

Wray, L. Randall

Working Paper

Money and Taxes: The Chartalist Approach

Working Paper, No. 222

Provided in Cooperation with:

Levy Economics Institute of Bard College

Suggested Citation: Wray, L. Randall (1997) : Money and Taxes: The Chartalist Approach, Working Paper, No. 222, Levy Economics Institute of Bard College, Annandale-on-Hudson, NY

This Version is available at:

<https://hdl.handle.net/10419/186896>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Money and Taxes: The Chartalist

by

L. Randall Wray*

Working Paper No. 222

January 1998

***Senior Scholar, The Jerome Levy Economics Institute**

Introductory Quotes

"A requirement that certain taxes should be paid in particular paper money might give that paper a certain value even if it was irredeemable." (Edwin Cannan, Marginal Summary to page 312 of Adam Smith's The Wealth of Nations, in Smith 1937: 312)

"[T]he money of a State is not what is of compulsory general acceptance, but what is accepted at the public pay offices..." (Knapp 1924: vii)

"Money is the creation of the state; it is not true to say that gold is international currency, for international contracts are never made in terms of gold, but always in terms of some national monetary unit; there is no important distinction between notes and metallic money...." Keynes (Keynes 1983: 402)

"In an economy where government debt is a major asset on the books of the deposit-issuing banks, the fact that taxes need to be paid gives value to the money of the economy. The virtue of a balanced budget and a surplus insofar as the commodity value (purchasing power) of money is concerned is that the need to pay taxes means that people work and produce in order to get that in which taxes can be paid." (Minsky 1986: 231)

Introduction

In conventional analysis, money is used to facilitate exchange; its value was long determined by the value of the precious metal it represented, although under a fiat money system, its value is determined by the quantity of commodities it can purchase. This, in turn, is a function of the rate of inflation, which is presumed to be under the control of the central bank. The government must tax the public to finance its spending, or, in the case of deficit spending, must borrow money from the public. Such deficit spending raises interest rates and crowds-out private spending. Governments sometimes "print money" to finance deficits, but this is not likely to increase government purchasing power for it will mainly cause prices to rise--and could even set off an hyperinflation. Monetary policy has to do, primarily, with control of the money supply, while fiscal policy has to do with government spending, taxing, and borrowing.

This is quite different from the Chartalist approach, which can be traced from

Adam Smith through to John Maynard Keynes. Rather than focusing on the better-known Chartalists, in this paper we instead choose to bring out the related ideas of Smith, Knapp, and Keynes, and the later ideas of the theorists who follow the "endogenous money approach", as well as related work by Hyman Minsky, Abba Lerner, and Kenneth Boulding. Thus, while this is an exercise in "history of thought", it is not an exposition of the ideas of those who are narrowly identified as the Chartalist economists.

In the Chartalist approach, money is a creature of the State; at least in the case of modern money, one cannot conceive of Stateless money. The State defines money as that which it accepts at public pay offices (mainly, in payment of taxes). This has important policy implications. Once the state imposes a tax on its citizens, payable in a money over which it has a monopoly of issue, it has no choice but to determine the value of that money, by setting the conditions under which the population can obtain the money. Taxes create a demand for money, and government spending provides the supply. The government does not "need" the public's money in order to spend; rather, the public needs the government's money in order to pay taxes. This means that the government can "buy" whatever is for sale in terms of its money merely by providing its money. It also means that the government can determine the "terms" on which the public obtains the money required to pay taxes; it determines what the public must do to "earn" government-provided money. Because the public will normally wish to hold some extra money, the government will normally have to spend more than it taxes; in other words, the normal requirement is for a government deficit. Government deficits do not require "borrowing" by the government (bond sales), rather, the government provides bonds to allow the public to hold interest-bearing alternatives to non-interest-bearing government money. This stands conventional analysis on its head: fiscal policy is the primary determinant of the quantity of money issued, and of the value of money, while monetary policy primarily has to do with maintaining positive interest rates through bond sales. This also means that rather than "crowding out" private spending by raising interest rates, government deficits

would normally place downward pressure on interest rates that is alleviated through bond sales--which are not required to "finance" deficits, but are required to prevent excess reserves from driving overnight inter-bank lending rates toward zero. Thus, the Chartalist view of money, if fully understood, would lead to a much different view of appropriate monetary and fiscal policy goals. Most notably, it would be recognized that rather than striving for a balanced budget, deficits would be accepted as the "norm". And rather than trying to use monetary policy to achieve stable prices, monetary policy would recognize that its role is to establish the short term interest rate, while fiscal policy would be used to stabilize the value of the currency.

