

The Position of Heterodox Economics in Economic Science

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SUMMARY

In economic science orthodox economics (mainstream economics respectively neoclassical economics). Despite its numerous intellectual failures, orthodox economics continue to prevail in teaching at universities. A certain alternative to orthodox economics is heterodox economics, which consists of three groups of theoretical approaches, represented by the Left-wing heterodoxy and Neo-Austrian school (we include them together in the Old heterodoxy) and the New heterodoxy. The objective of this article is to define the differences between orthodox economics and heterodox economics, to find common features of individual heterodox approaches and identify substantial differences between them and also highlight the relevance of these heterodox approaches from the point of view of the challenges we are facing today. A common characteristic of heterodoxy is the rejection of orthodoxy, especially its research methods. Heterodox economists reject the axiom that individuals are always rational, the concept of 'homo economicus', the application of a formal-deductive approach, the use of mathematical methods in cases that are not appropriate for this, and access from a closed system position. Heterodoxy is a very diverse theoretical tradition, and there are differences not only between the Left-wing heterodoxy, Neo-Austrian school and New heterodoxy, but also within these heterodox groups. They differ on specific topics they deal with and proposed solutions to socio-economic problems.¹

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Representatives of the so-called heterodox economics express many objections to orthodox economics. They criticise the methodology of orthodox economics as well as its conclusions and recommendations for economic practice. The criticism relates, inter alia, to the increasing formalisation and mathematisation of economic science, thus losing the relationship between formal calculations and human actions of individual economic subjects. *‘Although an analysis at the level of social groups would greatly help macroeconomic forecasts, the neoclassical mainstream generally does not view this to be a scientific method’* (Oláh, 2018).

The beginnings of the formalization of economic science can be found even in the period around 1900, when there was a formalisation of science in general - natural sciences, especially physics. Until then, 18th-century moral philosophy was applied in economics, with representatives including *Adam Smith* (Smith, 2002) and *David Hume*. Since the mid-19th century, it has become clear that economics has given up on the development of its own epistemology (way of cognition) and taken over the existing epistemology of natural sciences, especially classical physics. The main initiator of this direction was in particular *John Stuart Mill*, who in his work of 1843 (Mill, 1882, p. 239) referred to Newton’s natural laws and transferred the method of deduction to social sciences and thus to economics. Gradually, the historical context of socio-economic relations was pushed out. About thirty years later, in that spirit, *W.S. Jevons* and *L. Walras* developed their neoclassical concepts. Walras (2014) understood under pure economics the science, *‘which resembles physical-mathematical sciences’*.

‘Neoclassical economics is based on abstract assumptions, formalism, and mathematics, built on Newtonian mechanics, researched and

modelled the momentary interrelations, then the deterministic and stochastic dynamics of a parallel world that did not exist in reality. In a part of the developed Western world the intellectual market is attaching the highest price to the consistent achievements, despite the fact that the relevance of the elegant theories of this school is questionable due to their unrealistic assumptions and neo-positivist formalisations. Their contribution to the well-being of mankind is debatable, and indeed, in some cases their application has led to the global economic crisis’ (Móczar, 2017).

This was noted even by representatives of orthodox economics. *Milton Friedman* said that *‘economics has become largely an offshoot of mathematics, instead of dealing with real economic problems’* (Friedman, 1999). Similarly, *Ronald Coase* (1999) sees in contemporary economic science *‘a theoretical system that floats in the air and has little relation to what is happening in the real world’*.

The global financial and economic crisis in 2008 and its negative effects on the real economy, social sphere and society as a whole and also the corona crisis in 2020 show us that the orthodox, neoclassical way of thinking is not useful in these difficult times and we need new approaches. This created new challenges for economic theory.

Since the mainstream neoclassical school failed to prove any essential progress or to offer alternatives for decades, the crisis that set in during 2007-2008 can also be seen as a major intellectual challenge – and based on the experiences of the recent years, it also triggered substantial changes in economic thinking (Lentner-Kolozsi, 2019).

The *New Weather Institute* and campaign group *Rethinking Economics*, with input from a wide range of economists, academics and concerned citizens, challenged the mainstream teaching of economics and published a call for change in ‘33 Theses for an Economics

Reformation’ (New Weather Institute, 2017). The call featured in *The Guardian* and was supported by over 60 leading academics and policy experts.

