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The search for moneyness in an era of financial innovation

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‘Everyone needs money, that’s why it’s called money’ (Danny De Vito in *The Heist*, 2001)

Abstract

The paper contributes to the ongoing debate on monetary theory by focusing on the question whether some financial instruments produced by recent financial innovations can be regarded as money (‘shadow money’). The question is answered by looking at past contributions to monetary theory and the fundamental functions that an instrument must play to be regarded as money.

We look at the Menger-Jevons tradition, according to which the essential function of money is to be the economy’s medium of exchange, and an alternative view, as mainly expressed by Hicks, for which the essential function of money is to be the economy’s standard of value (unit of account). We regard this latter approach as more satisfactory and capable to give account of the economic and social nature of money. The emergence of money in human societies is the result of complex social and economic processes that cannot be reduced to the solution of the problem of the double coincidence of wants.

On these grounds we argue that those instruments that have come to be called ‘shadow moneys’ cannot be regarded as money in a proper sense. Neither are they the economy’s standard of value nor are they a means of payment universally accepted in the economy. The liquidity of such instruments can be high but this is not sufficient for them to be qualified as money.

JEL Classification: E40; E44; E50; B10.

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1 Introduction

The origins, the nature, the functions, the future of money have all been objects of debate and controversy for centuries and still today they are topics discussed at a theoretical level as well as at the more practical level of monetary policy. In particular, the intense process of financial innovation that characterized the world economy in the last 30-40 years has revitalized the debate on what is money and its essential functions. For several, some of the new instruments created by financial innovation have such properties and roles that enable them to be regarded as money, quasi-money or shadow money (Gabor and Vestergaard, 2016; Murau and Pforr, 2020).

The current debate on the emergence of alleged new moneys can benefit from a reconsideration of past contributions and discussions. The intent of our paper is to advance the ongoing debate on money by looking at some basic foundational aspects of monetary theory, which have been the object of intense discussions in the past and can still provide insights for a more satisfactory understanding of the current monetary environment.

The paper is structured as follows. First (section 2), we briefly look at what history can tell us about the origins, the nature and the functions of money in the course of the long process of development of human societies. Historical experience shows that money is the produce of complex social, religious, political and economic factors which constantly interact with one another. The emergence and development of money cannot be regarded as the outcome of a single factor, be it the market, the state, or whatever else.

We then turn to look at how different theoretical economic approaches to money are able to understand and capture the nature and functions of money consistently with the historical experience. To this purpose we contrast the still dominant ‘Mengerian’ monetary paradigm to a different tradition of thought as chiefly represented by Hicks’s numerous works on monetary theory but also by Keynes’s *A Treatise on Money* (sections 3 to 4).

In section 3, we take Menger’s and Jevons’s works on money as representative of the still dominant view of money. Menger and Jevons, with some differences between them, essentially view money as the spontaneous outcome of the working of markets, which evolve from barter to multilateral monetary transactions. The market is largely, if not exclusively, regarded as an environment which works separately and independently of the social and institutional context in which it is embedded. The emergence of money is the evolutionary outcome of decisions made by self-interested individuals in the process of repeated barter exchanges. In this ‘narrative’, anchored to methodological individualism and to the historical knowledge of their time, money’s essential function is its role of medium of exchange. The other two functions of unit of account and store of value are of secondary importance.

Section 4 is concerned with an alternative approach to money and its functions essentially inspired by Hicks's views as developed over a long span of time. In this perspective, market monetary transactions can never be analyzed independently of the social and institutional environment in which they take place. More specifically, since all exchanges can be regarded as stipulations of contracts, involving spot or deferred payments between parties, markets cannot work independently of the social, institutional and regulatory structures that, in a certain historical phase, organize and regulate the economy as a whole. Contracts, which are stipulated by using a generally accepted measure of the values exchanged, have economic sense only if there are laws and institutions that regulate them.

In this theoretical context, money necessarily appears as a 'social object' whose primary and essential function is to be the economy's unit of account or standard of value. The other functions of money (means of payment and store of value) are strictly connected to its primary function of standard of value and hierarchically subordinated to it. Whatever instrument that, in a certain historical phase, plays all those roles can be denominated *money*; or, in other words, such instrument has the property of *moneyness*.

In section 5, we first briefly describe the evolution and the characteristics of shadow banking and the financial instruments that it uses. Some of these instruments have been denominated 'shadow money'. We argue that such terminology is misleading. These financial instruments cannot be regarded as equivalent to, or substitutes for, money because they do not have the fundamental properties of money. 'Shadow moneys' are not the economy's standard of value and they are not a universal means of payment. The value of any shadow instrument is expressed in terms of money and must be ultimately converted into money. 'Shadow moneys' are used within more or less wide market networks, but they are far from being universally accepted and used as a means of payment in the economy as a whole. Shadow moneys can be used, like money, as a store of value but, following Hicks, we argue that this is the least important function of money. Section 6 concludes.

2 Money in a historical perspective and the dominant economic narrative

In the century-long debate over money and monetary theory three primary functions of money have been commonly identified: unit of account, means of payment and store of value. Disagreements have not been so much about the functions that make a certain asset money as on their hierarchy, that is to say which of these functions is the fundamental one as it has logical, and also historical, priority over the others. In this respect, history and anthropology can provide helpful insights.

Historical and anthropological studies are a fascinating challenge to explore notions of money through history, in different cultures and times. A number of anthropological studies reject the notion of a barter economy, as conventionally conceived in economic theory (see, for example, Graeber, 2012, chapter 2). Many scholars underline the crucial role of religious or political authorities in ancient societies in building money standards and validating their acceptance in trade.¹

In a well documented book summarizing various sources of historical research on financial history, Goetzmann (2017) attests to the role of money as a symbolic unit of account of values in the social systems of obligations, trade and sanctions organized under the prevailing authorities in city states, with the emergence of urbanization in ancient Mesopotamia. Goetzmann also argues that the early sophistication of financial contracts and circuits in the Ancient World, notably in Athens, was linked to the development of abstract thought and the development of an abstract notion of financial wealth and financial computation, jointly with the abstract idea of the measurement of time (Goetzmann, 2017, pp. 51, 81, 135).

This large body of historical and anthropological literature disproves the plausibility of a simplistic narrative that explains money as emerging from multilateral barter and the difficulties related to the so-called problem of the double coincidence of wants. This explanatory account of the origin and function of money has ancient roots, since it dates back to Aristotle's theorizing, and it is still common and authoritative in economics. In this narrative, money primarily is some useful commodity, adopting a view that Schumpeter defines as Theoretical Metallism, as opposed to Chartalism, which instead see the state as the primary originator of money.²

Although historical and anthropological research shows the little credibility of this view of money and barter, one might agree with Schumpeter that the detailed research on historical sources or the cultural significance of money in ancient societies are subjects of study distinct from the theoretical interpretation of money in economics (Schumpeter, 1991, p. 528).

¹Goodhart summarizes these findings as they are today accepted by many historians and anthropologists. 'Money was invented as a social, and governmental, phenomenon, not as a means of reducing transactions costs in markets. The invention of money probably pre-dated the development of formal markets; thus money facilitated the rise of markets, rather than vice versa. ... I believe that the consensus among historians and anthropologists is that money developed as a social (and governmental) artefact, rather than as a mechanism for reducing transactions costs in private-sector markets.' (Goodhart, 2009, p. 828).

²'By Theoretical Metallism we denote the theory that it is logically essential for money to consist of, or to be "covered" by, some commodity so that the logical source of the exchange value or purchasing power of money is the exchange value or purchasing power of that commodity, considered independently of its monetary role.' (Schumpeter, 1954[2006], p. 274). For Schumpeter (1954[2006], p. 275, note 2), 'according to the metallist view, the theory of money derives directly from the logically prior theory of barter.'

Or one might argue that a logical reconstruction goes beyond any pretence to provide specific historical accounts. However, even in a theoretical perspective the ‘barter-narrative’ distorts one central issue, that is that money is primarily a conventional, symbolic notion to express and measure debts and obligations in a common standard socially validated and shared.

The use of money for accountancy purposes in social obligations, as much as in contracts concerning deferred payments or the repayment of debts, requires the sharing of some abstract notion of wealth. The role of money as standard of value is rooted in commitments taking place in time, and the adoption of shared standards for measuring wealth is linked to the development of cognitive abstractions as regards the mathematics of time in financial dealings. The standard units adopted are organized in coherent systems of measurement, with multiples and sub-multiples of various denomination, as in the systems of measurement of weight or length. For millennia, human communities have adopted computable, symbolic measures of wealth to be used in social obligations and transactions linking present to future commitments.

Coming to the contemporary monetary environment, the understanding of ‘moneyness’ poses a further challenge to the metallist view. The ongoing evolution of legal arrangements and monetary practises illustrates the functioning of a merely symbolic monetary universe that cannot be accounted for by the metallist view. Since 1971, the international monetary system lost any anchorage to gold or to any other real commodity, and world currencies are merely scriptural. Either as irredeemable promissory notes printed on paper or as sets of data recorded in computer systems, they are socially shared symbols, whose acceptance is rooted in the shared trust in the authorities which issue them with their complex architecture of legal norms and working institutions. They are tokens undersigned by social authorities, with central banks at the top of their hierarchy.

