

Wray, L. Randall

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Working Paper No. 717

Introduction to an Alternative History of Money

by

L. Randall Wray*

Levy Economics Institute of Bard College

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Levy Economics Institute
P.O. Box 5000
Annandale-on-Hudson, NY 12504-5000
<http://www.levyinstitute.org>

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ABSTRACT

This paper integrates the various strands of an alternative, heterodox view on the origins of money and the development of the modern financial system in a manner that is consistent with the findings of historians and anthropologists. As is well known, the orthodox story of money's origins and evolution begins with the creation of a medium of exchange to reduce the costs of barter. To be sure, the history of money is "lost in the mists of time," as money's invention probably predates writing. Further, the history of money is contentious. And, finally, even orthodox economists would reject the Robinson Crusoe story and the evolution from a commodity money through to modern fiat money as historically accurate. Rather, the story told about the origins and evolution of money is designed to shed light on the "nature" of money. The orthodox story draws attention to money as a transactions-cost-minimizing medium of exchange.

Heterodox economists reject the *formalist* methodology adopted by orthodox economists in favor of a *substantivist* methodology. In the formalist methodology, the economist begins with the "rational" economic agent facing scarce resources and unlimited wants. Since the formalist methodology abstracts from historical and institutional detail, it must be applicable to all human societies. Heterodoxy argues that economics has to do with a study of the *institutionalized* interactions among humans and between humans and nature. The economy is a component of culture; or, more specifically, of the material life process of society. As such, substantivist economics cannot abstract from the institutions that help to shape economic processes; and the substantivist problem is not the formal one of choice, but a problem concerning production and distribution.

A powerful critique of the orthodox story regarding money can be developed using the findings of comparative anthropology, comparative history, and comparative economics. Given the embedded nature of economic phenomenon in prior societies, an understanding of *what money is and what it does* in capitalist societies is essential to this approach. This can then be contrasted with the functioning of precapitalist societies in order to allow identification of which types of precapitalist societies would use money and what money would be used for in these societies. This understanding is essential for informed speculation on the origins of

money. The comparative approach used by heterodox economists begins with an understanding of the role money plays in capitalist economies, which shares essential features with analyses developed by a wide range of Institutionalist, Keynesian, Post Keynesian, and Marxist macroeconomists. This paper uses the understanding developed by comparative anthropology and comparative history of precapitalist societies in order to logically reconstruct the origins of money.

Keywords: Origins of Money; Evolution of Financial System; Substantivist Methodology; Comparative History; Nature of Money

JEL Classifications: B5, B25, B41, E11, E12, N01, N2, P1

Inconvenient as barter obviously is, it represents a great step forward from a state of self-sufficiency in which every man had to be a jack-of-all-trades and master of none....If we were to construct history along hypothetical, logical lines, we should naturally follow the age of barter by the age of commodity money. Historically, a great variety of commodities has served at one time or another as a medium of exchange: ...tobacco, leather and hides, furs, olive oil, beer or spirits, slaves or wives...huge rocks and landmarks, and cigarette butts. The age of commodity money gives way to the age of paper money.... Finally, along with the age of paper money, there is the age of bank money, or bank checking deposits. (Samuelson 1973, pp. 274-6)

Although this explanation of the origins of money and financial institutions is taught in almost all money and banking courses, it is internally inconsistent and has little historical foundation. There is an alternative approach that emerges from the heterodox literature on money, banks, the broader financial system, and monetary policy. This two volume collection presents a cross-section of heterodox approaches to these issues. For purposes of contrast, some of the more important orthodox treatments are also included.

This paper integrates the various strands of this alternative view on the origins of money and the development of the modern financial system in a manner that is consistent with the historical facts, such as we know them. To be sure, the history of money is “lost in the mists of time,” as money’s invention probably pre-dates writing. Further, the history of money is contentious. And, finally, even orthodox economists would reject Samuelson’s caricature as historically accurate. Rather, the story told about the origins and evolution of money is designed to shed light on the “nature” of money. The orthodox story draws attention to money as a transactions-cost-minimizing medium of exchange. By contrast, the heterodox tradition focuses on money as a complex and important institution—perhaps the most important institution in the capitalist economy. (See, especially, Dillard 1980.)

It will not be possible to provide a complete history of money, financial institutions, and monetary policy. Rather, this paper will provide an outline of the alternative with links to other literature in the orthodox and heterodox traditions.

THE ORTHODOX STORY OF THE ORIGINS OF MONEY

According to the orthodox story, barter replaced self-sufficiency and increased efficiency by allowing for specialization.¹ It was then discovered that further efficiency could be gained by using some object as a medium of exchange to eliminate the necessity of a happy coincidence of wants required for barter to take place. Thus, money springs forth to facilitate exchange by lubricating the market mechanism, which had previously relied upon barter: money is created to minimize transactions costs. Further, “fairground barter” replaced “isolated barter” because this lowered the cost per unit of time taken to complete a transaction. Thus, the development of money and markets allowed the economy to move toward its optimum position with the lowest transactions costs. (See Goodhart 1998.)

The argument is extended to the development of fiat money by noting that in the 17th century, commodity money was commonly deposited with “goldsmiths” for safekeeping against receipts called “goldsmiths’ notes.” Time and effort (now called shoe leather costs) could be saved by exchanging notes, rather than by reclaiming the gold each time an exchange was made. The goldsmith discovered that as a result, some notes were permanently in circulation so that the gold they represented was never withdrawn. Thus, goldsmiths could safely lend these gold reserves, or issue additional receipts as loans, creating the equivalent of modern fractional reserve banking. Since the cost of writing out the receipts was less than that of mining gold, goldsmith “banking” was also a rational economic decision taken to reduce the costs of the transactions structure; paper money thus replaced commodity money.

However, as goldsmiths had to keep some commodity money to facilitate clearing with other goldsmiths and for deposit withdrawals, the quantity of paper money issued would be closely governed by the quantity of commodity money held in reserve. Some of the goldsmiths gradually specialized, and the modern private banking system emerged, based on fractional reserve deposit banking.² Governments began to compete by issuing fiat money either through their treasuries or through their central banks. Private banks were permitted (or required) to hold this governmental (or quasi-governmental) fiat money as reserves. Thus, an increase in the issue of government fiat money would lead to a multiple expansion of bank deposits in the fractional reserve system.

While the deposit multiplier might vary, central bank control over the privately-issued supply of paper money (and, later, demand deposits) is ensured through control of bank reserves. (See Friedman 1968 and Brunner 1968.) In order to prevent excessive money from being privately created, the central bank must closely regulate the quantity of reserves. Lack of moral fiber on the part of the authorities leads to excessive reserves and to excessive money. When the public finds itself with too much money, it spends the excess, causing inflation. Thus, the primary responsibility of the central bank is to serve as an inflation guard dog.

TOWARD A HETERODOX CRITIQUE

The orthodox story, in which the present is a linear descendant of the past, relies critically on an approach identified as “hypothetical, logical” in the passage by Samuelson above. The orthodox economist views our economy as a more-or-less free market economy in which only real variables matter (at least for the long run) and in which neutral money is used primarily to facilitate exchange of real goods, undertaken by self-interested maximizers for personal gain. The origins of money are then discovered by abstracting from this hypothetical economy to an economy that is an exact replication save one feature: it does not use money. The conventional economist then compares these two economies and finds that the one using money faces lower transactions costs. Money must, therefore, have been created to reduce the transactions costs that arise in barter. Historical detail can then be added to the picture; mental gymnastics ensure that historical “facts” are consistent with the basic Neoclassical view of the world.

“Money” can be discovered in almost any society (past or present) if one is willing to include as money “tobacco, leather and hides, furs, olive oil, beer or spirits, slaves or wives...huge rocks and landmarks, and cigarette butts,” as Samuelson is wont to do (Samuelson 1973, pp. 274-6). If such objects cannot be found in a particular society, one can always argue that this society merely has not yet discovered money. All societies are based on exchange, or at least would be if natural propensities were allowed to flower. If one is willing to define almost any human interaction as an “exchange,” then exchange can be found in any society. Finally, all such exchanges must be made on the basis of cold calculation of self-gain, for no other exchange could be rational.

Heterodox economists have mounted a several-pronged attack on this methodology and its conclusions. First, Institutionalists (in particular) have rejected the *formalist* methodology adopted by orthodox economists in favor of a *substantivist* methodology (Stanfield 1986). In the formalist methodology, the economist begins with the “rational” economic agent facing scarce resources and unlimited wants (Dalton 1971). The focus, then, must be on choice; implicit or explicit relative prices will be generated (by an auctioneer or through tatonnement) to guide choice as rational agents maximize.³ Since the formalist methodology abstracts from historical and institutional detail, it must be applicable to all human societies; indeed, it is presumably relevant for the study of any organism capable of making choices. Institutionalists instead argue that economics has to do with a study of the *institutionalized* interactions among humans and between humans and nature.⁴ The economy is a component of culture, or more specifically, of the material life process of society. As such, *substantivist economics* cannot abstract from the institutions that help to shape economic processes; and the *substantivist* problem is not the *formal* one of choice, but one concerning production and distribution.⁵

The universalist, formalistic method should be rejected because institutions matter, influencing social and economic arrangements adopted. As these vary across cultures and over time, different approaches have been taken to questions of production and distribution. This dictates a *comparative* methodology: comparative anthropology addresses differences across cultures, while comparative history deals with the evolution of institutional arrangements through time (including within and across societies). As Bloch argues, the comparative method should “analyze and isolate the ‘originality’ of different societies” (Bloch 1953, p. 507). He claims that if our analysis remains within the bounds of one society, we will never uncover the causes of germination of a historical development; a “general phenomenon must have equally general causes” (Ibid., p. 505). A series of monographs, each on a particular society, may be quite useful, but “none of them, working separately, is able to provide the solution” to a question concerning the general causes of a general phenomenon;” on the other hand, monographs become important only because “the comparative method can elicit from the chaotic multiplicity of circumstances those which were generally effective—the real causes” (Ibid., pp. 505-506). Use of the comparative method allows one to “isolate the ‘originality’ of

different societies” (Ibid., p. 507) by using “factual studies which are detailed, critical, and well-documented” (Ibid., p. 520).

The economist who wishes to use the comparative method faces a major hurdle: the *economy* in (all?) societies is “embedded” in the total social fabric so that it is difficult to identify (Stanfield 1986, p. 18). This is the corollary to the Institutionalist rejection of the formalist method: one cannot abstract from the institutions which shape (and are shaped by) society’s way of “making a living.” This is particularly true of pre-capitalist societies, where productive activities are closely integrated with other social activities (Ibid., p. 76).⁶ Polanyi argued that in pre-capitalist societies, the embedded economy is shaped by the rules and norms of the society; even where self-interested behavior exists, it must be *noneconomic* because the community generally takes care of all its members and norms of behavior exert continual pressure to *eliminate* self-interest as a cause of economic behavior (Polanyi 1968, p. 46).⁷

While this is an effective critique of orthodoxy’s “homogenous globules of desire” (Veblen’s well-known phrase), it also means that economic phenomena are difficult to disentangle from other, more general, pre-capitalist social behavior. However, this does not mean that the comparative economist’s task is impossible. In capitalist society, economic behavior achieves its highest degree of liberation from other social activities; the economy of the capitalist society is the least “embedded.” If one can develop an understanding of economic phenomena of a capitalist economy, one may use the comparative method to develop an understanding of pre-capitalist economies and improve one’s understanding of the capitalist economy. This is because, as Stanfield argues, the “facts” of the capitalist economy were already embedded in noneconomic social relations of pre-capitalist societies (Stanfield 1986, p. 54). These phenomena become more obvious in capitalist society; once we understand their functioning within a capitalist economy, we may contrast this with the role they play in pre-capitalist economies.