They note that ‘*the world faces poverty, inequality, ecological crisis and financial instability. The economics could help solve these problems. Within economics, an unhealthy intellectual monopoly has developed. The neoclassical perspective overwhelmingly dominates education, research, policy advice, and public debate. Many other perspectives that could provide valuable insights are marginalised and excluded. Scientific advance only moves ahead with a debate. Within economics, this debate has died. While neoclassical economics historically made a contribution and is still useful, there is ample opportunity for improvement, debate and learning from other disciplines and perspectives. Mainstream economics appears to have become incapable of self-correction, developing more as a faith than as a science*’ (New Weather Institute, 2017). A more pluralist approach can help economics to become both more effective and more democratic.

The objective of this article is to define the main characteristics of heterodoxy and orthodoxy and to formulate fundamental differences between them. Our intention is also to define the common characteristics of the different theoretical approaches within heterodoxy and to identify differences between them and also highlight the relevance of these heterodox approaches from the point of view of the challenges we are facing today as economists.

We asked the following research questions:

- ① What are the main characteristics of orthodoxy?
- ② What are the main characteristics of heterodoxy?
- ③ Can common characteristics be found for all theoretical approaches within heterodoxy?
- ④ If we find fundamental differences

between heterodox approaches, what are these differences?

- ⑤ What is the main benefit of heterodox approaches in terms of solving the problems of the present?

HETERODOXY VERSUS ORTHODOXY

In the last two decades, there have been numerous activities in economics, which were referred to as heterodox. This is evidenced by the emergence of the Association for Heterodox Economics (AHE). This association conducts annual conferences, postgraduate seminars and other activities. Heterodox economics is also developing at the University of Missouri in Kansas City, the University of Utah, in Australia at the University of New South Wales and elsewhere in the world.

The term *heterodox* under the Shorter Oxford English Dictionary (Lawson, 2006) means that it ‘*does not comply (in accordance) with established doctrines or opinions or with what is generally understood as orthodox*’. The term *doxá* (gr.) means form, appearance, opinion. The word *ortotes* (gr.) indicates correctness and *hetero* means different. The term *epistheme* represents a reliable knowledge that can come with reason, while *doxa* names knowledge seemingly, that is ‘to impress’.

On the basis of the foregoing, it can be concluded that the sphere of *doxá* admits adversarial. In the field of *doxá* everything that is good can be presented to others as bad. *Ortotes*, as a procedure for precise controllable steps, completely exclude the importance of human values, since they are empowered by man in a way other than the controllable processality of partial activities (Hogenová, 2001). *Hogenová* notes that *ortotes* today also prevail in philosophy (and we can add that also in economics). This means that if the *ortotes* is fulfilled, i.e. the procedure of action

is ensured, then there is a deceptive certainty and deceptive satisfaction from the work done.

The rise of a mainstream in economics occurred concomitantly with the emergence of specific compliance standards allowing work to qualify as ‘good’ research practice. At the time of the emergence of a mainstream in economics, in the 1980s, these standards consisted of a precise set of basic methodological choices, which is called ‘*the narrowly delineated neoclassical approach*’. Mathematical formalization and explicit microfoundations are its two *sine qua non*. Further its standards are ‘*theory & measurement*’ and ‘*pure theory*’ (De Vroey-Pensieroso, 2016). (See Table 1)

In economic theory, mainstream economics¹ (orthodoxy) is dominant. However, there is little discussion or analysis about what is at its core (Becker, 2009). Orthodoxy can be characterized as:

- studying the optimisation of an individual’s behaviour,
- the axiom that individuals are always rational in their behaviour,
- the application of methodological individualism,
- the application of a formal-deductive approach,

- the use of mathematical methods also in situations for which they are not appropriate (social analysis),
- an approach from a closed system based on the identification of the regularity of social phenomena.

It can be concluded that orthodox and heterodox economics in the true sense of the word are not separate sciences, but rather opinions which make a claim to veracity or correctness, without, however, applying means of cognition and assessing them which could confirm their accuracy. Lawson³ (2009) defines the essential common features of those heterodox traditions as follows:

- ① Specific themes of individual heterodox traditions,
- ② Creation of a theory for each such specific topic and on the basis of it shaping political attitudes. The results are often presented as theoretical and political positions that shape a relevant alternative to mainstream economics (orthodoxy).
- ③ It is not possible to establish broad agreement between existing heterodox traditions because of their specific theories and policies or their specific methodological positions. Even within one heterodox tradition, the only common foundation is

Table 1

THE EVOLVING COMPOSITION OF THE STANDARDS FOR GOOD SCIENTIFIC PRACTICE

Period	Standards for good scientific practice
First period (from the 1980s to the 2000s)	<ul style="list-style-type: none"> • Mathematical modelling • Explicit microfoundations • Either ‘pure theory’ or ‘theory & measurement’
Second period (from the 2000s to the present)	<ul style="list-style-type: none"> • The above three standards • Alternative standards: ‘purely factual’ contribution with an up-to-date research design

Source: De Vroey, M., Pensieroso, L. (2016)

opposition to mainstream economics or ‘neoclassical orthodoxy’.

