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The case for the ontology of money as credit: money as bearer or basis of "value"

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Abstract
Although we acknowledge that, throughout history, commodities have been used as money "things" or money "signifiers", *commodities have never been money itself.* We believe that the conflation of money with money "things" (commodities) in this way constitutes an ontological or category error. Austrian School economists and their Anglo-American neo-classical cousins favour a "conjectural" history of money where it is conceptualised as a cost-saving development of barter. Such a story supports their ethics. We reject any conjectural history which places the origin of money in the context of commodity exchange and instead support credit and state theories, and argue that in its essential nature, *money is credit and nothing but credit.*

Key Words: commodity money, universal equivalent, unit of account, credit and state theories of money

JEL classification: B4, E4, B1, B2

1. Introduction

This paper discusses the nature of money and contends that money is credit and nothing but credit (Innes, 1913; 1914; Wray, 1998; 2004). Although we acknowledge that, throughout history, commodities have been used as money "things" (Keynes (1930, Vol. 1, p. 14) or money "signifiers", *commodities have never been money itself.* We believe that the conflation of money with money "things" in this way constitutes an ontological or category error.

The argument that commodity money evolved as a cost-saving invention designed to improve the efficiency of trade is closely associated with economists who emphasise the presumed innate desire of man to "truck and barter" (Smith, 1776) and the importance of market forces (notably the Austrian and the neoclassical schools) as opposed to other groups who focus upon history, institutions and importantly, social relationships and their associated power and inequality (for example, Post-Keynesians, sociologists, anthropologists, numismatists and even those who study law[2]) and propose alternative explanations of money's nature and origins.

Neo-classical economists derive little or no comfort from a study of the historical development of money. When forced to consider money's history their usual response is to produce a "plausible" story for its development based around its supposed appearance as a cost-saving alternative to barter. Kevin Dowd uses the phrase "conjectural history" (Dowd, 2000, p. 139) when considering the development of money. From his perspective, it is unimportant if the

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[+] The authors are grateful to Charles Goodhart, Jamie Morgan, Hugo Radice and John Smithin for their valuable comments and suggestions on earlier drafts of this paper.
[2] Notable advocates of alternative versions to conjectural histories from a range of disciplines; Goodhart (1998), Ingham (2004a; 2004b), Polanyi, (1966; 1968) Grierson (1977) and Desan (2014).

conjectural history is different from actual history; all that is necessary is the plausibility of the story.

> "A conjectural history provides a benchmark to assess the world we live in, but it is important to appreciate that it is *not* meant to provide an accurate description of how the world actually evolved. The conjectural history is a useful myth, and it is no criticism of a conjectural history to say that the world failed to evolve in the way it postulates" (Dowd; 2000; p. 139, emphasis in the original).

In other words, for Austrian (and neo-classical economists), it is *as if* the world developed this way.

Conjectural histories have been around for a long time and although there is some variation in the story they tend to follow a similar pattern. Wray (1998, p. 39) considers, justifiably, that a succinct analysis of early conjectural histories can be found in Alfred Mitchell Innes (1913). Before providing a thorough critique of the story and discussing the credit theory of money, Innes provides an excellent summary. According to Innes, the story goes as follows; in "primitive" economies exchange was based on barter but as societies developed, efficiency was improved by the introduction of one commodity as a means of exchange. This commodity also served as a unit of value. A wide range of different commodities have been used in different societies at different times but eventually precious metals emerged as the most efficient variant. A fixed quantity of a metal (typically gold or silver) of known purity became a standard of value[3] and this standard should have been guaranteed by rulers. However, when the "authorities" took control of the system they exploited it to their own ends by debasing the currency. Eventually credit was introduced as a substitute for gold, requiring less direct use of metal and improving efficiency.

In what follows we provide (though not in precisely this order) a critique of mainstream orthodox theory (neo-classical in form but Austrian in some of its origins), the Marxian position as a commodity theory variant, and set out by contrast key components of state theory and credit theory in order to make the case that the latter two accord more with history and conceptual coherence.

Mainstream orthodoxy: a critique

For Ingham, "Menger's (1892) seminal analysis based upon rational individual choice still underpins the current neo-classical story of the origin of money" (Ingham, 2004a, p. 19) as exemplified in Dowd (2000) and Klein and Selgin (2000).[4] Menger's ontology is deeply rooted in the presupposition "that the individual enters the world equipped with rights to the free disposal of his property and the pursuit of his economic self-interest, and that these rights are

[3] Goodhart (1998, p. 448) argues that the role of precious metals is seen as critical in the orthodox view, associated with neoclassical and Austrian economists whereas support for the chartalist (or nominalist) alternative comes from post-Keynesians and those in different disciplines, notably anthropologists, numismatists and historians.

[4] Wray notes that according to the orthodox neo-classical view money "reduces transaction costs, simplifying 'economic life' by lubricating the market mechanism (Friedman, 1968). Indeed, this is the unifying theme in virtually all orthodox approaches to banking, finance, and money: banks, financial instruments, and even money itself originate to improve market efficiency (Klein and Selgin, 2000)" (Wray, 2006, p. 2).

anterior to, and independent of, any service that he may render" (Tawney, 1920, p. 23). Menger's theorising is based on an approach that characterises the approach of the Austrian School; "antiempiricist deductivism" founded upon the axiom that individual agents seek to achieve the subjective goal of maximising utility (Hands, 2001, p. 39). Given the "*a priori* truth" of his presuppositions and his impeccably logical deductive reasoning the need for empirical testing disappears for Menger; the "conjectural history" is given a green light. Menger contends that the origin of money "can be understood as following from a spontaneous process whereby individuals have discriminated between alternative commodities by degree of 'saleability' and eventually arrived at the most efficient option" (Menger, 1892, p. 245).

For neo-classical economists the conjectural history serves a very useful purpose; it supports their ethics. It is most helpful to specify a system where money develops as a "natural" response to changing circumstances by individuals maximising expected utility. Neo-classical theorists contend that money is merely a "veil"; its introduction into a barter economy improves efficiency but leaves quantities produced and relative prices unchanged. Ingham considers that "all orthodox economic accounts of money are *commodity exchange* theories. Both money's historical origins and logical conditions of existence are explained as the outcome of economic exchange in the market that evolves as a result of individual utility maximisation" (Ingham, 2004a, p. 19, emphasis in the original).

We are not suggesting that money only plays the role of medium of exchange in orthodox theory; rather that it is this function which gives money its distinctive character. Its importance as a unit of account and store of value, although acknowledged in established theory, is not stressed. A conjectural history approach fits well with this perspective. According to the neoclassical view there is no role for the state in the genesis of money. The state is seen as a late arrival on the scene and a corrupting force, taking an unjustified share of national wealth by exercising control of a monetary system[5] which had developed from the actions of individuals rightly pursuing "optimising" behaviour. In contrast, heterodox economists stress the role of money as providing a unit of account, an approach which tends to be compatible with a focus on the importance of the role of a central authority in the genesis of money, as opposed to market forces.

Ingham takes issue with the orthodox view on both logical and historical grounds and finds significant support for his critique in the evidence (Ingham, 2004b, pp. 181-182). He contends that discrete truck and barter would lead to the production of a vast array of bilateral exchange ratios, rather than the enduring unit of account required for the measurement of relative prices critical to the operation of the market Ingham 2004b, p. 181). Rather than arising from a spontaneous process, for Ingham, a stable unit of account is required *before* a market can function. If this is the case we need to consider how and why this stable unit of account would emerge. Ingham notes that

> "In Menger's conjectural history, money evolves from the rational use of the most tradeable commodity as a medium of exchange that maximises trading options. However, he realised that base metal coins and inconvertible paper money broke this link. Why, Menger (1892) asked, should individuals be

[5] Authorities "controlled minting, established coin's count, enforced its use to pay debts, and policed its exclusivity as a medium. They also charged for it at the mint: individuals paid in extra amounts of bullion and came away with coin" (Desan, 2014). Critics perceived the authorities actions in centralising control and forcing private individuals to accept a lower amount of bullion in the form of coin than they provided in metal as reprehensible.