People expect that scriptural monetary values be recognized as wealth and be legally and socially accepted to discharge reciprocal obligations by transferring them, although their face value cannot be redeemed on request at the counter of the ultimate issuer. They use these symbolic tokens as claims on the social product on the grounds of their trust in the institutions and social networks that declare them to be ‘money’, even though the signature by a central bank or state authority (within the set of legal and administrative rules regulating their functions) does not imply any guaranteed claim on real resources.

With the rapid evolution of payment technologies, monetary values become merely digits expressed in some unit of account, which register obligations or legal possessions in electronic accountancy systems. They are created through procedures by the institutions, which manage the technologies of the system of payments. The shared techniques of electronic

accounting systems are regulated as social institutions. The symbolic, fiduciary circulation of such digital monetary values is sustained by the trust in the network of operational financial institutions within which monetary transactions take place. Their conventional role as means of payment rests on the shared trust in the system of institutions, which provide the service of their supply and support their circulation. As Giannini (2004, p. 52 ff.) underlines, money is a social institution that operates within the frame of payment technologies, which requires procedures and institutions to generate trust. Notably, the institutional architecture, the working rules and the tasks of central banks evolved to provide some anchoring to merely symbolic currencies. The trust in the symbolic unit of account as an effective means of payment stands primarily on the reputation of the institutional structure that makes the payment technologies viable, and on the extension and stability of the networks of trade where they circulate.

In the history of economic thought, some interpretations identified the nature of moneyness primarily as the definition of a unit of account of abstract value and a conventional standard of some socially shared measure of wealth. Knapp (1924) declared the chartalist nature of moneys as pay-tokens, or tickets used as means of payment on the sanction of the state since the first German edition of his book in 1905. The primacy of money as a token money of account emerges also in Schumpeter's characterization of chartalism, a term he borrowed from Knapp. Chartalism has been recently revived by a number of contemporary authors (Ingham, 2004; Wray, 2004, 2014).

We cannot enter the complex history of chartalist interpretations and the related controversies on State authority and money, if not to underline that the functions and the sphere of the political authorities change, and their capacity of control may expand or contract. Contemporary financial markets have developed not in separation but in symbiosis with the expanding role of the rule of law under state control, or to overcome the regulations and go beyond the limits that they impose (Beggs, 2017; Ingham, 2022).

The emergence and development of new intermediaries and financial markets that are currently labelled as the 'shadow banking sector' revives some controversies at the core of monetary theory. Which is the degree of moneyness of the newly created private liabilities? Which is their relation with bank deposits and central bank money? How and in what circumstances new forms of private credit can be seen as a new form of scriptural, digital money produced by financial innovation? Could some digital scriptural instrument become money just because a community of private traders conventionally agree to adopt it to regulate their transactions and settle obligations in their own networks? We try to answer such questions in section 5, after having illustrated the two different views of money as they emerged in the history of economic theory.

3 The narrative of money and barter. Some critical considerations

‘Narratives’, as Shiller (2019) defines them, spread also in scholarly environments. Here we deal with the narrative of money and barter and the way in which it explains moneyness. In the 19th century Menger contributed to the dissemination and success of this narrative by proposing a refined, authoritative version expounded in the philosophical language of methodological individualism. He exposed his theses on money in chapter VIII of the *Principles of Economics*, first published in 1871, and later in his controversy on method with the scholars of the historical school (Menger, 1871[1994], 1883[1985]). Menger’s evolutionary explanation of the emergence of money was then summarized in his article ‘On the origin of money’ published in the *Economic Journal* in 1892 (Menger, 1892).

In his reasoning on the origin of money, by mixing logical reconstruction, conjectural history and sparse anthropological evidence, the Austrian scholar emphasized the primacy of the means of exchange function of money and the gradual emergence of money from repeated barter trade, although he was aware that in more advanced stages of historical development the state intervenes to validate and regulate the money instruments spontaneously born from the interaction of private individuals.

The origin of money (as distinct from coin, which is only one variety of money) is, as we have seen, entirely natural and thus displays legislative influence only in the rarest instances. Money is not an invention of the state. It is not the product of a legislative act. Even the sanction of political authority is not necessary for its existence. Certain commodities came to be money quite naturally, as the result of economic relationships that were independent of the power of the state. (Menger, 1871[1994], pp. 261-262)

Money is not a social artifact, to paraphrase Goodhart’s (see footnote 1). It was not invented as the result of private social contracts or the decision of some legislator. It emerged by social interaction as a ‘natural product of human economy’, when some commodity in trade is repeatedly selected in exchanges because of its property of saleability, which offer advantages in acquiring commodities in further exchanges (Menger, 1871[1994], p. 262). The saleability property depends on the resources and technologies of the community involved, and on the very physical nature of each different good.

In section 3 of chapter VIII of the *Principles* Menger argues that attributing to some money commodity the role of measure of value is a coarse mistake. Money should not be characterized by being a measure of value, not even for the *numéraire* purpose of expressing prices. The primary function

that characterizes the monetary role that a commodity may acquire is its function of means of exchange. Menger, thus, explicitly rejects the idea that the function of unit of measure is essential to the monetary role that a commodity plays. The passage devoted to this issue is crystal clear. A money commodity, once it happens to be selected through a spontaneous evolutionary process as the dominant means of exchange shared in some community, is effectively adopted as the unit in which to express prices for practical purposes and to avoid roundabout computations (Menger, 1871[1994], p. 276). However, it is never necessary that it be so. Other commodities might be used as the unit in which to express prices.

But this outcome is not a necessary consequence of the money character of a commodity. One can very easily imagine cases in which a commodity that does not have money character nevertheless serves as the ‘measure of price,’ or cases in which only one or another of several commodities that have attained money character serve in this additional capacity. The function of serving as a measure of price is therefore not necessarily an attribute of commodities that have attained money character. And if it is not a necessary consequence of the fact that a commodity has become money, it is still less a prerequisite or cause of a commodity becoming money. (Menger, 1871[1994], p. 278)

Since Menger rejects also the relevance of the store of value function,³ a role which may be shared by many durable goods, the only fundamental function of money is to be the means of exchange. In conclusion, he writes: ‘it appears to me to be just as certain that the functions of being a “measure of value” and a “store of value” must not be attributed to money as such, since these functions are of a merely accidental nature and are not an essential part of the concept of money.’ (Menger, 1871[1994], p. 280)

In 1883, in his book on methodological methods in the social sciences Menger clarifies that the emergence of money should be addressed as part of the larger question of how institutions arise to improve collective well-being and serve social interests, although neither positive laws nor any form of intentional common purpose establish their foundation (Menger, 1883[1985], p. 152). Money is one of these ‘unintentionally created social structures’ (Menger, 1883[1985], p. 147). Menger makes again a long digression on the origin of money in terms of the spontaneous evolution of barter trade in ancient societies, where money has not yet been established but people need

³‘But the notion that attributes to money as such the function of also transferring “values” from the present into the future must be designated as erroneous. Although metallic money, because of its durability and low cost of preservation, is doubtless suitable for this purpose also, it is nevertheless clear that other commodities are still better suited for it.’ (Menger, 1871[1994], p. 279).

to barter in their communities and suffer the inconveniences of the failed double coincidence of wants.⁴ The more capable agents, the more mindful of their own interests, act as leaders in trade behaviour. The less capable traders imitate them in choosing the most saleable goods in exchange for their goods in market barter. The imitative behaviour spreads and is supported by habit. In this evolutionary process self-interest jointly with learning and habit finally turn the most saleable good into the one that all agents accept in exchange for their own wares (Menger, 1883[1985], pp. 158-162)

Here like in the *Principles*, the conjectural barter economies are fictional representations built on anthropological and historical examples in conformity with the available studies and the paradigms of 18th and 19th century culture. The peculiarity of their description is that the economizing agents who exchange their wares belong to communities which appear to be devoid of any hierarchical order, religious or political authorities or even symbolic culture, although at the same time there appear references to fines or compensations. There is no specification of family ties, property rights or any social hierarchy; it is not even clear why their wares are theirs, or why they should barter goods instead of sharing the social product or predate each other as in some Hobbesian state of nature.

The emergence of money independently of any purposeful agreement or legislative compulsion seems to postulate a priori the regulated institution of property rights and societies organized around free individuals under no hierarchy of power and status. Money as ‘the unplanned outcome of specifically individual efforts of members of a society’ seems to arise in acephalous societies, whose social structure is implicitly postulated without accounting for its rules. Menger not only excludes normative law at the origin of money, but even purposeful private agreements, such as those that might arise in a community of merchants, who agree on mutual commitments, forms of contracts or legal or customary arrangements to settle their controversies and payments.

