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# Money Circulation Mechanisms: Micro-Meso-Macro

by

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**Abstract**.

The objectives of the paper are as follows: first, to identify divergence from reality in the study of money circulation in modern orthodox micro- and macroeconomics; second, to show the specifics of approaches to money analysis introduced by such classical heterodox economists as Veblen, Commons and Schumpeter; third, to consider the approach of modern heterodox mesoeconomics to analysis of money and money circulation based on evolutionary and institutional traditions

We show that analysis of the real mechanisms of money circulation is one of the pitfalls for neoclassical mainstream economists in micro- and macroeconomics. These problems are related to the specifics of the set of underlying methodological assumptions of neoclassical economics. We show that they are becoming a "Procrustean bed" for analyzing the complex monetary infrastructure and money circulation in the increasingly financialized and "open to the future" modern economies. Attempts to go beyond these methodological assumptions are constantly being made, primarily outside the economic mainstream. In many ways, they are based on the traditions laid down more than half a century ago in the works of Veblen, Commons and Schumpeter, who stood at the origins of the formation of institutional and evolutionary economics. In the paper we present the main ideas and results of their understanding of the specifics of money circulation. Next, we show how these traditions and suppositions are developed by modern heterodox economists and created modern heterodox mesoeconomics. We specify it as an independent field of research, which has its own intra-disciplinary structure and is based on certain methodological prerequisites. Some results that have already been obtained in the study of money and money circulation in the framework of a heterodox economy based on meso-foundations will be presented.

**Keywords**: money, money circulation, macro-microeconomics, mesoeconomics, heterodox economics, T. Veblen, J. Schumpeter, J Commons

**JEL Classification Codes**: B31 B41 B50 B52-53 G20 B12

## 1. Introduction.

It is an axiom that money and money circulation are integral characteristics of economy, its "circulatory system". An analysis of the economy outside these characteristics seems impossible. However, the paradox is that economic theory – in this case, we are talking primarily about the orthodox neoclassical mainstream - does not deal with the analysis of money circulation in the economy in sufficient depth, even though it operates with monetary indicators and the proportions of various monetary aggregates in most economic calculations.

To what extent have neoclassical micro- and macroeconomists managed to get closer to understanding the essence of money circulation processes? In other words, did they succeed in developing monetary theories to consider the money circulation as an endogenous economic process and to identify its actual connection with the processes of economic reproduction, that is, with the development of the economy itself? To what extent was it possible to realize the view of the economy as a development economy (in the sense of Schumpeter), in which the mechanisms of the “purchasing power " movement (Schumpeter 1934: 107) are the most important elements of monetary institutions?

In the paper we will show that the above-mentioned tasks - despite the undoubted achievements of micro- and macroeconomists - are still on the agenda, but they can hardly be solved within the framework of the neoclassical mainstream. This is primarily due to its initial methodological assumptions, which become a "Procrustean bed" for the study of processes occurring in a variety of increasingly complex financialized and "open to the future" economies of the world. We believe that a more relevant view of the phenomenon of money and money circulation in such economies is found in heterodox institutional-evolutionary economics, which is based on meso-foundations (Dopfer, Potts 2007).

The main objectives of this paper are as follows:

- first, to identify the insufficiently studied problems of monetary circulation in modern orthodox micro- and macroeconomics and to indicate the reasons for this;

- second, to pay attention to the specifics of the heterodox institutional-evolutionary approach to the analysis of the economy and money circulation;

- third, to show how modern heterodox mesoeconomics is a new direction that can be useful in the analysis of money and money circulation.

The objectives and tasks set determine the structure of the paper. First, in Section 2, we will show the specifics of the view of money circulation in mainstream micro- and macroeconomics through the prism of the theoretical and mathematical models used here. We will see that, despite some advantages of economic analysis based on clear and understandable models of economic equilibrium, such analysis has its limitations. These limitations, arising from the mainstream methodology, prevent the recognition of, among other things, the "magic" of money and money circulation. Then, in Section 3, we turn our attention to different economic models and the various resulting approaches to the analysis of money circulation proposed by well-known heterodox economists, primarily Thorstein B. Veblen (1857-1929), John R. Commons (1862-1945), and Joseph A. Schumpeter (1883-1950). We will pay special attention to their positions that are difficult and, most likely, impossible to include in predominant orthodox economic models. In Section 4, we consider modern heterodox mesoeconomics, which is largely based on the achievements of the great heterodox economists mentioned above and takes into account the complexity of economic realities and forms an alternative set of methodological prerequisites for economic analysis. The analysis of money circulation in line with the prerequisites of heterodox economic methodology already allows us, as we show in this paper, to obtain answers to those questions that are insufficiently investigated – and, perhaps, cannot be investigated - in the micro- and macroeconomics of the neoclassical mainstream. In Conclusion, Section 5, we summarize the results.