> ready to exchange goods for 'worthless' little metal discs or paper symbols?" (Ingham, 2004a, pp. 22-23).

Ingham (2004a, p. 23) considers the attempts at producing a resolution by later neo-classical economists and stresses that the arguments expressed by Jones (1976), Dowd (2000) and Klein and Selgin (2000) – which contend that non-commodity, intrinsically valueless money can be used as a means to reduce transactions costs- fail to deliver a convincing answer and cannot explain the existence of money. He notes that Hahn had already observed that "It is only advantageous for any given agent to mediate his transactions by money *provided that all other agents do likewise*" (Hahn, 1987, p. 26, emphasis in the original).

Ingham concludes his point with the *coup-de-gras.* "To state the sociologically obvious; the advantages of money for the individual presuppose the existence of money as an *institution in which its 'moneyness'* is established" (Ingham, 2004a, p. 23, emphasis in the original).

In a typical case of a conjectural history or "money-developing-from-barter" story, one commodity, such as grain, exchanges directly for many other commodities; for example, grain may be exchanged for salt, meat and other products. The quantitative worth of grain is expressed in specific quantities of different commodities. Under such a system, the grain has many different exchange ratios with different commodities, which are accepted by the societies involved in exchanges. The grain becomes a representative commodity, generally used in exchange for a wide range of others (Messori, 1997). Following the "conjectural" history narrative, grain might be expected to be (eventually) replaced by something which might to be more "saleable" making a more efficient form of money. By virtue of its relative scarcity, portability, durability, uniformity and divisibility, precious metal of a given purity seems to fit the bill.

The use of quantities of grain as money – or at least as a unit of account – is well documented (Wray, 1998, pp. 47-8). However, from a post-Keynesian perspective, drawing directly from Keynes's work, this use is founded on state action rather than being a market outcome. The units of account used in early empires[6] were almost without exception based on grain quantities and led to the establishment of precious metal standards (Keynes, 1982, pp. 236-7). If we refer to "a mina, shekel or pound, all the early money units weight unit based on either wheat or barley grains, with the nominal value of gold usually measured in wheat units, and the nominal value of silver measured in barley units" (Wray, 1998, p. 48).

Wray notes that a king would be able establish a monetary unit by setting it equal to a particular quantity of grains of gold, but the relative value of gold represented by its market price could change *without the need to change the standard* (Wray, 1998, p. 48, emphasis added). Thus the value of, for example, a shekel weight of gold could rise or (less frequently) fall against the abstract standard of the shekel.[7] Such a situation can easily be illustrated in a modern context. The $US is officially defined as 0.0231 ounces of gold (Tobin, 1998, p. 27) but, despite the fact that the market value of gold in $US is far higher today, the *definition of the dollar* remains the same; the $US has become an abstract standard, divorced from its original definition.

[6] Particularly Babylonia, the Mediterranean basin and Europe (Wray, 1998, p. 48).
[7] The Gold Standard represents an unusual period in history, where the monetary authorities exerted control over the market price of gold by agreeing to buy and sell unlimited quantities in order to maintain the official price (Armstrong, 2015).

Clearly the relative value of commodities could change against the standard. The state exerts influence on relative prices by the value in ascribes to the commodities it accepts in settlement of debt from the private sector via taxes or tribute. It may publish "price lists" in a unit of account. However, the value of commodities determined in private markets, although influenced by "official" prices, would in no way be fixed.[8] "Libertarians" who contend that market forces determine both the choice of the "representative commodity", and the structure of relative prices denominated using that commodity, claim that the observation of historic variable prices disproves the contention that the state decides on the standard and is able to provide official price lists.[9] From a post-Keynesian and, indeed, an anthropological perspective, such criticism is misplaced. Importantly, as noted above, the libertarian critique provides no compelling explanation of the origin of the unit of account itself.

Orthodox, neo-classical economists, consider the use of cowrie shells as an example of "primitive" commodity money replacing barter before – eventually – being superseded by precious metal currency. For hundreds of years, cowrie shells were used as a means of payment in India, China, the Middle East and West Africa. Quiggin (1949, p. 25) argues that "cowries had been in circulation as a means of payment by traders from, 'India, China, eastward to the Pacific Islands… across and encircling Africa to the West Coast… and penetrating into the New World', both before and, in some areas, even after precious metal currency had become generally accepted" (Shaikh, 2016, pp. 170-171).

Cowry shells satisfy most of the characteristics of money (in the form of currency), being portable, countable, recognisable and difficult to counterfeit. In Nigeria, cowries were used widely even until the first half of the 20th century, especially for small transactions. The story of cowrie currency is rich and there is far more to it than a "conjectural" view of it replacing barter (or an earlier form of commodity money) by virtue of possessing features allowing it to function efficiently as money. Cowry was used as money in Dahomey despite the fact it was not produced domestically. It needed to be imported and was then issued by the monarch. Without this state-directed process it could not have been used as currency (Polanyi, 1968, pp. 280-305). Rather than being an aspect of a market-based evolutionary process it was an aspect of state activity. "Cowrie …gained the status of a currency by virtue of state policy, which regulated its use and guarded against its proliferation by preventing shiploads from being freely imported" (Polanyi, 1968, p. 299).

In addition to neo-classical economists overlooking the role of the state in determining the monetary standard, their tendency to conflate the unit of account with the means of payment

[8] For example, a modern state might fix an official exchange rate which determines the price it will buy and sell foreign currency, however, this will not necessarily mean that private trades will occur at these prices.

[9] Nowrasteh (2013) contends that the observed variable prices, "based on supply and demand" contradict "Polanyi's fixed-price theory of trade" (see Polanyi, 1957, pp. 12-26; see also Oppenheim 1957, pp. 27-37). Nowrasteh notes that, for example, "the price of tin rose 20 percent in a short period" and that "texts in Babylonia from merchants to their agents order them to sell 'according to the market' – odd texts in a regime of supposed fixed prices." Nowrasteh also asserts that, "within grain markets with prices changes based on…supply and demand…prices in a 'good year' fall and prices in a 'bad year' rise, according to the size of the harvest. That behavior is difficult to explain if prices are not determined through the interaction of profit-maximizing buyers and sellers." Nowrasteh fails to distinguish between official prices, set by the state at which it will both accept and disperse commodities and private trades at market prices and attempts to find evidence contradictory to Polanyi's analysis where none exists in a futile attempt to find support for ideological dogma, namely the priority of markets over the state (Nowrasteh, 2013).

is another important source of error (as pointed out by Innes, above, this is a typical feature of conjectural histories of money). There is a distinct difference between the unit of account and the money "things" used to makes payments denominated in that unit. Such a distinction is an ancient one, as noted by Grierson who considers Homeric Greece and points out that, although the ox was the standard or unit of account, the means of settlement was usually in other forms such as gold or commodities whose value was measured in oxen (Grierson, 1977, pp. 9-10).