Smith on Money

Let us first examine Adam Smith's views of money. We will quote liberally from Smith to show how "modern" some of his views appear. At the same time, Smith's views--particularly on bank creation of money and on the determination of the value of an inconvertible currency--are quite similar to views presented below. It is thus worth the effort to explore the arguments of the "father" of economics in detail; our exposition later might then be easier to follow.

According to Smith, convertible bank notes can substitute for commodity money:

"When the people of any particular country have such confidence in the fortune, probity, and prudence of a particular banker, as to believe that he is always ready to pay upon demand such of his promissory notes as are likely to be at any time presented to him; those notes come to have the same currency as gold and silver money..." (Smith 1937: 277)

At this point, the bank can "create (bank) money" by lending its own notes:

"A particular banker lends among his customers his own promissory notes.... As

those notes serve all the purposes of money, his debtors pay him the same interest as if he had lent them so much money.... Though some of those notes are continually coming back upon him for payment, part of them continue to circulate for months and years together." (Smith 1937: 277)

Because notes circulate as if they were money, the banker need hold only a fractional reserve against them.

"Though he has generally in circulation, therefore, notes to the extent of a hundred thousand pounds, twenty thousand pounds in gold and silver may, frequently, be a sufficient provision for answering occasional demands. By this operation, therefore, twenty thousand pounds in gold and silver perform all the functions which a hundred thousand could otherwise have performed.... the whole circulation may thus be conducted with a fifth part only of the gold and silver which would otherwise have been requisite." (Smith 1937:277)

Thus, bank notes "free up" gold and silver. As this "freed" gold and silver is not needed domestically, it will leave the country--the paper money "forces" specie abroad. The excess gold and silver will "be sent abroad, in order to seek that profitable employment which it cannot find at home. But the paper cannot go abroad; because at a distance from the banks which issue it, and from the country in which payment of it can be exacted by law, it will not be received in common payments. Gold and silver, therefore...will be sent abroad, and the channel of home circulation will remain filled with...paper..." (Smith 1937:278) At "home", the force of law ensures the paper money fulfills obligations, but this law cannot apply abroad, thus, paper circulates domestically while specie is used internationally. For example, in Scotland at the time, the vast majority of the circulation was accomplished on the basis of paper. "The business of the country is almost entirely carried on by means of the paper of those different banking companies, with which

purchases and payments of all kinds are commonly made." (Smith 1937:281)

In most countries, bank notes enter the economy as banks discount bills of exchange. "It is chiefly by discounting bills of exchange, that is, by advancing money upon them before they are due, that the greater part of banks and bankers issue their promissory notes." (Smith 1937:282) However, in Scotland, banks had gone one step further, inventing a new method of increasing note issue.

"They invented, therefore, another method of issuing their promissory notes; by granting, what they called, cash accounts, that is by giving credit to the extent of a certain sum....to any individual who could procure two persons of undoubted credit and good landed estate to become surety for him, that whatever money should be advanced to him, within the sum for which the credit had been given, should be repaid upon demand, together with the legal interest. Credits of this kind are, I believe, commonly granted by banks and bankers in all different parts of the world." (Smith 1937:282-3)

In other words, banks issued notes and held IOUs of borrowers, with the "surety" of two creditworthy persons. These banks would then accept their notes in payment of bank loans. This then increased the demand for bank notes in order to make payments on loans ("cash accounts").

