The Origins of Money and the Development of the Modern Financial System

by
L. Randall Wray*

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*The Jerome Levy Economics Institute of Bard College and University of Denver

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L. Randall Wray[1]

> 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 of banking is taught in almost all money and banking courses, it has no historical foundation and is internally inconsistent. There is an alternative approach that emerges from a comparative analysis of economic institutions. This article attempts to integrate the various strands of this alternative view of the origins of money and the development of the modern financial system in a manner that is consistent with the historical facts.

Previous Institutionalist work in the area of the history of money has used comparative analysis to successfully counter the orthodox story presented above, but this work has failed to recognize how an understanding of the role money plays in our economy helps in analyzing the nature of its origins and the role it played in pre-capitalist society. Because it builds on this understanding of money in a modern economy, what follows will differ significantly from the Institutionalist tradition based on the work of comparative anthropologists and comparative

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[1] *Resident Scholar, The Jerome Levy Economics Institute, and Assistant Professor of Economics, University of Denver.* *Presented at the Association for Evolutionary Economics meeting, New Orleans, January 1992. The author would like to thank Richard Day, John Henry, Jan Kregel, David Levine, Anne Mayhew, Perry Mehrling, and Terry Neale for suggestions. With the exception of Kregel (who provided so much help that he must share some criticism), none should be held responsible for what follows; indeed, some of them were vociferous in their disagreement with the following arguments. However, their critical comments helped to sharpen the exposition.*

historians.

THE ORTHODOX STORY

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 represented by the lowest transactions costs.

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. Goldsmiths discovered that as a result, some notes were permanently in circulation so that the gold they represented was never withdrawn. Thus, they could safely lend these gold reserves, or issue additional receipts as loans, creating the equivalent of modern fractional reserve banking. Since the costs of writing out the receipts was less than mining gold, goldsmith "banking" was also a rational economic decision taken by the economy 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] Somehow, 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. 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.[3]

TOWARD AN INSTITUTIONALIST 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 no historical "fact" conflicts 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 <u>yet</u> discovered money. All societies are based on exchange, or at least would be

if natural propensities were allowed to flower. Again, if one is willing to define almost any human interaction as an "exchange", then exchange can be found in virtually 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.

Institutionalists have mounted a several-pronged attack on this methodology and its conclusions. First, Institutionalists 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.[4] 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.[5] 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.[6]

The universalist, formalistic method might be rejected because institutions matter since these influence (and indicate) production and distribution arrangements adopted by society. If these vary across cultures or over time, this could indicate that different social 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." [Bloch 1953, 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". [Bloch 1953, pp. 505-506] Use of the comparative method allows one to "isolate the 'originality' of different societies" [Bloch 1953, p. 507] by using "factual studies which are detailed, critical, and well-documented". [Bloch 1953, p. 520]

The economist who wishes to use the comparative method faces a major hurdle: the economy in most (all?) societies is "embedded" in the total social fabric so that it is difficult to identify.[7] [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. [Stanfield 1986, p. 76] 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] While this is an effective critique of orthodoxy's "homogenous globules of desire", 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 capitalist society is the least "embedded".[8] 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 here 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 presented here 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 and Post Keynesian macroeconomists.[9] I then use 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.[10]

Before proceeding, however, money should be defined. In this approach, money cannot be identified by its peculiar personal 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. A monetary economy is one for which assets exist whose liquidity premia exceed carrying costs. Those assets that function as money must carry a liquidity premium that exceeds carrying costs.[11] [Keynes 1964] These assets may have peculiar physical characteristics, or they may not; 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 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 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.

The rest of this paper seeks to identify the origins of money and the development of the modern financial system on the bases of this view of money in the modern economy and of the analyses of comparative anthropology and comparative history of pre-capitalist societies.

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.[12] 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 show none of these characteristics. I 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 "credit money"[13] predated commodity money and government 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. 86]; 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][14]

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 being 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" [Dalton 1982, 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. 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" [Dalton 1982, 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" [Dalton 1982, 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.[15] [Stanfield 1986, p. 59] 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.[16]

FROM PRIVATE PROPERTY TO MONEY, MARKETS, AND MONETARY PRODUCTION

In the alternative view presented here, primitive "exchanges" and "monies" cannot lead to the development of market exchange or to the use of money, since 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.[17] "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, property[18] 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.[19]

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. 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 abolished[20], 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 a 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 temple 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 to retire debt (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 (the value of which was determined by its weight equivalent to the barley unit of account) 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]

The credit money created in these private loan contracts thus eventually becomes standardized as a money of account. 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, credit money predates commodity money, 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 an 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.