## 2. Money circulation in micro-and macroeconomic theory

In microeconomics, the theoretical and methodological basis of which is a general equilibrium model, generally speaking money is not of fundamental importance. Heterodox economists and sociologists are constantly paying attention to this fact. As we know Schumpeter also noted that the Walras's model[1] of the

[1] Similar ideas were developed by Knut Wicksell in his concept of a pure credit economy (Wicksell 1962 (1898)). Although Wicksell was one of the first to argue that money is not a "veil", he did support the idea that money is still neutral in the long run. Modern theoretical constructions within the mainstream at the level of fundamental assumptions still accept key elements of the Walrasian and Wicksellian models (Boianovsky, Trautwein, 2006; Ostapenko 2020) developed within the so called "cashless framework" (Barbaroux 2008, 157).

economic process was basically a barter model, logically complete and autonomous in its own way, although its functioning could be disrupted by inflation and deflation (Schumpeter 1934, chapter 8). In such a model, money can only be considered as a means of "improving" barter practices. Further development of the mathematical apparatus within the framework of neoclassical microeconomics (we are talking primarily about the Arrow–Debreu model which is fundamental for this direction) followed the same tradition of actually ignoring the phenomenon of money. As Frank Hahn writes, “the most serious challenge that the existence of money poses is this: the best developed model of the economy cannot find room for it. The best developed model is, of course, the Arrow-Debreu version of Walrasian general equilibrium” (Hahn 1983, 1). Later, this feature of microeconomics, associated with its theoretical concepts and a set of initial assumptions, was directly pointed out by Geoffrey Ingham: “the methodology of orthodox economics is quite unable to explain the existence of money (Ingham 2004, 18) … Indeed, money is not even accorded an analytical place in some of the most prestigious mathematically sophisticated models of the economy – such as Arrow-Debreu’s general equilibrium” (Ingham 2004, 23).

And although microeconomists constantly operate with market variables that have monetary value, money circulation itself is not the subject of their analysis. This is also due to the presumption of a certain predestination in the course of market transactions[2]. In microeconomic models, it is assumed that the monetary system "functions properly", and money only serves economic processes, facilitating the search for equilibrium. This is pointed out by heterodox economists who seek to better understand the phenomenon of money and money circulation. They note: “The difficulties which the mainstream analysis has in dealing with money and credit are well-known… … The mainstream approach has generally seen ›money as a veil‹ (Sawyer 2010, 296-297), without delving into the essence of the very process of money circulation.  Hardy Hanappi supported him: «In the pure form of general equilibrium theory (GET) **there is thus no endogenously developed theory of money** <bold from H.H. >, money and prices are just like a veil thrown by a monetary authority over true and natural exchange ratios” (Hanappi 2013, 8-9).

However, in the 1930s the “flat” and, in fact, the “moneyless” nature of the microeconomic theoretical model was attacked by the paradox of thrift, or paradox of saving. This paradox was introduced in the writings of collaborating American economists William Trufant Foster and Waddill Catchings in the late 1920’s (Gleason 1959). Then it was popularized by John Maynard Keynes[3] who also based his famous macroeconomic approach (Keynes 1936) on it. He separates the

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[2] As Murray Rothbard pointed out at the time: “Thus, ironically, if it were not for the uncertainty of the real world, there could be no monetary system at all!” (Rothbard 2010 (1963), 29).

[3] Although Keynes himself referred in this case to the concept of Bernard Mandeville’s “The Fable of the Bees” (1714).

microeconomics studying economic behavior and markets based on individual incentives from the macroeconomics dealing with broad national economic aggregate variables and constructs. Keynes revives the circular flow economic model in which money moves between these two levels and current spending drives future spending. Keynes introduced the term a “monetary economy” and distinguishes this from a “real-exchange economy” that might use money, but “does not allow it to enter into motives or decisions” (Keynes 1973, 408-409).

What is the fundamental difference between macroeconomics as a new level of economic analysis in the context we are considering? In our opinion, the most significant difference is that here the role and structure of money circulation becomes significant. Keynes highlighted the transmission mechanism of monetary policy. This mechanism ensures the impact of changes in the proportions of money on business activity and economic equilibrium. The transmission mechanism proposed by Keynes was initially extremely simplified and included only one channel - through the rate of interest. Nevertheless, the Keynesian monetary macroeconomic analysis suggests that a more realistic understanding of the economy is impossible without "considering the monetary mechanism, and Say's Law is replaced by the Keynes’ Law of effective demand" (Ostapenko 2020, 3)[4].