The same themes run through the 1892 article on the origin of money that opens on the recognition of the puzzling nature of money, although Menger explicitly refers to coined pieces or documents representative of a

⁴‘The economic interest of the economic individuals, therefore, with increased knowledge of their individual interests, without any agreement, without legislative compulsion, even without any consideration of public interest, leads them to turn over their wares for more marketable ones, even if they do not need the latter for their immediate consumer needs. Among the latter, however, as is readily evident, they again select those which are most easily and most economically suited to the function of a means of barter. Thus there appears before us under the powerful influence of custom the phenomenon to be observed everywhere with advancing economic culture that a certain number of goods are accepted in exchange by everybody. These are, with respect to time and place, the most marketable, the most easily transported, the most durable, the most easily divisible.’ (Menger, 1883[1985], p. 154).

commodity money (Menger, 1892, p. 239). Menger's aim is to solve the puzzle proposing a theory of saleability, and the different degrees of saleability which various commodities in trade may possess (Menger, 1892, p. 243). The theory of saleability is developed for organized markets and it makes repeated use of the notion of price; a variety of reasons, including social and political aspects, affect the saleability of each good at the prevailing price in the market under normal conditions, a notion that Menger vaguely identifies with prices adapted to the 'general economic situation' (Menger, 1892, p. 247).

Prices are mentioned even before money is introduced; but the function of money as a standard unit of value is neglected in favour of the dominant role of means of exchange. Along an evolutionary path, in repeated exchanges one of the most easily saleable commodities gradually emerges as the generally accepted means of exchange because of the leadership of the more discerning traders, the imitation of the less enterprising ones, and the prevalence of habit (Menger, 1892, p. 249). Finally, precious metals prevail in the role of means of exchange and they become money. The sanction of the state only perfects this spontaneous institution in later stages of historical development.

Money has not been generated by law. In its origin it is a social, and not a state-institution. Sanction by the authority of the state is a notion alien to it. On the other hand, however, by state recognition and state regulation, this social institution of money has been perfected and adjusted to the manifold and varying needs of an evolving commerce, just as customary rights have been perfected and adjusted by statute law. (Menger, 1892, p. 255)

Here again the theoretical reasoning concerning the gradual emergence of money is made by abstracting from any reference to social institutions, as if isolated individuals were in contact in trade without any previous social arrangement as regards reciprocal obligations of whichever nature. References to the idea of normal prices are introduced to account for saleability, without accounting for markets as social institutions, the nature of contracts in trade or the regulations of market activities.

Saleability is discussed in sequences of barter exchanges severed from their geographical and historical frame, within which trade takes place, under some authority or within sets of rules and some system of justice. This is a radical weakness of Menger's account even as a mere conjectural reconstruction of the possible sequence of events in historical development. Notwithstanding these pitfalls, the Mengerian narrative of money and barter was a refined account, anchored as it was to a methodological perspective and to the anthropological knowledge of his time. Menger's theoretical stand

is still dominant, although in often oversimplified versions.⁵

In the last quarter of the 19th century also Jevons proposed his own version of the narrative about money in his successful book *Money and the Mechanism of Exchange* (1875[1893]). In Jevons's explanation, money is a commodity in trade that possesses some direct utility to the people adopting it as money (Jevons, 1875[1893], p. 32). Some useful good is finally chosen because its physical characteristics facilitate its circulation as a convenient means of exchange. In Jevons's evolutionary story the role of medium of exchange has both historical and logical priority over the role of unit of account. In the first part of his book, adopting an evolutionary perspective, he accounts for the primary function of money as 'medium of exchange', by arguing that money is literally one 'article' among the traded commodities that happens to be selected in repeated trades 'as money par excellence by custom or the force of circumstances.' (Jevons, 1875[1893], p. 13).⁶ The characteristics by which metallic moneys are the most convenient medium are the object of a detailed exposition in further chapters of the book.⁷

According to Jevons's evolutionary account, the function of money as 'measure of value' only gradually emerges in the learning process that takes place during the sequence of exchanges where the 'money' article works as medium. Money emerges as the unit of account in which prices are expressed from the habit of bartering goods always against the same article that finally dominates in the barter trade, by being again and again preferred as medium of exchange (Jevons, 1875[1893], p. 13).

Money as 'standard of value' for deferred payments is accounted for as a further step on the same evolutionary path, because of the convenience of possessing claims in 'one generally recognized commodity, of which the value varies little' (Jevons, 1875[1893], p. 14).⁸ Jevons specifically distinguishes the function of money as a 'standard of value' for deferred payments, to be specified as a separate one and not logically included in the notion of unit of account. This function is again anchored to the idea of money being primarily a useful commodity, an article among the many real goods in trade; but a major stumbling block emerges in the narrative: the time dimension of contracts.

Obligations and claims to be dealt with in a certain time horizon require

⁵Textbooks, at a more or less advanced level, are telling examples as they emphasize the primacy of money as a means of exchange (see, for example, Handa, 2000; Walsh, 2003; Heijdra, 2017).

⁶This perspective clearly puts Jevons's narrative in the realm of theoretical metallism as defined by Schumpeter.

⁷Jevons expresses some surprise at the 'strange phenomenon' that in history 'apparently valueless shells, bits of leather, or scraps of paper' were accepted in exchange for 'costly commodities' (Jevons, 1875[1893], p. 32).

⁸Notice that Jevons always uses the expression 'standard of value' to indicate the standard adopted for deferred payments.

to face the possible changes of value in future periods. If according to contracts the money commodity should be delivered at some future date, it becomes necessary to compare its value today to its value tomorrow. In its role as a standard of value for deferred payments the money medium should be ‘likely to be as valuable then as now’ (Jevons, 1875[1893], p. 14). A new requirement of stability emerges, whose meaning is not yet well defined and it is not easily satisfied by the theoretical principles that Jevons firmly adopts in his theory of exchange.

Bearing in mind that value is only the ratio of quantity exchanged, it is certain that no substance permanently bears exactly the same value relatively to another commodity; but it will, of course, be desirable to select as the standard of value that which appears likely to continue to exchange for many other commodities in nearly unchanged ratios. (Jevons, 1875[1893], p. 15)

The notion of a stable measure of value is not easily reconciled with the principles Jevons states in his equilibrium theory of exchange. In his theoretical essay first published in 1871, Jevons polemically argues that in political economy no general, abstract notion of value should have right of existence; the currently terminology of value is hazy or simply wrong (Jevons, 1879[2001]). The vague idea of ‘value in use’ should be substituted by the precise ideas of total and marginal utility. The expression ‘value in exchange’ should be substituted by the expression ‘ratio of exchange’, properly defined by specifying the two traded goods whose ratio is dealt with (Jevons, 1879[2001], pp. 85-88). No commodity exists of invariable exchange value.

Contrary to these arguments, Jevons’s accounting of money as standard of value is not expressed only in terms of relative prices between pairs of commodities in trade. While the evolutionary narrative focuses on repeated barter, each taken in isolation from the future evolution of exchange ratios and in the absence of contracts extending over future periods, the role of standard of value of money arises in the time horizon of delayed payments and debts. Introducing the time dimension requires to rely on some abstract notion of value that Jevons specifies as a vague idea of general purchasing power.

This further step imposes to enter the realm of money as a conceptual measure of value beyond the presence of the commodity medium; but Jevons underlines that no good of fixed value may exist. In other passages the standard of value is just a commodity *numéraire* to express variable ratios of exchange that may change daily.

Just as every quantity in physical science is defined by reference to some concrete standard, so, if we are to measure and express

value at all, we must fix upon definite quantities of one or more definite and unchangeable commodities for the purpose. . . . value merely expresses the essentially variable ratio in which two commodities exchange, so that there is no reason to suppose that any substance does for two days together retain the same value. All that a standard of value means is, that some uniform unchangeable substance is chosen, in terms of which all ratios of exchange may be expressed and calculated, without any regard whatever to the feelings or mental phenomena which the commodities produce in men. For reasons already stated, one or other of the metals, gold, silver, or copper, has usually been considered most suitable for constituting the standard substance. (Jevons, 1875[1893], p. 68)

If we are to measure and express value at all . . .

In the second part of the book, this difficulty arises again in the chapters where Jevons addresses the complexities of financial transactions and the ongoing substitution of metallic coins with representative money. In chapter XVI on representative money, he examines a number of historical examples of the ancient use of token money and the introduction of paper money in China, examples that seem to question his previous reconstruction. In further chapters he underlines the inconveniences of metallic money and acknowledges that ‘the use of representative documents’ in payments and financial transactions is becoming general (Jevons, 1879[2001], p. 203). He studies the emergence of the banking system and the financial transactions dealt with through accountancy procedures and clearing systems to settle payments and debt balances. When he addresses the evolution of financial markets and monetary systems, the simplicity of the narrative in terms of real commodities and barter is lost.

After discussing the possibility and inconveniences of inventing ‘a legal tender note’ convertible not in gold or any single commodity, but in some basket of commodities (Jevons, 1879[2001], p. 203), Jevons finally advances the proposal to adopt a computable, theoretical ‘standard of value’ that might isolate money from the fluctuations of prices. He illustrates the great advantages of what he calls a Tabular Standard of Value, that is a standard of value linked to the computation of a national price index (Jevons, 1875[1893], pp. 328 ff.). The national tabular standard is a theoretical construction that should be socially understood by both debtors and creditors and that should be monitored and validated by public institutions (e.g. a parliamentary commission) (Jevons, 1875[1893], p. 321). Of course, Jevons’s legal tabular standard is a social artefact validated by the state, that is to say a shared, abstract conception of monetary value that has nothing to do with the simple reference to a commodity medium adopted by repeated use in trade.