A powerful critique of the orthodox story regarding money can be developed using the findings of comparative anthropology, comparative history, and comparative economics. Institutionalists have already used the first and second methods extensively and successfully, but use of the third prong has not been extensively explored. This is not so much the fault of those who have adopted the comparative approach as it is the result of economists’ inadequate

theoretical understanding of the role of money in a capitalist economy. Given the embedded nature of economic phenomenon in prior societies, an understanding of *what money is and what it does* in capitalist societies is essential to this approach. This can then be contrasted with the functioning of pre-capitalist societies in order to allow identification of which types of pre-capitalist societies would use money and what money would be used for in these societies. This understanding is essential for informed speculation on the origins of money.

Finally, the methodology used by heterodoxy must be carefully distinguished from the orthodox approach as typified by the quote from Samuelson above. The neoclassical economist creates an abstract, formal economy that is purported to represent the actual economy. An identical economy is then hypothesized that does not use money. These are then “compared” to discover why money was invented.

In contrast, the comparative approach used by heterodox economists begins with an understanding of the role money plays in capitalist economies, which shares essential features with analyses developed by a wide range of Institutionalist, Keynesian and Post Keynesian, and Marxist macroeconomists.⁸ The outline provided in this paper then uses this understanding and the understanding developed by comparative anthropology and comparative history of pre-capitalist societies in order to logically reconstruct the origins of money.⁹

Before proceeding, however, money should be defined. In this approach, money cannot be identified by its peculiar individual physical “characteristics” (malleable, durable, transportable), nor by its functions (transactions medium, means of payment, etc.). Rather, money is defined with respect to the operation of the economy as a whole. Money is identified as a unit of account; it becomes the social measure of value in all *monetary* economies. It is an abstract “measuring unit.”

As Keynes put it in the *General Theory*, a monetary economy is one for which assets exist whose liquidity premia exceed carrying costs (Keynes 1964).¹¹ These assets may have peculiar physical characteristics, or they may not—but they will have essential properties which determine their liquidity. In a monetary economy, the purpose of production is to obtain money-denominated assets; this can be contrasted with a “barter” economy, or a “real wage economy” or a “co-operative economy” (these are merely different names for

nonmonetary economies) in which the object of production is real, physical output (Keynes 1979, p. 67).

It is necessary to distinguish between *money* as a measuring unit and those assets *denominated* in the money of account. Thus, bank deposits are not money, but are denominated in the social unit of account—that is, money (the dollar in the US). Similarly, it is necessary to distinguish between money and those various functions performed by assets denominated in the unit of account: money is not what money does. Some money-denominated assets function as media of exchange or means of payment. While these functions are typically fulfilled by certain money-denominated assets, this does not make any particular asset that so functions *money*.

Much of the confusion over whether primitive economies use “money” results because those who study such societies merely look to see whether these “primitive” societies might have any objects which perform some of the functions we associate with modern “money.” Once money is clearly separated from some of the functions it performs in modern monetary economies, it becomes apparent that primitive “monies” are not money.

In the following sections, this paper seeks to identify the origins of money and the development of the modern financial system, following this alternative view of money.

PRIMITIVE “EXCHANGE” AND PRIMITIVE “MONEY”

The orthodox explanation of the origins of money is based on the existence of an economy based on barter exchange in formal markets (the fairground barter) which predates the introduction of “money.” But this is neither historically accurate, nor is it coherent. The institutional prerequisites to the development of market exchange include the existence of private, alienable property, recognition of individual responsibility, self-interested behavior, and forward-looking production. Yet, the historical examples of barter exchange used to justify the traditional approach rarely show any of these characteristics. This paper will argue first that primitive “exchange” or “barter” did not lead to the development of markets; second, that money did not develop out of primitive “exchange;” third, that both “fiat money” and “credit money” *predated* coined “commodity money;” and fourth, that the quantity of credit money

has never been constrained by the quantity of central bank liabilities, as in the “multiplier” story.

The exchanges that occur in tribal societies are “public acts performed in regard to the status of persons and other self-propelling things...” (Polanyi 1971, p. 75); these exchanges have as their main aim to “exchange articles which are of no practical use...” (Malinowski 1932, p. 860; sometimes “the identically same object is exchanged back and forth between the partners...the sole purpose of the exchange is to draw relationships closer by strengthening the ties of reciprocity” (Polanyi 1971, p. 74); exchanges were frequently made to *equalize* wealth, rather than to achieve mutually beneficial allocations of resources; and there was generally no fixed exchange rate among exchanged goods—the exchange rates would depend upon the status of the parties to the exchange (Heinsohn and Steiger 1983).¹⁰

If these exchanges were not market exchanges, then what are the primitive “monies” (Samuelson’s tobacco, huge rocks, and wives) that have been identified as the cost reducing solution to barter exchange? These “primitive monies” are “used to create social relationships...prevent group hostility and warfare...elevate one’s political position...and restore peaceful social relationships between persons and groups disrupted by conflict...” (Dalton 1982, p. 185). These “monies” are always used in “special ways only” (Ibid., p. 185) and never as a social unit of account; the “special purpose monies or highly ranked treasure items necessary to the transaction” may be used only in specific ways and other items cannot be substituted for them in these specified transactions (Dalton 1967, p. 264).

These “monies” did not function as media of commercial exchange, they did not function as common measures of value, they did not act as the standard of deferred payment, (and they most certainly did not carry liquidity premia in excess of carrying costs, in Keynes’s terminology). Malinowski’s study of the Trobrianders found:

It is obvious at once that in economic conditions such as obtain among the Trobrianders there can be no question of a standard of deferred payments, as payments are never deferred...In fact, the narrow range of exchangeable articles and the inertia of custom leave no room for any free exchange, in which there would be a need for comparing a number of articles by means of a common measure. Still less is there a need for a medium of exchange, since, whenever something changes hands, it does so because the barterers directly require the other article. (Malinowski 1921, p. 13)

Similarly, while “loans” existed in primitive, nonmonetary societies, these were fundamentally different from the forward contracts that characterize loans in monetary economies. First, in a primitive society, “loans” are always initiated by the “lender,” who forces the “debtor” to accept a gift (Dalton 1967). Second, this “loan” is not undertaken by the “lender” with the prospect of material gain, for the chief motive is to obtain prestige precisely by *destroying* one’s wealth (Heinsohn and Steiger 1989). Third, in primitive societies, “repayment” terms of a “loan” are always fixed by social norms of reciprocity and redistribution—they are never the result of private negotiation and contract. Thus, in primitive societies, neither “money” nor “loans” represent economic phenomena—rather, the purpose of these is identical to the purpose of primitive “exchange:” to reproduce tribal society through reciprocity and redistribution.

On the basis of historical and anthropological evidence, it can thus be concluded that primitive barter exchange was not market exchange “without money” and that the primitive “monies” do not emerge from the reduction of transactions costs in the exchange process. Dalton (1982) prefers to substitute the term “primitive valuables” for “primitive monies” in analysis of most primitive societies since “demonstrably, most were not crude proxies for dollars or francs in simple market transactions” (Dalton 1982, p. 183) While these may have served “as special means of commercial or noncommercial payment or exchange in primitive, peasant, and archaic societies all over the world” (Ibid., p. 183), they “are regarded as valuables to be used in special ways only; they are necessary means of reciprocal payment in social and political transactions” (Ibid., p. 185).

This does not mean that individuals in tribal society are completely lacking in self-interested behavior, rather, that such behavior would not normally be manifested in exchange for two reasons: first, since the community takes care of all its members, gainful behavior in exchange is not necessary to provide a livelihood; second, reciprocity exerts continual pressure to eliminate self-interest from exchange *since it cannot benefit the individual* (Stanfield 1986, p. 59).¹¹ Clearly, such exchanges do not conform to the orthodox view of profit-seeking market behavior, but represent *conventional* behavior more akin to the Western practice of gift-giving at Christmas.¹²

PRIVATE PROPERTY AND MONEY

In one interesting heterodox thesis, it is argued that primitive “exchanges” and “monies” cannot lead to the development of market exchange or to the use of money *because* they do not lead to the institution of private property which is considered to be a prerequisite to the development of *monetary* production, that is, production for sale in markets for money-denominated assets.

“With the establishment of private property, we at once have the elements of a money economy...” (Heinsohn and Steiger 1989, p. 193). The development of private, alienable property¹³ is of crucial importance to the development of markets and money precisely because it destroys the collective security of tribal or command society which allows for ceremonial exchange and redistribution. The introduction of private property generates “existential uncertainty” in which each member of society becomes responsible for his/her (including family members) own social and economic well-being.¹⁴

The “existential uncertainty” that is generated by the introduction of private property is thus a crucial element in the alternative explanation of the passage from ceremonial to market exchange. In tribal society, reciprocal and redistributive modes of social integration ensure that the material needs of any particular individual in society will be met according to the ability of the tribe to do so. This does not mean that one will never go hungry, but that there is no distinction between the economic conditions of the individual and the society as a whole.

Anthropologists note that the typical case in tribal society is one of chronic underproduction: there is little attempt to produce much beyond a subsistence level, nor to hoard for unforeseen natural disasters. The attitude commonly found in tribal society is one of confidence that biological needs will be satisfied (Stanfield 1986). In these societies, there is little concern for personal possessions; indeed, personal accumulation of property is normally viewed with disdain, and is made nearly impossible by the aforementioned redistribution and sharing. Similar conditions prevail in those societies based on a central authority (whether chief, king, or priest), who receives obligatory transfers and then redistributes some of this to the community. While such societies certainly are not communistic, the redistributive function tends to ensure some minimal satisfaction of material wants. Finally, within the feudal manor

one again finds a nearly self-sufficient economic unit whose redistributive process is designed to meet subsistence requirements.

However, with the development of private property in land, one (usually, the individual household) becomes personally responsible for meeting material wants. As productive activities become increasingly divorced from other social activities, that is, as reciprocity and redistribution come to play a very small role in *economic processes* (while they may still be of some importance in other social activities—Christmas gift giving is socially important although economically insignificant), existential uncertainty is created because the social assurance of a minimal level of subsistence disappears. Individual insurance could then only be built up by producing and holding a margin of security in the form of excess production over minimum needs.

The role of existential uncertainty can be seen in the behavior of individual landowners who are unable to meet their needs from their own personal productive efforts. Their existence thus depends on being able to borrow means of subsistence from other individuals. Heinsohn and Steiger postulate that this is the basis of the first *economic* exchange, and it takes the form of a loan in which one private producer extends physical product which he has accumulated as his margin of security to a borrower who, in exchange, promises to furnish his labor whenever the lender should require it in order to ensure his own survival.

Thus, the earliest form of economic exchange produced forward contracts which, in the extreme, took the form of debt bondage in which the “debtor initially rendered himself in the power of the creditor as a debt serf and the creditor at any time during the credit term could call upon the debtor—even up to his extermination” (Heinsohn and Steiger 1984, p. 54). When debt bondage was abolished¹⁵, the creditor faced existential uncertainty during the period of the contract. This uncertainty was over the lender’s ability to survive periods of depressed production. For running this risk, the lender required payment in the form of interest. Note that this is not risk of failure of repayment, but the risk of the lender failing to survive a change in his circumstances as a result of not having his emergency surplus available.

The abolition of bondage created the conditions under which loans must include interest. These loans, and interest, were initially “in kind,” and in many cases, the interest could

be paid out of the natural fecundity of the loaned item. For example, the loan of a bushel of wheat today can be repaid with two bushels at the end of next year. However, as the types of loans expanded, and as the terms of repayment became standardized, repayment would take a standard form—denominated in a unit of account, or a “money of account.” The first money of account was a wheat unit. Temples seem to have played a role in standardizing the unit of account. The creditor and debtor required a neutral witness to, and enforcer of, private contracts. In return for this service, the temple would receive a portion of the interest on loans. These in-kind fees (plus tribute paid to the temple) led to the accumulation of large stocks of grain, animals, and other goods with significant carrying costs (Heinsohn and Steiger 1983, p. 19).

In order to reduce such costs, the temples encouraged the development of a standardized wheat unit of account. This was also to the advantage of borrowers and lenders, for now repayment was not necessarily linked to the natural fecundity of loaned items. Thus, the original *wheat money of account* began to serve as the *means of payment* allowing repayment to take many forms (a cow loan is repaid with wheat). The barley grain was later substituted because of its invariable unit weight. Of course, even barley grains entail large transactions and storage costs. After temples began to act as depositories for *creditors* (by holding for them the payments of debtors), transactions costs could be reduced by substituting stamped metal for barley on withdrawal. Storage costs were reduced when the temple accepted the stamped metal in payment of tribute or fees for its service as witness in private contracts. In order to deal with counterfeiters, temples eventually switched to stamped precious metals (Heinsohn and Steiger 1983, p. 21).