So, the economics in its updated (due to neoclassical synthesis) orthodox micro-macro version considers an economy as a two-level system, in which the interaction between levels occurs through monetary signals. The simplest model of this interaction or transmission mechanism involves three phases of development, described in (Moiseev 2002, 40). The first phase begins with the fact that, at the macrolevel, central banks change the official interest rate which usually transmits to the economy with changing market rates, expectations, asset prices, and exchange rates. In accordance with these changes, the prices of financial assets are adjusted, which affects the costs of microlevel entities - households and firms. The changes that have occurred in this regard in the real sector lead to changes in the structure of the borrowers’ balance - in this way signals from the microlevel are returned to the financial system. In the second phase, market interest rates are adjusted, which affects aggregate demand. After that, in the third phase, macroeconomic adaptation takes place: this is expressed in changes in macroeconomic indicators (economic growth and unemployment), which induce a recalculation of prices and wages. As a result, the economic system has moved to a new economic equilibrium.

It is obvious that in the 1930s not only theoretical challenges, but also a practical need led to modification of the economic model used by economists of that period. Overcoming the consequences of the Great Depression became possible primarily due to active government policy, for which the new theoretical model

[4] Further after that the transmission mechanism becomes the object of research by such prominent economists as Milton Friedman, Franco Modigliani, William Baumol, James Tobin etc.

(providing for the interaction of micro and macro levels) turned out to be very relevant. As William Baumol later noted, the Council of Economic Advisers established by the Truman administration in 1946, which acted on these new insights, also offered recommendations that provided "macroeconomic regulation that produced remarkably accurate and predictable results" (Baumol 2001, 101).

However, the further complication of the economic structure and the development of monetary instruments and financial mechanisms demanded an elaboration of the theoretical model. The micro-macro representation of the economy, being quite effective for its time, in the new conditions turned out to be insufficiently heuristic. So, operating only with the proportions of money entering the economy, without analyzing how monetary circulation occurs within the economy, is insufficient. But monetary economics, where money is a special subject of analysis, remains integrally linked to macroeconomics based on microfoundations. It gives reasons for some researchers making rather harsh statements that “In the framework of monetary analysis, researchers do not set themselves the task of showing how the money supply affects the economy. The effects of monetary policy are studied by testing the tightness of the correlations between changes in the money supply and gross output (or aggregate expenditure). Relying on a shortcut method of proof, monetary economics views the economy as a "black box", inside which unknown processes take place. Thus, there is no transmission mechanism as such” (Moiseev 2002, 45).

We also believe that the implementation of John Maynard Keynes’s ideas into mainstream economics, due to the neoclassical synthesis already mentioned, as well as the macroeconomic models developed in neo-Keynesian economics in the 1950s and 60s and then in new Keynesian economics since the 1980s, did not sufficiently contribute to an in-depth understanding of monetary circulation. This is due to the fact that money in macroeconomics is considered by analogy with commodity supply and demand within the framework of the same ‘fundamental equilibrium’ DSGE models. In other words, the current understanding of the transmission mechanism in mainstream economics presents it as a system of interdependent and co-functioning economic variables and is "trapped" in an econometric model that just describes the correlation between monetary and economic parameters. At the same time, the economy itself continues to be a "black box". In addition, macroeconomic models are non-historical and "do not contain anything that would distinguish market economies from Soviet-type economies or from the economies of Ancient Rome and medieval China" (Baumol 2001, 84).

Summing up, we can say that money circulation and the actual nature of money continue to be a problem area in modern orthodox micro- and macroeconomics. First of all, a structure of transmission mechanisms with money flows is "undisclosed". Second, it is the lack of research on connections between the processes of money circulation and changes in the real economy. The main reason for this is the methodological (micro) foundations of neoclassical economics and the models of analysis adopted in it which allow us to study changes in the real sector of the economy only in a short run and in stationary conditions (Moiseev 2002, 41-42). "In short, mainstream economics cannot provide a satisfactory explanation of money's existence and functions; that is to say, orthodox economics has failed to specify the nature of money" (Ingham 2004a, 23).

## 3. Money and monetary circulation through the lenses of classical figures of institutional and evolutionary economics

Limitations in the study of the phenomenon of money and money circulation in orthodox micro-macroeconomics are determined by the analytical program used and the vision of economic processes adopted. It is based on the concept of economic equilibrium and the *homo economicus* model.

A different vision is presented in heterodox economics. The differences that are important in our context are related to the following points. First, situations of economic dynamics and development (including cycles and crises), rather than equilibrium and statics, are of particular interest to heterodox economists. Second, the focus of their attention is more often directed to the analysis of the institutions of economic performance and various social models of behavior corresponding to them. Thus, it is not *homo economicus* with a universal model of behavior which becomes the main object of analysis, but a variety of factors that determine and direct different economic behavior. We are talking here about institutions, both historically rooted and constantly changing.

