

## **PAST, PRESENT, AND FUTURE OF BEHAVIORAL ECONOMICS. THE PARADIGM OF *HOMO ECONOMICUS***

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### **Abstract**

*It is a known fact that the 21<sup>st</sup> century is marked by the digital revolution alongside the involvement of artificial intelligence, constant changes that are persuading the economic behavior of individuals. Nevertheless, in this global story, we do not debate exclusively innovative technologies sustained by artificial intelligence or about governments' attempts to settle the foundations of a global economy, but also about social science innovations. The most relevant permutation of this domain is the behavioral economics that emerges at the collision between psychology and economy, being in contrast with standard economic principles based on figures and financial analyzes. Although the research is at the inception, behavioral economics is the psychology of numbers, and from its perspective we understand human emotions, thus removing the risk of losing the benefits of humanity and the creative spirit of human beings. The behavioral economics challenge is represented by the connection with economic development and the potential impact it might have on the global economy. Because the present research involves a topic about the importance of behavioral economics, I have chosen triangulation as a qualitative research method, based on the sufficiency and adequacy of the data selected and analyzed according to the theoretical needs of research. I hold my opinion about the fact that this method is the most appropriated one because qualitative research implies the discovery of depth information, understanding, and knowledge assessed by human criteria, this type of discoveries being extremely useful in the process of knowing the human nature, which is why this data cannot be achieved through the quantitative methodology.*

### **Keywords**

*neoclassical economy; homo economicus; behavioral economics; loss aversion.*

### **Introduction**

Economics is the study of people and choices. The famous economist Alfred Marshal defined economics: "The study of man and woman in the ordinary business of life. It inquires how he gets his income and how he uses it. Thus, it is on the one side, the study of wealth and on the other, and more importantly, the study of man" (Metu, 2017, p. 3). When economists make their models, they generally assume that people are rational and predictable. But when we glance at actual human beings, it accouters that people are impulsive, short-sided, and irrational.

Behavioral economics is a subfield of economics that focuses on the psychological, social, and emotional factors that influence decision-making. Generations of economists choose to ignore many irrational elements of decision making since it is harder to predict human behavior. But in the last few decades, behavioral economics has managed a comeback. Several Nobel Prizes have been rewarded to researchers that blend economics and psychology, and behavioral economics is being applied progressively in fields like marketing, finance, political science, and public policy. Furthermore, behavioral economics is about rationality, and in most cases people are rational. When

the price falls for a product, people develop a tendency to buy more of that product, proving the law of demand holds true. But economists also accept that this reaction is bounded rationality (Samson, 2014, p. 21). Limits of information, time, and abilities might prevent people from seeking out the best possible outcome, and if this happens, then the law of demand does not hold true, which creates a serious problem in classical economics, because the classical economic theories explain the big picture, but there are a lot of things about individual decision-making that are not fully understood.

Classical economics assumes that consumers have all the information when making choices. That is, they know or at least can quickly access information about prices and quality, but, in reality, they often do not. In this situation, consumers may act on the limited information they have, a suspiciously low price, which means either the product is a profitable situation or the quality is low.

Prices do send a lot of signals, and many studies have confirmed the fact that prices change perception. Contrary to the basic assumptions of economics, marketing actions can successfully affect experienced pleasantness by manipulating non-intrinsic attributes of goods (Plassmann, O'Doherty, Shiv & Rangel, 2007, p. 1050). At the same time, the fact that perceptions and passions influence our actions also applies in the finance field. Many economists used to believe that assets, like stocks and real estate, would stay at or near their real value because cold, calculating investors would buy undervalued assets and sell overvalued assets (Skousen, 2013, p. 84). But this procedure does not explain bubbles because in real life, investors are not always cold and calculating and they can get irrational sometimes. In this situation, we can admit that behavioral economics does not blow up traditional economic theory, it seeks to understand when and why people behave differently than economic models suggest. If people were entirely rational they would consistently make the same decision given identical options, but sometimes people's preferences are dependent on how the options are presented. Psychologists call this type of cognitive bias the Framing Effect and classical economics argues that framing should have a relatively inefficient effect on decision making (Seo, Goldfarb & Feldman Barrett, 2010, p. 21).