"The banks, when their customers apply to them for money, generally advance it to them in their own promissory notes. These the merchants pay away to the manufacturers for goods, the manufacturers to the farmers for materials and provisions, the farmers to their landlords for rent, the landlords repay them to the merchants for the conveniencies and luxuries with which they supply them, and the merchants again return them to the banks in order to balance their cash accounts,

or to replace what they may have borrowed of them; and thus almost the whole money business of the country is transacted by means of them." (Smith 1937:283)

Not only does the "paper money" substitute for gold and silver money, it actually increases the volume of trade. "By means of those cash accounts every merchant can, without imprudence, carry on a greater trade than he otherwise could do." (Smith 1937:283) This is because the merchant with a "cash account" (or, credit line) can safely keep nearly zero precautionary balances. "The merchant in Edinburgh...keeps no money unemployed for answering such occasional demands. When they actually come upon him, he satisfies them from his cash account with the bank, and gradually replaces the sum borrowed with money or paper which comes in from the occasional sales of his goods." (Smith 1937:284) This does not mean that the volume of paper money will exceed the volume of gold and silver that would be necessary to circulate the same output. If it were to exceed what is necessary for circulation, it would reflux to the banks (for redemption), resulting in a drain of gold and silver reserves. "Should the circulating paper at any time exceed that sum, as the excess could neither be sent abroad nor be employed in the circulation of the country, it must immediately return upon the banks to be exchanged for gold and silver." (Smith 1937:284)

Occasionally, however, banks do issue too much paper money. This could occur because a bank did not actually require its loans to be repaid; for example, a bank might allow a customer to deliver a bill of exchange rather than either commodity money or bank notes. Further, these were often "fictitious" bills with no commodities circulating behind them.

"Though the bills upon which this paper had been advanced, were all of them repaid in their turn as soon as they became due; yet the value which had been really advanced upon the first bill, was never really returned to the banks which advanced

it; because, before each bill became due, another bill was always drawn to somewhat a greater amount than the bill which was soon to be paid; and the discounting of this other bill was essentially necessary towards the payment of that which was soon to be due. This payment, therefore, was altogether fictitious."
(Smith 1937:295-6)

The problem was that this process would increase interest owed (due to compounded discounts on the bills submitted for payment) beyond the ability to pay. Further, excessive note issue would increase reflux, draining reserves. The bank would find that it actually had to increase its reserve holdings--which earn less interest--lowering its profitability. Thus, for the most part, market pressures would ensure that there would be a tendency to issue the "correct" amount of paper--which would be equivalent to the quantity of gold and silver required for circulation--but more than the amount that would have been circulated if specie were actually used in circulation (because the volume of trade would be larger).

According to Smith, market pressures are most likely to work if the denomination of notes is regulated. If banks are permitted to issue small denomination notes, then unscrupulous bankers will take advantage of unsophisticated consumers--issuing notes they cannot redeem. This is possible because for small denominations, little effort is devoted to determining the financial strength of the issuer; furthermore, small denomination notes tend to take a circuitous route (from employer to worker to retailer to intermediary) before redemption--meaning they might stay in circulation a long time, tempting the banker to increase issue. On the other hand, large notes circulate mainly among more sophisticated "dealers" (merchants), are redeemed more frequently, and more effort is taken to determine creditworthiness of issuer. Smith thus recommends that "It were better, perhaps, that no bank notes were issued in any part of the kingdom for a smaller sum than five pounds. Paper money would then, probably, confine itself, in every

part of the kingdom, to the circulation between the different dealers...." (Smith 1937:307)

So long as paper money is redeemed on demand for gold (or silver), it circulates at par with the gold coin. "A paper money consisting in bank notes, issued by people of undoubted credit, payable upon demand without any condition, and in fact always readily paid as soon as presented, is, in every respect, equal in value to gold and silver money.... Whatever is either bought or sold for such paper, must necessarily be bought or sold as cheap as it could have been for gold and silver." (Smith 1937:308) If it is not redeemable on demand, then it may circulate at a discount. He discussed the case where redeemability might be uncertain, or might require a wait: "Such a paper money would, no doubt, fall more or less below the value of gold and silver, according as the difficulty or uncertainty of obtaining immediate payment was supposed to be greater or less; or according to the greater or less distance of time at which payment was exigible." (Smith 1937:309) He went on to give the example of banks in Scotland which adopted an "optional clause" which allowed them the option of withholding redemption for six months after presentation (in which case they paid interest for the period). These notes typically suffered a discount of 4% relative to specie in trade.