It is obvious that these two aspects - dynamic and institutional - are interrelated. Institutional structures ("social technologies"), formed in the course of human activity in the conditions of specific societies and successfully passing through historical social selection, are kinds of bridges (elements of infrastructure) from the past to the future. The more powerful and diverse such an institutional infrastructure is, the more confidently the economy develops. Metaphorically speaking, institutions are an evolving "system of paths" such as transport, where there are railways along which people move goods and move themselves, and roads along which cars drive, and "air corridors" in which planes fly, and the system of sea routes for ships. The heterodox view on money and money circulation means that "money primarily provides the infrastructure for coordination" (Govtvan 2020, 60; Ricks 2018) in the development economy, or 'infrastructural' power (Mann 1986), which determines the directions of their analysis in the institutional-evolutionary economics.

Let us turn in this regard to the views of its classical figures such as Veblen, Commons and Schumpeter.

We start with Veblen who was probably one of the first to apply the evolutionary theory categories (process categories) to economics when he wrote that "evolutionary economics must be the theory of a process of cultural growth as determined by economic interest, a theory of a cumulative sequence of economic institutions stated in terms of the process itself" (Veblen 1898, 393). So, he also was one of the founders of the institutional approach in economics, handled the study of institutions as a necessary formative element of economic science as an evolutionary discipline. More definitely he wrote about it in his other work "The Theory of the Leisure Class…": “The evolution of social structure has been a process of natural selection of institutions… Social institutions are not only the result of selection and adaptation processes, shaping the prevailing and dominant types of relationships and spiritual position, at the same time they are special modes of the existence of a society, forming a special system of social relations and, hence, in turn, are an effective selective factor” (Veblen 1899, 188).

Veblen's interest is not in the investigation of equilibrium states (he was one of the most active critics of ‘neoclassical economics’, a term given by him in his article "Preconceptions of Economic Science" 1900), but in the investigation of the dynamic economic process as a "cumulative or unfolding sequence” (Veblen 1898, 386). “Few economists, I suspect, emphasize the processual nature of social reality as much as Veblen. He continually reminds us that the social realm, no less than the (non-social) natural realm, is a process of causal sequence, of cumulative causation” (Lawson 2014, 993). Indeed, “(F)or the purpose of economic science the process of cumulative change is to be accounted for is the sequence of change in the methods of doing things, - the methods of dealing with the material means of life” (Veblen 1898, 387).

In the process of economic development Veblen “emphasizes pecuniary initiative” (Wray 2007, 622) and the role played by credit not only in financing growth of capitalized values “but it is also critical to his description of the business cycle and the crisis phase that leads to liquidation” (Wray 2007, 621). “Following “German writers,” Veblen distinguished among the “natural economy,” the “money economy” and the “credit economy”’ (Wray 2007, 617), and the latter was the main object of his analysis. Veblen points out that the role of endogenous money creation by banks is high in the credit economy, which is a significant factor in the unevenness and cyclical nature of the economic process, and he described this process in detail (Veblen 1958). This gives a basis for modern researchers “to provide an interpretation of Veblen’s theory of economic crises, based on the view that banking policy is a major factor in generating crises” (Davanzati, Pacella 2014, 1043).

We also note Veblen's departure from the principle of methodological individualism and the *homo economicus* characteristic of neoclassical economics. This is expressed in his understanding of economic institutions that cannot be “fragmented” into the interests of individual agents but expresses the interests of large groups of people. Being an evolutionary science economics “must be a theory of economic life process of the race or the community. … It is necessarily that aim of such an economics to trace the cumulative working out of the economic interest in the cultural sequence” (Veblen 1898, 394). This approach is natural for the Veblenian analysis of money as the most important economic institution.

Next, we turn to the research of money and money circulation in the works of Commons. In our paper we very briefly dwell on the points that are important for our analysis, since a detailed paper by the Japanese researcher Akiyoshi Sakaguchi has just been published in the Journal of Economic Issues, dedicated to the contribution of J. R. Commons to the Institutional Theory of Money (Akiyoshi Sakaguchi 2020). First, we note that Commons, like Veblen, paid particular attention to the credit nature of money. Second, he approached it as a social institution: money is “a collective instrument for the creation, negotiability, and release of debt by individuals” (Commons 1934, 278) affirmed by law and custom, therefore it constitutes a “fundamental sociological notion ”(Commons 1934, 471). ”Commons… insisted that we ought to look for the “essential” attribute of money not in its material, but in its institutional characteristics, because the state of money as payment means (means to release debts) is prescribed by the rule (law and custom) that frames creation, negotiability, release of debt ”(Akiyoshi Sakaguchi 2020, 977). Third, Commons, while recognizing the universality of the functions of money, noted the historical diversity of instruments and rules that have evolved in different societies to carry out its main functions with money (Commons 1934, 461).