If critically examined Jevons's narrative of money and barter is neither internally consistent nor fully coherent with the assumptions of equilibrium exchange theory. It is easy to point out its flaws in a historical perspective. As we saw, contemporary historical and anthropological studies, radically question its evolutionary story. In theoretical terms, it is necessary to criticize the ambiguous notion of barter. What does multilateral barter mean, if it is not a plausible description of patterns of trade in some historical communities? If it is a fictional notion, by which assumptions is it defined and why should it be so relevant to monetary theory? The myth of a barter economy conceived as a simultaneous, multilateral trade economy implicitly suggests the comparison with the theoretical notion of a pure exchange economy. It is a false analogy, but the reference to mythical barter economies has heavy theoretical implications, since it obfuscates the understanding of monetary economies as drastically different from the horizon of pure 'barter' models of optimal equilibrium. The gap between fictional exchange economies and monetary economies surfaces again and again as an unsolved puzzle in economic theory.

The mere sequence of bilateral barter cannot operate a system of multilateral trade;⁹ multilateral trade would collapse without the activity of intermediaries, specializing in trading in some commodities as their social function. Specialized merchants, who form the operational backbone in multilateral trade, need common standards in which to express lists of prices, record mutual commitments, debts and their discharge (Hicks, 1989, p. 44). A system of multilateral exchanges is a complex network in a dynamic environment that requires a common standard of value to express mutual obligations in the time dimension and in abstract, accounting terms for its operational functioning.

4 The primacy of money as standard of value

In the first chapter of Volume 1 of his *A Treatise on Money*, entitled 'The classification of money' (Keynes, 1930[1971]a, pp. 3-19), Keynes expounded a notion of money which is based on the primacy of its function as standard of value ('money of account' in his terminology). Keynes's approach in *A Treatise* is connected, although with differences, to Hicks's view of money,

⁹'One might indeed conceivably construct a model in which the effect of multilateral trading was achieved through a sequence, or a circle of bilateral barter transactions. But it would be a very artificial model and we may be sure that if anything like it was ever achieved in practice, it would soon break up.' (Hicks, 1989, p. 44).

especially as expressed in his last book (Hicks, 1989).¹⁰

In the first page of *A Treatise* Keynes states,

Money of account, namely that in which debts and prices and general purchasing power are *expressed*, is the primary concept of a theory of money.

A money of account comes into existence along with debts, which are contracts for deferred payment, and price lists, which are offers of contracts for sale or purchase. Such debts and price lists (...) can only be expressed in terms of a money of account.

Money itself, namely that by delivery of which debt contracts and price contracts are *discharged*, and in the shape of which a store of general purchasing power is *held*, derives its character from its relationship to the money of account, since the debts and prices must first have been expressed in terms of the latter. (Keynes, 1930[1971]a, p. 3)

In this theoretical context, in which market exchanges are viewed as essentially based on the stipulation of contracts and debts, the state plays a central role: ‘it is the State or community not only which enforces delivery, but also which decides what it is that must be delivered as a lawful or customary discharge of a contract which has been concluded in terms of the money of account.(...) Thus the age of money had succeeded to the age of barter as soon as men had adopted a money of account.’ (Keynes, 1930[1971]a, p. 4)

Then Keynes proceeds to distinguish between what he calls ‘money proper’ and ‘bank money’: ‘the introduction of a money of account gives rise to two derived categories—offers of contracts, contracts and acknowledgments of debt, which are in terms of it, and money proper, answering to it, delivery of which will discharge the contract or the debt.’ This paves the way for a further development, that is to say, ‘the discovery that for many purposes the acknowledgments of debt are themselves a serviceable substitute for money proper in the settlement of transactions. When acknowledgments of debt are used in this way, we may call them bank money’ (Keynes, 1930[1971]a, p. 5). Finally, a further development takes place. Bank money comes to represent not only private debts but also state debts, so that the state is able to declare that its debt itself is ‘an acceptable discharge of a liability. Thus, a ‘particular kind of bank money is then transformed into money proper—a species of money proper which we may call representative money.’ (Keynes, 1930[1971]a, p. 6).

Keynes, influenced by Knapp (1924), regards his view of money and the

¹⁰Later on in the section, we shall look at Keynes’s view of money in *The General Theory* (1936 [1973]).

central role of the state in the definition of what is money as chartalist.¹¹ However, to share Keynes's position regarding the primacy of money of account, or standard of value, and to recognize that institutions in general play an important role in the definition of what is money, does not necessarily require to adhere to Chartalism. Hicks's approach to money is a telling proof of this.

Over a span of time long more than 50 years, Hicks dealt with money and monetary theory by developing and refining his ideas.¹² In this intellectual process, Keynes's ideas have always been a point of reference for Hicks, who tried to critically develop them.¹³ Here we limit ourselves to mainly refer to some of Hicks's more recent contributions and particularly to his last book.

The title of Hicks's 1989 book, *A Market Theory of Money*, is exactly the opposite of the title of Knapp's book, *A State Theory of Money*, which Keynes praised. Nonetheless Hicks approaches the problem of the nature of money along lines that are significantly close to Keynes's 1930 approach. For Hicks, like for Keynes, contracts and their stipulation are seen as the logical starting point to understand money and its functions. Hicks (1989, pp. 41-46) defines a representative transaction as divisible in three parts: i) a contract between parties; ii) the actual delivery of the object transacted; iii) the promise to pay. Money enters the transaction in two ways: when the contract is stipulated and the value of what is transacted is established; when the buyer's payment is made. The two ways in which money enters transactions correspond to two of its function: standard of value and means of payment.¹⁴

These two functions of money are not independent of one another and the role of standard of value implies the role of means of payment: 'It is not easy to see that there can be payment, of a debt expressed in money, unless money as standard has already been implied in the debt that is to be paid. So money as means of payment implies money as standard.' (Hicks, 1989, p. 43). Exchanges can be made without using money as a means of

¹¹'... the age of chartalist or State money was reached when the State claimed the right to declare what thing should answer as money to the current money of account (...). To-day all civilised money is, beyond the possibility of dispute, chartalist.' (Keynes, 1930[1971]a, p. 4). Here it is not possible to enter into a detailed discussion of Keynes's chartalism and the influence that Knapp's book exerted on him. On this see, Frankel (1977); Schefold (1987); Ehnts (2019).

¹²His earlier most significant contribution undoubtedly is 'A suggestion for simplifying the theory of money' (1935). His last 1989 book is the culmination of the long process of development of his ideas with many other contributions in between.

¹³See Hicks (1982, pp. 236-237) for a brief reconstruction of the evolution of his own contributions to the theory of money.

¹⁴In *Value and Capital* (1939[1965]) Hicks had already used the term standard of value instead of unit of account. There, however, the notion of standard of value is regarded as equivalent to Walras's *numéraire* (Hicks, 1939[1965], p. 58). We shall see below that Hicks changed his mind with respect to Walras's *numéraire*.

payment, but its function as standard of value remains indispensable.

Before entering into a more detailed discussion of the relationship between the two functions of money and their possible decoupling, it is worth to devote some attention to Hicks's notion of standard of value. First of all, Hicks (1989, p. 43) points out that the term standard of value is preferable because it refers also to deferred payments (Jevons, 1875[1893], pp. 14-15). But the reasons of Hicks's terminological choice are deeper than that. They can be better understood by referring to earlier works of his.

In the 1960s, Hicks had rejected the use of the term unit of account in favour of the term 'measure of value', to avoid any possible confusion with the notion of *numéraire* and the role it plays in Walrasian general-equilibrium models. In such models, a *numéraire* exists but it is not money as it is able to determine only relative prices. Consequently, since the term unit of account could be confused with the notion of *numéraire*, he adopted the Wicksellian term 'measure of value' as an alternative (Hicks, 1967).¹⁵ The Walrasian equations are sufficient to establish relative prices, i.e. prices expressed in terms of a *numéraire*. This 'numéraire is not the money in terms of which calculations are made. That money does not enter into the Walras equations; it is altogether outside them. The money prices can be at any level, yet the same Walrasian equilibrium will be attained.' (Hicks, 1967, p. 10).¹⁶

However, a general price level is necessary. A seller, when deciding to sell or not something at a certain price implicitly considers 'what that price may be worth in terms of other goods; he must have some idea about other prices before he can say whether or not a particular price-offer is acceptable.' (Hicks, 1967, p. 10). The existence of such a measure or standard of value makes it possible the formation of price-lists: '. . . the function of money as a standard, (. . .) is to make it possible to form a price-list, in which the values of a number of commodities are reduced to a common measure. Without its help, there would be a distinct price-ratio between each pair of commodities, and these would not need to be consistent with one another.' (Hicks, 1989,

¹⁵Hicks's argumentation was clearly related to the post-war debate on the possibility to introduce money into the Walrasian general equilibrium framework, in which Patinkin (1949, 1956) played a central role. Here it is obviously impossible to enter into a thorough discussion of such topic and we limit ourselves to expound Hicks's viewpoint regarding the necessity of a general price level for the functioning of markets. On the attempts to develop macroeconomics in a Walrasian framework in the 1950s and 1960s, see Ingrao and Sardonì (2019, pp. 140-161).