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", "money of account", or "ghost money". He traces this concept from the sixteenth century through the eighteenth century; one can find similar ideas in the current century in the works of Cipolla [1956; 1976]. An "imaginary money" is a money of account, commonly called a "pound" throughout Europe, that never changes much in value. As Einaudi correctly argues (and as I will discuss in more detail below), 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 (by clipping or through reduction of the amount of precious metals used in coinage), 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]

In spite of the frequent recognition of the common use of "ghost money", previous economic historians have incorrectly viewed the money of account as a "false" money, or as a "mirage",--an illusion that prevented economic agents from perceiving reality. Einaudi flatly states "imaginary money--here is my thesis--is not money at all". [Einaudi 1953, p. 237] He goes on to argue as if coins were invented to facilitate exchange; and because a wide variety of coins were developed, it became necessary to invent an imaginary money to keep "the monetary system in equilibrium" by providing a monetary unit in which exchange rates could be denominated. Thus, Einaudi traces Europe's imaginary pound to a tenth century invention of Charlemagne, and attributes its creation to "the longing of medieval men for the eternal, the immutable, the universal, accompanied by an abhorrence of the transitory, the mutable, and the particular".[21] [Einaudi 1953, p. 246] Einaudi also denies that the lira di banco was a ghost money because it had a physical representation as a bank liability. As I will argue, this story is actually very nearly the reverse of my position: "ghost money" is money; its origins are the origins of money. Thus, the money of account could not have been invented after coins, during the reign of Charlemagne, rather, we must look elsewhere for its origins--to the earlier creation of private property--and to an alternative explanation for the existence of physical representations of "ghost money", an explanation that will be developed below.

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 economies with private property and economies 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.

Unlike production in, say, a tribal society, capitalist production always involves money.[22] 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.[23] 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.[24] 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". [Levine 1983, 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. [Levine 1983, 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.[25]

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 with one another than any is with capitalism. The origins 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, engendered a protective response to limit the functioning of markets precisely because they could not achieve 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, as Keynes argued, 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.[26] As was recognized by Polanyi, markets exist long before a system based on markets appears. While I am not convinced that anything approaching Polanyi's "self-regulating free markets" ever existed, this is not important for our analysis. 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 certainly played a role in all of them. 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. [Stanfield 1986, 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.[27] 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.[28] 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 that was created after the development of private, alienable property allowed private loans. As loans came to be written in a standard money of account, the means of payment function of money developed. This gradually led to

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, as a unit of account, would be created as part of a forward debt contract. Money acting as a medium of exchange or means of payment would take a physical form (wheat or barley, and later, metals, 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.

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

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 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] These reserves consist of media of exchange and means of payment denominated in the unit of account. (They may be private IOUs, commodity money, or government fiat money--the development of these representations of money will be discussed below.)

These security reserves provide a source for lending to temporarily disadvantaged individuals. They are lent 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.[29] 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 can never 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 is nothing more than the terms in which promises to repay or to engage in exchange are denominated, anyone can create money, as 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 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.[30] A primary

example of a privately created liability that circulated among third parties is the inland bill of exchange.[31] 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, commodity money, or fiat money--at which point the money of account created as part of the (bill of exchange) forward contract is destroyed.[32]

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 circulability 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 precious-metal-wheat-denominated, stamped, metal bars issued by temples. Finally, after the development of stamped coins, 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.