In Lawson’s view (2006) in heterodox economics, there is no other unifying element to characterise heterodox economics than rejection of orthodoxy. Economists define heterodox economics by finding out what it is not, or more precisely on the basis of what it is in opposition to. The only hallmark of all heterodox traditions is the rejection of the current mainstream economics (orthodoxy).

Lawson (Lawson, 2006) defined the substance of heterodox theory and its distinction from orthodox economics in four theses:

① The substance of contemporary modern mainstream projects (orthodoxy), which are criticised by heterodox traditions and to which they are identified as heterodox, is not in their main results or in the essential elements of their analysis, but in their orientation to the used methods. Modern mainstream economics (orthodoxy) explore economic phenomena through the use of only (or almost) mathematically-deductive forms of reasoning.

② There is an increasing number of recorded intellectual failures and limitations of mainstream economics projects, precisely because of their emphasis on mathematical-deductive reasoning, which is unsuitable for social conditions. Ontological assumptions of these methods do not correspond to the needs of the examination of social reality.

③ Modern heterodoxy is primarily a focus on ontology.

④ Individual heterodox traditions differ from one another on the basis of their specific focus, interests, but do not differ in theoretical approaches or results, empirical knowledges, methodological principles or political attitudes (with the exception of the Neo-Austrian school, which remains consistent on the principles of liberalism and non-intervention in the economy).

Richard Lipsey, mainstream economist confirmed that: ‘If you want to get an article into the highest-rated economic journals today, you must provide a mathematical model, even if it does not at all benefit your verbal analysis’ (Lipsey, 2001). Heterodoxy means rejecting the claim that everyone will always and everywhere use mathematical-deductive modelling. It is a rejection of the view that formal methods are always and everywhere appropriate.

John B. Davis (2006) in his paper in the journal ‘Symposium on Reorienting Economics’, which focuses on Tony Lawson’s book ‘Reorienting Economics’, follows the ideas of Lawson while bringing critical comments and new opinions on the subject. Davis shares Lawson’s view that orthodoxy is (always) formalistic and deductive. It approaches to the examination of the socio-economic environment from the position of a closed system, which is based on the identification of the regularity of social phenomena, which is an inappropriate approach to the issues dealt with in economics. Heterodox economics rejects all this and uses ontological analysis that understands social reality as dynamic or processive, interconnected and organic, structured and providing recommendations. On the other hand, Davis believes that these characteristics were more valid for economics until the 1980s, but no longer fully capture the reality of current developments. In the last two decades, economic research has undergone a significant transformation, resulting in new research strategies that originate in other sciences. Heterodox approaches in economics (excluding the Neo-Austrian economics) can be specified on the basis of three characteristics:

① Rejection of the atomist concept in favour of a socially embedded concept of the individual;

② Emphasis on time as an irreversible historical process;

③ Reflection in terms of mutual impact between individuals and social structures.

On the basis of these three characteristics, orthodox economics can be distinguished from heterodox economics until 1980.

After 1980, a large number of new research programmes were created in the field of economics. These were e.g. game theory, behavioural economics, experimental economics, evolutionary economics, neuro-economics and others (Davis, 2006). Probably with the exception of game theory (and according to some authors, also behavioural economics), none of these new approaches can be considered orthodox today. To consider an approach as orthodox usually requires a shift from being a purely research programme to becoming a firmly established teaching programme in universities.

Heterodox economics after 1980 is therefore a complex structure consisting of two types of heterodoxy: old heterodoxy and new heterodoxy. Old heterodoxy consists of two different approaches: so-called ‘Left-wing’ heterodoxy and Neo-Austrian economics. The difference between these heterodox approaches lies not in the methodology used (they agree on this) but, above all, in the economic policy conclusions. The Neo-Austrian school shares liberal views on the economy and is therefore against state interventionism, while ‘Left-wing’ heterodoxy is their proponent. The Left-wing heterodoxy is internally highly differentiated and consists of a large number of research programmes with different historical origins and orientations.