¹⁶Also Tobin (1996, p. 151) is aware of the temptation to confuse the two notions. Although he keeps on using the term unit of account, Tobin clearly explains why the identification of unit of account and *numéraire* is erroneous. 'It is tempting to identify *numéraire* prices as money prices. But the *numéraire* is just a mathematical normalization convenient for handling the fact that the supply-equals-demand equations for N commodities determine only the $N - 1$ relative prices. Those relative prices are, by construction, independent of the scalar arbitrarily attached to the *numéraire*.'

p. 44). It is easy to see how much more complicated, if possible at all, would exchanges be without a general standard which allows all prices to be expressed homogeneously.¹⁷

Let us now turn to the relationship between money as standard of value and money as means of payment. Hicks uses two examples to show that money as standard is always required even though it is not actually used as means of payment; one is about international trade and bilateral exchanges and the other is taken from anthropological studies. Especially in international trade, it can happen that a debt is discharged through the offsetting of another debt (country *A*'s debt to country *B* is cancelled against a debt of *B* to *A*) when countries have run out of an internationally accepted money. The debts are expressed in a standard that is recognized by both parties, even though possibly not by others.¹⁸ Thus, also in this special case of bilateral trade a standard of value must exist.

However, the need for a standard of value arises also independently of trading. Hicks refers to anthropological studies, according to which certain societies used cattle as standard of value. The evidence of this is 'derived from what are in essence legal prescriptions, (...) which set out the fines or compensations which are to be paid on particular occasions, as for offences of various types.' If these prescriptions are expressed in cattle, this does not mean that they had to be paid in cattle. 'The prescriptions are price-lists; they depend upon a notion of what things are worth. The things which were delivered in payment had to have recognized, or at least acceptable, values' (Hicks, 1989, pp. 43-44).

This second example is important because of the emphasis on the fact that the existence of, and need for, a standard of value arises from the institutional organization of societies within which money allows markets to work.¹⁹ The first example, instead, is important because it helps to easily see how the picture becomes more complex when one turns to consider

¹⁷Marx had already made this point clearly. Agents operating in markets 'cannot bring their commodities into relation as values, and therefore as commodities, except by comparing them with some one other commodity as the universal equivalent' (Marx, 1887[1954], p. 90).

¹⁸This sort of bilateral exchanges may be called barter deals but they are 'different from the small-scale swaps that figure in economic textbooks (...); for these make no use of money, even for accounting purposes.' (Hicks, 1989, p. 43).

¹⁹Also for Marx, 'a particular commodity cannot become the universal equivalent except by a social act. The social action therefore of all other commodities, sets apart the particular commodity in which they all represent their values. Thereby the bodily form of this commodity becomes the form of the socially recognised universal equivalent. To be the universal equivalent, becomes, by this social process, the specific function of the commodity thus excluded by the rest. Thus it becomes-money.' (Marx, 1887[1954], p. 90). Here Marx carries out his analysis under the assumption that the universal equivalent is a commodity (gold), but his argument would be even stronger if some sort of nominal monetary instrument were considered. For a brief treatment of this aspect of Marx's monetary theory, see Sardoní (1987, pp. 26-36).

multilateral trading.

Although the use of money as means of payment may be not required in bilateral trading thanks to the offsetting of debts, this is not the case of multilateral trading. In this case a seller of a certain good must receive in exchange something that can be readily used to make other purchases from other sellers (Hicks, 1989, pp. 44-45). In Hicks's development of the analysis of the problem, the interaction of economic, historical and institutional factors as well as the agents' trust is crucial.

Historically, precious metals, for well-known reasons, came to be used as means of payment and Hicks (1989, p. 45) points out: 'What is important is that they were surely able to establish themselves through "market forces"; no one had to order that they should be used in that way.' This, however, does not exclude the need for the role played by some form of institution to face the problem of the traders' trust in the means of payment used. Coinage was the response to the problem. Coinage guarantees the weight and quality of the precious metals used as money, which should otherwise be tested at every transaction.

In principle, the guarantee of coinage could be given by different subjects: i) by a single merchant; ii) by an association of merchants; iii) by the government of the territory where merchants operate. The third possibility, which became dominant over time, is the best because it maximizes the number of people who trust it. Thus, metallic money, if it has to be usable, depends on a guarantee and the society's trust in the guarantor. In this respect, metallic money 'does not differ so much from paper money' (Hicks, 1989, p. 46)

Multilateral trading, however, can take place also by using debts. Historically, bills of exchange were the debt instrument mostly used by merchants but not by the entire economy. Hicks looks at this sort of 'mixed economy' by considering two interconnected sectors: a 'merchant sector', which uses bills, and a 'cash sector', which uses cash (say precious metals).²⁰ This brings about the necessity of intermediaries that work at the 'frontier' between the two sectors. Such intermediaries discount bills for cash to allow trading between the two sectors and, hence, they must hold stocks of both bills and cash.

Bills of exchange are exchanged for money at a discounted rate in terms of cash (they yield a positive interest rate). For Hicks, the explanation of this has to be found

in the consideration that bills are only acceptable *within* the mercantile sector, while cash is acceptable within that sector and also outside. So whether the mercantile sector is large or small, cash

²⁰In his analysis, Hicks also deals with the problem of bills of different quality and riskiness; here, for simplicity, this aspect is not taken into account.

must always have a wider acceptability. But it is probably more fundamental that cash is a standard of value as well as a means of payment, so it is fully money; it is the standard in terms of which contracts are expressed and enforced at law; bills, being only a means of payment, are no more than quasi-money. The discount is the expression, by the market, of this inferiority. (Hicks, 1989, p. 52)²¹

The use of bills of exchange is a form of borrowing and lending which is suitable to the merchant sector. The activity of the dealers that discount bills is a near-banking business. The loans they make are guaranteed by the reputation of the borrowing merchants and the fact that bills arise out of the sale of goods, which in principle can be reclaimed in the case of the buyer's default. Problems arise when the sector expands significantly and there appear potential borrowers which are not merchants and cannot offer the same sort of the merchants' guarantees.²²

With the expansion of trading, dealers themselves must borrow to discount the increasing amount of bills issued. Their borrowing necessarily implies to get cash from outside the merchant sector. The modern banking system emerges from this need. Banks start from being 'custodians' of cash (gold) held by merchants as well as the general public and evolve into firms that manage the system of payments through cheques, i.e. the transfer of deposits from one account to another (Hicks, 1989, pp. 55-60). This brings about a radical transformation of economic system.

... it means that the whole of the bank deposits which are withdrawable at sight become usable as money. They are usable as such by the depositors in the bank, and—what is even more remarkable—they are usable as money by the bank itself. (...)

When the bank makes a loan it hands over money, getting a statement of debt (bill, bond or other security) in return. The money might be taken from cash which the bank had been holding, and in the early days of banking that may often have happened. But it could be all the same to the borrower if what he received was a withdrawable deposit in the bank itself. The bank deposit is money from his point of view, so from his point of view there is nothing special about the transaction. But from the point of view of the bank, it has acquired the security, without giving up any cash; the counterpart, in its balance-sheet, is an increase in its liabilities. There is expansion, from its point of view, on each

²¹Hicks had been dealing with with this problem since the 1930s (Hicks, 1939[1965], pp. 163-170).

²²Hicks (1989, pp. 53-54) considers also the case of public borrowing and debts (see also Sardoni, 2021), an aspect with which we do not deal here.

side of its balance-sheet. But from the point of view of the rest of the economy, the bank has ‘created’ money. This is not to be denied. (Hicks, 1989, p. 58)

It is now time to turn to consider the third canonical function of money as store of value.²³ Money, like many other things, can be used as a store of value but this function is not a crucial property of its. For Hicks, it cannot be argued that money is the perfect store of value because of its perfect liquidity. Liquidity must be defined in terms of exchangeability for money; therefore to ‘define money as an asset with perfect liquidity is to argue in a circle.’ The degree of liquidity of any asset is defined by its ability to be exchanged for money with no loss at short notice; hence money is obviously perfectly liquid. Consequently, it cannot be held, like Keynes did, that the reason why money does not bear interest is its perfect liquidity (Hicks, 1989, p. 42).

The reason why money can be held as a store of value is essentially connected to its two other ‘intrinsic’ functions of standard of value and means of payment. The functioning of an economy in which transactions take place in time—and not all simultaneously thanks to the existence of an auctioneer—and in which transaction costs are significant implies a demand for money as a store of value, that is to say the demand for a certain amount of money to be kept idle for a certain span of time. In so far as money is the means of payment generally used and the value of the objects transacted is expressed in it, it is rational to keep some money in store.

