herself with his/her specific characteristics, performing economic activities. Emphasizing the behavioural characteristics in the process of commercial communication between market participants, the Nobel laureate laid the foundations on which behavioural economics subsequently developed.

For H. Simon, the distance between rationality and behaviour is overcome by the concept of *decision*. In this sense, choice is the process of deciding to choose one of the many possible alternatives to behaviour to be realized. Microeconomics places special emphasis exactly on this decision-making process and the benefits, respectively the losses, introducing the marginal approach in its methodological tools. Each behaviour includes a selection of different options, the implementation of which is associated with decision-making and leads to a specific result. The alternative to the choice and the respective decision taken is the basis on which behavioural economics develops, because in this decision-making process, in addition to the purely market factors, the intrinsic ones of the respective economic agent also appear. The degree of rationality is manifested in purely behavioural characteristics which, according to behavioural theorists, are different as a force for individuals. This means that permanent rationality, the same for each individual, does not exist. Here it is necessary to clarify that rationality is perceived as a criterion used in the decision-making process. The outcome of the decision-making process itself largely depends on the rational behaviour of economic agents. Assuming that each individual is rational in his/her actions, as classical theory suggests, means that the end result of each decision and each choice is the same for each economic agent – reaping the maximum benefit because of this built-in rationality in human behaviour.

When analyzing the behaviour of economic agents in relation to the concept of rationality, which neoclassical economic theory defines as an intrinsic characteristic of man, it is necessary to conduct a comprehensive and multifaceted study of the concept[3]. Based on the research of H. Simon, it can be concluded that rationality is the result of the relationship between the goals set and the means used to achieve them. In terms of this ratio, it is essential to consider the actual possible behavioural possibilities, to distinguish the probable consequences of choosing one of the possibilities and, last but not least, to compare the possibilities and what they would generate in the future as a utility for individuals.

Global Rationality and Decision-Making Theory

When analyzing bounded rationality in the work of H. Simon, it is necessary to emphasize his bias towards the model of global rationality. The latter affects all economic operators who are incapable of fulfilling in practice the conditions listed above. Global rationality is related to the limitations of knowledge, and to the inability of the brain to know everything. In other words, by analyzing the behaviour of

[2] **Klaes, M., & Sent, E.** A Conceptual History of the Emergence of Bounded Rationality. *History of Political Economy*, 2005, 37(1), pp. 27–59.

[3] **Arthu, W. B**. Inductive Reasoning and Bounded Rationality (The El Farol Problem). *American Economic Review* (Papers and Proceedings), 1994, 84.

economic agents in conditions of bounded rationality, the existence of a difference between the theoretical and practical behaviour of economic agents is established. It is in the decision-making process that the degree of rationality, possessed by individuals, becomes apparent. Here is the place to add the fact that, in real conditions, a person does not always have the opportunity to act rationally, even if he/she is aware that the decisions he/she has taken will not lead to the utility, which he/she has wanted to receive, as a result of invested funds[4].

A number of authors, including H. Simon, have focused their research interest on studying the behaviour of individuals, especially with regard to the decision-making process. Based on the classical and neoclassical behavioural patterns, it becomes clear that each individual carries rationality as the main feature of his/her character. Therefore, all activities that are performed, and which are the basis of decision-making, i.e. making economic choices, are related to the generation of rationality. The latter is the main determinant on which the final economic result depends. However, these models take into account only economic factors studied ceteris paribus, i.e. in the absence of a real economic environment, characterized by dynamics and volatility. It is characteristic of static economic patterns of behaviour that purely psychological elements in the behaviour of individuals are ignored. In this line of thought, in this type of economic patterns of behaviour, various traps of thought, unconscious repetitions of already wrong decisions, etc. are ignored.

What is missing in the developed neoclassical behavioural models is the constantly improving economic subject through the accumulation of knowledge, experience and expansion of intellectual capabilities. It is no coincidence that the new economy of a few years ago is based on knowledge. Accumulated knowledge and skills have a beneficial effect on decision-making, which in fact helps the economic individual to act rationally. In fact, rationality itself consists in the right decisions to carry out specific activities, not so much in the end result obtained from the set of actions already implemented. This is an extremely important point, especially in terms of improving neoclassical behavioural patterns, and of adding two new elements to them: the psychological factor that affects the actions of market participants, and the dynamic environment in which economic processes take place [5, 6, 7].