A brief exploration of the history of commodity money is in order to demonstrate that it is not the "natural" form. Keynes shows that the early money of account in Babylonia was the mina, a unit of measurement consisting of 10,800 grains of wheat. [Keynes 1982, pp. 231-273] He notes "the unit of weight is given by counting grains of wheat". [Keynes 1982, p. 233] 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 were denominated. 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. [Heinsohn and Steiger 1983, p. 24]

Cipolla also acknowledges that "the notion of money" underlying the names of monetary units and coins in the Middle Ages was "the primitive notion of a standard of weight" [Cipolla 1956, p. 7], but he goes on to argue that this is "rather peculiar" and, incorrectly in my view, attributes it to a movement away from a "monetary economy" and toward a "barter economy" in the Middle Ages. Actually, weight had always been the basis of monetary units. Thus, it is not a coincidence that the "ghost money" used throughout Europe after the tenth century was denominated in the pound. This was not due to the "longing of medieval man" (as Einaudi believed); rather, the money of account was traditionally measured in weight units, a practice that can be traced to the early wheat/barley units of ancient times. Indeed, the Babylonian mina money of account averaged 504 grams (10,800 wheat grains), which is very close to the modern pound. [Heinsohn and Steiger 1987, p. 237] The Babylonian shekel, or the Milanese ducatoon, or the French ecu coins were all valued in terms of the money of account, which, in turn, was always a weight unit. Precious metals were not chosen to be used as coins because they are intrinsically worthy, rather, they were chosen for technical reasons, and their worth was derived from the value of the social unit of account (wheat or barley). Credit money would also be denominated in the money of account; as long as the debtor did not default on his/her liability, the credit money could not be debased relative to the money of account. However, commodity money (gold, silver, or copper coins) could be debased relative to the money of account through clipping or reduction of fineness. This is because once it has been established (eg, during Charlemagne's reign) that twenty coined silver shillings of the maximum obtainable purity shall weigh one pound, any reduction of weight or purity will devalue the shilling (so that more are required to equal the pound unit of account), but this will not devalue the money of account or the value of credit money denominated in the unit of account. It is significant that the value of minted coins was frequently determined not by nominal face value, but by weighing--to take

account of clipping and loss of metal in coins due to normal wear caused by handling (losses due to wear alone amounted to one percent per year [Munro 1979]).

Einaudi argued that the ghost money was never coined; in contrast, Cipolla argues that all the ghost monies were coined in the late Mediterranean world. Because he, like Einaudi, identifies "real money" with media of exchange, rather than with the unit of account, he assumes that "ghost monies" were created to simplify transactions in a variety of media of exchange, but is forced to conclude that by the fourteenth century, "the ghosts were bringing confusion all around." [Cipolla 1956, p. 49] Actually, things were not so confused as Cipolla believes. In Roman times, the gold solidus was minted at the rate of 72 coins per pound of gold (thus, the coined unit was equal to one seventy-second of a pound of gold--the money of account). This same unit was later adopted in medieval Italy as the florin, 72 of which equalled a pound of gold. However, in the eleventh century, Charlemagne adopted a silver pound unit of account, such that a pound of silver was equal to twenty shillings, or 240 pennies; only the pennies were coined, but accounts also could be kept in terms of shillings and pounds. Cipolla calls the pound and shilling the ghost monies of account. At the same time, the gold florin also circulated, and was equal to one of Charlemagne's silver "imaginary" pounds, or to 20 "imaginary" shillings. Eventually, however, a shilling coin was minted, leading Cipolla to argue that the ghost money was coined. Over time, the quantities of precious metals in the shilling and penny coins were reduced; thus, by 1445, it took 768 penny coins to equal a real pound of silver or a real florin coin; by the early 1700s, 266 real shilling coins were required to equal one real florin gold coin (which was never debased). However, according to Cipolla, in imaginary terms, a pound was still defined as 20 shillings or as 240 pennies; thus, even though the real florin coin was worth 768 pennies, Cipolla claims the ghost florin was now worth 384 pennies so that one real florin was worth two ghost florins--leading to Cipolla's remark concerning "confusion all around". There is a simple explanation for this: Charlemagne's pound was no longer the money of account. Charlemagne's attempt to shift to a silver-pound unit of account would be successful only so long as the silver coins were not debased, in which case they would retain a stable

exchange rate with the gold florin (which was explicitly based on gold). However, as the silver coins became debased, they lost value relative to the gold-denominated money of account; even where accounts were explicitly kept in terms of silver pounds, shillings, or pennies, conversion to the gold money of account was necessary because the silver "imaginary" pound (based on 240 debased pennies) continuously fell in value. Cipolla argues that "all the systems of account in existence in those days were actually based on and tied to a real coin" [Cipolla 1956, p. 50]; clearly this was not the case. The systems of account were based on a precious metal weight equivalent. This would be consistent with the units used for coinage only so long as the coins remained "full-bodied" precious metal coins. Thus, the recognition that the money of account ("imaginary money") comes before any particular commodity money allows us to clear up the confusion in the accounts of Einaudi and Cipolla.[33]