Below we will explore an alternative explanation of the origins of the money of account—the state money view. However, it is interesting that Heinsohn and Steiger’s “private property” view of money’s origins relies on a central authority for the creation of the money unit.

In the view of Heinsohn and Steiger, with the development of a money of account, and with the creation of a method for witnessing the legitimacy of private contracts (and of enforcing them), credit money could finally circulate among third parties and perform those functions associated with “money,” including the medium of exchange function so obviously

encountered in markets. Thus, they argue that credit money *predates* commodity money (gold coins), and the unit of account function of money *predates* either the medium of exchange or means of payment functions.

The origins of money are not to be found, then, in a hypothesized exchange society based on barter. Instead, money develops as a unit of account, or, *as the terms in which debts are written*: “A money of account comes into existence along with debts... Money proper in the full sense of the term can only exist in relation to a money of account” (Keynes 1971, p. 3). When private loans are made, the lender gives up private property in exchange for an IOU issued by the debtor, which represents a forward contract. This private contract must include an interest premium, the size of which is determined by the estimate of the existential uncertainty faced by the lender who has given up reserves that provide security in the face of an unknowable future (Heinsohn and Steiger 1989, p. 192). Thus, all forward contracts involve “wheat now for more wheat later” propositions, which are monetary propositions, with money serving as a unit of account. (See Keynes 1964, Chapter 17.)

The distinction made above between “money” and “assets denominated in the money of account” is not so novel as it appears to be to the modern reader. Einaudi (1953) offered a detailed examination of the history of a concept variously termed “imaginary money,” “ideal money,” “political money,” “moneta numeraria,” or “ghost money.” He traces this concept from the sixteenth century through the eighteenth century; one can find similar ideas in the works of Cipolla (1956; 1976). An “imaginary money” is a money of account, commonly called a “pound” throughout Europe, which never changes much in value. Einaudi argues this money of account “grew almost spontaneously out of men’s habit of keeping accounts in monetary units” (Einaudi 1953, p. 233). As the ghost money frequently remained uncoined, it certainly could not fulfill that function of money orthodoxy takes as paramount: medium of exchange. Instead, the ghost money was the unit of account, the social measure of economic value, the unit in which debts were measured, and the unit in which exchange rates of all media of exchange were calculated.

For example, Einaudi shows that in the eighteenth century, the duchy of Milan used 51 different coins and 50 different monetary units. The value of each of these, however, was always determined relative to the livre (pound) money of account (which was not one of the

coined units) (Einaudi 1953, p. 243). If one of these coins were debased, prices of commodities would rise in terms of this particular coin *but not in terms of the ghost money*. This means, of course, that commodity prices (in addition to values of media of exchange) were actually denominated in terms of the *livre* money of account. As another example, the Bank of Amsterdam, reputed to be the prototype for the Bank of England, issued no notes and made no loans, but merely offered depositors clearing house payment services in terms of an “imaginary” national money of account. Similarly, the *lira di banco* was a unit of account, valued in equivalent gold weight units, created by *giro* banks to provide invariable terms for bank liabilities used by members of the “*giro* payment society” (Wray 1990).

By distinguishing money from the various functions it performs, we may conclude that primitive, pre-private property economies did not use money. It is thus an inappropriate use of the comparative method to try to find objects that fulfill “money-like” functions in tribal societies and then label these “money.” Rather, our understanding of the role money plays in capitalist economies enables us to use the comparative methodology to identify the contrasts between monetized economies and those based on communal, reciprocal relations—the latter do not use money, although we may find objects that superficially appear to fulfill some of the functions we now associate with assets denominated in the money of account.

THE RELATIONS BETWEEN MONEY AND MARKETS

Unlike production in, say, a tribal society, capitalist production always involves money. The capitalist must hire workers to produce the goods that will be sold on markets (to workers and other capitalists). As production takes time, the capitalist must pay wages now, before sales receipts are realized. Furthermore, because the future is uncertain, wages are paid in money form; and sales receipts are uncertain because money wages need not be spent on any particular output—nor even on output in general. This means that the capitalist who borrows to pay the wage bill must pay interest and that capitalist production is only undertaken on the expectation of making profits. Thus, capitalist production always involves “money now, for more money later.” The market, then, “is not a *place of barter*...but a place for earning the means of settling debts, i.e. money” (Heinsohn and Steiger 1989, p. 193).

Markets cannot exist independently of money, much less predate it.¹⁶ The hypothesized barter economy assumes that individuals “organize their activities with the idea of marketing in mind” before money exists (Levine 1983, p. 21). They specialize in producing commodities they do not need in order to exchange them in the market for desired commodities. But such production requires the pre-existence of private property and independence of individuals. As argued above, these are the prerequisites to the development of money as a unit of account. Furthermore, even production for (hypothesized) barter exchange in a private property economy involves time and uncertainty, but these are the additional prerequisites for *monetary* production. Thus, all of the prerequisites for a monetary economy already exist in the market economy that is supposed to be based on barter. Is it conceivable that barter could have predated the use of money, even though the hypothesized barter economy displays all of the conditions of a monetary economy?

Levine (1983) argues that the existence of a market requires diversity and variability of needs—otherwise, one must suppose that the existing distribution of endowments (resources, ability, know-how) just happens to be such that a large portion of the population cannot produce for its own needs, but must produce for the market. Even if this can be accepted, it does not seem to generate the conditions required for an innovative, dynamic market, for production would be geared to satisfy the “historically developed and given modes of consumption and structures of neediness” (Ibid., p. 22). That is, the drive to accumulate is seriously constrained in the hypothesized barter economy. Only in an economy in which wealth is denominated in money does “need” become socially determined by the requirements of social accumulation. In a monetary economy, individuals produce commodities which they do not need because their motivation for production is the acquisition of wealth as such (i.e., making money). The separation of producer from consumer supports a system of exchange. That separation comes about because the idea of wealth in general has become a part of a way of life and mode of thinking. The penetration of the idea of wealth into consciousness makes pursuit of wealth through commodity production an intelligible goal (Ibid., pp. 22-3).

This separation of producer from consumer requires (for its full development) the existence of private property and the creation of a class of propertyless workers. The existence of propertyless workers also extended market demand, and extended the medium of exchange

function of money. In conclusion, market supply is created as production becomes oriented to the market to obtain money-denominated assets; market demand exists because propertyless workers must purchase the means of subsistence through the use of money wages.

The preceding discussion has admittedly flown through several thousand years, covering the whole period from the first tentative movements away from tribal society to the development of a full-blown capitalist society. On one hand, this can be justified by the argument that all pre-capitalist societies are much more similar to one another than any is to capitalism. The origins of markets based on use of money lie in the early development of private property; however, money and monetary production remained “embedded” in noneconomic social relations until the emergence of a “monetary economy” relatively recently.

There is no novelty in this claim; one can find similar arguments in Stanfield (1986), in Polanyi (1968), and in Heilbroner (1985). Stanfield argues that the major transition to the modern economy occurred in the seventeenth century, during which the Mercantilist state took an active role in the creation of internal markets; from this point forward, the economy gradually emerged and began to shape the rules and norms of society (Stanfield 1986, p. 102). This culminated, according to Polanyi, in the conscious creation of a “self-regulating free market economy” in the nineteenth century, in which the disembedded economy functioned without the direction of authorities. A market myth was created, summarized as the belief that pursuit of self-gain would achieve social provisioning even without purposeful pursuit of this social purpose.

According to Polanyi, the attempt at creating a self-regulating market economy failed, thus engendering a protective response to limit the functioning of markets precisely because they could not accomplish desired social provisioning. Finally, Heilbroner argues that the creation of capitalist society represented a *revolutionary* movement in which an economic system is created whose overriding function is to accumulate “capital,” rather than to ensure social provisioning. This continual “expansive metamorphosis of capital” is the essential *logic* of capitalism (Heilbroner 1985, p. 36). Furthermore, this logic of accumulation takes the form of accumulation of greater *nominal* values. Clearly, capitalism—a system based on nominal accumulation—is a system very different from previous institutionalized interactions among humans and between humans and nature.

However, one cannot ignore the substantial differences between tribal society—which does not use money—and pre-capitalist societies which do. Once private property appears, we have the origins of money and the development of markets—markets have been fairly common since the later Stone Age (Stanfield 1986, p. 97). Monetary production, however, remains a much later development.¹⁷ As was recognized by Polanyi, markets exist long before a *system* based on markets appears. It is clear that markets can exist in a variety of economic systems—from the tribute economies based on central authority, to the democratic societies of ancient Greece, and from the Roman slave society to the feudal societies of Europe. Even though most production in all of these societies never entered markets, markets and sale of goods for money-denominated assets played a role. This admission, however, concedes nothing to the Neoclassical insistence on seeing a natural propensity to truck and barter in all societies. Rather, in most of these cases, markets were set up specifically by state intervention; in all cases, states regularly intervened.

Indeed, Levi-Strauss defines exchange as a peacefully resolved war, and likens exchange rates to peace treaties (Ibid., p. 90). Polanyi writes of the creation of markets by generals to provision armies; prices were not set by the higgling and haggling of markets, rather,

traditionally, trade carried no taint of commerce. In its origins a semi-warlike occupation, it never cut loose from government associations, apart from which but little trading could take place under archaic conditions.... Treaty prices were matters of negotiation, with much diplomatic higgling-haggling to precede them. Once a treaty was established, bargaining was at an end. For treaty meant a set price at which trading took its course. As there was no trade without treaty, so the existence of treaty precluded the practices of the market. (Polanyi 1971, pp. 86-7)

The existence of private property, money, and markets is apparently not sufficient for the development of a market *system*, or, better, a system based on production for sale in markets for money-denominated assets. In Wray (1990), it is argued that the extent of the market would remain limited until a substantial portion of the population became propertyless, thus, became wage workers.¹⁸ As Stanfield (1986, p. 45) argues, the hungry must obtain food, but how they go about obtaining it is institutionalized. The propertyless, and therefore hungry, individual may rely on family, on begging, on government redistribution, or on wages by

selling labor power (Polanyi's fictitious commodification of labor), each depending on the response engendered by institutional arrangements. Bloch (1953) argues that the creation of a pool of potential wage laborers was accomplished by a process often (somewhat narrowly) called the enclosure movement.¹⁹ Again, however, the "labor market" did not spring naturally from this development, but was gradually created, and the extent of production for market would be severely constrained until labor became "commodified"—a process that resulted in part from accelerated privatization of land.

In summary, money first existed as a unit of account. The development of private, alienable property allowed private loans.²⁰ As loans came to be written in a standard money of account, the means of payment function of money developed. This gradually permitted production for market to earn the means of settling debts, which generated a medium of exchange function for money. The first standardized money of account was wheat, but it was subsequently replaced by barley. Money, recorded as a debt denominated in a unit of account, would be created as part of a forward debt contract.²¹ Money acting as a medium of exchange or means of payment would take a physical form (wheat or barley, and later, clay tablets, wooden tally sticks, metal coins, or paper IOUs), denominated in terms of the idealized money of account. Because production in a market system is always *monetary* production, its purpose is to realize production in money form. Thus, the purpose of production in a "market" economy is to accumulate money-denominated units of the social measure of wealth. Accumulation of money-denominated assets becomes the universally recognized path to wealth; the money of account becomes the social unit of value.