With respect to coins, Wray contends that the relationship of the nominal value of a coin to the unit of account in which it was dominated was not based upon precious metal content and could often vary in relation to the unit of account;[10] it was determined by authority. He writes, "coins, even though they may contain precious metal, do not necessarily carry a nominal value that is fixed relative to either the nominal value of the embodied gold or even to the money of account" (Wray, 1998, p. 49). Polanyi notes that the "once" (the French equivalent of the "ounce"; the standard in English ounce trade) provides the unit of account for the French slave trade; traded items – including cowrie – were thus given a relative value (Polanyi, 1966, pp. 162-3).

Keynes notes the distinction between a commodity which is disconnected from a unit of account and merely used in a way to improve spot transactions and a money "thing" which by virtue of its relationship to a standard or money of account becomes "money proper", "something which is merely used as a convenient medium of exchange on the spot may approach to being Money, inasmuch as it may represent a means of holding General Purchasing Power. But if this is all that is involved, we have scarcely emerged from the stage of Barter. Money-Proper in the full sense of the term can only exist in relation to a 'Money-of-Account'" (Keynes, Vol. 1, p. 3). This point is stressed by Grierson,

> "For my part, I would insist on the test of money being a measure of value. Unless the commodities used for exchange bear some fixed relation to a standard we are still dealing with barter, or, where unilateral payments of a redistributive character are concerned, with payments in kind. The distinction seems to me to be fundamental one" (Grierson, 1977, p. 9).

We would also point out that, despite the widespread existence of barter, anthropological analysis (Humphrey and Hugh-Jones, 1992) is instrumental in supporting Graeber's (2011) contention that *barter could not have had a role to play in the development of money*. The reason for this conclusion is that, despite extensive study, no society based on the use of barter has yet been found. "No example of a *barter economy*, pure and simple, has ever been described, let alone the emergence from it of money all available ethnography suggests that there never has been such a thing" (Humphrey, 1992, quoted in Graeber, 2011, p. 29, emphasis added).

Although, we may never know the full story of the development of money we can surely at least develop theories which provide a compelling explanation of the nature of money and underpin an understanding of the history of its development. For this reason, we believe credit

[10] Wray (1998, pp. 52-3) notes how kings might "cry down" the value of the currency by reducing the value of a coin relative to the unit of account. "The king would not change the monetary unit, but would only change the monetary value of his 'tokens', thereby avoiding disruption in private markets (which for the most part were carried out using tallies, bills of exchange or other debts denominated in the money of account)."

and state theories are complementary and superior to the orthodox theory. In contrast to the neo-classical theory which finds its roots in the optimising behaviour of individuals, the state theory, which we shall discuss below, contends that the origins of money are rooted in social relationships and the development of power and inequality. Traditional tribal societies were essentially egalitarian and had no need for money. According to Polanyi, they were based upon reciprocity, redistribution and householding (Polanyi, 1944). However, with the development of inequality, a *raison d'être* for money emerged. Henry finds the essential origins of money to lie in power and inequality rather than exchange.

> "Those who see money as a social relationship stress the significance of money as a unit of account in which obligations are both created and extinguished. Money, then, represents a relation between those who claim these obligations and those who must service those claims" (Henry, 2004, p. 79).

He goes on to suggest that the role of exchange in the genesis of money is of minor significance, especially since the existence of markets is in no way a necessary condition for the evolution of money.

The state theory of money

Ingham (2004a, p. 47) discusses the *Methodenstreit* and the division of opinion between the German Historical School and the Austrian School and its heirs in Anglo-American neo-classicism. The latter conceptualised money's origins and development as a commodity in market exchange, whereas as the latter instead saw money as a means of accounting for and settling debts and regarded an approach to analysing money without a foundational role for the state as absurd.

In the *State Theory of Money* (1924), Knapp argues that it is the state that decides on the unit of account and the "money things" that are to be used in settlement of debts denominated in this unit. Initially, the unit of account may be a weight of precious metal of given fineness. However, the state may choose to change the unit to a different metal by decree. Thus the choice of unit is in the hands of the state rather than springing from a process involving individuals searching for the most efficient way of reducing the costs of barter. If the state decided that a different metal was to be used as a standard of value then it held the power to change the unit of account (Knapp, 1924, p. 13).

Knapp analyses the process of monetary development from the starting point of a monetary unit expressed as a weight of metal of given fineness. The use of stamped coins whose weight determines value is seen as a later development. This point is highlighted by Davies (2002, pp. 61-2). A further and final stage widespread in the modern world was reached when the coins were given a nominal value by the authorities not based upon weight or precious metal content (Knapp, 1924, p. 15). The state has the power to choose the "money things" i.e. what may be used to settle debts in the designated unit of account (Knapp, 1924, p. 15). "In modern monetary systems proclamation is always supreme" (Knapp, 1924, p. 31).

The role of the state is dominant in each of the stages. The state decides the timings, not individuals maximising expected utility. The state is not a late arrival on the scene, hijacking a monetary system- which is progressing efficiently driven by optimising incentives – for its own purposes; rather it always directs the process, for good or ill.[11] As we noted above, once the unit is chosen it may continue to be defined historically as a particular weight of metal of given fineness. However, over time its nominal value would change in relation to the metal which underpinned its original definition (Knapp, 1924, p. 15).

The state theory of money shows how ancient authorities would use their power to move resources from the private sector to themselves. Control of the monetary system provides a highly effective means for this aim to be achieved (Siddiqui and Armstrong, 2018). By way of illustration, we suggest a highly stylised story based upon the use of stamped metal might go as follows; a ruler might decide what she desires, for example, palaces, amphitheatres and an army of conquest. She could utilise her monopoly power over the monetary system to obtain what she desires. She would first define the unit of account and then decide upon the money things acceptable in payment of debts denominated in this unit, say, stamped metal discs clearly marked with her head. The disc may contain precious metal. This precious metal content (if any) would be decided upon by the state (the mint standard). The use of precious metal may help prevent counterfeiting and raise the prestige of the issuer but the intrinsic value of the coins provides only a floor value for the currency. The nominal value would be higher and determined by decree.

She would then impose a tax on her or his subjects denominated in its chosen standard, payable by the surrender of the stamped discs. The ruler decides the nominal value of the coins and how many each person must pay to satisfy their tax bill. This process gives the coins value. They are tokens showing the holder had a credit on the state. They are really “tax credits”. The ruler can now spend these tokens on whatever she wishes as long as it is available in her own domain – or “monetary space”. The private sector suppliers of goods accept the tokens, not because they are made of precious metal but rather because the population needs them to pay taxes. The ruler then pays her soldiers with the stamped metal discs and the soldiers, in turn, are able to go to the villages and buy whatever they wish, provided it is available. The populace sell the soldiers real goods to obtain the discs to meet tax liabilities. Clearly, the empress has to spend before she can collect. Any private agent minting discs with the ruler’s head on without her permission in order to enrich themselves might be expected to face severe punishment. Thus a ruler does not need to raise taxation revenue before spending. The imposition of the tax liability comes first, followed by the spending of the currency which is required to settle it. Logically and practically the emission of state money is anterior to its collection.

From this perspective, following the logic of Knapp’s approach, taxation serves, not to fund spending as is mistakenly believed by most economists and nearly all the population, but to create a demand for the currency and to reduce the spending capacity of the private sector. If the private sector is spending less its command of resources is correspondingly lowered, allowing the state “room to spend” without causing inflation. Thus the state’s ability to impose and collect taxes enables it to act as a currency issuer within its sovereign monetary space and transfer resources from the private sector to itself. The ultimate “value” of a tax-driven currency is determined by the amount of effort required by the issuer in order to obtain it. The significance of the power of the state is noted succinctly by Knapp, “Within a state the validity of the kinds of money is not a trade phenomenon but rests on authority” (Knapp, 1924, p. 217).