As another example, Smith offered the case of the American colonies, which typically offered conversion only after a wait of several years and did not pay interest on the paper for the waiting period. Still, these colonies passed legal tender laws "to render their paper of equal value with gold and silver, by enacting penalties against all those who made any difference in the price of their goods when they sold them for a colony paper, and when they sold them for gold and silver..." (Smith 1937:311) Smith decried such regulations as "tyrannical" and ineffectual, for the colony currency would fall relative to the English pound. However, he also noted that Pennsylvania "was always more moderate in its emissions of paper money than any other of our colonies. Its paper currency accordingly is said to never to have sunk below the value of the gold and silver which was

current in the colony before the first emission of paper money." (Smith 1937:311) Here there is some ambiguity, for he had not previously argued that the depreciation of a nonconvertible currency was a function of the quantity of the currency issued, but now he seemed to argue that the more moderate emission of Pennsylvania might forestall depreciation.

However, in the following paragraph he seems to have solved the puzzle. If a paper money whose redeemability is uncertain (or is subject to conditions--such as a waiting period) is accepted in payment of taxes, and if it is not excessively issued relative to the tax liability, then it need not depreciate relative to specie.

"The paper of each colony being received in the payment of the provincial taxes, for the full value for which it had been issued, it necessarily derived from this use some additional value, over and above what it would have had, from the real or supposed distance of the term of its final discharge and redemption. This additional value was greater or less, according as the quantity of paper issued was more or less above what could be employed in the payment of the taxes of the particular colony which issued it. It was in all the colonies very much above what could be employed in this manner." (Smith 1937:312) [emphasis added]

Thus, the depreciation noticed in the colonies occurred precisely because the note issue was well above what was required in payment of taxes.

A wiser government could not only prevent depreciation, it might even cause paper money to carry a premium over specie!

"A prince, who should enact that a certain proportion of his taxes should be paid in a paper money of a certain kind, might thereby give a certain value to this paper

money; even though the term of its final discharge and redemption should depend altogether upon the will of the prince. If the bank which issued this paper was careful to keep the quantity of it always somewhat below what could easily be employed in this manner, the demand for it might be such as to make it even bear a premium, or sell for somewhat more in the market than the quantity of gold or silver currency for which it was issued." (Smith 1937:312)

In summary, an essentially non-redeemable paper money could actually circulate above par even under a gold standard if it was legally required by the state in payment of taxes, and if the quantity issued were kept "somewhat below what could easily be employed in this manner". The key, then, is not really redeemability, nor is it "legal tender laws" that attempt to "render their paper of equal value with gold and silver"; rather, it is the acceptance of the paper money in payment of taxes and the restriction of the issue in relation to the total tax liability that gives value to the paper money. Importantly, Smith recognized that this paper money need not be government fiat currency, for his argument was predicated upon the recognition that the paper money is the liability of the banking system, issued as the banks "made loans" and accepted private IOUs. All that mattered was that the state accepted these bank notes in payment of taxes, in which case they could circulate at par, or even at a premium, relative to specie.

In the next section, we will examine Knapp's more general theory of money, which is consistent with, but expands significantly upon, the observations of Smith.

Knapp and the State Theory of Money

Georg Friedrich Knapp put forward a state theory of money, similar to, but more general than, what is now known as the Chartalist approach. This approach is opposed to the Metallist view, according to which the value of money derives from the value of the metal

standard (eg, gold or silver) adopted. More generally, according to Knapp, Metallists try to "deduce" the monetary system "without the idea of a State". This, he believes, is "absurd" for "the money of a state" is that which is "accepted at the public pay offices". (Knapp 1924: vii-viii) It is thus impossible to separate the theory of money from the theory of the state. Knapp's exposition is quite complex and required the creation of a classificatory scheme with hundreds of terms. We will try to keep our summary quite simple; to some extent we will have to paraphrase rather than use extensive quotes for otherwise we would have to define the numerous terms he created.