Behavioral economists also like to talk about the nudge theory. Nudges encourage people to act a certain way, without actually changing the choices available to them, and at the same time, is changing how public policy is implemented. Another important issue that is related to behavioral economics is the risk and in particular loss aversion, the idea that people strongly want to avoid losing. Studies show that, in general, losses are more painful than gains are pleasurable (Mukherjee & Sumitava, 2019, p. 24). So people might choose a safe course of action even if it is not the most logical choice. Understanding of loss aversion can help businesses and policymakers influence decisions.

### **Neoclassical theoretical approach**

Since the beginning, economics has had a blind spot. But behavioral economics helps us get a better look at how people make decisions and the inception of our understanding of behavioral economics lays down in the neoclassical economic theory. Whether it is understood or not, behavioral economics started to be heard in economics more often. The way that I understand it, made me think about the statement of Herbert Simon, an

alumnus of the University of Chicago, awarded in 1978 with the Nobel Prize in Economic Science for his pioneering research into the decision-making process within the economic organization. In his Ph.D. thesis, he stated: "The phrase behavioral economics appears to be a pleonasm. What non-behavioral economics can we contrast with it? The answer to this question is found in the specific assumption about human behavior that is made in neoclassical economic theory." (Herbert, 1987, p.12), explaining what non-behavioral economics might be.

Economics is about the behavior of all the factors which are creating the global economic system, like companies, human capital, consumers, and employees. The common factor is that all of them are people. This is a collision point that raises the question about what non-behavioral economics is, but the answers are within the assumptions of the neoclassical economic theory. The core assumption that drives everything in economics is the assumption that agents of the economic ecosystem choose by optimizing.

But in the beginning, economics started in a behavioral way. For a better understanding of this affirmation, we should go back in the economic history, to the founder of economics, Adam Smith, who was the first behavioral economist. He spoke about behavioral economics, drawing research directions for economists through the statements he has made. Regarding behavioral economics, he fostered the following main topics (Ashraf, Camerer & Loewenstein, 2005, p.132):

**Table 1. Behavioral economics core**

<i>Overconfidence</i>	"The overweening conceit which the greater part of men have of their own abilities."(1776)
<i>Loss aversion</i>	"Pain...is, in almost all cases, a more pungent sensation than the opposite and correspondent pleasure."(1759)
<i>Self-control</i>	"The pleasure we are to enjoy ten years hence interests us so little in comparison with the which we may enjoy today." (1759)

*own representation based on N. Ashraf, C. F. Camerer and G. Loewenstein, 2005*

The language might be slightly different from the modern way of speaking of, but what Adam Smith stated 260 years ago, are the core ideas of behavioral economics. The second neoclassical economist who realized the importance of behavioral economics was John M. Keynes, the inventor of behavioral finance, a status which he won with his general theory (1936): "Day today in the profits of existing investments, which are obviously of an ephemeral and non-significant character, tend to have an altogether excessive, and even absurd, influence on the market." (Faten, 2016, p. 5).

This observation was later demonstrated by Robert Shiller (1981), when he shared the Nobel Price with Eugene Fama and Lars Hansen, who won in large part for work documenting the fact that stock prices seem to move too much compared to the movement of fundamentals.

At the same time, for a better understanding of what behavioral economics is, it is important to bring in discussion another early behavioral economist, Vilfredo F.D. Pareto, who stated (1906) that: "The foundation of political economy, and, in general, if every social science, is evidently psychology. A day may come when we shall be able to decide the laws of social science from the principles of psychology." (Candela, Rosolino Wagner &Richard, 2016, p.35).