[11] Although it is the state that decides upon the unit of account, the private sector is able to issue its own debt denominated in this unit (Armstrong, 2015).

However, what if the state wishes to obtain goods and services from outside this space- from a foreign country? Clearly, it cannot levy a tax on foreign independent nations so it becomes a currency-user with respect to that country's currency. It must obtain that nation's currency to make the purchase or find a foreign producer prepared to accept its own currency. Knapp notes that the amount of foreign currency that may be obtained for each unit of domestic currency is not subject to the control of the authorities, rather it is the result of action of buyers and sellers on the foreign exchange market or "Bourse" (Knapp, 1924, pp. 217-218).

The credit theory of money

With respect to the credit theory of we focus our attention on the work of Innes and his two famous articles from the *The Banking Law Journal,* "What is Money?" in 1913 and "The Credit Theory of Money" in 1914. As we noted earlier, for Innes, the nature of money is founded upon the credit and debt relationship and money should not be seen as a development of barter.

Innes is highly critical of the contention that more efficient direct exchange was facilitated by the use of commodity "money". He considers both an apparent mistake made by Adam Smith in this context and its unwanted legacy. He notes that Smith referred to "the two most generally quoted instances of the use of commodities as money in modern times, namely that of nails in a Scotch [sic] village and that of dried cod in Newfoundland" (Innes, 1913, parentheses added).

Innes notes that, rather than nails being used as commodity money in Scottish villages, the nails were merely accepted as (part) payment of debt which was denominated in the unit of account applying at the time. "In the Scotch [sic] village the dealers sold materials and food to the nail makers and bought from them the finished nails the value of which was charged off against the debt" (Innes, 1913, parentheses added).

Referring to the supposed use of dried cod as commodity money, Innes is equally scathing. Innes then contends that Smith thought he had found commodity money but had really "discovered" credit and highlighted examples of how the law and convention existing at the time had permitted particular debtors to settle their debt when it was due using specific commodities. However, these commodities were merely permitted "signifiers", given a value in terms of the unit of account (pounds) and were not a means of measuring value or indeed a medium of exchange in the sense of being a circulating medium which was used to settle debts in general. They were merely accepted at their money value when the (uncommon) circumstances required it (Innes, 1913).

The supposed used of tobacco as money offers us an interesting example of the relationship between money (or money of account) and "money things". Peacock[12] (2017, p. 1481) notes how tobacco was used as "money" in colonial Virginia, Maryland and North Carolina, including payment for purchases and for paying fines and taxes. Indeed, a number of items in addition to tobacco, such as corn, wheat, tallow, leather and beaver skins fulfilled monetary functions in North Carolina (Rabushka, 2008, p. 235) and corn was recognised as legal tender in 1631 by Massachusetts (Sylla, 1982, p. 24). "In Virginia, which like Maryland relied

[12] Peacock (2017) gives a thought-provoking summary and critique of Lawson (2018) and Lawson's approach to the ontology of money. Ingham (2018) contributes to the debate with a further critique.

on tobacco cultivation for its economic livelihood, tobacco was used in market exchange and payment of taxes (Breen, 1985, p. 41). By legislative act of 1619, Virginia designated tobacco a means of payment and value were assigned to quantities of tobacco (three shillings per pound of highest grade, 18 pence per pound of low grade tobacco." (Peacock, 2017, p. 1481). Thus tobacco acquired the legal status of a money "thing" (or a "commodity money") and became acceptable as a means to settle debt; in other words, the holders of such commodities held a credit, valued in terms of the unit of account. Rather than being money itself, we would argue that the tobacco (and other commodities) were merely signifiers of credit.[13]

In order to facilitate a critique of the traditional story popularised by Smith, Innes posits a question, "If we assume that in pre-historic ages man lived by barter, what is the development that would naturally have taken place, whereby he grew to his present knowledge of the methods of commerce?" He then looks deeper into the issue, stressing the importance of *credit*. "There is absolutely no reason for assuming the existence of so clumsy a device as a medium of exchange when so simple a system [as credit] would do all that was required" (Innes, 1913, parentheses added). Innes (1913) contends that, "What we have to prove is not a strange general agreement to accept gold and silver; but a general sense of the sanctity of an obligation. In other words, the present theory is based on the antiquity of the law of debt".

He then notes that the historical evidence overwhelmingly supports the credit theory of money, regarding the idea of barter as the origin of money as "without foundation'. He concludes across history in a wide range of locations "debts and credits are equally familiar to all, and the breaking of the pledged word, or the refusal to carry out an obligation is held equally disgraceful" (Innes 1913). Innes clarifies the meaning of credit.

> "It is here necessary to explain the primitive and the only true commercial or economic meaning of the word 'credit'. It is simply the correlative of debt. What A owes to B is A's debt to B and B's credit on A. A is B's debtor and B is A's creditor. The words 'credit' and 'debt' express a legal relationship between two parties, and they express the same legal relationship seen from two opposite sides. A will speak of this relationship as a debt, while B will speak of it as a credit" (Innes, 1913).

He is then able to define money as credit, "Credit is the purchasing power so often mentioned in economic works as being one of the principal attributes of money, and… *credit and credit alone is money*" (Innes, 1913, emphasis added). He follows this by explaining the nature of credit, "A first class credit is the most valuable kind of property. Having no corporeal existence, it has no weight and takes no room. It can easily be transferred, often without any formality whatever" (Innes, 1913). He then explains the relationship between credit and debt and in so doing describes the nature of money,

> "Whether…the word credit or debt is used, the thing spoken of is precisely the same in both cases, the one or the other word being used according as the situation is being looked at from the point of view of the creditor or of the debtor" (Innes 1913).

[13] Peacock (2017; 1481-6) provides a detailed analysis of the arguments surrounding the status (or otherwise) of tobacco as money.

> "Money, then, is credit and nothing but credit. A's money is B's debt to him, and when B pays his debt, A's money disappears. This is the whole theory of money" (Innes 1913).

In his second article, Innes defined state money as credit, "Every time a coin or certificate is issued… A credit on the public treasury is opened, a public debt incurred" (Innes, 1914). Innes recognised that a debt to the state or tax liability can be paid by the return of the government's own debt instrument; in other words there exists "the right of the holder of the credit (the creditor) to hand back to the issuer of the debt (the debtor) the latter's acknowledgement or obligation, when the former becomes debtor and the latter creditor" (Innes, 1914).

Innes's work is significant inasmuch as it provides a powerful critique of orthodox theory concerning the ontology of money. It highlights the weaknesses in the latter approach and provides a persuasive alternative perspective; namely *money as credit in its essential nature*.

We would argue that it is possible to develop a structure which illustrates the relationship between the credit theory of Innes and the state theory developed by Knapp. Smithin (2018, pp. 194-95) contends that the study of money and monetary issues should follow a four stage "schema" beginning with a realist social ontology, followed by economic sociology, monetary macroeconomics and, finally, political economy. Applying this structure allows us to see credit theory as foundational and forming part of the first stage, seeking to explain the ontology of money itself. The state theory applies to the second stratum; the economic sociology which explains what is acceptable in payment of debt in the specific society in which we live.[14]

The Marxian (commodity variant) theory of money

At this point we might consider Marx's analysis of money which is complex and does not fit neatly in with either the orthodox or heterodox approach discussed above. Marx saw the role of money as acting as a *general equivalent* fulfilling a unique role (Brunhoff and Foley, 2007) and notes the importance credit money, although undeveloped in the second half of the 19th century when he was writing *Capital*, viewing the credit system as simply a form or development of a monetary economy. Marx emphasises that money is embedded in the social relations underlying commodity exchange and that money mediates between capital and labour (and also between financial and industrial capital). This gives money a crucial role in determining the way the contradictions embedded in social relations manifest themselves over time (Marx, 1981).