This is true for both transactions concerning goods and services²⁴ and financial transactions. As for the latter, the rationale for financial operators to hold a certain amount of money in their portfolios resides in their need to be able to exploit possible future opportunities or to face unforeseen emergencies. In a world of certainty where all transactions take place at known times, or simultaneously if a fantastical auctioneer exists, there would be no reason for the portfolios of financial operators to contain money. It would be rational and profitable to hold other assets which ensure a higher yield. In the world as it is, instead, it is rational to hold a certain amount of

²³Hicks (1967, pp. 17-18) had argued: ‘It is curious ... to notice that this “store of value” function is much less of a monetary function than the others. ... A money that could not be stored might still be used as a unit of account, it might still be used as a means of payment; if it had these other functions (even if it had only one of these other functions) it might still be reckoned as a money of a sort, even if no more than a *partial money*. But a thing which did not have the other functions, though it was capable of being carried forward, and maintaining its value (at least to some extent) on being carried forward, would not naturally be thought as being money at all. ... The other functions, taken by themselves, do confer some monetary quality; the mere capacity of being a store of value does not.’

²⁴See, for example, Goodhart (1989, p. 26). Baumol (1952) and Tobin (1956) are well-known models of the demand for money as an inventory in relation to transactions in the real sector of the economy.

money to be able to face future unforeseen emergencies or to exploit possible profitable opportunities. Money—the instrument that is the economy’s general means of payment because it is its standard of value—is a component of the portfolios for this reason, that is to say to be able to make currently unforeseen future transactions at the lowest possible cost, even though in some specific cases the demand for money could be nil. The demand for money to exploit opportunities corresponds to Keynes’s speculative motive, whereas the demand for money to face emergencies corresponds to Keynes’s precautionary motive. Hicks (1982, p. 261) observes: ‘I have generalised these concepts a little, and when they are generalised they do not look so very different.’

Here it is not possible to enter into a detailed exposition of Hicks’s copious work on liquidity and liquidity preference.²⁵ It is important, however, to point to some significant differences between Hicks’s approach and the one followed by Keynes in *The General Theory*, which is significantly different from that in *A Treatise*. In his 1936 book, Keynes sees the demand for money and liquidity preference essentially as synonymous and the demand for money as store of value is connected to the precautionary and, above all, the speculative motive. In chapters 13 and 15 of *The General Theory* Keynes analyzes the demand for money by denoting it as ‘liquidity preference’.²⁶

Coherently with his emphasis on liquidity, Keynes defines money as a set of assets of varying liquidity,

... we can draw the line between ‘money’ and ‘debts’ at whatever point is most convenient for handling a particular problem. For example, we can treat as money any command over general purchasing power which the owner has not parted with for a period in excess of three months, and as *debt* what cannot be recovered for a longer period than this; or we can substitute for ‘three months’ one month or three days or three hours or any other period; or we can exclude from money whatever is not legal tender on the spot. It is often convenient in practice to include in money time-deposits with banks and, occasionally, even such instruments as (e.g.) treasury bills. (Keynes, 1936 [1973], p. 167n)

This ‘vague’ notion of money is surprisingly at odds with Keynes definition in *A Treatise* where money proper must necessarily be the economy’s standard of value. Other instruments, whatever is their degree of liquidity, are not the standard of value and hence cannot be defined as money.

²⁵Hicks’s essential works on the topic are Hicks (1935, 1967, 1982) and Hicks (1989, pp. 55-79).

²⁶‘... an individual’s *liquidity-preference* is given by a schedule of the amounts of his resources, valued in terms of money or of wage-units, which he will wish to retain in the form of money in different sets of circumstances’ (Keynes, 1936 [1973], p. 166).

Instead, as we saw, Hicks relates the demand for money as store of value not to a generic need for liquidity but to the fact that it is the economy's standard of value and means of payment. Hicks's approach to liquidity differs from Keynes's in *The General Theory* and, once again, is inspired by Keynes's view as expressed in the second volume of *A Treatise*. There, considering banks' portfolio decisions, Keynes establishes a ranking of assets of differing liquidity and observes '... bills and call loans are more "liquid" than investments, i.e. more certainly realisable at short notice without loss, and investments are more "liquid" than advances.' (Keynes, 1930[1971]b, p. 59). Hicks generalizes Keynes's considerations about the banks' portfolio to all sorts of firms and assets (Hicks, 1989, pp. 64-65). The problem of liquidity has to be treated by considering the degree of liquidity of portfolios rather than the degree of liquidity of single assets. Variations of the liquidity preference cannot be reduced to variations of the demand for money.²⁷ In fact variations of the agents' liquidity preference might not give rise to any variation of the demand for money.

We conclude by mentioning another consideration by Hicks regarding the composition of portfolios as it is relevant to our discussion of shadow money in the next section. Hicks argues that, in some circumstances, the agents can be induced to economize as much as possible on the amount of money they hold. He considers a case of high inflation and the possibility to hold highly liquid assets that yield an interest. However, those assets 'are not means of payment; they have to be turned into cash to be so used. And that is vital. ... If the convertibility were lost, the quasi-monies would cease to be liquid; the liquidity crisis which would then develop could pass all bounds' (Hicks, 1982, pp. 265-266). The crucial point made by Hicks is that the liquidity of assets other than money, into which they must ultimately be converted, can vary over time.

5 The rise of shadow banking and the demand for liquidity

Beyond the interest in the foundational properties of money considered above, theorists have been concerned with the working of the monetary and financial sectors by traditionally focusing on central banks and ordinary banks. Their liabilities are the money supply.²⁸ Banks transform their

²⁷'Liquidity Preference is a matter of the "spectrum" of assets, assets which may be *more or less* liquid.' (Hicks, 1967, p. 30).

²⁸Here, for simplicity, we generically refer to bank deposits as a component of the money supply, but a more detailed and thorough analysis should distinguish among different types of bank deposits by pointing out that they are part or not of the money supply depending on the definition of money from a statistical point of view (M_1 , M_2 , M_3 , etc.).

liabilities (deposits) into assets through lending, both when they manage the deposits of those who keep part of their wealth in this form and when they create new deposits by lending. Banking, thus, involves three major activities: i) maturity transformation (investing in assets with a longer maturity than the liabilities issued to acquire them); ii) liquidity transformation (the use of liabilities with a high degree of liquidity to acquire assets with a lower degree of liquidity); iii) credit transformation (the use of liabilities with a low level of risk to invest in assets with a higher level of risk). A crucial feature of banking is the asymmetry between their liabilities and assets both in terms of their maturity and their riskiness.

Banking is characterized by a structural tension between the liabilities, of which banks promise the availability on demand, and the assets in which they invest, which are not available on demand and may be dependent on variable market values. Economists have been aware of this structural fragility since the late 18th century.²⁹ It has been underlined by a whole line of scholars advocating a regime of 100% reserves for banks, and the separation of their investments in risky, illiquid activities from their activities of deposits collection and provision of payment services.³⁰ King (2016) calls these structural feature of banking the ‘alchemy’ of banking.³¹ Although it may work well in normal times, it makes the financial system inherently fragile (King, 2016, p. 105).

The structural fragility of the banks’ budgets and the risk of bank runs was evident in many financial crises; notably in the collapse of part of the US banking sector in the early 1930s. In a long process of institutional change and policy innovation, central banks and governments have developed policy instruments and operational bodies to help both regulate and support the banking sector to maintain financial stability. The public ‘backstop’ is articulated in the form of regular liquidity provisions by the central bank to the banking sector, its role as lender of last resort in the case of a crisis, a regulatory frame concerning the banks’ reserves and their equity capital requirements, the legislation on resolution and bail-ins or, in severe crises, public bail-outs.

The articulate set of institutions and policy practises that temperate the risks intrinsic to the alchemy of banking is the result of a historical evolution from which shared arrangements between the banking sector and state institutions (the central bank, legislative and regulatory bodies, etc.) have emerged. In their institutional evolution, central banks have established a series of arrangements to provide liquidity intraday and overnight

²⁹Notably since the beginning of the 19th century with the first formulation of a theory of central banking by Thornton (1802[1991]).

³⁰The list includes scholars such as Fisher, Friedman and even Tobin.

³¹‘The transmutation of bank deposits—money—with a safe value into illiquid risky investments is the alchemy of money and banking.’ (King, 2016, p. 104).

to the banking sector to maintain the smooth functioning of the system of payments and to enable the banks with a shortfall of central bank reserves to continue to operate and exchange deposits with central bank money at par. Moreover, since after the banking crisis of the 1930s most countries have adopted insurance schemes aimed at protecting and making safer bank deposits up to a certain amount in the case of a bank's default. Thanks to this articulate set of legal and operational arrangements, bank deposits are money, i.e. they are equivalent to the currency issued by the central bank. Thanks to this architecture, and the economy's trust in it, a liability issued by a private agent acquires the status that makes it a perfect substitute for central bank money.³²

In the picture drawn above, the main actors are central banks and the banking sector, with the latter that connects lenders and borrowers and the former that aims at ensuring financial stability through regulations and variations of interest rates. However, in today world, when dealing with the financial sector it is necessary to take into account the structural changes produced by relatively recent financial innovations. In the last 40-50 years the landscape of the financial environment has changed with the emergence of new financial agents and practises.

McCulley (2007) calls 'shadow banking system' a branch of the financial sector containing non-bank financial intermediaries that perform activities similar to those of traditional banks, in particular that of maturity transformation.³³ These agents operate without the institutional architecture and public policies which aim at stabilizing the traditional banking system. To enter into a detailed historical and analytical examination of the origins and functioning of shadow banking is beyond the scope of this paper.³⁴ It will suffice to recall some essential aspects and focus on the question whether some of the financial instruments created by the shadow banking sector can be regarded as money ('shadow money').