Finally, let us turn to the works of Schumpeter and his understanding of the nature and role of money in the process of economic development. Of the entire multitude of his ideas on this topic occasionally changing over time[5], we will focus primarily on those that meant going beyond the orthodox neoclassical model[6]. Here we will mostly rely on the analysis presented in the paper “Schumpeter on money, banking and finance: an institutionalist perspective” by Agnès Festré and Eric Nasica (Festré, Nasica 2009).

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[5] In this regard we note that, for example, Schumpeter's student, who became an eminent economist Hyman Minsky, believed that in his work *Business Cycles* (1939) Schumpeter departed from his understanding of money presented in his earlier work (Mishell 2014, 86).

[6] Although there are indications that, for example, in *Treatise on Money* (published in English translation in 2014) Schumpeter intended to synthesize Wicksellian monetary theory with the Walrasian framework (Mishell 2014, 88). Minsky chided Schumpeter for increasing devotion to the Walrasian general equilibrium system — a system Minsky viewed as incompatible with the central role played by money in Schumpeter’s earlier work (Mishell 2014, 86). “…. Schumpeter got enmeshed in a Walrasian trap that assumed only real things matter, whereas in his original vision, money mattered.” (Minsky 1983, 15. Quote from: Mishell 2014, 86).

Let us point first to Schumpeter's understanding of economic evolution primarily as a process of constant change and renewal. He considered it important to emphasize this because, in his opinion, evolutionary explanations of his time in the field of natural sciences “are unable to deal in a satisfactory manner with the problem of novelty” (Festré, Nasica 2009, 328). According to the well-known definition of Schumpeter, “evolution is a disturbance of existing structures [...] more like a series of explosions than a gentle process, through incessant transformation” (Schumpeter 1939, vol. I: 102). Thus, evolution implies the constant creation of new structures that shape the development process, creating conditions broadening the scale of individual actions and creating new combinations.

Another important feature of economic analysis according to Schumpeter is the inclusion in it (along with history, statistics and (economic) theory) of economic sociology as an additional, but necessary element in the arsenal of an economist (see his *History of Economic Analysis*, chapter 2). The inclusion of economic sociology in economic analysis means, for Schumpeter, first of all, attention to institutions where the results of interactions occurring at all levels of social life are "absorbed"; at the same time, the priority for Schumpeter are institutional factors closely related to economic activity. In turn, institutions reflect the dominant position of social groups and leaders in society (Schumpeter 1934: 107). Thus, “for Schumpeter, economic sociology or social institutions are more than a complement to economic analysis. They rather constitute a logical priority to it. In other terms, for Schumpeter, it is not possible to deal with economic change without considering complementary and necessary previous institutional change ”(Festré, Nasica 2009, 332). At the same time, institutional changes become the center of research into economic dynamics, which is understood as “such changes in economic life as are not forced upon it from without but arise by its own initiative, from within” (Schumpeter 1934: 63), and money is studied by Schumpeter as a social institution whose "design" depends on specific historical conditions.

Such views on the economic process allowed Schumpeter to substantiate the distinction between three successive cases - the ‘circular flow’, the ‘steady-growth case’[7] and the ‘development case’ (for a more detailed analysis, see Festré, Nasica 2009, 337-344). General equilibrium models, as Schumpeter believed, are adequate only for describing the first two cases. Here money is just ‘an entrance ticket’ to the economic world or ‘technical device’ to carry business transactions (Schumpeter 1917-1918). The bank plays a passive role in such cases, and Schumpeter describes the loans it gives as ‘normal credit’. In this case, not only money, but the bank itself is just a veil (Godley & Lavoie 2007, 497).

[7] “Even though unusual, it is not surprising that Schumpeter includes the case of steady growth under ‘statics’. He simply regards it as an extension of the pure model of the ‘circular flow’, except that it displays a positive rate of saving” (Festré, Nasica 2009, 339).

As for the ‘development case’, it differs primarily in that here the banker gives the entrepreneur so-called ‘abnormal credit’ and thus plays an active role in economic change. The investigation of this case became the core of Schumpeter’s achievement in his well-known *Theory of Economic Development* as well as in *Business Cycles*. Along with these works the previously noted *Treatise on Money* (Schumpeter 2014) allowed modern researchers to more fully imagine a “credit theory of money” by Schumpeter. Ones noted the important contribution he made to a “monetary analysis” of capitalism in which Schumpeter replaced the orthodox view of a “real” economy by the central concept of money as a “social accounting” system of economy (Lakomski-Laguerre 2016). We note also that, in fact, Schumpeter drew attention to the fact that money in the economy is heterogeneous, and the "monetary infrastructure" is represented by different types of monetary instruments, "moving" at different speeds and intended for different functions (in particular, "routine" and "innovative").