[14] Smithin argues that the third stage of monetary macroeconomics deals with the technical issue of explaining the operation of a monetary economy and that the final stage of political economy deals with questions of policy, governance and equity (Smithin, 2018, pp. 194-95). Smithin is critical of the approach of mainstream economics which stands opposed to his schema and notes that the advocacy of an *individualist ethical position* underpins the practice of mainstream economics. Smithin (2010) contends that, "…most economists as well as political or social scientists, essentially form their *ethical* views first. The views then expressed or more likely only implicitly formed, on ontology and epistemology, then follow directly from this, and the political stance that emerges is simply that deriving from the original ethical judgement" (Smithin, 2010, p. 36, emphasis in the original). Smithin (2010; 2018) rejects this approach and believes that investigation should *begin with ontology*, which should be followed by epistemology then ethics and finally politics. He argues that this philosophy-informed structure corresponds with his four-stage schema outlined earlier (Smithin, 2018, pp. 194-95).

Lapavitsas (2003, p. 2) notes that there are notable commonalities between the Marxist and Post-Keynesian approaches (the latter drawing inspiration from state and credit theories). Marxian economics provides insights into the development of the monetary system under capitalism and Marx's association with the perspective of the Banking School and rejection of the claims of the Currency School[15] is an interesting case in point. However, Lapavitsas and Itoh (1999) retain faith in a version of the "commodity money" story, albeit a different one to the Austrian school, and reject alternative theories which are based upon anthropology.

> "Marx's analysis is…incompatible with the anthropological claim that money was originally an ideal unit of account without a corporeal means of exchange. Insofar as past societies sought a unit of account to express the equivalence of disparate use values, they were forced to do so by their external relations. It is highly unlikely that economic relations among pre-capitalist societies rested on trust, mutual obligation or reciprocity, requiring money only as an abstract numeraire. A corporeal money was also necessary to effect the exchange of commodities" (Itoh and Lapavitsas, 1999, p. 55).

In marked contrast to Ingham (2004a) and Wray (1998), Lapavitsas (2003)[16] concludes that the origins of money are to be found in commodity exchange, where "foreignness" is significant especially between communities and the belief that once money has been derived as a "universal equivalent," its corrosive power (Itoh and Lapavitsas 1999) then permeates society and, in the case of capitalism, becomes a dominant social relation (Lapavtisas, 2003, pp. 14-15).

At this stage a more detailed examination of the nature and importance of barter is required in order to shed light upon the Marxian version of the origins of money; an anthropological perspective is provided by Chapman (1980). "Barter is not embedded in society. It stands out by itself as a purely economic transaction.[17] What then is its role in history, in process? If barter is not an institution it might be termed a cultural or behavioural pattern" (Chapman 1980, p. 49).

Importantly, Chapman stresses that barter is a behaviour pattern that is separate from money and exists in all societies. "Barter exists with or without money" (Chapman, 1980, p. 57) Chapman notes the apparent existence of barter in all types of societies; however, in capitalism it is marginal, with the exception of periods of crisis. (Chapman, 1980) Crucially, barter *should not be understood as a forerunner of money.* Chapman's (1980) assessment of

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[15] 'Marx agreed with Banking School on its anti-Quantity theory stance, but went beyond it in providing theoretical foundations for the view that determination runs from prices to money and not vice versa.' (Lapavitsas, 1994, p. 460)

[16] [16] Itoh and Lapavitsas (1999, pp. 229-234) attempt to refute the arguments expressed by Wray (1990) and the evidence for state and credit theories in general in order to add credence their own approach. They provide some thought-provoking analysis but ultimately, from our perspective, their arguments remain wholly unconvincing and, importantly, are not in accord with the evidence.

[17] In describing barter in this way, Chapman is establishing a "universal model of barter…suggesting that barter as an ideal type is not embedded in society" (Humphrey and Hugh-Jones, 1992). Chapman states that in her study she "postulates 'pure' barter as a logical category, which, as such, exists only in theory, only abstractly. The model is not applicable to, or representative of, any given case of real ('impure') barter. In the world barter is a transaction between two living human beings, or groups; it always occurs in a social or psychological situation. The context however never (or rarely) distorts the prime motivation of the act of barter, which is the exchange of objects. The contexts, too numerous to define, presuppose two individuals or two groups, who need or desire to acquire each other's objects" (Chapman, 1980, p. 36, parentheses in the original).

Marx's explanation of the exegesis of money is in broad agreement with that of Lapavitsas (2003).

> "Marx states that exchange originated in the context of trade of products having use-values between two communities on their shared border, and that, as the volume of trade increased, the products were transformed from objects having use-value (a concept which here includes direct labour) into objects having value (abstract labour time) as well as use value. The labor necessary to produce the object has now passed from the use-value concept to the value concept. In this process of the transformation of products into commodities, money first emerges, as the measure of the exchange value of the commodities. The causal incidence of this momentous development is the result of exchange between communities, that is, *not* an internal transformation in the mode of production within the community or communities involved" (Chapman, 1980, emphasis in original).

Anthropologists Humphrey and Hugh-Jones (1992) support this interpretation of Marx's views of barter and add insight to it,

> "The idea that barter is 'beyond society' was clearly expressed by Marx in *Capital*, volume I (1954[2013], p. 91) where he opposed barter to transactions within society and based on communal property rights. He located the origin of barter in exchanges between primitive societies, on the grounds that only in the absence of communal rights to property was it possible for people to alienate their goods…Marx went on immediately to add that as soon as people got the idea of alienated exchange of goods this spread inside society too, because of man's inherent desire for individual acquisition" (Humphrey and Hugh-Jones, 1992, p. 12).

Chapman develops her analysis by specifying four causal factors in Marx's theory of direct exchange, "(1) accident or chance; (2) events exterior to the community; (3) gradual increase in exchange or trade; (4) creation of surplus products. These factors are axiomatic; they are given, assumed as reasonable and illustrated by random examples from pre-capitalist societies" (Chapman, 1980, p. 68). Chapman then comments on each in turn,

> "(1) By proposing the genesis and early development of barter (and of exchange in general) as accidental, Marx assumes that it is not the result of any process; that it might have 'happened' or not. Therefore this factor cannot be structured into a theory of this nature.
> (2) By situating the origin and initial development of exchange as exterior to the community, Marx implies that in its origin the process is not the result of (or part of) forces which operate in terms of dialectic relations.
> (3) By describing the process which leads to the transformation (of primitive society due to the insertion of commodity production in it) as gradual, further analysis is eluded in this context.
> (4) What is surplus product? Surplus over and above what? Assuming that a normal or average consumption can be determined for a given society the surplus is the amount of products exceeding it. Among some hunting, fishing, and gathering people, for instance, food which is set aside for future

> consumption is not necessarily bartered or exchanged" (Chapman, 1980, p. 69, parentheses in the original).

Chapman then provides a range of examples of "surplus" and places them in specific societal contexts before concluding, "the creation of surplus may be due to such various types of economic behaviour, that surplus of itself cannot be assumed to represent a given causal factor." (Chapman, 1980, p. 69) Chapman goes on to argue that Marx's story of the origin of the commodity is strangely incongruous with the rest of his analysis. The causal factors Marx brings into play in his theory of direct exchange and the origin of the commodity are amazingly weak and strangely contradictory to the theory of history (historical materialism) he applied to capitalism and so resolutely defended" (Chapman, 1980, p. 70, parentheses in the original).