However, it should be clarified that there is not a fully unified view among all economists on integrating individual economic approaches (schools) into heterodox or orthodox economics (mainstream economics). *De Vroey and Pensieroso* (2016) regard the Neo-Austrian economics as belonging to neoclassical approach in its broad delineation variant.

These authors also incorporate behavioural economics into neoclassical economics.

The New heterodoxy criticises the methodology used to orthodoxy, uses the results of other sciences (such as psychology) in economics and wants to be a constructive opponent of orthodox economics.

THE NEO-AUSTRIAN SCHOOL

A common feature of heterodoxy and the Neo-Austrian school is methodological subjectivity as the antithesis of positivity in science. They do not consider the existence of economic phenomena to be the result of objective laws similar to those of nature and reject the application of natural science methods in social sciences and criticise the so-called scientism of orthodox approaches (a tendency to imitate the methods of natural sciences). They criticise the matematization of economics, consider the use of quantitative methods in economics to be an end in itself, leading to a hazing of the nature of economic phenomena and hindering their understanding. The Neo-Austrians are also unacceptable to the neoclassical concept of competition, namely the neoclassical model of perfect competition and the concentration on market balance and the lack of analysis of the market process (Holman, 2001).

The Neo-Austrian school distinguishes from other heterodox traditions by the applied methodological individualism. Only individuals have goals, their own minds and their ability to act. Economic phenomena can only be understood if they are perceived as results of individual actions. There are also significant differences between the Neo-Austrian school and other heterodoxy in an ideological area where the Neo-Austrian school is clearly in positions of liberalism. A fundamental difference between the Neo-Austrians and (above all) the ‘left-wing’

heterodoxy is the fact that the Neo-Austrian school can be identified with the classic liberalism of the Chicago school. The Neo-Austrian economists are often even tougher and more fundamental advocates of human freedom than some orthodoxy representatives. Their views in this area are reflected in the criticism of ‘social engineering’ (Soto, 2008).

According to *Mises* (1996), the source of all wishes, evaluations and knowledge is a person’s creative ability. Therefore, any system based on forced action against free human action, as in socialism and to a lesser extent in interventionism, will prevent the emergence of information necessary for the coordination of society in the minds of individuals. Economic calculation requires the availability of first-hand information and becomes impossible in a system that, like socialism, rests on forming. Mises thus concludes that without market freedom, no economic calculation is possible. It is impossible to organise a society by foreration if the managing authority cannot obtain the information necessary for it.

Hayek (1990) took the view that socialism⁴ in the broad meaning of the word is an intellectual mistake, because it is logically impossible for a person who wishes to organise or interfere with society to create or acquire information or knowledge that would enable him to improve the social system. In order to be able to discover and transmit a huge amount of practical information or knowledge in a business, people must be able to plan their objectives freely and discover the means necessary to achieve them, without hindrance of any kind, in particular systematic or institutional comeration or violence.

On the other hand, however, there are very profound differences between representatives of the Neo-Austrian school and representatives of orthodox economics (above all) in the field of methodology used. On this basis, the Neo-Austrian school, in our opinion, can be

included in heterodox economics. Below, we will highlight the main differences in neoclassical (orthodox) economics and the Neo-Austrian economics.

One of the signs that distinguishes most the Neo-Austrian school from the Neoclassical school is that Austrian economists understand economic science as a theory of action and not decision-making. Human dealing involves and goes far beyond individual decision-making. They are not interested in the fact that the decision has been made, but that it results from human action, which is a process involving a sequence of interactions and gradual coordinations (Soto, 2008).

The Neo-Austrian economists are particularly critical of the narrow concept of the neoclassical economists, who reduce the economic problem to the technical problem of allocation, maximization or optimisation, with certain constraints which are also considered to be known. They argue that one does not so much allay the resources among the given goals, such as constantly looking for new goals and means, learning from the past and using his imagination to discover and create the future. Economics is thus part of much broader and more general science, the theory of human action (dealing) and not human decision-making or choice. According to Hayek, the most appropriate name for this science is practiceology, defined and widely used by Ludwig von Mises (Hayek, 1952).

Another important feature of the Neo-Austrian school is subjectivism. They want to create economic science based on real human beings who are the protagonists of all social processes. The subject of economics are not things and material objects, but people, their thoughts, opinions and dealings (Mises, 1996).