CREDIT AND STATE THEORIES OF MONEY: MODERN MONEY THEORY

It has long been recognized that early monetary units were based on a specific number of grains of wheat or barley (Wray 1990, p. 7). As Keynes argued, "The fundamental weight standards of Western civilization have *never* been altered from the earliest beginnings up to the introduction of the metric system" (Keynes 1982, p. 239). He shows that the early money of account in Babylonia was the mina, a unit of measurement consisting of 10,800 grains of wheat (Ibid., pp. 231-273). These weight standards were then taken over for the

monetary units, whether the *livre*, *sol*, *denier*, *mina*, *shekel*, or later the *pound* (Keynes 1982; Innes 1913 p. 386; Wray 1998 p. 48). As another example, the Roman pound was equal to 6912 grains of wheat. Furthermore, “all weight standards of the ancient and also of the medieval world...have been based on either the wheat grain or the barley grain” (Keynes 1982, p. 239). Of course, weight units pre-exist money—they were already in use to measure tribute paid to temples (Heinsohn and Steiger 1983, p. 22). These weight units were carried over into the monetary units in which credit money and, later, commodity money was denominated.²² It is significant that the standard coins of Greece and Babylonia (the stater and shekel, respectively) each had a weight equivalent to 180 barley grains—implying that the unit of account came before the coins (Ibid., p. 24).

Hudson (2004) explains that the early monetary units developed in the temples and palaces of Sumer in the third millennium BC were created initially for internal administrative purposes: “the public institutions established their key monetary pivot by making the shekel-weight of silver (240 barley grains) equal in value to the monthly consumption unit, a ‘bushel’ of barley, the major commodity being disbursed” (Hudson 2004 p. 111). Hence, rather than the intrinsic value (or even the exchange value) of precious metal giving rise to the numeraire, the authorities established the monetary value of precious metal by setting it equal to the numeraire that was itself derived from the weight of the monthly grain consumption unit. This leads quite readily to the view that the unit of account was socially determined rather than the result of individual optimization to eliminate the necessity of a double coincidence of wants.

Orthodoxy has never been able to explain how individual utility maximizers settled on a single numeraire (Gardiner 2004; Ingham 2004). While use of a single unit of account results in efficiencies, it is not clear what evolutionary processes would have generated the numeraire. According to the conventional story, the higgling and haggling of the market is supposed to produce the equilibrium vector of relative prices, all of which can be denominated in the single numeraire. However, this presupposes a fairly high degree of specialization of labor and/or resource ownership—but this pre-market specialization, itself, is hard to explain (Bell, Henry, and Wray 2004). Once markets are reasonably well-developed, specialization increases welfare; however, without well-developed markets,

specialization is exceedingly risky, while diversification of skills and resources would be prudent. It seems exceedingly unlikely that either markets or a money of account could have evolved out of individual utility maximizing behavior.

Does the origin of money as a social unit of account used to measure obligations matter? Is money a social institution, or is it merely a convenient medium of exchange? While Institutionalists and some Post-Keynesians have long viewed money as an institution, indeed, as the most important institution in a capitalist economy, most heterodox economists have not delved deeply into this. (Important exceptions include Dillard 1980, Minsky 1986, and the sociologist Ingham 2000.) However, if we are to understand the nature of money, it is important to uncover the social relations that are obscured by this institution.

The credit money and state money approaches help to lift that veil. We first look at the credit theory of money and then turn to the state theory of money.

The Credit Theory of Money

Schumpeter (1934) made a useful distinction between the “monetary theory of credit” and the “credit theory of money.” The first sees private “credit money” as only a temporary substitute for “real money”—possibly a “natural” money that is free of social relations. Final settlement must take place in real money, which is the ultimate unit of account, store of value, and means of payment. Exchanges might take place based on credit, but credit expansion is strictly constrained by the quantity of real money. Ultimately, only the quantity of real money matters so far as economic activity is concerned. Most modern macroeconomic theory is based on the concept of a deposit multiplier that links the quantity of privately created money (mostly, bank deposits) to the quantity of high powered money (HPM). This is the modern equivalent to what Schumpeter called the monetary theory of credit, and Friedman (1948; 1968) (or Karl Brunner 1968) is the best representative. The real money that is the basis of deposit expansion should be controlled, preferably by a rule that will make the modern fiat money operate more like the metallic money of the hypothesized past.

The credit theory of money, by contrast, emphasizes that credit normally expands to allow economic activity to grow.²³ This new credit creates new claims on HPM even as it leads to new production. However, because there is a clearing system that cancels claims and debits without use of HPM, credit is not merely a temporary substitute for HPM. Schumpeter does not deny the role played by HPM as an ultimate means of settlement, he simply denies that it is required for most final settlements.

Like Schumpeter, Innes focused on credit and the clearing system, mocking the view that “in modern days a money-saving device has been introduced called *credit* and that, before this device was known all purchases were paid for in cash, in other words in coins” (Innes 1913, p. 389). Instead, he argued “careful investigation shows that the precise reverse is true” (Ibid., p. 389). Rather than selling in exchange for “some intermediate commodity called the ‘medium of exchange,’” a sale is really “the exchange of a commodity for a credit.” Innes called this the “primitive law of commerce”: “The constant creation of credits and debts, and their extinction by being cancelled against one another, forms the whole mechanism of commerce...” (Ibid., p. 393). Innes explains:

By buying we become debtors and by selling we become creditors, and being all both buyers and sellers we are all debtors and creditors. As debtor we can compel our creditor to cancel our obligation to him by handing to him his own acknowledgment (sic) of a debt to an equivalent amount which he, in his turn, has incurred. (Ibid., p. 393)

The market, then, is not viewed as the place where goods are exchanged, but rather as a clearing house for debts and credits. Indeed, Innes rejected the typical analysis of the medieval village fairs, arguing that these were first developed to settle debts, with retail trade later developing as a sideline to the clearing house trade. On this view, debts and credits and clearing are the general phenomena; trade in goods and services is subsidiary—one of the ways in which one becomes a debtor or creditor (or clears debts). Innes viewed the creditor-debtor relation as the fundamental social relation lying behind money’s veil. There is no “natural” relation-free money that lies behind the credit money. Indeed, for Innes, even HPM is credit money—for reasons discussed in the next section.

The credit approach as advanced by Innes and Schumpeter provides a more useful vision of monetary operations of a capitalist, “market” economy than does the orthodox

vision of money serving as a lubricating medium of exchange. The monetary production economy as described by Marx, Veblen, and Keynes is dominated by a complex web of financial relations that were characterized by Minsky as “money now for money later” propositions (Minsky 1986, p. 228). Money is not a veil that should be stripped away to observe the essential characteristics of the “market economy.” Rather, the money of account and those credit-debt relations are the key institutional relations of the capitalist economy.

The State Theory of Money

Goodhart (1998) makes a useful distinction between the metalist approach and the chartalist—or state money—approach. (See also Lau and Smithin 2002, who prefer the term catallactic over metalist.) The latter emphasizes that money evolves not from a pre-money market system but rather from the “penal system” based on the ancient practice of wergild, as described above (Grierson 1979; Goodhart 1998; Wray 1998). Hence, it highlights the important role played by “authorities” in the origins and evolution of money. More specifically, the state (or any other authority able to impose an obligation) imposes a liability in the form of a generalized, social unit of account—a money—used for measuring the obligation. This does not require the pre-existence of markets, and, indeed, almost certainly predates them. Once the authorities can levy such obligations, they can name what fulfills this obligation by denominating those things that can be delivered, in other words, by pricing them. This resolves the conundrum faced by methodological individualists and emphasizes the social nature of money and markets—which did not spring from the minds of individual utility maximizers, but rather were socially created.

Note that the state can choose anything to function as the “money thing” denominated in the money of account: “Validity by proclamation is not bound to any material” and the material can be changed to any other so long as the state announces a conversion rate (say, so many grains of gold for so many ounces of silver) (Knapp 1924, p. 30; see also Wray 1990, 1998). The state chooses the unit, names the thing accepted in payment of obligations to itself, and (eventually) issues the money-thing it accepts. In (almost) all modern developed nations, the state accepts the currency issued by the treasury

(in the US, coins), plus notes issued by the central bank (Federal Reserve notes in the US), plus bank reserves (again, liabilities of the central bank)—together, HPM. The material from which the money thing issued by the state is produced is not important (whether it is gold, base metal, paper, or even digitized numbers at the central bank). No matter what it is made of, the state must announce its nominal value (that is to say, the value at which the money-thing is accepted in meeting obligations to the state) and accept it in payments made to the state.

The state money approach might appear to be inconsistent with the credit money approach described in the previous section. Indeed, some critics of the state money approach imagine that markets operating on the basis of private credits and debits denominated in a money of account pre-existed the state or authorities (Mehrling 2000). The state is then supposed to have inserted itself into the private money system, taxing and borrowing the private credit money for use in public expenditures. In contrast, Innes insisted that when the state spends, it becomes a debtor (as he said, “by buying we become debtors”) as it issues state money. Hence, even state money is credit money, however, it is a special kind of credit, “redeemed by taxation” (Innes 1914, p. 168). For the government, a dollar is a promise to “pay,” a promise to “satisfy,” a promise to “redeem,” just as all other money is. Innes argued that even on a gold standard it is not gold that government promises to pay:

It is true that all the government paper money is convertible into gold coin, *but redemption of paper issues in gold coin is not redemption at all, but merely the exchange of one form of obligation for another of an identical nature.* (Ibid., p. 165)

Whether the government’s IOU is printed on paper or on a gold coin, it is indebted just the same. What, then, is the nature of the government’s IOU? This brings us to the “very nature of credit throughout the world,” which is “the right of the holder of the credit (the creditor) to hand back to the issuer of the debt (the debtor) the latter’s acknowledgment or obligation” (Ibid., p. 161). The holder of a coin or certificate has the absolute right to pay any debt due to the government by tendering that coin or certificate, and it is this right and nothing else which gives them their value. It is immaterial whether or not the right is

conveyed by statute, or even whether there may be a statute law defining the nature of a coin or certificate otherwise (Ibid., p. 161).

Hence, we can integrate the state money and credit money approaches through the recognition of the “very nature of credit,” which is that the issuer must accept its own IOUs. What, then, is special about government? The government’s credit “usually ranks in any given city slightly higher than does the money of a banker outside the city, not at all because it represents gold, but merely because the financial operations of the government are so extensive that government money is required everywhere for the discharge of taxes or other obligations to the government” (Ibid., p. 154). The special characteristic of government money, then, is that it is “redeemable by the mechanism of taxation” (Ibid., p. 154): “It is the tax which imparts to the obligation its ‘value’ A dollar of money is a dollar, not because of the material of which it is made, but because of the dollar of tax which is imposed to redeem it” (Ibid., p. 152).

By contrast, orthodox economists are metalists (as Goodhart 1998 calls them), who argue that until recently, the value of the government’s money was determined by the gold used in producing coins or by the gold backing paper notes. However, in spite of the attention paid to the gold standard, it was actually in place for only a short period. Typically, the money-thing issued by the authorities was not gold-money, nor was there any promise to convert the money-thing to gold. Indeed, as Innes insisted, throughout most of Europe’s history, the money-thing issued by the state was the hazelwood tally stick:

This is well seen in medieval England, where the regular method used by the government for paying a creditor was by “raising a tally” on the Customs or on some other revenue getting department, that is to say by giving to the creditor as an acknowledgment of indebtedness a wooden tally. (Innes 1913, p. 398; see also Robert 1956 and Maddox 1969).

Other money-things included clay tablets, leather and base metal coins, and paper certificates.

Why would the population accept otherwise “worthless” sticks, clay, base metal, leather, or paper? Because these were evidence of the state’s liabilities that it would accept in payment of taxes and other debts owed to itself. The key power of the state was its ability to impose taxes: “the government by law obliges certain selected persons to become its debtors.... This procedure is called levying a tax, and the persons thus forced into the

position of debtors to the government must in theory seek out the holders of the tallies or other instrument acknowledging a debt due by the government” (Innes 1913, p. 398). Contrary to orthodox thinking, then, the desirability of the money-thing issued by the state was not determined by intrinsic value, but by the nominal value set by the state at its own pay offices. Nor was the government’s money forced onto the public through legal tender laws. It is certainly true that governments often do adopt legal tender laws, but these are difficult to enforce and hence often ineffective (Knapp 1924, p. 111). The power of government to impose a tax and to name what will be accepted in tax payment is sufficient, and certainly trumps legal tender laws.