In the shadow banking world, the main actors are institutional cash pools, asset managers, security dealers and special purpose vehicles, which began to gain importance since the early 1980s. All these entities operate in connection among them and with the traditional banking sector, whose process of transformation itself is one of the factors that caused and

³²Some call the result of this political and institutional evolution a 'social contract' by virtue of which bank deposits are included in the public money supply (Gabor and Vestergaard, 2016). We avoid the use of this term because of its ambiguous reference to a contractual agreement that does in fact not exist. We prefer a more explicit and articulate reference to the regulatory framework, the policy stance and the operational institutions actively monitoring the banking sector.

³³For more exhaustive analyses and descriptions of shadow banking, see, for example, Adrian and Ashcraft (2012); Pozsar et al. (2012); Michail (2021).

³⁴For a historical reconstruction of these transformations, see, for example, Ferguson (2019) and Tooze (2019) and also Michail (2021).

favoured the emergence of shadow banking. Securitization of the banks' assets (loans), which gained momentum in the 1980s, transformed the traditional bank lending process from the scheme originate (loans) to hold (to maturity) (OTH) to originate to distribute (OTD).³⁵ Banks created, so to speak, the 'raw material' for the shadow banking, that is to say the objects (liabilities and assets) that it transforms and trades. Thanks to a complex chain of intermediaries and the use of new financial practises the shadow banking system provides funding for the borrowers and it is able to manufacture short-term liquid assets for the lenders. Securitization and the rise of derivative-based investments proceeded together with the growing financial globalization and the rise of the so-called asset-management capitalism (Pozsar, 2014).

Financial globalization developed together with the increasing importance of global corporate cash pools. Since the 1990s, institutional cash pools manage large quantities of liquidity (in the form of short-term 'cash balances') on behalf of institutional investors and global non-financial firms. Their management of liquidity must meet a demand for safety coming from their customers which want to hold their assets in the form of highly liquid money-like instruments with a positive yield. Also because the amount of these cash balances exceeds the maximum amount covered by deposit insurance schemes, cash pools managers started to direct the demand for liquidity towards new forms of short-term liquid assets issued by private entities, which claim to be bank deposit substitutes. As the weight of cash pools increased, liquidity was partly managed away from bank deposits towards new instruments created by innovative financial engineering.

The rise of asset management has been described by Minsky (1988) and Haldane (2014), who both see this evolution as the main force behind the creation of the new financial environment. The rise of managed money capitalism changed the structure of managerial capitalism: money managers started to replace industrial managers as leading players in the economy (Minsky, 1988). The mandate of money managers is to maximize total returns and maintain positions in safe liquid assets. Financial agents with a large amount of money-claims to manage imply new financial practises. A new structure of credit intermediation rose to enable the creation of assets with a low level of risk which could respond to the increasing demand coming from institutional cash pools and asset managers for which the supply of insured bank deposits was insufficient, inadequate and non-profitable (Pozsar, 2014).

³⁵Securitization is the banking sector's attempt to become more profitable by circumventing the existing regulatory framework concerning capital requirements and other bank activities. In the US, for example, the Federal Reserve Regulation Q imposes capital requirements on banking activity, prohibits the payment of interest on demand deposits and establishes a cap on the interest on other types of deposits (McCulley, 2009).

The shadow banking system innovates the whole credit process with respect to i) loan origination; ii) loan warehousing; iii) issuing of asset based securities (ABS) and collateralized obligations (CDO); iv) ABS warehousing; v) ABS ‘intermediation’; vi) wholesale funding. Each step is performed by different agents, mostly non-banks financial agents using different kinds of financial tools to connect ultimate borrowers and lenders. Although the process can take place in a different number of steps, it always starts with loan origination and ends with wholesale funding (Pozsar and Singh, 2011).

Financial innovations increased competition in financial markets and its ability to provide credit; but the absence of regulatory legislation and of a public policy stance aiming at stabilizing the new markets, left to the new financial environment itself the task to support the claim that the new instruments are convertible at par with money, and to underwrite contractual arrangements to promote the lenders’ trust. A market-based ‘shadow-insurance’ is created through private backstops, such as a private bank’s promise to backstop in bad times the financial agents that issue liabilities, and through different forms of financial engineering.

Some argue that some instruments belonging to the large array of those created by shadow banking have such properties that they can be denominated ‘shadow money’. Murau and Pforr (2020) define an asset as shadow money if it responds to the following three criteria: i) it must perform the role of substitute for bank deposits; ii) it must trade at par with higher ranking money and with other shadow moneys; iii) it must be created as a swap of IOUs between agents. This classification raises a number of problems and difficulties. First, in considering the alleged equivalence between shadow money and bank deposits, no distinction between deposits is made. It is necessary to distinguish between deposits originated by some agents’ decisions to hold part of their wealth in the form of money and deposits originated by the banks’ lending. Michell (2017, p. 363) correctly argues that the ability of agents operating in the shadow sector to issue so-called shadow moneys is always connected to a change in the liquidity preference of private agents and implies a prior decision not to spend and to transfer liquidity from money to other assets. In other words, shadow banks are pure intermediaries whereas banks are not (see also Jakab and Khumof 2015, Bianco and Sardoni 2018, Ingraio and Sardoni 2019, pp. 127-131, Michail 2021).³⁶

When a bank makes a loan to finance a borrower, it creates new purchasing power *ex nihilo* and the amount of liquidity in the economy increases. While the bank must carefully manage its balance sheet in order to be able

³⁶‘The most important task of the traditional banking sector, i.e. the creation of money, is not part of the services that shadow banking provides. What shadow banking does is to facilitate money creation through the provision of funding to the traditional banking sector.’ (Michail, 2021, p. 190).

to make payments for its customers, its ability to provide credit does not rely on the liquidity preference of other agents. When a shadow entity makes a loan it does not create purchasing power *ex nihilo*, but it is relying on the complex process of credit intermediation created by the financial system to provide credit to costumers and liquid monetary instruments to lenders. The ability of shadow operators to provide credit ultimately relies on the liquidity preference of institutional cash pools and on the ability of the system to perform the intermediation process smoothly.

Second, the insistence on the ability of shadow moneys to trade at par with money obviously reveals that they are not a means of payment in the sense in which money is. Moreover, not all authors agree with the requisite that shadow money must exchange at par with money; sometimes a quasi-par relation is sufficient (Pozsar, 2014; Ricks, 2016).³⁷ Third, the last of the criteria listed above is too general as any financial transaction can be interpreted as a swap of IOUs.

Pozsar (2014) tries to come to terms with the monetary nature of shadow instruments by introducing a fourth attribute of money to add to its three canonical functions. Such a ‘quintessential’ property is that money ‘always trades at par on demand.’³⁸ He recognizes that not all the instruments which claim to trade at par on demand can always honour their promise and constructs a hierarchy of ‘moneys’ at the top of which there is ‘traditional’ money and at the bottom a number of instruments issued by the shadow sector. Pozsar’s definition of money and classification of assets and liabilities are confusing and arguable. For the instrument that is the economy’s unit of account (money), Pozsar’s ‘quintessential’ attribute is superfluous and tautological. For all the other instruments, whatever is the issuer, their ability to trade at par is contingent on their degree of liquidity and riskiness in a certain market situation at a certain time. In other words, they do not possess the ‘quintessential’ attribute. Pozsar’s classification, therefore, cannot be regarded as a hierarchical ordering of ‘moneys’ but simply as an ordering of financial instruments according to their degree of liquidity and their capacity to exchange at par or quasi-par with money, i.e. the only instrument that plays the role of standard of value. To call such instruments ‘money’ means that moneyness is made to depend only on the degree of

³⁷Some types of shadow money offer a par exchange on-demand with bank deposits; other types offer a par exchange in the near future. As noted by Pozsar (2014), in the real world the demarcation between these two type of money-claims is difficult to detect because the ability to exchange at par change with their maturity. Money claims with few days left to maturity exchange at par because of the low price risk compared with money claims with one or more months of maturity left.

³⁸‘Money is usually defined from a functional perspective as a “unit of account, store of value and medium of exchange.” However, this definition does not take into account the quintessential attribute of money — that money always trades at par on demand — and the institutional arrangements that underpin this attribute.’ (Pozsar, 2014, p. 7).

liquidity of a certain class of assets. Apparently, Pozsar follows the same approach as Keynes's in *The General Theory* where, as we saw, he adopted a vague notion of money based on the degree of liquidity.

Thus, from this literature it emerges that what is called shadow money is demanded essentially because it attracts the appetite of asset managers for being a liquid return-yielding store of value, whose nominal value in the economy recognized standard of value is relatively stable in a short term horizon. Following Hicks, we argued in the previous section that an instrument can be regarded as money if it plays *all* the three functions of standard of value, means of payment and store of value, with the first being the one hierarchically dominant. The so-called shadow moneys do not have the moneyness property, even though they can favour the creation of money by providing liquidity to banks and by being used as a collateral to borrow.