A joint examination of the views of Veblen, Commons and Schumpeter shows that they used different, in comparison with neoclassical micro-macroeconomics, methodological prerequisites in the analysis of the phenomenon of money and money circulation. In modern language, we can summarize them as follows:

- a departure from equilibrium analysis (statics) and consideration of the economy from the perspective of development processes (dynamics), which are heterogeneous and include cycles and crises;

- designation of the role of institutions not only and not so much as restrictions on economic behavior (as is generally accepted, for example, in neoinstitutional economics), but as phenomena that structure development processes; their important element is the social models of behavior of the main economic agents. From these positions, the classics of heterodox economics implement an approach to the analysis of the phenomenon of money and money circulation as a social institution[8];

- understanding the heterogenety of money functioning in the economy under conditions of uncertainty and highlighting the special role of credit money.

The identified methodological prerequisites are obviously different from those that form the methodological framework of neoclassical micro-macroeconomics and the monetary theories based on them. However, they are very close to the set of postulates that are accepted in modern heterodox mesoeconomics. How promising is it to go from microfoundations to mesofoundations in the study of money and money circulation, what does it give? We will show it in the next Section.

[8] It is important to emphasize that they do not separate money from its "economic" base, i.e. they do not consider it as a political institution in the tradition by Gilles Deleuze, Pierre-Félix Guattari, Paul-Michel Foucault etc.

## 4. **Modern heterodox mesoeconomics for the study of money and money circulation**[9]

About mesoeconomics as a research area that integrates primarily evolutionary and institutional concepts[10] in economic theory, was described in detail in (Potts 2007; Dopfer & Potts 2007). However, despite the long tradition of the origins of meso, the rapid development of mesoeconomic research began, perhaps, from the beginning of the XXI century[11]. On the one hand, this is caused by the increasingly complex relationships in the modern economy and the emerging new structures, the design of which required its "own theoretical space – meso" (Chen 2008, 21). On the other hand, the reason was the dissatisfaction of many researchers with the analytical micro-macro program of the neoclassical mainstream (Dopfer 2004; Elsner & Heinrich 2009; Elsner 2010).

We believe that by now we can talk about the formation of heterodox mesoeconomics as an independent field of research, which is based on a certain set of initial prerequisites and has its own intra-disciplinary structure. The experience of classification of heterodox mesoeconomics studies is presented in our recent paper (Kirdina-Chandler, Maevsky 2020). In our analysis of the body of publications in this research area[12], we tried to trace the logic of the deployment and consistent theoretical content of meso studies in order to see the "cumulative effects" within the emerging heterodox mesoeconomics. We relied on a historical-chronological approach and took into account the specifics of the mesostructures studied by the international community of mesoeconomists. Our grouping comprises four directions, namely "mesoeconomics of localized structures"," mesoeconomics of network structures"," institutional mesoeconomics", and "mesoeconomics of reproduction". These directions unfolded sequentially one after another, and although sometimes the time frame for the development of each of them overlapped (and continue to overlap, because all these directions are actively developing today

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[9] The study of money from the perspective of the mesoeconomic approach developed within the neoclassical framework, which seeks "a middle way between the macroeconomic emphasis on effective demand and the microeconomic analysis of agents" (Lavoie 2009, 73), deserves a separate discussion. Here we only note that in this case, the logic of the equilibrium approach is also applied to money (money demand). Neoclassical mesoeconomics is based on microfoundations and is only slightly aimed at studying the necessary structures that ensure the "order of their chaos" and set the laws of monetary cycles. With this approach when, metaphorically speaking, «a set of biological atoms moving towards its natural equilibrium via markets – then there is no room for an understanding of the growth of structure, of exactly those processes which constitute the emergence of life forms (of all evolutionary forms) living as temporary contradictions to the law of entropy… there is no theory of credit and capital" (Hanappi 2013, 9). This topic is beyond the scope of our paper.

[10] In this framework, an institution is defined as a stable (meso) rule population as the outcome of a (meso) trajectory. The central analytic implication of the evolutionary theory of institutions is that an institution is essentially a meso - not a micro or macro concept (Potts 2007, 341).

[11] Only in Russia several fundamental books on mesoeconomics were published last years. Among them Mesoeconomics of Transition Period: Markets, Industries, and Enterprise. 2004.; Mesoeconomics of Development 2011, Mesoeconomics: Current State and Prospects 2018, Mesoeconomics: Elements of A New Paradigm 2020.

[12] Our analysis included works in which the authors independently identified themselves with mesoeconomics, which was evident from the titles, keywords and texts of publications.

and exist in parallel), nevertheless, each subsequent direction, absorbing the achievements of the previous ones, represented the next step and a deeper immersion in the study of the nature of various kinds of mesostructures. Thus, the study of the phenomenon of money has become the object of primary consideration in the newest (developing since the 2010s) direction "mesoeconomics of reproduction".