In addition to this statement, John Maurice Clark, a professor in the economics department of the University of Chicago, came up with a filling: "The economist may attempt to ignore psychology, but it is a sheer impossibility for him to ignore human nature... if the economist borrows his conception of man from the psychologist, his constructive work may have some chance of remaining purely economic in character. But if he does not, he will not thereby avoid psychology. Rather, he will force himself to make his own, and it will be bad psychology." (Clark, 1918)

### **Recent studies about behavioral economics**

An important work in the development of finance and behavioral economics was written by Amos Tversky and Daniel Kahneman in 1979. Their work, "Theory of Perspectives: A Risk Analysis", used cognitive psychological techniques to explain a series of documented divergences in decision making in neoclassical theory. Over time, many other psychological effects have been included in behavioral funding, such as overload and the effects of limited attention. Other milestones in the development of the field include a well-organized and diversified conference at the University of Chicago, a special edition of the Quarterly of Economics (1997) dedicated to the theme of behavioral economics, and the Nobel Prize for Daniel Kahneman in 2002 because he had an integrated perspective on psychological research in the field of economic science, especially as regards human judgment and decision-making under uncertainty. Prospectus theory is an example of the expected general theory of utility. Although not frequently included in behavioral economics discussions, the theory of generalized utility is similarly motivated by concerns about the descriptive inaccuracy of the expected utility theory.

Behavioral economics has also been applied to problems of intertemporal choice. The most prominent idea is that of the hyperbolic reduction proposed by George Ainslie (1975), which uses a high rate of reduction between the present and the near future and a lower rate between the near future and the distant future (Ainslie, 1991). This updated model is dynamically inadequate, or inconsistent with time, and therefore inconsistent with some rational choice models because the reduction rate between time  $t$  and  $t + 1$  will be reduced at time  $t-1$  when  $t$  is near future but high at  $t$  when  $t$  is present and time  $t + 1$  near future.

At the beginning of the research, behavioral and finance economics theories were developed almost exclusively through experimental observations and survey responses, although real-world data has taken a more prominent position. Functional Magnetic Resonance Imaging, fMRI, has completed this effort by using it in determining areas where the brain is active in various stages of economic decision-making. Experiments simulating market situations such as stock market trading and auctions are considered particularly useful as they can be used to isolate the effect of some particular biases on behavior. The behavior observed on the market can be typically explained in a number of ways, carefully designed experiments can help narrow the range of plausible explanations. Experiments are designed to be compatible with mandatory incentives and transactions that imply that real money is the norm.

There are three main themes in the field of behavioral finance and the economy: heuristic, training, and market failure (Howard & James, 2013, p.125). When it comes

to heuristic, people often make decisions based on approximate rules, not on strictly rational analyzes. Cognitive biases or limited rationality are also considered. According to training, the way that a problem or decision is presented to the decision-maker will affect its action. Finally, about market failure, there are explanations for observed market outcomes that are contrary to rational expectations and market efficiency. These include incorrect prices, non-rational decisions, and return abnormalities.

Generally, cognitive prejudices can have strong abnormal effects overall if there is social contamination with a strong emotional content (collective greed or fear), which leads to more widespread phenomena such as feeding and group thinking. Behavioral finance and the economy are based on social psychology in large groups and on individual psychology. However, some behavioral patterns explicitly demonstrate that a small but significant group can also have market-related effects.

### **Defining assumptions of Economics. The paradigm of Homo Economicus**

Homo Economicus is a philosophical precept that runs through economics from Adam Smith onwards that basically tells us what it means to be a human being, to be self-interested; to be monetarily sensitized to one's environment, an individualist. It became the principle on which the society was organized around with the rise of neoliberal economics that really saw this as the heart of the economic machine: self-interested individualism. For the last four decades, we have been waterboarded by the ideology of homo economicus. The following main characteristics of the economic man guides us to a better understanding of this ideology (Bowbrick, 1996, p. 18):

*Optimization* – people are assumed to choose the best option for those they can afford.