Knapp noted that his approach was shaped by the view that "the use of paper money was based on credit". (Knapp 1924:vi) As such, he was concerned initially with debts, means of payment, and units of value. The means of payment was defined as "a movable thing which has the legal property of being the bearer of units of value" (Knapp 1924:7), while the "unit of value is nothing but the unit in which the amount of the payment is expressed" (Knapp 1924:8). Debts are expressed in units of value and discharged with means of payment. What, then, determines which things will act as means of payment to discharge debts? Knapp noticed that means of payment are occasionally changed; sometimes one type of material (say, weighed or coined gold) has been accepted but "suddenly" another (say, weighed or coined silver) takes its place. Therefore, while the means of payment may be a definite material, it is not bound to any particular material for it may be changed. (Knapp 1924: 8-25) "A proclamation is made that a piece of such and such a description shall be valid as so many units of value." (Knapp 1924:30) "Validity by proclamation is not bound to any material. It can occur with the most precious or the basest metals, and in all cases where payments are not pensatory [that is, where the value of the money material is not calculated by weighing it], i.e. in all modern monetary systems." (Knapp 1924:30) The fundamental insight was his recognition that these transitions always require that the State announce a conversion rate (say, so many ounces of gold for so many ounces of silver). This proves that the debts were always nominal and

were never actually "metallic": all debts are converted to the new metal, which proves that all units of account must be nominal. Hence, the Chartalist, and more specifically, State theory of money, since the proclamation is made by the State.

Knapp examined the transition from use of weights of gold, to stamped coins that are weighed to determine value, to stamped coins that are accepted at face value, and finally to paper money; he found that the State played the major role in much of this transformation--but we shall skip this historical evolution. We will begin with the modern system, where Chartal money has developed.

"When we give up our coats in the cloak-room of a theatre, we receive a tin disc of a given size bearing a sign, perhaps a number. There is nothing more on it, but this ticket or mark has legal significance; it is a proof that I am entitled to demand the return of my coat. When we send letters, we affix a stamp or a ticket which proves that we have by payment of postage obtained the right to get the letter carried. The "ticket" is then a good expression....for a movable, shaped object bearing signs, to which legal ordinance gives a use independent of its material. Our means of payment, then, whether coins or warrants, possess the above-named qualities: they are pay-tokens, or tickets used as means of payment.... Perhaps the Latin word 'Charta' can bear the sense of ticket or token, and we can form a new but intelligible adjective--'Chartal.' Our means of payment have this token, or Chartal, form. Among civilized peoples in our day, payments can only be made with pay-tickets or Chartal pieces." (Knapp 1924:31-32)

Note that like the tin disc issued by the cloakroom, the material used to manufacture the Chartal pieces is wholly irrelevant--it can be gold, silver, or common metal; it can be paper.

"It is, therefore, impossible to tell from the pieces themselves whether they are Chartal or

not. This is at once evident in the case of warrants. As to coins, we must always refer to the Acts and Statutes, which alone can give information.... if the pieces gain their validity through proclamation, they are Chartal. Chartality, then, is simply the use in accordance with proclamation of certain means of payment having a visible shape." (Knapp 1924:34-35) Finally, "Money always signifies a Chartal means of payment. Every means of payment we call money. The definition of money is therefore 'a Chartal means of payment'". (Knapp 1924:38)

Knapp's explanation may appear to be nothing more than the claim that legal tender laws determine that which must be accepted as means of payment, and as well determine the value of the means of payment. However, his analysis went further.

"The State as guardian of the law declares that the property of being the means of payment should be inherent in certain stamped pieces as such, and not in the material of the pieces. In this case also juridical reflection goes to work and creates the concept of the pay-token or ticket, not from caprice but because it must accommodate itself to the altered situation.... The State, not the jurist, creates it." (Knapp 1924:39)

"If we have already declared in the beginning that money is a creation of law, this is not to be interpreted in the narrower sense that it is a creation of jurisprudence, but in the larger sense that it is a creation of the legislative activity of the State, a creation of legislative policy." (Knapp 1924:40)

And what is the nature of this "legislative activity" that determines what will be the Chartalist money accepted within the jurisdiction of the State?