Having considered the key arguments contained in the literature it seems reasonable to suggest that the credit/debt relationship existing within society forms the basis for the development of money as a social institution. Barter however, although it might exist, is *not embedded within societies* as a foundational social phenomenon. No society has yet been found with an economy based upon barter (Humphrey and Hugh-Jones, 1992). Rather barter comes into its own when "foreignnness" (Lapavitsas, 2003) is significant. It is therefore important when trade occurs *between communities* (although it does still occur within communities). It is an appropriate way of allowing spot transactions to occur between the representatives of different social groups.

The nature and history of barter are separate from the nature and history of money; barter trades and monetary transactions apply in different situations. The key element is that distinguishes the nature of barter from that of money is that *barter involves only two parties in the exchange* whereas a *monetary transaction, in contrast, involves three.* When a purchase is made the buyer provides the seller with a credit on a third party. This credit is money. There is no money in direct exchange; barter cannot provide the origins of money although it seems that barter exists alongside money.

The superiority of state and credit theories

> "Money was invented as a social, and governmental, phenomenon, not as a means of reducing transactions costs in markets. The invention of money probably predated the development of formal markets; thus money facilitated the rise of markets, rather than vice versa" (Goodhart, 1998, p. 16).

The argument that money's origins are found in the social relationships embedded within communities which allow states to provision themselves and for credit transactions to become widespread is much more convincing than the argument that it exegesis can be found in commodity exchange (whether this be the neo-classical or Marxist version of the story).

Commodity theory typically entails the logical derivation of money as a universal equivalent resulting from the development of commodity exchange and often where "foreignness" is significant (such as in an inter-community extent, allowing "spot" transactions to take place). This is followed by the claim (implicit or explicit) that, once established, this universal equivalent forms the basis of the monetisation of society. However, this *conflates the introduction of a precious metal "universal equivalent" into international trade with the origins* *of money itself.* Such thinking is not new and certainly predates Marx, being apparent in the writings of John Locke (1695).

> "Locke offered a cohesive definition of money, one that broke with tradition. According to Locke, money was the same as traders' silver, the commodity that travelled in international exchange. This traditional view was that coined money was given 'extrinsic' value by sovereign authority, produced for public as well as private ends, and intended to nurture a domestic community" (Desan, 2014, pp. 345-46).

Desan notes how Locke believed that the intrinsic value of precious metal (in this case, silver) allowed it to act as a universal instrument in exchange. In fact Locke defined money as "a commodity with intrinsic (metallic) value, engendered as a medium by the consensus of traders, for their use in international exchange" (Desan, 2014, p. 346). Desan observes that Locke considered that "Silver worked 'as money' because it offered 'intrinsic value'. That value attached by the 'common consent' of those using silver as an instrument of the 'universal barter or exchange'" (Desan, 2014, p. 346, quoting Locke 1695).

Desan also points to the following statement made by Locke "I have spoken of silver coin alone because that makes the money of account, and measure of trade, all through the world." (Desan, 2014, p. 346, quoting Locke 1695, p. 422) and argues, following Lowndes (1695), "Foreign trade ran 'at par' when the currencies of each country traded for each other in the amount that reflected the quantity of silver they contained" Desan (2014, p. 347). However, it is significant that

> "[t]he reason coins travelled across foreign borders according to their silver content was that, in precisely that circumstance, they were *not* 'money'. Money was a domestic affair, a political project based on the institutions of minting, spending, taxing adjudicating, and enforcing that made it work as way to count value, settle debts and circulate value at home. Stripped of that infrastructure – outside of the engineering that made it circulate *as money* – coin was, in fact, bullion. European polities had long settled accounts in silver or gold, given the value those metals held for money-making within their bounds.
>
> But conflating the shared content of moneys- bullion- with the domestic measure itself was not hard to do. After all, silver and gold *did* move between countries as a means of lubricating trade. That point of reference was enormously attractive, especially for those unfamiliar with the way communities engineered money internally" (Desan, 2014, p. 347, emphasis in the original).

This attraction exerted a powerful influence on Locke,

> "As he summarized his argument for defining money, it was silver that 'mankind' had agreed to give and take and give 'for all other commodities as an equivalent'. Locke invoked a universal in order to set the standard for local practice… Locke did attend to the domestic situation, but he did so by extrapolating from his model. Having described bullion but called it money,

> Locke then assimilated the latter to the former" (Desan, 2014, p. 347, quoting Locke, 1695, p. 423).

The similarities between Locke's approach and that expressed by Lapavitsas (2003) are remarkable. In the same way as Locke (and Marx) before him, Lapavitsas explains the establishment of a "universal" commodity for use in international exchange – silver or gold – but then makes the same mistake as Locke by conflating this with *money*. Money does not derive from a "universal equivalent" which appears in international trade; rather "money" is a domestic invention, embedded in a particular society by forces generated within that society. In summary, we might contend that there is no proven link between inter-community or international trade and the introduction of money into communities. Locke manifests this error which is found in both neo-classical economics and Marxism. Instead, we would argue that it is state and credit theories which provide much more powerful explanations of the development of money within communities and, as we shall see below, receive significant support from the evidence. The origin of money should not be understood as some side-effect of the development of inter-community or international trade but rather as a development which springs directly from the development of social relationships within communities.

All money is credit but not all credit is money (Wray, 2004). If a seller provides goods and services but is prepared to wait for payment she is granting credit. If the credit she holds on the buyer becomes transferable and allows her to settle her own debts with others it effectively becomes money. Money then is merely transferable debt. It is a fictitious commodity in a Polanyian[18] sense. It has no corporeal existence and intrinsically has a zero cost of production. It is not a produced commodity, it is merely an entry on a ledger. We might even suggest that in a world where trust and memory were perfect, money could exist purely in spoken form. A seller could receive a spoken credit and could pass this on to her own creditors in settlement of her debts using only language.

However, in the real world where trust and memory are not perfect, monetary systems have utilised tokens or "money things" such as coins, tallies or banknotes to symbolise the debt. A seller, rather than acquiring merely a spoken credit or even a book credit, receives a physical token to show that they hold credit on the debtor (the state or on a private individual or institution). The tokens may at first glance appear to be money itself but on reflection it is clear they are only symbols indicating that the holder holds the debt of another agent. The nature of the tokens as only symbols of money can be illustrated by referring to Knapp. The state could demonetise one token and monetise another.

The choice of token by different communities can have far-reaching consequences. This is especially true of "commodity money". Historically coins containing precious metal have become a common form of tokens. These coins are really metal discs monetised by the

[18] Polanyi notes the nature of fictitious commodities, "labour, land and money are essential elements of industry; they must also be organised in markets; in fact, these markets form an absolutely vital part of the economic system. But labour, land and money are obviously not commodities; the postulate that anything that is bought and sold must have been produced for sale is emphatically untrue in regard to them. In other words, according to the empirical definition of a commodity they are not commodities. Labour is only another name for a human activity which goes with life itself, which in turn is not produced for sale but for entirely different reasons, nor can that activity be detached from the rest of life, be stored or mobilized; land is another name for nature, which is not produced by man; actual money, finally, is merely a token of purchasing power which, as a rule, is not produced at all, but comes into being through the mechanism of banking or state finance. None of them is produced for sale. The commodity description of labour, land and money is entirely fictitious" (Polanyi, 1944, pp. 75-76).

stamp of the issuer. Their nature as commodity money tokens results from being declared as acceptable in payment of taxes by the state (Knapp, 1924). From a modern standpoint it might seem wasteful to manufacture tokens or money things from precious metals with high intrinsic value and multiple uses instead of something with zero or close to zero intrinsic value. Why use precious metal? As Minsky said "anyone can create money, the trick is getting it accepted" (Minsky, 1986, p. 228). We suggest that in a world of uncertainty about the future, issuing debt by using precious metal tokens would have had several advantages. First, it would raise the prestige of the issuer. Any state that can access gold or silver and use it to manufacture money tokens should be worthy of at least some respect. Second, the scarcity of precious metals would give the tokens a "floor value". If the current monetary system broke down and the tokens were no longer acceptable in payment of taxes then at least they would have some residual value. Third, this scarcity would add to the acceptability of the tokens from those who might fear that the possibility of irresponsible issue of tokens by the state in the future was a real threat and might lead, in turn to a reduced value of their monetary wealth. Lack of availability of precious metal would constrain the state from such actions. Fourth, fraudsters would find it hard to find precious metal relative to, say, a common material which would reduce (although not eliminate) the chance of counterfeiting.