Entrepreneurs constantly generate new informations that are in principle subjective, practical, dispersed and difficult to pass on (separable) (Soto, 2008). The Neoclassical

economists always understand information objectively. They understand information as an objective entity which, like any other product, is purchased and sold on the market on the basis of maximisation decisions. This information is preserved using a variety of media. Subjective information of the Neo-Austrians is practical and indispensable and is subjectively interpreted, perceived and used in the context of a specific act.

The Neoclassical economists have chosen the equilibrium model as the center of their research. This model assumes that all informations are given (either with certainty or with some probability) and that there is a perfect adjustment between different variables. Neoclassical economists see functional relationships between different phenomena, the origin of which (human action) remains hidden or is considered unimportant. In their equilibrium models, the neoclassical economists usually overlook the coordinating power that the Neo-Austrians attribute to business. The Neo-Austrian economists are interested in exploring a dynamic understanding of competition (the competitive process), while the Neoclassical economists focus exclusively on models of equilibrium. The Neo-Austrian economists prefer to examine the market process that leads towards equilibrium, but which is never achieved. The entrepreneurial process of social coordination never ends or is exhausted. It is a dynamic, never-ending process that is constantly expanding and supporting civilisational progress (Soto, 2008).

The founder of the Austrian school, *Carl Menger*, has already pointed out the advantages of an unformatted language, the fact that it can capture the essence of economic phenomena, while the mathematical language does not. Representatives of the Neo-Austrian economics consider the use of mathematics in economics to be wrong, because the mathematical method puts together quantities that are heterogeneous

in terms of time and entrepreneurial creativity. Nor do they recognise neoclassical axiomatic rationality criteria. Hayek (Hayek, 1952) uses the term '*scientism*' in relation to the unauthorized application of a method typical of physics and natural sciences to social sciences.

The Neo-Austrian economists argue that empirical phenomena are constantly changing, so there are no parameters or constants in social phenomena, but only variables. So the traditional objectives of econometrics is very difficult to achieve. Contrary to the positivity ideal of the Neoclassics, the Neo-Austrian economists seek to create their economics in an aprioristic, deductive way. This involves developing a logical-deductive argument based on obvious knowledge (axioms, such as the subjective concept of dealing). They place great emphasis on history as a discipline (Soto, 2008). In their view, economic theory can be developed in a logical way, including the concept of time and creativity (practiceology), i.e. without any need to use functions or assumptions of constancy that are incompatible with the creative nature of human beings, which are the only real protagonists of social processes – the subject of economic research.

Even the most prominent neoclassical economists have had to admit that there are important economic laws (such as the theory of evolution and natural selection) that cannot be empirically verified (Rosen, 1997). Often those aggregates that are statistically measurable have no theoretical significance, and vice versa: many concepts of peak theoretical importance cannot be measured or conceived empirically (Hayek, 1989).

THE LEFT-WING HETERODOXY

The left-wing heterodoxy includes Post-Keynesianism, old institutionalism,⁵ feminism, social economics, radical economics and many

others (Lawson, 2006). These are very different heterodox approaches, so the question arises, what unites these different heterodox projects?

From the left-wing heterodoxy, so-called '*old institutionalism*' - whose leaders include *Thorstein Veblen*, *John Rogers Commons*, *John Kenneth Galbraith* and others - can be considered a significant research tradition. Unlike representatives of orthodoxy, the subject of their research is the '*real world*', social institutions, laws, ethics, with the intention of penetrating research into the nature of the functioning of society. They recommend state intervention in a market system to correct market failures. Although '*the new institutionalists*', like the '*old institutionalists*', observe and explore social institutions, they use the tools of neoclassics (orthodoxy) that have been rejected by the old institutionalists. Their conclusions refute the views of Veblen and Galbraith. They are not a single group and are united only by acceptance of neoclassical (orthodox) economics. They have been created since the 1960s. New institutionalism includes the public choice theory, the property rights theory, the transaction cost theory and others.

The current message for the present can be the opinions of the neo-institutionalist *John K. Galbraith*. He analyses the problem of well-being and society, whose economy is not based on scarcity but on abundance, and whose resources are unevenly distributed between private and public consumption (Galbraith, 1958). Consumer preferences are shaped by advertising and marketing tools. Firms are able to force almost anything on the consumer without meeting any need for it. Therefore, instead of rational allocation of production resources under conditions of scarcity, attention should be focused on mass waste of resources in the context of the current consumer market economy.