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".[34] Actually, the process worked in reverse. A commodity money could not have developed before the development of a money of account--which is necessarily the result of private debt contracts. The private liabilities created in these contracts have circulated before and concurrently with commodity money as media of exchange and means of payment. The commodity money is developed for technical 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.) It is not that deposits of commodity money make loans and credit money; rather, loans and credit money generate a desire to hold small reserves of commodity money in order to ensure convertibility. Gold, and so on, is not money, nor has it ever been money.[35] 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 full-bodied commodity money is the risk-free representation of the

social measure of value; as such, it is initially chosen as the "ultimate" backing for credit money.

The quantity of commodity money available, as discussed above, never constrains the money of account supply. This means that wholesale conversion ("liquidation") of private IOUs can never be accomplished in the aggregate. That is, a credit money economy based on a commodity money 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 qualm 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.[36] 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.[37] 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.[38]

Historically, governments had been typically very constrained in their ability to borrow or to issue fiat money. Individuals and institutions were reluctant to accept government liabilities, partially due to frequent governmental defaults.[39] Governments also tried to issue "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: one would take gold to the government mint and receive the fiat coins that represented a promise by the government that these could be exchanged in the future for 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, thus, government money normally would not circulate unless it took the form of commodity money, with its value determined by the amount of embodied precious metal. In this case, debasement through clippage or reduction of the amount of precious metal would merely lead to rising prices in terms of the government money; thus, the government unable to issue fiat money.[40]

The early US government was similarly constrained in its ability to issue coins, by the quantity of precious metals.[41] When the U.S. mint was first created to provide small coins, it found itself faced with a shortage of copper--the precious metal used for the cent. The modern reader would expect that the mint would have substituted a common, cheaper metal. However, at this time, this would merely have caused the value of the cent to fall below one one-hundredth of a dollar (the unit of account). Thus, a mint worker (Henry Voight) "cleverly thought to substitute a small plug of silver in the center of a small copper cent. This allowed the mint to use much less copper, while retaining a full cent's worth of metal." [Stevenson, 1992]

The inability to obtain purchasing power by creating fiat money was finally solved through the development of central banking. As no private bank wanted to run the risk of accepting government liabilities that might be devalued by fiat, they had to be offered incentives to do so. 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 vast 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 private property 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 continual narrowing of the types of liabilities that will circulate, to those in the highest reaches of the pyramid. Thus, the financial system has 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.[42]

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. Furthermore, central bank fiat money was not the first type of government fiat money. Historically, there were examples of government fiat money that circulated before the creation of central banks--although this was the exception rather than the rule. For example, some of the Italian city-states were able to issue government liabilities that circulated regionally at a nominal value stated in terms of the unit of account. One of the reasons for the success of the money-denominated liabilities issued by the city-states seems to be that all the citizens of the cities were held to be individually responsible with unlimited

liability for city debts. In other cases, governments usually could only issue liabilities backed by a specific revenue source (for example, it was common for a Crown to borrow against future tax revenues--"anticipation" of taxes). Perhaps the most important development that gave governments the ability to issue fiat money was the creation of representative democracy--in which case government debt represents the debt of its citizenry, much as the debt of the city-states was a debt of its citizens. In conjunction with a gold standard, this would allow a government to issue fiat money--representing a promise to convert paper or coin to gold--that would circulate at a value stated in terms of the unit of account. While this development deserves more attention, it is beyond the scope of this article except to notice that governments certainly did not begin by issuing fiat money. Indeed, the full-bodied commodity money is a special purpose money issued by governments that are not sufficiently credit-worthy that their liabilities will be accepted. Governments were able to issue this commodity money because the money of account was a metal-weight unit, and not because gold is naturally 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.[43] 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 displace others. However, this is true only to the extent that the central bank does accommodate the need for reserves.

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. 89] The "money" to be accumulated is, of course, comprised of the 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. 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 a fundamental advance over the commodity 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.