In principle, though, materials with little or no intrinsic value could have been (and indeed, were) chosen as money tokens, notably hazel wood tallies (Wray, 1998; Desan, 2014). However, the common choice of precious metal tokens has been the source of a great deal of confusion as category errors have proliferated in economics. Unfortunately, economists have committed an ontological error (or category error) when considering *the actual nature of money* and have confused "money things" or "signifiers" (more generally, tokens) which are producible commodities with the money itself, which is not a produced commodity (Ingham, 2001).

The evidence in support of state and credit theories is wide-ranging and comprehensive. The impressive work done by Ingham (1996; 1999; 2000; 2001; 2004a; 2004b), Wray (1998; 2006), Grierson (1977) and Goodhart (1998; 2009) – amongst others – is important and, from our perspective, ultimately convincing; we have already referred to Wray et al. (2004) who provides a detailed analysis and critique of Innes' work and a wide-ranging survey of evidence concerning the development of money.

In the case of Egypt John Henry considers that, "Egypt was not a monetary economy; production was not undertaken to 'make' money. But it certainly had money and money was not a medium of exchange, but a social relationship. It was bound up with the transition from egalitarian to class society" (Henry, 2004, p. 96). He continues in support of Innes's credit theory of money, "A. Mitchell-Innes's theoretical account, developed nearly a century ago and long ignored by economists, is in accord with the historical facts of the development of money in Egypt" (Henry, 2004, p. 97).

We might also consider the case of Mesopotamia, Hudson[19] contends that, in general,

> "The power to create money and expand the credit supply historically has tended to be in the hands of public bodies. Ever since its Bronze Age inception, money's power has been established by the public sector's

[19] See also Goodhart and Hudson (2018, pp. 6-15) for an analysis of jubilee debt cancellations. Their work highlights further evidence in support of the argument that state power and authority are at the root of the development of money.

> willingness to accept it in payment for public fees and taxes" (Hudson, 2004, p. 121).

He goes on to conclude, in the specific case of ancient Mesopotamia,

> "rather than originating with private individuals trucking and bartering, money was created as a medium to denominate and pay obligations to the large public institutions. The Mesopotamian breakthrough lay in creating a system of price equivalencies that gave a sense of proportion.[20] The value dimension was provided by the accounting formalities that enabled temples and palaces to coordinate their internal resource flows and dealings with the rest of the economy" (Hudson, 2004, p. 123).

Third, we might consider ancient Greece. According to Keynes, "The Solonic reform of the Athenian currency in the sixth century B.C. was an exercise of the chartalist prerogative which was contemporary with, but in no way dependent upon, the existence of coined money. It was just a change of standard" (Keynes, 1930, vol. 1, p. 13).

The evidence supports the contention that money is always credit and should be analysed as a development from the credit/debt relationship and that the state has a critical role in the introduction and use of money. Examination of ancient empires confirms this. Even today, states and would-be states are issuing or intending to issue their own currency. In 2014, Isis announced plans to introduce its own currency; this, in a sense, is an affirmation of its view of itself as a "state".

> "Isis said it would reinstate an ancient Islamic dinar currency using gold and silver coins. There is a modern form of the dinar still in use in some countries, but these use fewer precious metals for coins. Isis's announcement did not state when the currency would come into circulation" (The *Independent*, 13, November, 2014).

Conclusion

When discussed in isolation what money "is" may seem an esoteric matter of concern only to historians and a select few disciplinary specialists. This opinion, however, would be a profound error. The nature of money bears directly on the nature of the socio-economic processes that are core to the way we live. The nature of money bears directly on the ideational significance and veracity of finance and on whether in fact we live in money economies where financing is core to the scope and potential of societies. Money is a vital *relational* social technology. If we get what money "is" wrong, then we commit errors all the way up the theory chain.

It seems clear that we cannot *afford* to get the nature of money wrong as our experience of financial crises and the ill-constructed response represented by austerity reveals.[21] We would further argue that it is no coincidence that the most effective critics of the failures of finance

[20] As we have noted, Hudson (2004) describes how the Mesopotamians created a bi-monetary price ratio (barley and silver) which enabled the relative values of products, land rents, trade and services, debt and its interest charges to be coordinated into a single overall value system.
[21] Armstrong (2019).

have been credit theorists, such as Michael Hudson[22] and L. Randall Wray (or, indeed, Hyman Minsky from whom Wray draws inspiration).[23]

References

Armstrong, P. (2015) "Heterodox Views of Money and Modern Monetary Theory" https://moslereconomics.com/wp-content/uploads/2007/12/Money-and-MMT.pdf.

Armstrong, P. (2019) "Keynes's view of deficits and functional finance: a Modern Monetary Theory perspective." *International Review of Applied Economics*, 33(2): 241-53.

Breen, T.H. (1985) *Tobacco Culture: The Mentality of the Great Tidewater Planters on the Eve of the Revolution*. Princeton, NJ: Princeton University Press.

Brunhoff, S. de and Foley, D. (2007) "Karl Marx Theory of Money and Credit." *A Handbook of Alternative Monetary Economics*, in P. Arestis and M. Sawyer (eds.), London: Edward Elgar.

Chapman, A. (1980) "Barter as a Universal Mode of Exchange." *L'Homme* 20:3 p. 33-83.

Davies, G. (2002) *A History of Money*. Cardiff: University of Wales Press.

Desan, C. (2014) *Making Money*. Oxford: Oxford University Press.

Dowd, K. (2000) "The invisible hand and the evolution of the monetary system." In *What is Money?* (Smithin ed.), Abingdon: Routledge p139-141.

Friedman, M. (1968) *Dollars And Deficits*. Prentice Hall, p. 193.

Goodhart, C.A.E. (1998) "The Two Concepts of Money: Implications for the Analysis of Optimal Currency Areas." *European Journal of Political Economy*, Vol. 14, pp. 407-432.

Goodhart, C.A.E. (2009) "The Continuing Muddles of monetary Theory: A steadfast Refusal to Face Facts." *Economica*, Vol. 76, Issue S1, pp. 821-830, October.

Goodhart, C.A.E. and Hudson, M. (2018) "Could/should jubilee debt cancellations be reintroduced today?" Discussion papers, Centre for Economic Policy Research, London, UK.

Graeber, D. (2011) *Debt: The First 5000 Years*. New York: Melville House.

Grierson, P. (1977) *The Origins of Money*. London: Athlone Press.

Hahn, F. (1987) "Foundations of Monetary Theory." In M. DeCecco and J.Fitoussi (eds.) *Monetary Theory and Institutions*. London: MacMillan.