*Consumer sovereignty* – no self-control problems – people know what is best for themselves and in particular, they know better than anyone else could know. The idea of consumer sovereignty, that we choose what is the best for us, means that we never choose what is wrong.

*Unbiased beliefs* – there is a large literature in economics, called rational expectations literature, which formalizes something that was always assumed informally in economics: people's expectations about the future are unbiased, meaning that people couldn't improve it.

*Self-interest* – economists assume that people are selfish and only care for themselves.

The mingling of these assumptions defines homo economicus, the starting for behavioral economics because there is a difference between humans and homo economicus. Economics is not supposed to be a theory for experts, but for all the humans, just like the life-cycle theory of savings is a theory about how everybody saves for retirement, but in the same time people makes errors which are predictable or systematic because they are optimizing and are deviating from that in a predictable manner.

Another argument based on the early data from laboratory and experiments is that people used to believe this type of experiment are low stakes, but they would get it right if the stakes wore raised. Also, when it came to learning, it was believed that in the real world, people get to learn, but in the experiments, they are given this chance. From this paragraph, we can conclude that people behave more like home economicus. Though these arguments are self-contradictory, at the same time, both are real because the higher the stakes, the less often people confront. Markets have no way of transforming

humans into homo economicus and this is why the data should be taken seriously if we are willing to understand why humans behave differently from homo economicus. For every fluctuation in the economy, there are models created in order to understand the changes and to measure the impact of them. Behavioral economics would not exist without neoclassical economics, because it was the benchmark of the economy of today.

In a nutshell, homo economicus is a representation of people as individuals who are constantly rational and narrowly self-interested and who usually optimally pursue their subjectively defined goals. Generally, the economy seeks to maximize utility as a consumer and profit as a producer. As a theory of human behavior, it contrasts with the concepts of behavioral economics, which examines cognitive biases and other irrationalities, and another mythical species, homo reciprocates, a model that emphasizes human cooperation (Dohmen, Falk, Huffman, Sunde & Uwe, 2009, p.595).

In game theory, homo economicus is often modeled by assuming perfect rationality. The notion of homo economicus is often used by non-economists to criticize or approach economics. There are distinct concepts: the preferences that individuals have among outcomes and the processes that individuals use to make decisions. The question of whether individuals are in fact able to make the best choices, given their preferences, leads to the economic definition of rationality or the so-called rational economic man. This concept of rationality does not limit what kind of preferences are permissible.

### **Behavioral Economics impact in economic development**

The standard perception of the economy is that all consumers act fully rationally and try to maximize their usefulness, but this perception of the economy does not explain why things such as the capital market do not work with a high level of efficiency; in fact, the standard model of the economy would suggest that the stock market would be much more efficient than it is today. The field of the behavioral economy was created to fill in the gaps and inconsistencies left by standard economic theory. The behavioral economy is a theory that suggests that consumers' decisions are prone to be affected by irrelevant influences, with consumer decisions being relatively irrational. Colin Camerer, an important behavioral economist, said that: "Behavioral economics increases the explicative power of the general economy by providing more realistic psychological foundations."(Camerer & Loewenstein, 2004, p.55). This theory attempts to adapt standard econometric models to reflect the consumer's irrationality that follows a predictable model and to help us better understand how the consumer mindset and decisions are influencing economic development.

The behavioral economy is full of numerous sub-theories and ideas that attempt to explain the individual behaviors exposed by consumers when making decisions; sub-theories that were able to explain illogical behaviors and phenomena exposed by consumers. This area, which threatens to change many standard economic notions, existed in the concept of the birth of the economy but was initially ignored because of its base in psychology, which at that time was much less scientific. The field of behavioral economics and the fusion of psychology and economics, gives the opportunity to a better understanding for the economic analysts about the decisions of the average consumer and the previously abstract economic phenomena, thus explaining the influences in economic growth and development.