Galbraith (1958) points to the senselessness of producing more and more goods that are

essentially useless to humans, and the '*demand*' for them is driven only by aggressive, costly, psychologically focused advertising. Such excessive consumption reduces the meaning of a person's life to the hunt for more consumer goods. He disputes the idea that man's goal is to use more and more goods and services. Galbraith countered the established view that such a development is a consequence of economic necessity and is natural and non-alterable. He has criticised the prevailing conventional views of entrepreneurs and managers about the need for ever-increasing production and consumption. In his opinion, economic thinking should also address the meaning and purpose of production. In his book, he argued that '*we do a lot of what is not necessary, a lot of what is not wise, and a few things that are directly insane*'. He concludes that material wealth in itself does not lead to social optimum. It is therefore necessary to establish a mechanism of equilibrium power that removes distortions from past and present and helps to strike a social balance.

In his book '*The Affluent Society*', Galbraith focused on the problem of social balance in society. He points to the fact that American society does not have a mechanism to ensure social balance. Galbraith highlighted the contrast between fast-growing private production on the one hand and the lagging behind of social spheres such as health and environmental protection, education, transport. There is a contradiction in American society between the wealth of material goods and the poverty of public services, between investment in production and investment in man. In his view, this problem became central at that time.

Post-Keynesianism closely linked to Keynes' teachings, acknowledging the problem of effective demand, deepening Keynes' criticism of neoclassical economics and highlighting the problem of uncertainty in the economy. Its

representatives reject the opening of Keynesian economics to neoclassical postulates, which took place within the Neo-Keynesianism in connection with the emergence of the so-called Neoclassical Synthesis. The most prominent representatives of Post-Keynesianism within the Italian-Cambridge School are J. *Robinson*, N. *Kaldor*, L. L. *Pasinetti* and others, and within the American school (younger) Post-Keynesians: S. *Weintraub*, P. *Davidson*, H. P. *Minsky* and others.

The efforts of these economists are to defend the true message of J. M. Keynes. Its representatives reject neoclassical economics (orthodoxy), its methodology, as well as its conclusions, but also the Neo-Keynesianism. Among left-wing heterodox approaches appears to be the most promising (also in view of their realistic approach to the issue of global financial and economic crises), especially those of its branches, which seek to formulate their own synthesis of institutional and Post-Keynesian theories (Sojka, 2009). Such authors are Hyman Minsky, *Paul Davidson* and others. Paul Davidson and Hyman Minsky (1986) developed an institutional-structural approach to the Post-Keynesian money theory. Keynes' theory of money was interpreted as a structural-institutional version of the theory of the endogenous nature of money supply. They see money as a social institution and highlight its function as a tool to combat uncertainty. They emphasize its ability to transmit values over time. Money has a contradictory impact on the dynamics of the economy. It creates scope for investment growth that goes beyond the possibilities of self-financing but, on the other hand, increases the internal instability of the market economy, especially if it become a speculative financing instrument (Davidson, 2002). As a result, major financial and economic crises may arise. In the course of historical developments, money and banking have been significantly transformed. The form of money

has changed dramatically (Horbulák, 2015). Financial innovation and deregulation have increased the instability of the financial system. At the economic boom phase, risky investor behaviour increases, speculative investment occurs. Financial innovations support and accelerate this trend. This was evidenced by the last global financial and economic crisis. The market is regarded as an institution which, by its nature, is internally unstable. Informal institutions, but especially formal institutions, serve to stabilise the market (Skott, 2011). There are conflict situations on the market which can have serious consequences and it is therefore necessary for the state to act as an arbitrator.

At a time of global financial and economic crisis of 2008-2009, H. Minsky's research work has come to the attention of (not only) economists. He was a leading figure in the Post-Keynesian theory of the economic cycle. This theory arose as a disapproval of the views of the so-called neoclassical Keynesians (Neo-Keynesians) who formed the mainstream in the post-war period (1945-1970). Minsky (1986) criticised the fact that since the days of Keynes, the analysis of crises has come under the back of economists's attention. In his research focused on the analysis of the financial instability of modern capitalism. His work is based on the assumption of fundamental uncertainty in economic life. The financial structure of the economy, its players as well as the institutional framework give way to an unstable form of financing of firms. This trend is supported by the existence and expansion of financial innovations. Even before the last global financial and economic crisis, the Post-Keynesians called on responsible politicians to restructure international financial flows. Minsky rejected conventional economic views, such as the market efficiency hypothesis, on the basis of which he called his hypothesis of financial instability.