Once the state has created the unit of account and named what can be delivered to fulfill obligations to the state, it has generated the necessary pre-conditions for development of markets. As Innes argued, credits and debts preceded markets, and indeed, created the need for markets. The primordial debt is the tax obligation, which then creates the incentive for private credits and debts and then for markets. Indeed, evidence from early Babylonia suggests that early authorities set prices for each of the most important products and services—perhaps those accepted to meet obligations to the authorities (Hudson 2004). Once prices in money were established, it was a short technical leap to creation of markets. This stands orthodoxy on its head by reversing the order: first money and prices, then markets and money-things (rather than barter-based markets and relative prices, and then numeraire money and nominal prices). The next step was the recognition by government that it could issue the money-thing to purchase the mix it desired, then receive the same money thing in the tax payments by subjects/citizens. This would further the development of markets because those with tax liabilities but without the goods and services government wished to buy would have to produce for market to obtain the means of paying obligations to the state.

THE DEVELOPMENT OF CENTRAL BANKING AND THE EVOLUTION TO THE MODERN FINANCIAL SYSTEM

Let us turn to the creation of a monetary *system* at the beginning of the rise of capitalism in Europe—we'll examine the period from approximately 1200 to 1700, from the rise of banks through to the development of the central bank. This also saw the transition from a very weak state—if it could even be called that in much of Europe—to the beginnings of modern states. Gardiner (2004) makes the case that these two developments are linked in important ways—something we will not explore in detail here. However, it is important to distinguish the financial position of the early European governments from that of the authorities of ancient Babylonia, Rome, and even Greece. With the notable exception of the stronger Italian city states, European governments often had to borrow from banks—due to numerous defaults on their own liabilities, governments were not trusted by the population. Hence, during the period that we analyze here, these states could not always rely on the ability to issue money-denominated IOUs to finance spending. While it is still true that governments mostly spent by issuing such IOUs (often in the form of tally sticks), they periodically and even chronically faced financial constraints that were relieved by issuing IOUs directly to banks, which then intermediated by issuing bank IOUs to finance the crown's spending. Hence the story of money in this period cannot be told without substantial focus on the private credit system (Lane and Mueller 1985; Usher 1953; Gardiner 2004; Wray 1990).

We begin with a theoretical analysis of the nature of a monetary system, then turn to the rise of banks and central banks.

A money of account, private, alienable property (which creates existential uncertainty—so long as historical time exists, as in the real world) and wage labor provide the conditions required for monetary production, and generate the necessity to accumulate. Accumulation of reserves of very liquid assets (“money things”) denominated in the money of account increases individual security and reduces reliance on lending from others: each proprietor tries to “set up his own reserves as a source of *security* which will protect him, in an unknowable future, from the need to ask credit of other—similarly isolated—proprietors” (Heinsohn and Steiger 1989, p.

192). Reserves consist of media of exchange and means of payment denominated in the unit of account. (They may be private IOUs or claims on government.)

These security reserves backstop lending to temporarily disadvantaged individuals. Lending takes place (largely) at a rate of interest determined by the risk the lender incurs from parting with his margin of safety. The existence of interest also means that the borrower will have to produce in excess of subsistence in order to meet the interest costs and repay principal. This generates a *logic* of accumulation in any society in which most money is created as part of a contract that provides “money now for more money later” and in which production always involves “money now for more money later.” If accumulation falters, these nominal contracts cannot be met.

The logic of a monetary system, then, requires that the nominal money supply expand by at least the amount necessary to meet the expansion of incomes due to interest income growth—if it doesn’t, a crisis develops. Monetary production cannot be constrained by a fixed money supply, nor by a commodity money whose quantity expands only upon new discoveries, for this could make it impossible to meet contractual commitments to pay interest. But since these commitments are in terms of the money-of-account whose supply is determined primarily in the private contracts between debtors and creditors, money growth cannot be controlled except by interfering with private initiative in stipulating contracts: the quantity of wheat money of account cannot be constrained by the quantity of wheat in existence. Rather, the quantity of wheat money created in contracts is constrained by the willingness of the lender to accept the promise of “more money” later in the form of interest. The same principles hold regardless of the money unit of account chosen (whether it is the dollar or the yen), and regardless of the medium of exchange used (bank notes, bank deposits, gold coins, or government money), which would be denominated in the money of account.

As the money of account represents the terms in which promises to repay or to engage in exchange are denominated, anyone can create money, so long as one’s liabilities are accepted by a counter-party who is a willing participant in a forward contract. Thus, by creating money, one may “spend now, pay later,” that is, one may receive something today merely on the promise to deliver “money” tomorrow. The “money” to be delivered tomorrow will take the form of a money-denominated means of payment; it can be obtained by exchange in the

market. While the earliest “private” monetary liabilities were merely two-party contracts, gradually, privately created liabilities (denominated in the wheat money of account) began to circulate and function as media of exchange and as means of payment.

In order to enhance the ability of privately created money-denominated liabilities to circulate, IOUs would be “accepted” by trustworthy individuals or institutions, through an endorsement that guaranteed the IOU. A primary example of a privately created liability that circulated among third parties is the inland bill of exchange.²⁴ A bill is created as part of a forward contract which is written in terms of the money of account; the bill may circulate (especially on endorsement) among third parties as a means of payment and as a medium of exchange, or it may be held as a store of wealth; the liability represented by the bill will be retired through the use of a means of payment—either another bill drawn on a third party, a “money thing” backed by a promise to redeem in gold, or fiat money—at which point the money of account created as part of the (bill of exchange) forward contract is destroyed.

This is called “redemption.” When one is indebted to another, the debtor needs only to obtain an IOU of the creditor to “redeem” her own IOU. If one cannot find an IOU of the creditor then one must offer an acceptable IOU of another debtor. In practice, one often uses the IOUs issued by either government or banks to redeem one’s own IOU. If a creditor refuses to accept her own IOU in payment, or another’s IOU that she previously agreed to accept in payment, that is a default. Or, from the debtor’s point of view, failure to provide an agreed-upon IOU in payment due is also default.

This brings us to the primary problem of a privately created money-denominated liability when it is used as a means of payment, medium of exchange, or store of wealth: its issuer might default. To further increase the circulation of private IOUs, these would be made convertible under specified conditions into other media of exchange. Thus, the early private liabilities, written in terms of the wheat unit of account, would be made convertible into wheat. Later, these would be made convertible into the IOUs issued by temples, palaces, or states. Finally, after the development of stamped coins or other easily recognized IOUs of the state, private liabilities could be made convertible into currency. At all stages, however, private liabilities were also made convertible into other private liabilities—normally into those issued by *relatively* more credit worthy individuals and institutions.

With the development of precious metal coins, we finally arrive at the “goldsmith” stage, at which orthodox theory begins, with a commodity money (gold) that is deposited with the goldsmith, who discovers the “deposit expansion process.”²⁵ Actually, the process worked in reverse. A money coin could not have developed before the development of a money of account. The private liabilities created in money contracts have circulated before and *concurrently* with currency—such as stamped precious metal coins—as media of exchange and means of payment. The precious metal coin is developed for *technical* and perhaps political reasons, but becomes the reserve money because private credit money is subject to default risk, and exchange rate risk. (That is, the holder of private credit money faces the risk that the value of this money will fall relative to the money of account. See Peacock [2006] for a discussion of the origins of coins.) It is not that deposits of a precious metal commodity allow banks to create loans and credit money; rather, loans and credit money generate a desire to hold small reserves of coined metallic money in order to ensure convertibility.

But, gold, and so on, is not money, nor has it ever been money. Money is the socially determined unit of account, but all privately issued money-denominated liabilities expose their holder to at least some risk, and to make this risk palatable, credit money is made convertible into other forms of money-denominated assets. The modern state’s currency is the risk-free representation of the social measure of value; as such, it is chosen as the “ultimate” backing for credit money.

The quantity of the state’s currency available does not normally constrain the credit money supply. This means that wholesale conversion (“liquidation”) of private IOUs cannot be accomplished in the aggregate. That is, a credit money economy based on a commodity—gold—reserve collapses if there are attempts at conversion. However, declining confidence can lead to a “run” on credit money, which cannot be met through liquidation. Instead, a trusted individual or institution would try to quell the fears of holders of credit money by certifying the financial soundness of the issuer. If confidence could not be restored, the issuer would default and the credit money would lose its value. This could generate additional runs, could degenerate into a financial panic, and could lead to a debt deflation.

As in the case of all other capitalist countries, England developed a “pyramidal” financial system (Foley 1989; Wray 1990). Each economic agent would issue liabilities made

convertible into liabilities of an agent higher in the pyramid. Thus, a firm would make its liabilities convertible into country bank notes (typically, the “borrowing” firm would enter into an agreement with an “accepting” bank, issuing a bill of exchange denominated in the bank’s liabilities). The country banks, in turn, made their notes convertible into notes issued by London banks.²⁶ These London banks would hold the “reserves” of country banks, which included stocks, bonds, and London bank notes and deposits. If a run began on a country bank, the London bank would lend its notes against the reserves of the country bank. However, this arrangement was not sufficient to stop periodic financial crises. The obvious problem with a *private* lender of last resort is that its ability to stop runs by issuing its liabilities is always constrained. First, it must worry about its net worth, and second, it must worry about a run on its own notes.²⁷

Early European governments (medieval through Renaissance) were sometimes constrained in their ability to issue money-denominated IOUs. Individuals and institutions were reluctant to accept many government liabilities, partially due to frequent governmental defaults. It is likely that the “gold standard” was in part adopted to reduce fear of government default (although it is more likely that it was adopted to allow government’s IOUs to circulate outside its own sovereign domain) (Wray 2004). Even on the gold standard, governments usually issued “fiat” coins: these were coins whose embodied precious metal was less than the promised value in terms of the unit of account. In reality, such coins were nothing more than government debt—an IOU stamped on gold. (In this case, the coin really was no different than the paper used to register forward contracts; the coins were merely the physical evidence of debt contracts. This is why they frequently had cows or other physical objects printed on them—long before the head of the king appeared on coins.) However, those who received the coin always faced the risk that at some later date the King would declare a lower value, in terms of the unit of account, for the fiat coins. Indeed, experience proved that governments frequently tried to obtain purchasing power through this method (called “crying down” the currency).²⁸

This inability to obtain purchasing power by creating fiat money was solved through the development of central banking in the late 17th century. After default by the King of England on his (tally stick) debts, the Bank of England was first created to provide purchasing power to

the government by purchasing government debt and issuing bank notes. In return, it was granted various monopoly rights and other advantages. Perhaps the most important advantage was the sole right to issue notes in London. (In other countries, private bank notes were taxed out of existence, again giving *de facto* monopoly rights over note issue to central banks.) As London was the financial center, and as country banks already “pyramided” liabilities on London, the Bank of England became the reserve bank. This essentially gave the government purchasing power, for the Bank of England could buy government debt and its notes (denominated in the money of account) would function as fiat money that was always desired since it functioned as the reserve. Gradually, a “mono-reserve” system was developed, with Bank of England liabilities serving as the primary reserve and as the apex of the debt pyramid (Wray 1990). This is the prototypical arrangement now found in all capitalist countries.

In all monetary economies, then, money is a unit of account, created by a promise to pay. A pyramid of these promises evolves—each backed by (or made convertible into) a promise higher in the pyramid. Generally, only the liabilities issued by those who are relatively high in the pyramid will circulate as means of payment and media of exchange. Over time, there has been a *narrowing* of the types of liabilities that will circulate, to those in the highest reaches of the pyramid. Thus, the financial system evolved from one in which a wide variety of types of liabilities circulated to one in which government liabilities and the liabilities of banks comprise the vast majority of the circulating supply of means of payment and media of exchange.²⁹ However, that trend has been reversed in recent decades, at least for some purposes as “shadow bank” liabilities became increasingly acceptable.