Despite the growing scope and role of mesoeconomics research, JEL classification codes, updated quarterly by the American Economic Association, still do not include the Mesoeconomics code. Although more than 15 years ago and then later, it was proposed to add a new category to the JEL: (S0) Meso Economics: General (Dopfer & Foster & Potts 2004, 263; see also Holland & Black 2018, 15). In our opinion, this is primarily due to the methodological specifics of modern mesoeconomics, based on postulates that are very different from the original concepts of predominant neoclassical economics.

First, heterodox mesoeconomists are moving away from the microeconomic foundations and principles of additive aggregation adopted in modern neoclassical theory (Gareev 2010, 47). They view the economy as a complex system in which mesoeconomic structures arise due to the emergent effects of economic co-evolution processes and are qualitatively different from the microlevel (Elsner 2007). Thus, heterodox mesoeconomists abandon the principle of methodological individualism in favor of an approach that focuses on the structures and processes that regulate the environment where economic agents operate. We call this approach, in which the features of the development of economic systems are derived not so much from the behavioral characteristics of the subjects of the economy, as from the properties of the structures that form it, mesoeconomic foundations. Mesofoundations allow a more thorough investigation of the mechanisms of stability of the economic system in dynamics.

Second, if in the orthodox economics the main object of analysis is the price coordination mechanism with a predominance of negative feedbacks, then heterodox mesoeconomists pay equal attention to the effects of positive feedbacks. On the one hand, such feedbacks ultimately ensure economic growth, but on the other hand, they can lead to an imbalance in the economy including crises. Accordingly, the recognition of the role and scale of the spread of positive feedbacks means attention not only to competition coordinating economic processes, but also to other spontaneously emerging coordination mechanisms like cooperation, redistribution, mergers and acquisitions etc. (Dementiev 2002; 2015; Mesoeconomics of Development ... 2011, 21).

Third, heterodox mesoeconomists are characterized by a systemic view of economic development. Some of them even consider the mesoeconomic approach as synonymous with the system approach, for example, Jean Carassus (The

Construction Sector System Approach… 2004, 4). Moreover, heterodox economists pay special attention to the complexity of economic systems, which predetermines their attention to the study of the meso-level, where, according to Brian Arthur, the main interactions in a complex economic system take place (Arthur 2013), as well as their structuring and institutionalization (Elsner 2010). Thus, heterodox economics moves away from the reductionist approach of the orthodoxy, in which aggregation is the main way of moving from micro-level analysis to macro-level (which means relying on microfoundations when considering the processes of meso and macro levels), in favor of a system approach. “The methodological meaning of identifying the meso-level is that it is at this level that structures are formed as the main characteristic of the system” (Deryabina 2018, 33). Therefore, in many cases, it is generally sufficient to analyze the economic system at the meso-level, since the structures formed at this level already contain the necessary information about the evolution of the system and its self-organization (Haken 2006).

Fourth, heterodox mesoeconomists are distinguished by their view of the economy as a dynamically developing system, in which not static states (or a change in static states), but vital processes for the economy and the conditions for their occurrence, attract the main attention. Accordingly, the formation and development of mesoeconomic structures is viewed in dynamics and from the point of view of the processes that they are designed to serve in a dynamic economic system, which brings mesoeconomists closer to the author of *Theory of Economic Development*.

Fifth, heterodox mesoeconomists take into account the social conditioning of economic mesostructures, they are characterized by an "institutional view" and an understanding of the social embeddedness of economic processes, which is an obvious continuation of the approaches of Veblen and Schumpeter, which we paid attention to in Section 3.

Thus, heterodox mesoeconomics forms different methodological lenses in comparison with the mainstream micro-macroeconomics. How productive is this approach when analyzing the phenomenon of money and money circulation?

An indirect confirmation of the fruitfulness of this view can be found in the fundamental work “The Nature of Money” by Goeffrey Ingham (Ingham 2004; 2004a). Despite the fact that the mesofoundations of his research are not postulated explicitly, attentive readers will obviously see them. They are expressed in the fact that Ingham recognizes the inadequacy of orthodox economic theory with its reliance on the concept of equilibrium for understanding the essence of money. Building on Schumpeter's approaches, he examines it in a developmental context: “With its emphasis on the development of capitalism, *The Nature of Money* helps to position findings from mesolevel studies of institutional development in economic sociology within the broader economic and political context of a theory of capitalism" (Beckert 2006, 1299).