One of the major gaps in terms of economic methodology, especially in terms of analysis of market participant behaviour, is that the methodological tools do not include all elements of the real environment in which economic processes take place. It is this static nature and "freezing" of the economic picture that lead to deviations in the developed economic models of behaviour. These deviations in turn have a negative impact on the end result and distort it. Similarly, when the economic agent is faced with making an economic choice, a mandatory element of the decision-making process is the study of the different options and their comparison. Other serious problems of economic methodology are the limited intellectual capacity and the inability for everyone to know everything. From the perspective of classical economic theory, the latter is a serious problem because, in the analysis of the economic behaviour of individuals, there is always the absolute awareness of economic agents regarding all market elements.

Changes in the Behaviour of Economic Agents: Neoclassical Theory Versus Behavioural Economics

Every economic agent strives to be rational in his/her choice, which is a prerequisite for maximizing the effect of the activity. Neoclassical economic theory emphasizes the systematization and analysis of the motives for consumption of economic entities in the market. In this regard, answers are sought to questions related to consumer preferences for one product over another, to the factors motivating a consumer to change combinations of goods when their prices or consumer income change, to the main goal

[4] **Heiner, R.** The Origin of Predictable Behavior. *American Economic Review*, 1983, 73.

[5] **Simon, H.** From Substantive to Procedural Rationality. In: Latsis, Spiro J. (ed.). *Method and Appraisal in Economics*. Cambridge University Press, Cambridge, 1976.

[6] **Simon, H.** Human Nature in Politics: The Dialogue of Psychology with Political Science. *American Political Science Review*, 1985, 59.

[7] **Simon, H.** Rationality in Psychology and Economics. *Journal of Business*, 1986, 59.

of each user and the conditions ensuring the fulfilment of this goal, as well as to what the effect of consumption is. In fact, neoclassical economic theory emphasizes the following important considerations:

First: according to neoclassical theory, the analysis of consumer behaviour is based on the subjective preferences of economic agents. It depends on their desires what will be produced, namely what is sought. In this sense, by purchasing a product, the consumer determines whether it is necessary or not.

Second: all goods have a price that makes them limited, which affects all consumers, regardless of their personal disposable income.

Third: the consumer is considered to have reasonable and consistent behaviour. He/she has complete information about the prices of goods and his/her income, and calculates the effect of consumption on this basis. In the event of a change in market prices or income, he/she immediately changes his/her behaviour in order to maintain the utility derived from consumption.

Thus, by analyzing the elements of consumer behaviour, it is possible to implement effective consumer choices that maximize the effect of consumption in order to get maximum utility of the goods and services consumed.

From the perspective of behavioural economic theory, it is clear that individuals strive for rationality, but it is limited and beyond their knowledge. In order to improve the decision-making process, as well as to include psychological factors in economic behaviour, psychology and sociology come together in search of an answer to the question of why economic individuals are not permanently rational. Behavioural economics tries to understand the reasons behind the irrational behaviour of individuals. It is concluded that the main reason is the result of limited human knowledge, and of the complexity and scope of the problems that require objective rational behaviour in real life[8]. This discrepancy is the factor for the emergence of bounded rationality[9, 10].

However, outside the conditions and theoretical framework of neoclassical economics, individuals are not necessarily rational and perfectly sensitive. The theory of bounded rationality sees the decision-making process from a completely different point of view than the neoclassical theory. According to the theory of limited rationality, in the decision-making process, the maximum cannot be obtained even with relatively simple tasks, as it is impossible to check all possible alternatives. As mentioned in the research of Vargas-Hernandez and team, limited rationality is associated with the fact that rational intention is encoded in human behaviour, but not always realized due to the emergence of information asymmetry. Moreover, the human mind has little ability to formulate and solve problems. It is limited by neuropsychological problems on the one hand, and by language limitations on the other hand.