The financial instability hypothesis is a theory of the impact of debt on system behaviour and also incorporates the manner in which debt is validated. Three distinct income-debt relations for economic units, which are labelled as hedge, speculative, and Ponzi finance, can be identified. Hedge financing units are those which can fulfil all their contractual payment obligations by their cash flows. Speculative finance units are units that can meet their payment commitments on ‘*income account*’ on their liabilities, even as they cannot repay the principle out of income flows. Such units need to ‘*roll over*’ their liabilities: (e. g. issue new debt to meet commitments on maturing debt). For Ponzi units, the cash flows from operations are not sufficient to fulfil either the repayment of principle or the interest due on outstanding debts by their cash flows from operations. Such units can sell assets or borrow. Borrowing to pay interest or selling assets to pay interest (and even dividends) on common stock lowers the equity of a unit, even as it increases liabilities and the prior commitment of future incomes. A unit that Ponzi finances lowers the margin of safety that it offers the holders of its debts (Minsky, 1992).

The first theorem of the financial instability hypothesis is that the economy has financing regimes under which it is stable, and financing regimes in which it is unstable. The second theorem of the financial instability hypothesis is that over periods of prolonged prosperity, the economy transits from financial relations that make for a stable system to financial relations that make for an unstable system. Over a protracted period of good times, capitalist economies tend to move from a financial structure dominated by hedge finance units to a structure in which there is large weight of units engaged in speculative and Ponzi finance. If an economy with a sizeable body of speculative financial units

will become Ponzi units and the net worth of previously Ponzi units will quickly evaporate. Consequently, units with cash flow shortfalls will be forced to try to make position by selling out position. This is likely to lead to a collapse of asset values. The financial instability hypothesis is a model of a capitalist economy which does not rely upon exogenous shocks to generate business cycles of varying severity (Minsky, 1992).

The left-wing heterodoxy criticises the formal rationality of the so-called economic man (*homo economicus*), methodological individualism, logical time, modelling of institutional, socioeconomic areas according to the rules of formal economic models and ahistoric analysis of social relations. The broad application of formalised calculations in mainstream economics is also understood by left-wing heterodox economists purely as a technique in which economics is only a mathematical game with symbols. They therefore consider it necessary to bring back the ‘human world’ to economics. In the field of economic policy recommendations, they call for an interventionist approach on the part of the state.

THE NEW HETERODOXY

1980 is an important year for economics because a large number of new research programmes were created at that time. These were e.g. game theory, behavioural economics, experimental economics, evolutionary economics, neuroeconomics and others.

In the context of the New Heterodoxy, behavioural economics is particularly successful. It has been developing since the 1970s. The publication of the article ‘Prospect theory’ by *Daniel Kahneman and Amos Tversky* (1979) in the journal *Econometrica* can be seen as a turning point in its development.

In 2002, Daniel Kahneman was awarded the Swedish National Bank's Prize for the Advancement of Economic Science in memory of Alfred Nobel (known as the Nobel Prize in Economics) for his contribution to economics, despite not being an economist but a psychologist. In 2017, the Nobel Prize in Economics was awarded for the development of behavioral economics to *Richard Thaler* from the University of Chicago. He was appreciated for including realistic assumptions from the field of psychology in the analysis of decision-making in the economy, examining the consequences of limited rationality, social preferences and lack of self-control. Thaler showed how these human features systematically influence individual decision-making and market behavior (Thaler, 2015). He sees as his most significant contribution the fact that he managed to get mainstream economists (orthodoxy) to accept that economic decisions are only human decisions and can therefore sometimes be irrational. As a result of this valuation, the popularity of behavioral economics, behavioral finance and other disciplines based on behavioral approach has increased (Chytil - Klesla, 2018).

Thaler is one of the most prominent representatives of contemporary behavioral economics and is also the founder of the behavioral finance. Like other representatives of heterodoxy, he also takes a critical stance on the basic starting point of standard economics – the neoclassical concept of '*homo economicus*'. He examines the impact on economic behaviour of habits, moods, prejudices and why, under certain circumstances, people behave irrationally. This makes it possible to supplement and correct the knowledge of standard orthodox economics, where full rationality of human behaviour is assumed. Based on empirical research, he analyzes and criticizes theoretical models of economic orthodoxy, based on the behavior of perfectly

rational beings, which he called *econs* (entities without emotions, mistakes and social bonds). Mathematical models of economic behaviour are imperfect because it results from the physiological arrangement of the human brain and the resulting dual way of human thought – fast and slow.