Central bank “fiat” money is, like all privately created money, merely an IOU—a debt denominated in the money of account; that is, central bank money and private money have always been “fiat” money. While the first central banks were created to provide government finance, they gradually discovered that their position at the apex gave them the ability to function as lenders of last resort.³⁰ As they could essentially provide reserves without limit merely by discounting the assets of other banks, they could always stop a run. This greatly increases the stability of the capitalist system, for it solves the primary problem of a commodity reserve system: the supply of reserves becomes elastic. This does not mean, however, that the central bank controls the supply of privately issued money-denominated

liabilities—the quantity of Federal Reserve liabilities does not limit the supply of (dollar) unit of account money any more than the supply of wheat limited the supply of wheat money of account. It merely means that an accommodative central bank can prevent debt deflations, while a commodity reserve system cannot because the supply of the commodity money cannot accommodate the need for reserves. It also helps to narrow the types of liabilities that will circulate—those guaranteed by the central bank will tend to displace others.

A system that relies on accumulation functions more smoothly if debt deflations are avoided. The purpose of accumulation in a capitalist economy is not to accumulate widgets, nor is it even to accumulate widget-making machines. Accumulation has only one purpose: “to end up with more money than it started with” (Keynes 1979, p. 891). The “money” to be accumulated is comprised of assets denominated in the money of account; this is the social measure of wealth. A run to liquidity generates defaults and halts the accumulation process; it even leads to significant decumulation of wealth if it spreads.³¹ A system based on commodity money reserves will periodically experience debt deflations; in contrast, a central bank reserve system need not, thus, supports accumulation. An accommodative supply of reserves is better than the commodity—gold—reserve system because it eliminates decumulation at the aggregate level. Again, an accommodative supply of reserves is essential; to the extent that the central bank tries to constrain the growth of reserves, it abandons its responsibility for sustaining accumulation.

When credit money is denominated in the money of account, its nominal value can fall only when it is devalued relative to the money of account (for example, due to fear that its issuer will default). However, on the gold standard, some private liabilities were made convertible into coins.³² As discussed, debasement of coins became common in medieval Europe; this added a further avenue through which credit money could lose value, as any credit money denominated in the debased coin would lose value relative to a money of account. On the other hand, the *debtor* whose liabilities were denominated in the (pound) money of account would find that repayment in terms of a debased (silver shilling) coin became more difficult—increasing the likelihood of default. In medieval Europe, both types of private credit money existed: some was denominated in the unit of account, while other credit money was denominated in terms of coins. The “dual” system consisting of an invariable unit of account

but with coined money whose value relative to the money of account could change by proclamation was not conducive to an economic system based on credit relations. As Cipolla (1956, p. 50) argued, a system based on a stable coin would favor creditors and rentiers, while a system based on a deteriorating coin favored debtors and entrepreneurs. In fact, these divergent outcomes arise because the *system* is based on a money of account, but debts could be written in terms of a coin (which might be debased) or in terms of the money of account.

Polanyi (1968) writes of an attempt to “commodify” money (one of his “fictitious commodities”) as countries throughout Europe established a gold standard. Coins and notes would be made convertible into gold at a fixed rate of exchange as established by the money of account (a pound bank note can be converted into so many shillings; so many shillings equal a pound sterling; so many pounds sterling equal an ounce of gold). With the gold standard, there is no longer a distinction between credit money denominated in the money of account versus credit money denominated in terms of commodity money. When devaluation occurs, it means that the unit of account, credit money, and coined money all fall in value relative to *gold* but not relative to one another.

This brings us back to Einaudi's “ghost money”: one of the functions of a coined money is to provide a common currency, denominated in the “ghost” money of account, into which all other “moneys” are convertible. This is necessary so accounts may eventually be cleared; the coins could be used to settle net debits. With the development of fiat currency, denominated in the unit of account and the value of which, in turn, was fixed relative to gold, we have a “domicile currency” used to clear accounts. The earliest example was the Bank of Amsterdam which guaranteed a uniform gold unit of account used as the common denominator for various media of exchange, all of which represented debts. The uniform unit of account (both domestically and internationally) was necessitated by the dominant use of bills of exchange—if the various bills were made convertible only into private domestic liabilities, their values would be uncertain. Thus, the “gold standard” did not arise “naturally” when money was invented, but was created *because* most money took the physical form of privately-issued bills of exchange (and other private liabilities).

The US had issued treasury notes, denominated in the dollar unit of account and (on the gold standard) also made convertible into precious metal at a fixed exchange rate. These notes

served as a reserve for private liabilities and they were used to clear accounts. It is interesting to note that the US “ghost money” was “coined” early in the history of the country, while the European “ghost money” remained uncoined for centuries. This ability of the government to issue by fiat the currency denominated in the unit of account is an improvement—but it also conflicts with the gold standard, itself, because a run on a convertible currency results in loss of the gold reserve.

Creation of the gold standard eliminates the “dual system” mentioned above, in which debts could be written in terms of either an invariable unit of account or a coined money that could be debased. With a gold standard, credit money that is made convertible into gold can fall in value relative to the unit of account only in the case of bankruptcy of the debtor. Still, however, such bankruptcies can spread whenever there is a run on credit money due to the pyramidal structure of debts and due to the limited quantity of gold reserves. Thus, lender of last resort intervention is required to prevent debasement of credit money relative to the money of account; this is possible only if an elastic supply of fiat money is available—but that is not consistent with a gold standard. This is why the central banking function conflicts with a gold standard, and is one of the reasons the gold standard is commonly abandoned during crisis.

The gold standard permits devaluation of a nation's unit of account (due to a run out of the currency or to deliberate government policy) relative to the units of account of other countries. As the pound sterling falls relative to gold, it also falls relative to the German mark. Thus, while the gold standard resolves the problem of the “dual system” within a country, it does not provide an invariable international unit of account.³³ A debt denominated in the dollar unit of account will fall relative to the value of the pound sterling unit of account whenever the dollar falls relative to gold. Furthermore, the gold standard is as unworkable when there is a run out of a particular country's debts and currency as the commodity money reserve is when there is a run out of a particular bank. Just as the national system requires an elastic fiat money reserve system to stop national runs, the international system requires an elastic fiat money reserve denominated in the reserve currency (the pound sterling pre-WWII) to stop international runs.

The world essentially adopted a dollar unit of account after WWII—but the international monetary system broke down again in the early 1970s when the US abandoned

gold. Even though the dollar has remained as the primary international unit of account, and even though the international supply of dollar reserves has been somewhat elastic (due to actions of the Bank for International Settlements, the World Bank, the IMF, and national central banks), crisis of the international financial system remains one of the most important problems facing the world today.

CONCLUSIONS AND POLICY IMPLICATIONS

This analysis has argued the orthodox approach to money and to policy is historically and logically flawed. Money was not injected into a well-functioning barter economy; instead, money and the market developed together. This helps to explain why production in a market economy is always monetary production: money now for more money later. It also means that the money supply in a monetary economy is necessarily endogenously determined. Monetary economies have not, and cannot, operate with exogenous money supplies. Finally, while a monetary economy with an endogenous money supply can operate with a commodity reserve system, such a system is subject to periodic debt deflations. Thus, in all developed capitalist economies, this has been replaced by an accommodative central bank reserve system.

The Monetarist policy prescription (close control over the quantity of reserves) represented a giant step backward to an unstable system in which accumulation suffers occasional reversals during debt deflations. Furthermore, Monetarist policy would not lead to greater control of the money supply—the supply of reserves (whether of wheat, of gold, or of central bank liabilities) has never determined the quantity of credit money. Rather, rigid control over reserves would eliminate the primary advantage bank liabilities have over other types of liabilities and would lead to greater use of alternative money-denominated liabilities. This, however, comes at the expense of the revival of debt deflations.

The current system, based on central bank reserves, did not evolve out of a commodity money system. Rather, the commodity money reserve evolved out of an endogenous money system to solve one of the problems with a monetary economy: in any monetary economy, the vast majority of assets denominated in the money of account consists of private IOUs, the value of which depends on the economic condition of their issuers. Thus, there was an attempt to

“commodify” money—tying it to gold, supposedly a riskless representation of the social unit of account—to be used as a reserve. Privately-issued money liabilities were made convertible into the “money commodity” merely to enhance circulation, but, the quantity of these was never constrained by the quantity of gold in existence.

This helps to make it clear that an exogenous money system is not possible in an economy that is based on nominal accumulation. One might imagine a system that could be based on exogenous money, but this would have to be a system in which private pursuit of wealth denominated in the money of account was eliminated.³⁴ While a commodity reserve system is possible, it is far more unstable than a central bank reserve system. Rather than attempting to constrain the central bank so that its liabilities are supplied as if we had a commodity money reserve system, it is far better to maintain the current accommodative reserve system.

It would be difficult to improve upon Tooke’s recommendations concerning appropriate monetary policy in a monetary economy:

The greater or less liability to variation in the rate of interest constitutes, in the next degree only to the preservation of the convertibility of the paper and the solvency of banks, the most important consideration in the regulation of our banking system. (Tooke 1959, p. 124)

Later, Keynes argued for a permanently low interest rate—to euthanize the rentier. In the US, we abandoned low interest rate policy as the Fed attempted to first control money supply through rate hikes and then to control inflation through interest rate targeting. This led to greater instability of interest rates, which in turn encouraged regulated financial institutions to hedge off risk. After Bretton Woods was abandoned, they also had to hedge against exchange rate fluctuation. To a large extent, these and other innovations, like securitization, were in part a reaction to Fed policy but also a reaction to the growth of what we came to call “shadow banks” that enjoyed fewer restrictions. In turn, regulations of banks had to be relaxed so that they could compete with the shadow banks. In important ways, all of the developments were a reaction to the use of interest rates as a policy variable—as policy veered from the recommendation made by Keynes.

Private bank liabilities were, however, made convertible to HPM with the central bank and later deposit insurance guaranteeing circulation at par. Expansion of the “safety net” to shadow banks provided a veneer of government backstop to other liabilities that were not explicitly guaranteed. At the same time, the deregulation, de-supervision, and move to “self supervision” meant that the government did not really keep close watch over bank solvency. Increasingly complex financial instruments plus off-balance-sheet commitments that were undisclosed really made it impossible for anyone—including regulators, but also bank top management—to know whether they were insolvent. The global financial crisis that began in 2007 was in large part a result of this uncertainty: many liabilities that had been thought to be liquid and nearly as safe as insured bank deposits turned out not to be so; and financial institutions that had been thought to be strong turned out to be sitting on piles of risky assets. A massive and unprecedented bailout by the Fed was required.

This paper is not the place to make policy recommendations, but rather to offer a vision of the *nature* of money, banks, and the monetary *system*. This is a pre-requisite to discussions of monetary policy, regulation, interest rate setting, exchange rate policy, and financial crises and responses.