Nowadays, among the large community remain the questions of the existence of bounded rationality, and of whether there is evidence of the emergence of bounded rationality. Many authors, including J. Conslick, argue that there is an abundance of empirical evidence to prove models of bounded rationality. Here is the place to emphasize that the economic decision-making process is an expensive act. Therefore, the object of research interest is precisely the use of bounded rationality in making economic decisions in a real environment. The latter creates conditions in which economic individuals lose their theoretically built-in ability to be permanently rational Therefore, the analysis of their behaviour in a real economic environment allows us to highlight the reasons for generating bounded rationality. In this context, it is important to study the decision-making process under the influence of behavioural factors. When modelling the decision-making process with behavioural elements included, a special place is given to training. It is by strengthening the training process, gaining more experience in the decision-making process, and gaining the necessary knowledge about the behaviour of market participants in different conditions. The main emphasis is placed on the various situations that arise in terms of decision-making, and on the purely behavioural characteristics that economic entities exhibit.

---

[8] **Simon, H.** *An Empirically Based Microeconomics*. Cambridge, UK: Cambridge University Press, 1997.

[9] **Elster, J.** The Limits of Rationality. Chicago: University of Chicago Press, 1990.

[10] **Vargas-Hernández, J. G., et al.** Bounded Rationality in Decision-Making. *International Journal of Research in Business Studies and Management*, 2018, 5(10), pp. 48–57.

Conclusion

The concept of bounded rationality, defined by H. Simon, and that of unbounded rationality are two opposing theories. The hypothesis of rational behaviour is a continuation of classical economic theory, and relies on techniques and methods for formalizing theoretical analysis. Studies based on the hypothesis of bounded rationality are still under development, which is why there is not enough empirical material to draw conclusions. One of the key factors influencing the scale of rational behaviour are expectations. In his/her daily life, each person makes different decisions that shape his/her life path. Unfortunately, no one has so far been able to create models that successfully show the right solutions, generating greater future benefits. Therefore, it can be concluded that, currently, the model of the rational economic individual is the best model. The research conducted proves its great imperfections, but, at the moment, the empirical material is still insufficient to create another, newer and practically applicable model of behaviour of the real economic person, which is characterized by bounded rationality.

REFERENCES

1. **Arthur, W. B.** Inductive Reasoning and Bounded Rationality (the El Farol Problem). *American Economic Review* (Papers and Proceedings), 84, 1994.
2. **Conslick, J.** Why Bounded Rationality? *Journal of Economic Literature*, 1996, 34, pp. 669–700.
3. **Elster, J.** *The Limits of Rationality*. Chicago: University of Chicago Press, 1990.
4. **Heiner, R.** The Origin of Predictable Behavior. *American Economic Review*, 1983, 73.
5. **Jensen, H.** The Theory of Human Nature. *Journal of Economic Issues*, 1987, 21.
6. **Kahneman, D., & Tversky A. (eds.).** *Choices, Values, and Frames*. Cambridge: Cambridge University Press, 2000.
7. **Klaes, M., & Sent, E.** A Conceptual History of the Emergence of Bounded Rationality. *History of Political Economy*, 2005, 37(1), pp. 27–59.
8. **Simon, H.** *Models of My Life*. Cambridge, MA: The MIT Press, 1996, originally published: New York: Basic Books, 1996.
9. **Simon, H.** From Substantive to Procedural Rationality. In: Latsis, Spiro, J. (ed.). *Method and Appraisal in Economics*. Cambridge: Cambridge University Press, 1976.
10. **Simon, H.** Human Nature in Politics: The Dialogue of Psychology with Political Science. *American Political Science Review*, 1985, 59.
11. **Simon, H.** Rationality in Psychology and Economics. *Journal of Business*, 1986, 59.
12. **Simon, H.** Rationality as Process and as Product of Thought. *American Economic Review*, 1978, 69(2).
13. **Simon, H.** *An Empirically Based Microeconomics*. Cambridge: Cambridge University Press, 1997.
14. **Vargas-Hernández, J. G., et al.** Bounded Rationality in Decision-Making. *International Journal of Research in Business Studies and Management*, 2018, 5(10), pp. 48–57.