"What forms part of the monetary system of the State and what does not? We must not make our definition too narrow. The criterion cannot be that the money is

issued by the State, for that would exclude kinds of money which are of the highest importance; I refer to bank-notes: they are not issued by the State, but they form a part of its monetary system. Nor can legal tender be taken as the test, for in monetary systems there are very frequently kinds of money which are not legal tender... We keep most closely to the facts if we take as our test, that the money is accepted in payments made to the State's offices. Then all means by which a payment can be made to the State form part of the monetary system. On this basis it is not the issue, but the acceptation, as we call it, which is decisive. State acceptation delimits the monetary system. By the expression 'State-acceptation' is to be understood only the acceptance at State pay offices where the State is the recipient." (Knapp 1924:95)

Thus, it is the decision of the State to accept at State pay offices, and not legal tender laws, that creates a chartal money.

According to Knapp, "centric" payments, or those involving the State, are decisive; these take the form of either (1) "payments to the State as receiver; these we call epicentric" or (2) "payments made by the State, these we will call apocentric". (Knapp 1924:96-97) On the other hand payments between private persons ("paracentric") "are not so important as is generally supposed, for they mostly, so to speak, regulate themselves". (Knapp 1924:96) Indeed, the actions of the state play a large role in determining that which will serve as ("paracentric") means of payment in private transactions.

"In the monetary system of a State there must be one kind of money which is definitive, as opposed to provisional (convertible) money. ... Money is definitive if, when payment is made in it, the business is completely concluded...The payer is no longer under an obligation, the recipient has no further rights either against the payer or against the State, if the State has issued the money." (Knapp 1924:102)

"That kind of definitive money which is always kept ready and can be insisted on for apocentric payments [payments made by the State] ... we call valuta; all other kinds of money...we call accessory." (Knapp 1924:105)

The definitive, or valuta, money is that in which the State makes payments, and that which the State insists it will accept at pay offices and provide in payment.

"In Germany our gold pieces were valuta, not because they were made of gold...but only because the State, when it made a payment, was ready in the last resort to pay in gold pieces, and, if it found it at all inconvenient, totally to refuse any other means of payment which the recipient might happen to want." (Knapp 1924:107)

However, once the State has decided to accept one type of money as "valuta", then that type will become the "decisive" money used in private transactions.

"So, if from political necessity the State announces that henceforth it will pay in State notes, as fountain of law it must equally allow the State notes to suffice for other payments.... The consequence is, in a legal dispute the means of payment which the creditor is compelled to accept is always that which the State has put in the position of valuta.... Apart from friendly agreement, all payments eventually have to be made in valuta money." (Knapp 1924:110)

Thus, it is not simply a "legal tender" law that makes State notes acceptable in private transactions, but it is the fact that the State first decides what it will use or accept as money in its own transactions, and the fact that this must then be acceptable as means of settlement of private debts. "The laws do not decide what shall be valuta money, they merely express a pious hope, for they are powerless against their creator, the State; the

State in its payments decides what is valuta money and the Law Courts follow suit."

(Knapp 1924:111)

As Knapp noted, State money need not be issued by the State, indeed, most State money in the modern economy is issued by banks--originally bank notes (but today, bank deposits)--as they "buy assets", or make loans. "The bank makes notes and offers them in payment to its customers. Issuing notes is not a special business...but a special way in which the bank endeavours to make its payments.... It tries to pay in its own notes instead of in money issued by the State, because then with a comparatively small capital it can make greater profits than it otherwise could." (Knapp 1924:131) Acceptability of bank notes in private transactions is not (as was commonly believed) due to the bank promise to convert these to specie. In other words, bank money did not derive its value from the gold reserves or specie coin, or even valuta money, into which it promised redemption. "A bank-note is a chartal document, which specifies a sum of valuta money; and the bank issuing it is pledged by law to accept it for a payment of that amount." (Knapp 1924:134) Whether bank notes are convertible or redeemable is irrelevant. "An inconvertible bank-note, then, is not a nullity, but has this in common with the convertible bank-note, that it is a till-warrant of the bank." (Knapp 1924:134) What is important is that the note "is a private till-warrant available for payments to the bank....but clearly the customers of the bank can use it for payments between themselves, as they are sure it will be taken at the bank. These customers and the bank form, so to speak, a private pay community; the public pay community is the State." (Knapp 1924:134) Within the "private pay community" (or "Giro"), bank money is the primary money used in payments; however, payments in the "public pay community" require State money--that which is accepted by the State. This can include bank money, but note that generally delivery of bank money to the State is not "final" because the State will present it to banks for "redemption". Bank money when used in the public pay community is not "final, definitive, valuta" money unless the State also uses it in its own purchases. Knapp goes further than Smith in his