These theories and principles aim to broaden human knowledge, the economic field of behavior with implications in macroeconomics, and many concepts with a behavioral basis that could be elucidated through psychological research. The behaviors described in macroeconomics can be understood using behavioral principles and theories. A publicized version of a theory of macroeconomics, namely the theory of labor economics, suggests that unemployment is the result of wage payments above the level that would balance supply (jobs) and demand (job seekers) causing a surplus of workers without sufficient jobs (Jahan, Mahmud & Papageorgiou, 2014, p.53).

A similar branch of behavior, finance, explores the idea that investors have limited rationality and are quite similar to the concept of behavioral economics. An important phenomenon in behavioral financing is the observation that the average return on equity is much higher than bond yields. To take this into account, people dealing with stocks would be at a higher risk than would have been predicted by the standard utility model, which means there is a problem with current theories of market functioning. Although the cause of this phenomenon has not yet been fully understood, the behavioral economy is trying to understand the reasons for this situation.

The so-called "Groucho Marx" theorem states that people would not want to trade with other people who would like to trade with them, but the volume of capital market transactions is amazing. For example, the annual turnover rate for New York Stock Exchange shares is more than 75%, and the daily volume of currency transactions in all currencies is about a quarter of total world trade and investment flows (Harbaugh, Maxwell, Roussillon, 2006, p.17).

This is another phenomenon that behavioral finances are trying to understand, which is what drives the exorbitant and irrational size of volume on the stock market. Behavioral finances are trying to cope with the notions of the market and the influence of the behavioral economy in growth and economic development. Regarding these assumptions, I consider that behavioral economics is an important segment that can change the way the economy is perceived and applied.

### **Critical to Behavioral Economics**

Behavioral economics critics usually emphasize the rationality of economic agents. From their point of view, experimental behavior is inappropriate for market situations, as learning opportunities and competition will ensure a rapprochement with rational behavior. At the same time, critics note that cognitive theories, such as perspective theory, are decision-making models are applicable only to decision-making issues once presented to experienced participants or respondents in the survey.

Traditional economists are skeptical about experimental and survey-based techniques that are widely used in behavioral economics, arguing that experiments and surveys should be carefully designed to avoid systemic prejudices, strategic behavior, and lack of incentive compatibility, not trusting the results obtained in this way because of the difficulty of eliminating these problems.

The behavioral economists reject these criticisms, defending that the results are typically reproduced in different situations or countries and can lead to a good

theoretical understanding. They incorporated these criticisms, focusing on field studies rather than on laboratory experiments, pleading that this division is a fundamental schism between experimental economics and behavioral economics, but behavioral and experimental economists tend to overlap techniques and approaches to respond to common questions.

For example, many behavioral economists are actively investigating the neuro-economy, which is entirely experimental and cannot be verified in the field. Other supporters of the behavioral economy note that neoclassical models often fail to predict results in real-world contexts. From my point of view, I consider that behavioral perspectives can be used to update neo-classical equations, and in the same time, behavioral economists should note that these revised models do not just go to the same predictions as traditional models, but also correctly predict some results where traditional patterns have failed.

## Conclusions

The main findings of the theoretical research indicate that lately, behavioral economics has made its presence felt more and more as an independent area of research, its study being animated both by the technological advance of the last decades it has imprinted on humanity and by the economic crises. Often, which brought back into question the need to return to “origins”, to the attempt to “rediscover” the fact that, beyond any abstracted, formal and mathematical model, economics is a living science, with man at its center. If, on the one hand, this discipline is intended to be a continuation of the work of the classics, on the other hand, it creates its own concepts by capitalizing on knowledge in psychology and other social sciences. The ultimate goal of this discipline is to increase the explanatory power of economics, by providing a more realistic psychological basis, given that human behavior is not only the object of study of economics but also of psychology and social sciences as a whole. However, as it is still at an early stage of development, its status, role, and implications cannot yet be fully assessed.