In the area of behavioral finance, Thaler dealt with the anomalies of rationality in financial markets. He opposed the previously widely accepted hypothesis of efficient markets and the resulting recommendation that financial markets do not need to be regulated. He has shown that there are rationality anomalies in financial markets, especially when making decisions under time pressure. In financial markets, investors' over-confidence in estimating future price developments on the basis of their own past trading experience is reflected, supported by short-term technical analysis. The result is a delayed inadequate response to price developments leading to price bubbles and their bursting. Behavioural finances provide a new approach in the analysis of financial market behaviour.

It can be concluded that behavioural economics plays the role of a constructive opponent of standard orthodox economics. Behavioural economists use experiments and their interpretation to study and understand human irrationality. However, it only examines certain areas and does not yet provide a comprehensive solution to economic problems (like other heterodox approaches).

CONCLUSION

The basic characteristics on the basis of which orthodox economics can be distinguished from heterodox approaches are defined in *Table 2*. However, heterodox theoretical approaches are so numerous and varied that exceptions to those characteristics can be found for some of

Table 2

FUNDAMENTAL DIFFERENCES BETWEEN ORTHODOXY AND HETERODOXY

Ortodoxy	Heterodoxy
1. Formal racionality – ‘ <i>homo economicus</i> ’	1. Orientation to ontology
2. Methodological individualism	2. Methodological pluralism
3. Atomistic concept of the individual	3. Socially embedded concept of the individual
4. Logical time (ahistorical analysis of social relations)	4. Historical context of socio-economic relations
5. Mathematical-deductive forms of reasoning (formal-deductive approach)	5. Inductive approach
6. Modelling according to the rules of formal economic models	6. They do not use mathematical economic modelling
7. Closed system	7. Open system (examining the mutual impact between individuals and social structures)

Source: literature-based self-processing

them. An example is the Neo-Austrian School, whose leaders are inclined to apriorism in methodology, so methodological pluralism is not acceptable to them.

A common characteristic of heterodoxy (Left-Wing Heterodoxy, Neo-Austrian School and New Heterodoxy) is the rejection of orthodoxy, in particular its research methods. They reject the axiom that individuals are always rational, the concept of ‘*homo economicus*’, the application of a formal-deductive approach, the use of mathematical methods in cases that are not appropriate for this, and access from a closed system position.

Heterodoxy represents a very diverse theoretical traditions, with differences not only between the Left-Wing Heterodoxy, Neo-Austrian school and New Heterodoxy, but also within these heterodox traditions. They differ on specific topics that are addressed, as well as proposed solutions to socio-economic problems. With their views, comments and recommendations, they provide inspiration for the development of economic science as well as for economic policy-makers. However, they do not yet provide a comprehensive solution to economic problems, which could be a coherent alternative to orthodox economics. ■

NOTES

¹ This article was written as part of the final outcome of the research project VEGA 1/0239/19 ‘Implications of Behavioral Economics for Streamlining the Functioning of Current Economies’.

² Lawson identifies orthodoxy with mainstream economics, unlike some other authors, such as David Dequech (2007, p. 282), who distinguish between orthodox economics and mainstream economics. Because the differences between these

two approaches are not crucial for the focus of our contribution, we will therefore build on Lawson's approach.

³ Tony Lawson originally studied mathematics. Later continued his study of economics at the London School of Economics, where he encountered extensive use of formal economic models, which he considered too easy to match the realities of life. This was the reason why Lawson became interested in ontology, the nature of social reality, and continued his PhD studies at Cambridge University. He is one of the founders of the European Association for Evolutionary Political Economy, as well as the Centre for Critical Realism.

⁴ Hayek uses the term 'socialism' in a very broad sense, which includes not only so-called 'real socialism' (a system based on public ownership of production factors), but generally any systematic attempt, through coercive measures of 'social engineering', partly or entirely to plan or organize any area of the network of human interactions forming the market and society.

⁴ As the 'old institutionalism' in this article, we understand the American interwar institutionalism (1st half of the 20th century) as well as the Neo-Institutionalism that was developed after World War II in the US, because they share methodological backgrounds and are also linked by economic policy conclusions.

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