NOTES

1. The orthodox story presented here can be found in the typical principles and money and banking texts. See, for example, Samuelson (1973). Orthodox economic historians add much detail to the story; see Schweikart (1991) for a detailed historiographical survey of money and banking in the US. While these economic historians would reject the simple orthodox story presented here, their *historical* analyses do reflect a similar *theoretical* position regarding the nature of money.
2. The transition from a system based on “paper money” (bank notes) to one based on deposits does not play a prominent role in orthodox thought. It may be explained as a consequence of taxes placed on notes, thus, deposits carried lower transactions costs.
3. See Ingrao and Israel (1990). In general, even under very strict assumptions, the formalized Neoclassical economy is not likely to achieve a unique equilibrium as defined by a vector of relative prices. Even if equilibrium can be shown to exist, that equilibrium is not likely to be unique, nor can it be shown to be stable. Thus, even if an equilibrium price vector can be found, there is no assurance that the economy would tend toward it. See Goldberg (2009) and Aschheim and Tavlas (1997) for somewhat heterodox approaches to introduction of money into general equilibrium models—alternatives to ahistorical attempts to find a purely logical way to add money to a model that doesn’t need it.
4. Indeed, many “economic” activities do not involve choice. For example, according to Dalton, “in subsistence (non-market) economies, the question of choice among real alternatives does not arise in such explicit fashion...the Trobriander is born into a yam-growing economy. He does not ‘choose’ to plant yams,” no more than the American “chooses” to learn to speak English (Dalton 1971, p. 78).
5. This discussion follows that of Stanfield (1986, p. 34). However, he defines substantive economics as the study of institutionalized interactions with nature. I think this is too narrow; we should also include the study of institutionalized interactions among humans.
6. Some might doubt that “economics” can be applied to pre-capitalist societies, for it could be questioned whether these exhibit an economic “system” at all. These questions can be answered affirmatively; as Dalton argues, “it is useful to regard all communities or societies as having economic systems. The word ‘system’ refers to structured arrangements and rules which assure that material goods and specialist services are provided in a repetitive fashion” (Dalton 1971, p. 88). However, one should not fall into the “universalist” trap of formalist economics, which seeks to define all human behavior as the result of constrained choice. Arguing that all societies exhibit an economic system does not imply that all have the same “structured arrangements and rules” of provisioning.
7. According to Polanyi and Stanfield, it is only where productive activities are divorced from other social activities that we can identify the “economy” as a separate entity; where this occurs, we can observe the “laws” of supply and demand operating in a “self-regulating market economy” (Stanfield 1986, p. 76). This goes too far: while the “self-regulating market

economy” is surely the normative ideal of neoclassical economics, it has never been achieved; “supply and demand” have never operated separately from other social forces. That is, even under capitalism, the “economy” can never be observed as functioning separately from society. However, it is easier to identify a “logic” of the capitalist economic system that operates more independently from human intentions than does the “logic” of other economic systems. It has been commonly noted that economic *theory* really did not exist before capitalism. As capitalism develops, the “economy” becomes sufficiently separate from the larger social setting that an economics *discipline* is created. See Polanyi (1971) and Heilbroner (1985).

8. See Chick (1986), Moore (1988), Niggle (1990), and Wray (1990) for such treatments.
9. Admittedly, this is a difficult and controversial task. Two factors make the task difficult: money was almost certainly “invented” before writing, thus, we will not find its origins in the historical record; furthermore, the historical record as interpreted by comparative historians generally suffers from an incomplete understanding of the nature of money. (Comparative anthropologists are closer to the mark.) This means that we must reconstruct “history” using comparative economics. Thus, what follows is necessarily a speculative attempt at discovering the *origins of money*, and at reconstructing the *development of the modern financial system*.
10. See Wray (1990, pp. 6-9) for a detailed critique of the orthodox notion that primitive (that is, pre-private property) societies used money. See also Heinsohn and Steiger (1983, 1984, 1989).
11. Thus, self-interested behavior must be *noneconomic*; it must be displayed in behavior unrelated to the production and distribution of society’s means of livelihood. In tribal society, economic activity cannot be gain-oriented at the individual level (Stanfield 1986, p. 45). Pursuit of gain through exchange is the result of institutionally enforced patterns of behavior that arise with the development of private property, as will be discussed below. In tribal society, there is no well-conceived concept of the individual separate from membership in the clan; as such, all “individual” responsibility was social.
12. Thus, we define primitive “exchange” as noneconomic behavior, having next to nothing to do with self-interested behavior. Rather, such “exchange” was a component of reciprocal and redistributive arrangements, designed *to reproduce* tribal society—and not a step on the road to the revolution that replaced tribal society with a monetary economy. See Dalton (1967; 1982). Tribal “exchange” is an outgrowth of the institution of hospitality, rather than an expression of selfishness. As Dalton notes, “moneyless market exchange was not an evolutionary stage in the sense of a dominant mode of transaction preceding the arrival of monetary means of market exchange. Barter occurs very widely in past and present economic systems, but always as minor, infrequent, or emergency transactions employed for special reasons by barterers who know of alternative and more important ways of transacting” (Dalton 1982, p. 188).
13. Private ownership of property certainly does not imply completely unconstrained use of the property—all societies constrain individual use of property to some extent. When the rules “specifying rights of acquisition or usage...are expressions of kinship or political relationships, the economic component is inextricably related to the social, and we have a *socio-economic* practice, institution, or process” (Dalton 1971, p. 88). In such cases, individual initiative

regarding the use “private property” cannot be *economically* important. For example, when land is “acquired” through kinship right or tribal affiliation, there can be no economically significant “market” in land. Polanyi’s (1968) notion of “commodification” perhaps helps to define “private property,” however, because his term is so closely identified with “a self-regulating market economy,” it may imply that commodification of land and labor did not appear until the nineteenth century. Here we do not use the term “private property” so narrowly—but it should be recognized that there is a range of “privateness,” that is, of the degree to which rights of acquisition and usage are constrained by kinship and political relationships.

14. By uncertainty, we mean Keynesian uncertainty, not risk. Keynes defined uncertainty as follows:

By “uncertain” knowledge, let me explain, I do not mean merely to distinguish what is known for certain from what is only probable. The game of roulette is not subject, in this sense to uncertainty; nor is the prospect of a Victory bond being drawn. Or, again, the expectation of life is only slightly uncertain. Even the weather is only moderately uncertain. The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention, or the position of private wealth owners in the social system in 1970. About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know. (Keynes 1987, pp. 113-4)15.

15. For example, debt bondage was abolished under Solon in Athens (approximately 600 B.C.). See Heinsohn and Steiger (1984) for a discussion of this, and for an analysis of the development of private property out of the Mycenaean tribute economy. Money and monetary production can also exist in a private property, slave economy; however, the extent of the market must remain restricted. Propertyless wage earners are necessary for the full development of a “market economy” in which monetary production becomes the basis of the economy. *In the aggregate*, sales receipts cannot be realized until wages are paid.
16. By market, we do not mean Polanyi’s “self-regulating free market economy.” In this paper, we use the term market to merely indicate that some goods are produced specifically for generalized exchange, that is, for economic trade. Ritualized exchanges common in tribal society that fulfill reciprocal and redistributive functions (for reasons discussed in the text) are not included as “economic.” However, we should not constrain the term “market” to include only exchanges in which prices are “freely” set through “supply and demand.” The normal case (as is discussed briefly in the text) is for prices to be administered—in pre-capitalist society, market prices were often set by treaty; in capitalist society, prices are administered by firms with market power. “Free” markets are an aberration, no matter what sort of society one is to analyze. Finally, by “market system,” we do not mean a system of “supply and demand” (or “self-regulating” economy); rather, this term is used to indicate an economic system in which production for markets has become a significant economic activity of the society under analysis. Feudal society certainly had *markets*, however, the role of the market in feudal society

was very limited—essentially to external trade, and to trade in luxury items (Stanfield 1986, p. 97). In contrast, most production in capitalist societies (and even in socialist societies) is for *internal* trade; thus, capitalist societies are characterized as having “market systems.” It is irrelevant for my purposes whether prices are “free” or are administered (this is in agreement with Polanyi that “free” markets would be disastrous; the disagreement is over whether they have ever been widespread.)

17. Recall the distinction made above between a “barter economy” and “monetary economy”: as Keynes argued, a nonmonetary economy may use money “for transitory convenience,” but most production is not for the market (Keynes 1979). Tribute economies, slave economies, and feudal economies use money—this is beyond question—but none can be characterized as “monetary systems”; most production in these economies is not “monetary production.”
18. As David Herlihy notes, even in Renaissance Florence most production was geared toward luxury items for the rich because the purchasing power of the average European was simply not sufficient to encourage a market in common items. “The Italians of the Renaissance period would seem to have had the ingenuity, the business acumen, and the capital to progress in the industrialization of production, and thus to lead their society, and perhaps all Europe, towards industrialism. But the character of the market would not readily support efforts at mechanization and mass production” (Herlihy 1977, p. 15).
19. In addition to the enclosure of common lands, a labor force was created by the Statute of Artificers, by imposing penalties for vagabondage, through forcible “liquidation” of the clans’ lands in Scotland, by seizure of church lands (and expulsion of peasants), through bankruptcy of artisans by factory production, and so on.
20. Heinsohn and Steiger postulate that existence of private property in land predates private lending. Actually, we do not need private property in land but rather only in that which is to be lent—including the output of the land (wheat). In tribal society, distribution was governed by the tradition of reciprocity. If that broke down, then private loans of wheat become possible.
21. This guarantees that payment commitments grow over time (at the loan rate of interest). See Wray (1991a) for a detailed discussion of the relation between accumulation and the rate of interest. Because banks are profit-seekers, they will not “make loans” without requiring interest. This means that in the aggregate, outstanding loans will grow at a rate determined in part by the rate of interest.
22. In any case, coinage was a very late development that seems to have little to do with the search for a handy medium of exchange. See Cook (1958), Grierson (1977, 1979), Heinsohn and Steiger (1983, 1989), Kraay (1964), and Wray (1998, 2004).
23. The Circuit approach follows Schumpeter in explicitly formulating a credit money model. See Deleplace and Nell (1996).

24. The first bills of exchange were probably *foreign* bills used to transfer purchasing power across time and *place*. Money (as a unit of account) was created whenever a bill was drawn. As soon as a bill was “accepted” by a bank or acceptance house, it became a “gilt edge” or an “acceptance,” which could be used as a means of payment. Interestingly, goldsmiths were among the primary users of *inland* bills of exchange—first for their own account and later to “transfer” gold for their customers (it would be the bill that traveled, not the gold). Bills of exchange were the primary medium of exchange used throughout Europe to circulate goods until relatively recently (Kregel 1988). See Wray (1990, Chapter 2) and Usher (1953) for discussions of the history of the bill of exchange.
25. Actually, goldsmiths got their start as safe depositories for gold plate, rather than coin, and this was due to the perfidy of Charles I. That is, it certainly was not “natural” that people would leave their valuables with the goldsmiths—they did it only out of fear of the Crown (Private correspondence from J. A. Kregel). We are not going to provide an extended critique of the orthodox view of the gold standard and the belief that “full bodied” “commodity money” coins were the norm. However, the view taken here is that even precious metal coins are debts—IOWs that are stamped on gold or silver. There is substantial historical and legal evidence for this view that coins were always “nominal,” valued at whatever nominal value the crown proclaimed.
26. Often, notes could be redeemed only at the London bank. This may have reduced the incentive to do so, but to some extent, it was a convenient arrangement for many note-holders as a large portion of transactions took place in London, anyway.
27. Thus, banks worry about the risk of not being able to validate their outstanding liabilities, therefore, have a preference for liquid assets. No bank can be its own lender of last resort; this is why banks charge interest on loans—to compensate for their illiquid positions in assets.
28. See Wray (1990) for a discussion of debasement, and for a discussion of the rise of the Bank of England as the central bank of England.
29. For example, Cameron (1967) reports that bills of exchange accounted for nearly 70 percent of the circulating private “money supply” in 1800, while bank notes, specie, and bank deposits together made up only 30 percent. By 1855, bank deposits alone accounted for nearly 40 percent of the circulating money supply (nearly as large a percent as bills). See Wray (1990, p. 69). Recently, this trend has been reversed in the US, due in part to the government’s apparent willingness to guarantee a broad range of private liabilities, as well as growth of the near money IOWs issued by the shadow banking sector.
30. See Bagehot (1927) for a discussion of the evolution of the Bank of England’s perception of its role in the economy. See Tooke (1959) for an early recognition that the Bank of England could function as a central bank.
31. Many describe the global financial crisis that began in 2007 as a modern example of a run to liquidity. See Wray (2009) and Wade (2009) for examination of the financial crisis.

32. Lane (1977) discusses the common practice of writing contracts in terms of a variety of coins and moneys of account in Venice in the thirteenth and fourteenth centuries.
33. However, to some extent, this problem was mitigated when the pound sterling was used throughout Europe as the international unit of account in which most foreign bills of exchange were written—even for trade between two countries that did not involve the UK.
34. Thus, an exogenous money system might work in a socialist society, where the object of production is to provide goods and services. However, a monetary, *capitalist* society is based on accumulation of money-denominated wealth, and not on production of goods and services. As Veblen argued, the purpose of capitalist production is to produce pecuniary values; the production of use values occurs only as a by-product of capitalist production (Wray 1991b).