In standard economics, individual differences are neglected, but in modern economics, economists would allow that differences in age, gender or socio-demographic characteristics can have an influence. The role of personality, moods, and emotions are not allowed in standard economics, and this is the particularity fascinating area of behavioral economics because it is allowing the different personality types affect how people decide and choose.

Behavioral economics is not well designed for capturing macroeconomic behavior because behavioral economics assumes that people might be independent and might learn from each other. These personality and individual differences, make it very difficult to aggregate, and the point about standard macroeconomic models is they have got the aggregation problem really solved. If the masses are the same, then macroeconomic happens, but in behavioral macroeconomics, it is more complicated because people are interacting and are different, so in terms of behavioral macroeconomics it is a big challenge for behavioral economics to do, to capture behavioral macroeconomics more efficiently.



At the same time, another conclusion of the paper is that in the context of today's global economy, positions focus on how homo economicus bases its economic decisions on consumption, production, or investment. Assumptions about the behavior of individuals faced with decision-making that determine economic actions have a history as long as that of economics itself. Present in Adam Smith's work and at the heart of the neoclassical theoretical approach that still represents the mainstream, these presumptions were in fact based on brilliant intuitions about human psychology. The rapid development of psychology as a science and the progress in sociological research has inevitably given way to new behavioral perspectives in economics. Thus, behavioral economics, through its representatives, has become a continuous challenge to neoclassical hypotheses, broadening the scope of scientific research and trying to insert a higher degree of realism to the theory itself.

### ***Further research directions***

Behavioral economics is an area that offers the possibility of a large volume of research whose results can influence the global economy. For this reason, I would like to go further with this research, identifying the connection of behavioral economics with the Industrial Revolution 5.0, the one of personification, which announces a new paradigm whose keyword is coopetition, focused on cooperation between man and artificial intelligence. Coopetition is a term belonging to Francisco Jaime Quesada, a specialist in innovation and competition, representing a combination of competition and cooperation between people and robots, which is the hallmarks of this new era, which will be the personification revolution, centered on cooperation between human capital and artificial intelligence. The aim of further research will be highlighting the importance of implementing the principles of behavioral economics in the global economic ecosystem as it might provide new perspectives for the development and reorganization of the global governance systems.

Lately, behavioral economics has made its presence felt more and more as an independent area of research, its study being animated both by the technological advance of the last decades it has imprinted on humanity and by the economic crises. often, which brought back into question the need to return to "origins", to the attempt to "rediscover" the fact that, beyond any abstracted, formal and mathematical model, economics is a living science, with man at its center. If, on the one hand, this discipline is intended to be a continuation of the work of the classics, on the other hand, it creates its own concepts by capitalizing on knowledge in psychology and other social sciences. The ultimate goal of this discipline is to increase the explanatory power of economics, by providing a more realistic psychological basis, given that human behavior is not only the object of study of economics but also of psychology and social sciences as a whole. However, because of the fact that behavioral economics is still at an early stage of development, its status, role, and implications cannot yet be fully assessed.

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### **Videography - TED Talks**

- Predictably Irrational - basic human motivations: Dan Ariely at TEDxMidwest. <https://www.youtube.com/watch?v=wfcro5iM5vw>
- Behavioral economics - how to make it work for us | Maciej Kraus | TEDxWarsaw, <https://www.youtube.com/watch?v=bTDBel-mtDg>
- Applying behavioral economics to real-world challenges: Kelly Peters at TEDxUtrecht, <https://www.youtube.com/watch?v=0rLb0pGZzOw>
- Google talks: Richard Thaler: Misbehaving: The Making of Behavioral Economics, <https://www.youtube.com/watch?v=42qbHeFxdzE&t=1430s>