A more obvious result of applying the mesoeconomic approach is our comparative analysis of banking in different types of economies (Kirdina, Vernikov 2013). Heterodox economists point out that "the monetary system carries the marks of the specific institutional setting prevailing in that society" (Hanappi 2013, 2), and our comparative analysis of banking as financial intermediation confirmed this. Based on the provisions of the institutional matrices theory (Kirdina 2014; Kirdina-Chandler 2017), we showed a different role of banking for countries where X-matrix institutions are predominant (like Russia and China) compared to countries where Y-matrix institutions are predominant (like  transitional economies of central Europe. These differences reflect different institutional dynamics inherent in two fundamentally different types of societies (Polanyi 1957, 1977; Rosefielde 2008). China and Russia both belong to the same type economies based on centralized redistribution of resources, including finance.  "Such economies presume a central role for the state in industry as well as in the financial system. In that case, the institutional design of the banking industry must be coherent with the rest of the economy… Institutional consistency is key to the sustainable functioning of the system, which presupposes a sustainable proportion between the prevailing institutional forms (e.g., state-controlled banks and centralized credit reallocation) and complementary ones (e.g. private banking, both domestic and foreign). An attempt to renounce the prevailing matrix by leaving finance to private initiative (like in Russia in the 1990s) is futile and can destabilize the economy and finance alike" (Kirdina & Vernikov 2013, 479-480).

One of the recent results of mesoeconomists in the studies of money and money circulation is their analysis in the context of capital reproduction process. It was obtained in the framework of the "mesoeconomic of reproduction" (the fourth direction of heterodox mesoeconomics which we mentioned earlier) by a group of Russian scientists from the Institute of Economics of the Russian Academy of Sciences. Of particular importance for these studies is the theory of the shifting mode of reproduction based on mesoeconomic foundations (Maevsky 2010; Maevsky at al 2016). Developing Marx's scheme of reproduction and accumulation where Marx was the first to point out the peculiarities of money circuits between I Department and II Department, Vladimir Maevsky and his colleagues built a mesoeconomic theoretical and mathematical model. In this model «(T)he mesoeconomic money circuit includes two "local" circuits: the circuit of the "short-term" (fast) money that serves the movement of consumer goods, and the circuit of the "long-term" (slow) money that is used for investment (capital goods). In a mesoeconomic money circuit the metamorphoses of the "short-term" money into "long-term" money take place continuously and vice versa» (Maevsky at al 2016, 41).

Calculations using this mesoeconomic model allowed them not only to reliably simulate economic dynamics, but also to obtain non-trivial theoretical results, in particular, to contribute to the discussion on the neutrality/non-neutrality of money. The assumption of long-run money neutrality underlies almost all macroeconomic theory. However, the meso calculations reveal different reactions of the economy to the growth of money issue which can be both neutral and non-neutral. It was showed that the phenomenon of neutrality of money in the long run is not a general rule, as is customary in the orthodox economic model, but just a special case. On the contrary, the general rule can be considered as the phenomenon of non-neutrality of money in the long run (see Maevsky at al 2019).

## 5. Conclusion.

Money is a constant subject of economics. Along with the description of historically developing monetary systems, functions and forms of money, their role in the development of the economy, the study of the mechanisms of money circulation as one of the endogenous mechanisms of economic development is of particular interest. There is still work to be done in this direction, but the prospects for such work are different, in our opinion, for orthodox and heterodox economic theory.

As we have shown in this paper, the orthodox neoclassical economics of the mainstream has certain obstacles here due to the fact that, it would seem, it is the basis of its modern dominance. We mean a strict system of methodological assumptions that make up the core of neoclassical economics and a system of economic models characteristic of it. We see methodological limitations in reliance on microfoundations, which does not allow us to "distinguish" those mesostructures within which the necessary circulation take place, including of money, which ensure economic reproduction. As for the equilibrium economic models of mainstream, they also ignore the meso-level structures without which, in our opinion, it is difficult to conduct a full analysis of endogenous monetary mechanisms.

Research in the field of heterodox mesoeconomics appears to be more promising in this context. Perhaps the "resurgence of mesoeconomics, challenging the bipolar world of micro- and macroeconomics" (Hahn 1983, 3), has not yet achieved its recognized theoretical status. However, in the study of monetary mechanisms, heterodox mesoeconomics, as we have shown in this paper, already has serious theoretical achievements. This is, firstly, a deeper understanding of the nature of money. Second, the heterodox institutional-evolutionary approach allows us to identify the specifics of the monetary infrastructure in various institutional contexts. Third, the reliance on mesofoundations allows us to consider endogenous monetary circulation in the context of capital reproduction processes and to identify the conditions of neutrality / non-neutrality of money in the short and long term.

In other words, the meso approach to the analysis of money and money circulation, based on and developing the traditions of heterodox institutional-evolutionary economics, seems to us more promising in comparison with the micro- and macro-approaches of neoclassical orthodox economics.

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