Hands, D.W. (2001) *Reflection without Rules.* Cambridge: Cambridge University Press.

Henry, J. (2004) "The Social Origins of Money." In *Credit and State Theories of Money,* Cheltenham: Edward Elgar.

Hudson, M. (2004) "The Archaeology of Money: Debt versus barter Theories of Money's Origins." In *Credit and State Theories of Money,* Cheltenham: Edward Elgar.

Humphrey, C. and Hugh-Jones (eds) (1992) *Barter, Exchange and Value: An Anthropological Approach*. Cambridge: Cambridge University Press.

The *Independent* (2014) "Isis Declares New Currency Will Be Circulated Across Syria and Iraq." http://www.independent.co.uk/news/world/middle-east/isis-declares-new-currency-will-be-circulated-in-its-bid-to-establish-caliphate-across-syria-and-iraq-9859752.html.

Ingham, G. (1996a) "Some recent changes in the relationship between economics and sociology." *Cambridge Journal of Economics,* 20, pp. 243-275.

[22] Although Hudson draws insight from Marx he differs from many Marxists by focusing on the particular significance of rent-seeking in capitalism, especially how it underpins the parasitic role of the financial sector.
[23] Wray (2016, pp. 2-11).

Ingham, G. (1996b) “Money is a social relation.” *Review of Social Economy,* 54 (4), pp. 507-29.

Ingham, G. (1999) “Capitalism, money and banking: a critique of recent historical sociology.” *British Journal of Sociology,* 50 (1), pp.76-96.

Ingham, G. (2000) “’Babylonian madness’: on the sociological and historical ‘origins’ of money.” In *What is Money?* Smithin, J. (ed) pp. 16-41. London and New York: Routledge.

Ingham G. (2001) “Fundamentals of a Theory of Money: Untangling Fine, Lapavitsas and Zelizer.” *Economy and Society*, 30 (3), pp. 304-323.

Ingham, G. (2004a) *The Nature of Money.* Oxford: Polity/Blackwell.

Innes, A. M. (1913) “What is Money?” *Banking Law Journal,* May, pp. 377-408.

Innes, A. M. (1914) “The Credit Theory of Money.” *Banking Law Journal,* January, pp. 151-168.

Itoh, M. and Lapavitsas, C. (1999) *Political Economy of Money and Finance*, Basingstoke: Palgrave MacMillan.

Jones, R. A (1976) “The Origin and Development of Media of Exchange.” *Economic History Review* 44, no. 4, pp. 757-775.

Keynes, J. M. (1930) *A Treatise on Money,* 2 vols. New York: Harcourt and Brace.

Keynes, J. M. (1982) *Collected Writings Volume XXVIII,* Cambridge: Cambridge University Press.

Klein and Selgin (2000) “Menger’s Theory of Money: Some Experimental,” In *What is Money?* (Smithin ed.), Abingdon: Routledge pp. 217-34.

Knapp, G. F. (1924) *The State Theory of Money.* New York: Augustus M. Kelley (1973).

Lapavitsas, C. (1994) “The Banking School and the Monetary Thought of Karl Marx.” *Cambridge Journal of Economics*, 18 (5), pp. 447-461.

Lapavitsas, C. (2003) “Money as a Universal Equivalent and its Origin in Commodity Exchange.” https://www.soas.ac.uk/economics/research/workingpapers/file28848.pdf

Locke, J. (1690) Two Treatises of Government. Cambridge. In Laslett, P. (Ed.), Cambridge Univ. Press.

Locke, J. (1692) “Some Considerations Concerning Raising the Value of Money.” In *Locke on Money* (2 vols.) edited by Patrick Hyde Kelly, Oxford: Clarendon press, 1991.

Locke, J. (1695) “Further Considerations Concerning Raising the Value of Money.” In *Locke on Money* edited by Patrick Hyde Kelly, Oxford: Clarendon press, 1991.

Lowndes, W. (1691) “Remarks upon the Proposal for Establishing a Fund to Raise Two Millions.” In *The Writings of William Paterson* London: Judd and Glass, 1859.

Lowndes, W. (1695) *A Report Containing an Essay for the Amendment of Silver Coin*, London: Charles Bill and the Executrix of Thomas Newcomb

Mackinac Centre for Public Policy, http://www.mackinac.org/overtonwindow.

Marx. K. (1857) *Grundrisse.* London: Penguin, 1993.

Marx. K. (1867) *Capital* Volume I. London: Penguin, 2013.

Marx, K. (1894) *Capital* Volume III. London: Penguin, 1981.

Menger, C (1892) “On the Origin of Money.” *Economic Journal* volume 2 pp. 239-55 (trans. Caroline A. Foley).

Messori, M. (1997) “The Theory of Value without Commodity Money?” *International Journal of Political Economy*, 27 (2), pp. 51-96, summer.

Minsky, H. (1986) *Stabilizing an Unstable Economy*. New York: McGraw-Hill Professional.

Nowrasteh, A. (2013) “Karl Polanyi’s Battle with Economic History.” https://www.libertarianism.org/blog/karl-polanyis-battle-economic-history September 12.

Peacock, M. S. (2017) “The Ontology of Money.”, *Cambridge Journal of Economics* 41, pp. 1471-1487. doi: 10.1093/cje/bex012.

Polanyi, K. (1944) *The Great Transformation*. Boston, MA: Beacon Press, 2002.

Polanyi, K. (1966) *Dahomey and the Slave Trade*. Seattle and London: University of Washington Press.

Polanyi, K. (1968) *Primitive, Archaic and Modern Economies*. Edited by George Dalton, New York: Anchor Books.

Quiggin, A. (1949) *A Survey of Primitive Money: The Beginnings of Currency*. London: Methuen.

Rabushka, A. (2008) *Taxation in Colonial America*. Princeton, NJ: Princeton University Press.

Shaikh, A. (2016) *Capitalism: Competition, Conflict, Crises*. Oxford: Oxford University Press.

Siddiqui, K. and Armstrong, P. (2018) “Capital Control Reconsidered: Financialization and Economic Policy.” *International Review of Applied Economics,* 32(6), pp. 1-19.

Sindzingre, A.N. (2017) “Understanding the Concept of Gift in Economics: Contributions from other Social Sciences.” Association for Heterodox Economics Conference Paper, University of Manchester.

Smith, A. (1776) *The Wealth of Nations*. Ware, Hertfordshire: Wordsworth Editions; Classic World Literature edition, 2012.

Smithin, J. (2010) *Money, Enterprise and Income Distribution*. London and New York: Routledge.

Smithin, J. (2018), *Rethinking the Theory of Money, Credit, and Macroeconomics: A New Statement for the Twenty-First Century*. Washington D.C.: Lexington.

Sylla, R. (1982) “Monetary Innovation in America.” *Journal of Economic History*, vol. 2 no. 1, pp. 21-30.

Tawney, R.H. (1921) *The Acquisitive Society.* London: Bell and Sons.

Tobin, J. (1998) *Money, Credit and Capital*. Boston MA: Irwin McGraw- Hill.

Wray, L. R. (1998) *Understanding Modern Money.* Cheltenham: Edward Elgar.

Wray, L. R. (2004) *Credit and State Theories of Money.* Cheltenham: Edward Elgar.

Wray, L. R. (2006) “Banking, Finance and Money: A Sociological Approach.” *Levy Economics Institute,* Working Paper No. 459, July.

Wray, L. R. (2016) *Why Minsky Matters: An Introduction to the Work of a Maverick Economist*. Princeton University Press: Princeton, NJ.

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