As mentioned above, 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, after the development of commodity money, some private liabilities were made convertible into coins, and some credit money was denominated in commodity money (say, silver shilling coins) rather than in the money of account (say, gold "imaginary" pounds).[44] In the absence of debasement, it would not really matter whether credit money were denominated in commodity money or in the unit of account. However, 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 (gold 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 with commodity money whose value relative to the money of account was determined by the quantity of embodied precious metal 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 (another of his "fictitious commodities") as countries throughout europe established a gold standard. Actually, in one sense, the "gold standard" was nothing new--since Roman times, europe had used the pound as the unit of account. The establishment of the international gold standard actually represented an attempt to prevent debasement of commodity moneys within countries (and debasement of national currencies among countries). Credit money could then be denominated in the commodity money and made convertible into commodity money; the commodity money 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 commodity 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 commodity 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 commodity money 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 exceedingly uncertain. Thus, the "gold standard" did not arise "naturally" as money was invented, but was created because most money took the physical form of privately-issued bills of exchange (and other private liabilities). Of course, in the U.S., we had treasury notes, denominated in the dollar unit of account and (at one time) also made convertible into precious metal at a fixed exchange rate--these fiat notes served as a reserve for private liabilities and they were used to clear accounts. It is interesting to note that the U.S. "ghost money" is "coined" very 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 unit of account money represents a major advance--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 commodity 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 this 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 concerning the "dual system" within a country, it does not provide an invariable international unit of account.[45] 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 a universal unit of account to stop international runs. (Again, the international gold standard has repeatedly been abandoned during crises.) 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--a topic beyond the scope of this paper.

CONCLUSIONS AND POLICY IMPLICATIONS

This analysis has shown 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 money 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) represents 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 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.

Some of those who adopt the endogenous money supply approach argue that this endogeneity is a recent phenomenon--either due to a change of central bank practice such that it now accommodates the demand for reserves, or due to innovations in banking that have allowed banks to escape reserve constraints.[46] Thus, it is argued that the money supply was exogenous in the past, determined by the quantity of commodity money. As this analysis has made clear, however, this could not have been the case. 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, commodity money--a riskless representation of the social unit of account--was used as a reserve. Privately-issued money liabilities were made convertible into commodity money merely to enhance circulation, but, the quantity of these was never constrained by the quantity of commodity money 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.[47] 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:

> [T]he 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]

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 U.S. 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. Or is it to serve as a lap dog for rentier interests? See May and Grant [1991].

4. 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.

5. 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]

6. 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.

7. Some might question whether "economics" can be applied to pre-capitalist societies, for it could be questioned whether these exhibit an economic "system" at all. I answer these questions

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.

8. 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] As I will discuss in more detail below, I think 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, I agree that in principle, 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].

9. See Chick [1986], Moore [1988], Niggle [1990], and Wray [1990] for such treatments.

10. Admittedly, this is a difficult and controversial task. Two factors make the task difficult: as I will argue below, money was almost certainly "invented" before writing, thus, we will not find its origins in the historical record; furthermore, I believe 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, as I will argue.) This means that I

must reconstruct "history" using comparative economics. Thus, what follows is necessarily a speculative first attempt at discovering the origins of money, and at reconstructing the development of the modern financial system. Those who have written the "monographs" studying particular economies can help in further attempts at this reconstruction by filling in the details. This paper must isolate only those most important variables required to present a concise picture; the world is obviously much more complex.

11. I will distinguish "money" from those assets that fulfill functions of money in a moment.

12. It must be admitted that we will never have sufficient historical data on the origins of money that we can settle the issue merely on the basis of historical facts. Any analysis of the origins of money will necessarily rely to some extent on historical speculation. Thus, my criticism of Samuelson's approach is not merely that his interpretation relies on speculation, nor is it that his interpretation conflicts with some of the historical facts. Rather, the primary problem with the orthodox story is that it is illogical and that it conflicts with our understanding of the operation of a monetary economy. Thus, I will present an alternative interpretation of the origins of money and monetary production that is consistent with the few historical facts available, but which is also consistent with my (explicitly Post Keynesian) understanding of money and of monetary production. I also want to emphasize my indebtedness to Heinsohn and Steiger, whose work greatly influenced my view on the origins of money and my view that money has always been endogenous.