Clearly, none of the existing shadow moneys is the economy's standard of value. If this were the case, there should be no preoccupation about their ability to convert into money at par. The fact that, in normal times, shadow instruments are highly liquid can explain the financial operators' demand for it but, on the other hand, its liquidity manifests itself in its ability to convert into money. If any shadow money were the standard of value its convertibility at par would be tautological as in the case of money. The value of shadow moneys is necessarily expressed in terms of the 'thing' that the economy as a whole recognizes as the measure of the value of everything. This implies the hierarchical dominance of the instrument that is standard of value because only for this 'thing' it is possible to fix its value and its yield simultaneously. The worth of one 'dollar' is always one 'dollar' whatever is its promised yield. For any other instrument, it is possible to fix its price, but then it is the market that determines its yield or, vice versa, its yield can be fixed and then the market establishes its price.³⁹ The financial crisis of 2007-2008 has eloquently shown how the price of shadow financial instruments can change drastically and rapidly.

Shadow moneys are not even a means of payment universally used and accepted within the economy. They may well be used as a means of payment within limited networks, but they are far from being universally accepted as the instrument that definitely closes a transaction. Hence, they need to be converted into money when they want to cross their 'shadow line', i.e. to exit from their specific confined network.⁴⁰ 'Shadow instruments' can

³⁹Woodford (2000, 2001, 2003) uses this line of argumentation to hold that central banks' (the issuers of the 'dollar') monetary policies can be effective also in an economic environment characterized by intense and widespread financial innovation. On this topic, which cannot be adequately treated here, see also Sardonì (2006).

⁴⁰Also Minsky (1986[2008], p. 255) points out the possibility that there exist in the economy different means of payment for different purposes, '... what is money is determined by the workings of the economy, and usually there is a hierarchy of monies, with special money instruments

certainly be store of value, but this function is not sufficient to qualify them as money because many assets can be store of value.⁴¹

There is, however, another factor that induces some to adopt the notion of shadow money. In this case, the focus is not so much on the properties of the instruments but rather on the policies that could transform them into money. The discussion is carried out by referring to the financial crisis of 2007-2008 and the response to it by central banks, with the US Federal Reserve being the most important protagonist both at the domestic and international level. The financial crisis was a stress test of the marketability and liquidity of shadow assets. During the crisis, the shadow banking system went under pressure. Agents that had invested in various forms of ‘shadow money’ started to question their ability to convert at par with money and thus to be a safe bank deposit substitute. The crisis manifested itself as a run on shadow intermediaries, with pressure on them to convert their liabilities into bank deposits and central bank money. The shadow money system proved to be fragile in its role of credit intermediation.

The financial crisis hit the shadow banking system in three consecutive waves during which some or all of the shadow instruments were affected.⁴² In all three waves, the intervention of the Federal Reserve and the US government was crucial to stabilize the shadow sector. The Fed, followed by all the major central banks around the world, started to act as Market Maker of Last Resort (Buitert and Sibert, 2008) for some particular class of assets, especially the assets involved in the ‘shadow money universe’. Central banks started to operate as outside dealers (Mehrling, 2011) by establishing a floor for the price of the assets for which they were creating the market. With

for different purposes. . . . an economy has a number of different types of money: everyone can create money; the problem is to be accepted.’ Minsky’s argument is correct but his terminology may be confusing as he uses the term ‘money’ to denote what, in our view, should be more properly denoted as ‘means of payment’. The simultaneous existence of different private moneys or means of payment and the difficulties it creates has been examined also by Tobin (1996, pp. 147-149).

⁴¹Finally, in comparing the liabilities of the intermediaries operating in the shadow banking system with those of banks, it should not be overlooked that banks can create deposits by lending and, hence, directly affect the money supply and the amount total liquidity available to the economy.

⁴²The first wave hit the ABCP market when Countrywide Securities got into trouble; the repo market was affected by all three waves and the MMF shares went under pressure in the last wave after the collapse of Lehman Brothers. Murau (2017) describes the actions of the public authority during the various waves of the crisis. ABCP lost their ability to convert at par with higher ranking money, and thus their status of quasi money or bank deposit substitute, due to the reluctance of the public authority to ensure a one-to-one par clearance. Different credit puts and temporary guarantee programs were established by the government to stop the run-on REPO market and MMF shares. The Federal Deposit Insurance Corporation (FDIC) also raised to 250,000 dollars the maximum amount of insured bank deposits and, by doing so, it reduced the competitiveness and attraction of shadow instruments with respect to bank deposits.

their actions, they managed to stop the run on shadow instruments.

For some, these new forms of central-bank interventions, with a direct focus on the securities market, are to be considered as first steps towards a change of the institutional and regulatory framework, now englobing the shadow markets born from financial innovation. Murau (2017) sees the new types of public intervention as implying a change of status of some kinds of shadow instruments as they can now benefit from a public backstop and, hence, they have become more similar to bank money. Gabor (2021) explicitly describes these interventions as ‘shadow monetary financing’ since the main objective of the central banks’ outright purchases of government bonds is to stabilize the shadow banking world, rather than directly finance government expenditures.

We believe however that policies for the stabilization of the shadow financial sector cannot be too simplistically interpreted as steps of a process leading to the emergence of new moneys. For all the reasons we have expounded in the paper, although central banks’ stabilizing policies and other regulatory interventions can make at least some types of shadow instruments safer and more liquid, this is not sufficient to make them money. From this point of view, it is worth to point out that the historical processes that brought central banks and other regulatory agencies to intervene to stabilize and make less risky the shadow banking sector and its own instruments cannot too easily be assimilated to the historical processes that eventually led bank money (deposits) to the status of proper money. The fundamental difference between the two processes is that, before the institutional recognition of its status of money altogether, bank money was already widely used as means of payment in the economy as a whole; whereas shadow moneys are currently used within limited financial networks.

6 Conclusion

Recent financial innovations have understandably attracted the attention of many economists, who have emphasized their relevance for the explanation of the 2007-2008 crisis, their macroeconomic implications as well as the changes of monetary policies ideated to face and overcome it. After decades in which macroeconomics has largely ignored the financial sector and its vital interrelations with the rest of the economy (Ingrao and Sardoni, 2019), all this is welcome.

In our paper’s we try to contribute to the ongoing debate on financial and monetary issues by concentrating on the question whether financial innovations have led to the emergence of new moneys, the so-called ‘shadow moneys’. We approach the topic by looking at past contributions to monetary theory and see how they answered question of which characteristics an instrument must possess to be regarded as money; or, put in different

terms, which are the essential features and functions of what is money. We reckon that such past contributions are still relevant to the understanding of the current monetary and financial environment.

We first looked at Menger's and Jevons's contributions to the theory of money, which still are at the heart of the dominant current explanation of money, its origins and functions. Both Menger and Jevons viewed money as mainly, if not exclusively, a medium of exchange or means of payment. In their analytical framework markets and trade among individuals are essentially seen as something that exists and functions independently of the state and other public institutions. Institutions, when taken into consideration, intervene *ex post* on a reality that was born and developed spontaneously and autonomously. Coherently with this vision, Menger and Jevons did not pay much attention to the contractual relations underlying any transaction, especially those which imply deferred payments, which require the existence of, and the interaction with, some kind of institutional organization, be it religious, legal or political.

As an alternative to Menger's and Jevons's approach we propose the views expressed by Hicks in many of his works. In this context, the contractual nature of exchanges plays a crucial role. Consequently, the function of money as standard of value is the fundamental function of money. The function of money as means of payment is hierarchically dependent on its function as standard of value. The function of money as store of value and its 'perfect liquidity', as argues Hicks, is the least monetary of its functions and it is insufficient to qualify any even highly liquid financial instrument as money.

From this approach it necessarily derives that money and its acceptance by the economy as a whole in a certain historical phase is the outcome of complex social, political and economic processes, which involve also the 'state' (i.e. some sort of recognized authority). Money cannot be simplistically seen either the spontaneous product of the market or the mechanical product of the state which imposes it by law or by establishing that taxes must be paid in 'its' money, as held by some recent revivalists of the early 20th century Chartalism.

In the theoretical and analytical framework that we suggest, markets and private institutions that operate in it can certainly create new financial instruments as the result of innovation or as a response to specific critical situations. From this point of view the experience of the so-called shadow money, its origins and its role are an instructive phenomenon to analyze. The story of the shadow money is the story of financial private agents that use new financial practises to compete in the market by offering new liquid instruments which essentially are alternatives to money as a store of value. These instruments, however, are not a generally accepted means of payment and they are not the economy's standard of value. Therefore, we argue, these

instruments cannot qualify for being money in the proper meaning of the word.

Support to our view comes from the fact that much of the debate on shadow moneys has to do with their ability to convert at par or not with money. If any shadow money were money, its convertibility at par would be a non-problem, as the convertibility at par of anything with itself evidently is a tautology. In some circumstances, markets can determine a one-to-one exchange rate between money and shadow instruments, but the convertibility at par of such instruments is contingent on the varying conditions of the markets in which they are traded. As the historical experience teaches us, the mere high liquidity of instruments that can for some time exchange at par, or quasi-par, with money, can transform itself into high illiquidity quite rapidly, with a fall in their prices. The fact that public authorities, namely central banks, intervene to stabilize the value of such instruments is not sufficient to make them gain the status of money.

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