REFERENCES

- Aschheim, Joseph and George S. Tavlas. 1997. "Money." In Thomas Cate, Geoff Harcourt, and David C. Colander, eds. *An Encyclopedia of Keynesian Economics*. Cheltenham, UK and Northampton, MA: Edward Elgar Publishing Ltd.: 444–50.
- Bagehot, Walter. 1927. *Lombard Street: A Description of the Money Market*. London, UK: John Murray.
- Bell, Stephanie, John F. Henry, and L. Randall Wray. 2004. "A Chartalist Critique of John Locke's Theory of Property, Accumulation, and Money: Or Is It Moral to Trade Your Nuts for Gold?" *Review of Social Economy* LXII (1): 51–65.
- Bloch, Marc. 1953. "Toward a Comparative History of European Societies." In Frederic C. Lane and Jelle C. Riemersma, eds. *Enterprise and Secular Change: Readings in Economic History*. Homewood, IL: Richard D. Irwin, Inc.: 494.
- Brunner, Karl. 1968. "The Role of Money and Monetary Policy." Federal Reserve Bank of St. Louis Monthly Review 50:7: 8-24.
- Cameron, Rondo, ed. 1967. *Banking in the Early Stages of Industrialization: A Study in Comparative Economic History*. New York, NY: Oxford University Press.
- Chick, Victoria. 1986. "The Evolution of the Banking System and the Theory of Saving, Investment and Interest." Discussion Paper No. 86-01. London, UK: Department of Economics, University College of London.
- Cipolla, Carlo. 1956. *Money, Prices, and Civilization in the Mediterranean World: Fifth to Seventeenth Century*. Princeton, NJ: Princeton University Press.
- . 1976. *Before the Industrial Revolution: European Society and Economy, 1000-1700*. New York, NY: W.W. Norton & Company, Inc.
- Cook, R.M. 1958. "Speculation on the Origins of Coinage." *Historia* 7: 257–62.
- Dalton, George. 1967. "Primitive Money." In George Dalton, ed. *Tribal and Peasant Economies*. Austin, TX and London, UK: University of Texas Press: 254–81.
- . 1971. *Economic Anthropology and Development*. New York, NY and London, UK: Basic Books, Inc.
- . 1982. "Barter." *Journal of Economic Issues* 16 (1): 181–190.
- Deleplace, Ghislain and Edward J. Nell, eds. 1996. *Money in Motion: The Post Keynesian and Circulation Approaches*. New York, NY: St. Martin's Press.

- Dillard, Dudley. 1980. "A Monetary Theory of Production: Keynes and the Institutionalists." *Journal of Economic Issues* XIV (2): 255–73.
- Einaudi, Luigi. 1953. "The Theory of Imaginary Money from Charlemagne to the French Revolution." In Frederic C. Lane and Jelle C. Riemersma, eds. *Enterprise and Secular Change: Readings in Economic History*. Homewood, IL: Richard D. Irwin, Inc.: 494.
- Foley, Duncan. 1989. "Money in Economic Activity." In John Eatwell, Murray Milgate, and Peter Newman, eds. *The New Palgrave: Money*. New York, NY and London, UK: W.W. Norton: 248.
- Friedman, Milton. 1948. "A Monetary and Fiscal Framework for Economic Stability." *American Economic Review* XXXVIII (3): 245–64.
- . 1968. "The Role of Monetary Policy." *American Economic Review* LVIII (1): 1–17.
- Gardiner, Geoffrey W. 2004. "The Primacy of Trade Debts in the Development of Money." In L.R. Wray, ed. *Credit and State Theories of Money: The Contributions of A. Mitchell Innes*. Cheltenham, UK: Edward Elgar: 79–98.
- Goldberg, Dror. 2009. "The Tax-Foundation Theory of Money." Working Paper 2009-5. Ramat-Gan, Israel: Department of Economics, Bar-Ilan University.
- Goodhart, Charles A.E. 1998. "The Two Concepts of Money: Implications for the Analysis of Optimal Currency Areas." *European Journal of Political Economy* 14 (3): 407–32.
- Grierson, Philip. 1977. "The Origins of Money." In *The Origins of Money*. London, UK: The Althone Press University of London: 7–33, 35–44.
- . 1979. *Dark Age Numismatics*. London, UK: Variorum Reprints.
- Heilbroner, Robert. 1985. *The Nature and Logic of Capitalism*. New York, NY and London, UK: W.W. Norton and Company.
- Heinsohn, Gunnar, and Otto Steiger. 1983. "Private Property, Debts and Interest, Or: The Origin of Money and the Rise and Fall of Monetary Economies." *Studi Economici* 21: 3–56.
- . 1984. "Marx and Keynes: Private Property and Money." *Monnaie et Production* ISMEA 1: 37–71.
- . 1989. "The Veil of Barter: The Solution to the 'Task of Obtaining Representations of an Economy in which Money is Essential.'" In J.A. Kregel, ed. *Inflation and Income Distribution in Capitalist Crisis: Essays in Memory of Sidney Weintraub*. New York, NY: New York University Press.

- Herlihy, David. 1977. "Family and Property in Renaissance Florence." In Harry A. Miskimin, David Herlihy, and A.L. Udovitch, eds. *The Medieval City*. New Haven, CT and London, UK: Yale University Press: 3–24.
- Hudson, Michael. 2004. "The Archaeology of Money: Debt Versus Barter Theories of Money's Origins." In L.R. Wray, ed. *Credit and State Theories of Money: The Contributions of A. Mitchell Innes*. Cheltenham, UK: Edward Elgar: 99–127.
- Ingham, Geoffrey. 2000. "'Babylonian Madness': On the Historical and Sociological Origins of Money." In John Smithin, ed. *What is Money?* London, UK and New York, NY: Routledge: 16–41.
- . 2004. "The Emergence of Capitalist Credit Money." In L.R. Wray, ed. *Credit and State Theories of Money: The Contributions of A. Mitchell Innes*. Cheltenham, UK: Edward Elgar: 173–222.
- Ingrao, Bruna, and Giorgio Israel. 1990. *The Invisible Hand: Economic Equilibrium in the History of Science*. Cambridge, MA: The MIT Press.
- Innes, A. M. 1913. "What is money?" *Banking Law Journal* May: 377–408.
- . 1914. "The Credit Theory of Money." *Banking Law Journal* January: 151–68.
- Keynes, John Maynard. 1964. *The General Theory of Employment, Interest and Money*. New York, NY and London, UK: Harcourt Brace Jovanovich.
- . 1971. *The Collected Writings of John Maynard Keynes, Volume V*. Donald Moggridge, ed. London, UK and Basingstoke, UK: The MacMillan Press, Ltd.
- . 1979. *The Collected Writings of John Maynard Keynes, Volume XXIX*, John Maynard Keynes (1979), Donald Moggridge (ed.), *The General Theory and After, A Supplement*, London, UK: Macmillan and Cambridge University Press for the Royal Economic Society, 76–87
- . 1982. *The Collected Writings of John Maynard Keynes, Volume XXVIII*. Donald Moggridge, ed. London, UK and Basingstoke, UK: The MacMillan Press, Ltd.
- . 1987. *The Collected Writings of John Maynard Keynes, Volume XIV: The General Theory and After*. Donald Moggridge, ed. London, UK: Cambridge University Press.
- Knapp, Georg Friedrich. 1924. *The State Theory of Money*. Clifton, NY: Augustus M. Kelley.
- Kraay, C.M. 1964. "Hoards, Small Change and the Origin of Coinage." *Journal of Hellenic Studies* 84: 76– 91.

- Kregel, J. A. 1988. "Historical Introduction to Bills of Exchange in International Finance." Manuscript.
- Lane, Frederic. 1977. "The First Infidelities of the Venetian Lire." In Harry A. Miskimin, David Herlihy, and A. L. Udovitch, eds. *The Medieval City*. New Haven, CT and London, UK: Yale University Press: 43–63.
- Lane, Frederic C. and Reinhold C. Mueller. 1985. *Money and Banking in Medieval and Renaissance Venice: Volume 1: Coins and Moneys of Account*. Baltimore, MD and London, UK: The Johns Hopkins University Press.
- Lau, Jeffrey Y. F. and John Smithin. 2002. "The Role of Money in Capitalism." *International Journal of Political Economy* 32 (3): 5–22.
- Levine, David. 1983. "Two Options for the Theory of Money." *Social Concept* 1 (1: 20–29.
- Maddox, Thomas, Esq. 1969. *The History and Antiquities of the Exchequer of the Kings of England in Two Periods*. Vols. 1 & 2. 2nd ed. New York, NY: Greenwood Press.
- Malinowski, Bronislaw. 1921. "The Primitive Economics of the Trobriand Islanders." *The Economic Journal* 31 (121): 1–16.
- . 1932. *Argonauts of the Western Pacific: An Account of Native Enterprise and Adventure in the Archipelagoes of Melanesian New Guinea*. London, UK: George Routledge & Sons, Ltd.
- Mehrling, Perry. 2000. "Modern Money: Fiat or Credit?" *Journal of Post Keynesian Economics* 22 (3): 397–406.
- Minsky, Hyman P. 1986. *Stabilizing an Unstable Economy*. New Haven, CT: Yale University Press.
- Moore, Basil. 1988. *Horizontalists and Verticalists: The Macroeconomics of Credit Money*. Cambridge, UK: Cambridge University Press.
- Niggle, Christopher J. 1990. "The Evolution of Money, Financial Institutions, and Monetary Economics." *Journal of Economic Issues* 24 (2): 443–450.
- Peacock, Mark S. 2006. "The Origins of Money in Ancient Greece: The Political Economy of Coinage and Exchange." *Cambridge Journal of Economics* 30: 637–50.
- Polanyi, Karl. 1968. *The Great Transformation*. Boston, MA: Beacon Press.
- . 1971. "Aristotle Discovers the Economy." In Karl Polanyi, Conrad M. Arensberg, and Harry W. Pearson, eds. *Trade and Market in the Early Empires*. Chicago, IL: Regnery Company: 64.

- Robert, Rudolph. 1956. "A Short History of Tallies." In A. C. Littleton and B. S. Yamey, eds. *Studies in the History of Accounting*. Homewood, IL: Richard D. Irwin, Inc., 75–85.
- Samuelson, Paul. 1973. *Economics*. 9th ed. New York, NY: McGraw-Hill.
- Schumpeter, J.A. 1934. *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle*. Cambridge, MA: Harvard University Press.
- Schweikart, Larry. 1991. "U.S. Commercial Banking: A Historiographical Survey." *Business History Review* 65 (Autumn): 606.
- Stanfield, J. R. 1986. *The Economic Thought of Karl Polanyi: Lives and Livelihood, Houndmills*. Basingstoke, Hampshire and London, UK: Macmillan.
- Tooke, Thomas. 1959. *An Inquiry into the Currency Principle: The Connection of the Currency with Prices and the Expediency of a Separation of Issue from Banking*. Houghton Street, Aldwych, London: The London School of Economics and Political Science.
- Usher, A.P. 1953. "The Origins of Banking: The Primitive Bank of Deposit, 1200-1600." In Frederic C. Lane and Jelle C. Riemersma, eds. *Enterprise and Secular Change: Readings in Economic History*. Homewood, IL: Richard D. Irwin, Inc.: 262–291.
- Wade, Robert. 2009. "From Global Imbalances to Global Reorganizations." *Cambridge Journal of Economics* 33: 539–62.
- Wray, L. Randall. 1990. *Money and Credit in Capitalist Economies: The Endogenous Money Approach*. Aldershot, UK: Edward Elgar.
- . 1991a. "The Inconsistency of Monetarist Theory and Policy." *Economies et Societes, Serie Monnaie et Production* 8 (11-12): 259–276.
- . 1991b. "Saving, Profits, and Speculation in Capitalist Economies." *Journal of Economic Issues* 25 (4): 951–975.
- . 1998. *Understanding Modern Money: The Key to Full Employment and Price Stability*. Cheltenham, UK: Edward Elgar.
- , ed. 2004. *Credit and State Theories of Money: The Contributions of A. Mitchell Innes*. Cheltenham, UK: Edward Elgar.
- . 2009. "The Rise and Fall of Money Manager Capitalism: A Minskian Approach." *Cambridge Journal of Economics* 33, 807–28.