13. I will use the term "credit money" to denote privately created, money-denominated liabilities that fulfill the functions of money. These should not be confused with money itself. See the discussion that follows.

14. 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].

15. 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.

16. Thus, I would 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.

17. 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].

18. 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. I 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.

19. By uncertainty, I 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]

20. 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.

21. As Einaudi adds, "Eureka!". Medieval man found monetary equilibrium in the imaginary money.

22. 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.

23. In the aggregate, sales receipts cannot be realized until wages are paid.

24. By market, I do not mean Polanyi's "self-regulating free market economy". I use the term market to merely indicate that some goods are produced specifically for generalized exchange, that is, for economic trade. I do not include ritualized exchanges common in tribal society that fulfill reciprocal and redistributive functions (for reasons discussed in the text, I do not view these as "economic"). However, I also do not mean to 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", I do not mean a system of "supply and demand" (or "self-regulating" economy); rather, I use this term 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 (I agree with Polanyi that "free" markets would be disastrous; I disagree over whether they have ever been widespread.)

25. Of course, workers are not the only source of market demand, but market demand would remain restricted until a large portion of the population relies on money wages for subsistence.

26. 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. 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".

27. 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].

28. 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.

29. 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.

30. As discussed above, temples may have played this role initially.

31. 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]

32. See Wray [1990, Chapter 2] and Usher [1953] for discussions of the history of the bill of exchange.

33. Frederic Lane provides a very similar example to that discussed by Cipolla. In Venice between the twelfth and fourteenth centuries, the governments experimented with a silver standard. The official unit of account was the silver libra or lira (pound) composed of 240 denari (pennies), which were coined. However, over time the various coins became debased due to clipping, wear and tear, and intentional debasement by the government (that is, the silver content was reduced). This led to the development of at least four different silver moneys of account. Each time a new silver unit of account was created, the government would try to obtain purchasing power by coining it; but because the government would then debase the coins, these would lose value such that more were required to equal the unit of account. Even when the government would pass laws which legally determined rates of exchange for the coins in terms of the various moneys of account, these would not hold in practice. Indeed, by trying to set a value for a coin in excess of its silver content relative to a silver money of account, the public would merely abandon that money of account. The search for an "invariable money" led Venice to return to the gold money of account. Thus, Venice, which began to mint the gold ducat in the thirteenth century (with the same gold content as the florin), returned to gold in the fourteenth: "The lira di grossi, now firmly based on gold ducats, was the standard of value used in wholesale trade, banking, and foreign exchange, and in recording and paying the public debt and salaries of high officials" [Lane 1977, p. 63]. The experience of Venice follows very closely with that of Charlemagne: coining the money of account leads to problems unless the coin is never debased. It also shows that contracts could be written in a variety of moneys of account, and in a variety of coins. Lane discusses the problems that arose when contracts were written in terms of a unit of account or a coin that was falling in value. (See the discussion below.)

34. 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]

35. Significantly, unstamped or unminted metal does not perform the functions of money. Reserves of gold could not be money. The money of account must have existed before gold reserves (denominated in the unit of account) could be money reserves.

36. See Foley [1989] for a discussion of the financial system pyramid.

37. 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 noteholders as a large portion of transactions took place in London, anyway.

38. 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.

39. Of course, it was not healthy to be a creditor of a crown in financial difficulty, for the crown could always solve its debt problems through imprisonment or execution of creditors.

40. See Wray [1990] for a discussion of unsuccessful attempts at debasement, and for a discussion of the rise of the Bank of England as the central bank of England.

41. Furthermore, coins were commonly shaved or clipped due to a shortage of small denomination coins. For example, the U.S. "bit", whose value was originally equal to an eighth of a Spanish dollar, was created by literally cutting the dollar into pieces to provide small change.

42. For example, Cameron [1967] reports that bills of exchange accounted for nearly 70 percent of the circulating "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 to some extent in the US, primarily due to the government's apparent willingness to guarantee a broad range of private liabilities.

43. 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.

44. As mentioned above in note 33, 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.

45. 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.

46. See Chick [1986], Moore [1991], and Niggle [1990] for examples of a "stages" approach to money in which the money supply is exogenous at certain stages.

47. 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]

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