recognition that banknotes do not derive their value from the reserves (whether gold or government fiat money) held for conversion, but rather from their use in the "private pay community" and "public pay community"; this, in turn, is a function of "acceptation" at the bank and public pay offices.

What makes bank notes State money? "Bank-notes are not automatically money of the State, but they become so as soon as the State announces that it will receive them in epicentric payments [payments to the State]." (Knapp 1924:135) If the State accepts notes in payment to the State, then the bank notes become "accessory" and the business of the bank is enhanced "for now everybody is glad to take its bank-notes since all inhabitants of the State have occasion to make epicentric payments (e.g. for taxes)." (Knapp 1924:137) The bank notes then become "valuta" money if the State takes the next step and makes "apocentric payments [payments by the State] in bank-notes". (Knapp 1924:138) However, States often required that banks make their notes convertible to State-issued money "one of the measures by means of which the State assures a superior position to the money which it issues itself" (Knapp 1924:140), and thus maintained bank notes in the role of accessory money (rather than allowing them to become valuta money). If the State accepts bank notes in payment, but does not make payments in these bank notes, then the notes will be redeemed at banks--leading to a drain of "reserves" of valuta money (indeed, governments and central banks used redemption or threat of redemption to "discipline" banks).

In times of distress (frequently during wars that required finance provided by banks), however, governments would pass laws ending convertibility, announce that the State would henceforth make payments in terms of the bank notes, and thereby declare that the bank notes were valuta money. (Knapp 1924:143) Usually, this was for one bank only--the bank which became the central bank. "The change from one kind of valuta money to another can only come by the will of the State, valuta meaning the kind of

money with which the State makes its apocentric payments." (Knapp 1924:194) Through action of the State, then, paper money can become valuta money. "At first bank-notes and Treasury notes are employed only as accessory money. ... The mournful hour arrives when the State has to announce that it can no longer pay in the money that was till then valuta [say, coined gold] and that those warrants themselves are now valuta." (Knapp 1924:196) This often comes after the bank has purchased government debt and issued notes that promised conversion; in times of war or other distress, the government would "encourage" banks to issue far more notes (to "finance" government spending) than they could conceivably convert. Thus, suspension of convertibility served the interests of government as well as the bank.

At this point we have a Chartalist, nonconvertible, paper money, as do all modern developed countries. Of course, this extreme development came nearly three-quarters of a century after Knapp's book was first published (1905). However, he had recognized that the money of a State did not derive its value from metal, and indeed, that no metal was needed domestically. He did argue, on the other hand, that "To dispense with specie money altogether would only be possible for very large federations of States, [and, therefore, is] probably impracticable. On account of foreign trade specie money is still necessary." (Knapp 1924:xv) Within a State, however, specie is not necessary for "State money may be recognised by the fact that it is accepted in payment by the State"; as Keynes said (see below), the State not only enforces the dictionary (legal tender laws) but writes it (decides what is to be accepted as money). Of course, the type of monetary system envisioned by Knapp is similar to the one adopted shortly thereafter by the US: a "gold standard" without domestic convertibility, but with a specie reserve to satisfy international purposes. Knapp did not foresee the time when metals could be dropped altogether in favor of foreign currency reserves and flexible exchange rates.

It can be seen that Knapp's analysis is consistent with Smith's. Most paper money

(today, mostly deposits) is privately issued and derives its value not from a promise of redeemability but rather from State acceptance at pay offices. Knapp goes further, for he argues the State eventually realizes (usually during a crisis) that it can also make payments in that which it promises to accept at pay offices. Once freed from domestic convertibility on a metallic standard, the State's spending domestically would not be constrained by the quantity of the metal available. Abandonment of the metallic standard internationally would eliminate metallic constraints on countries.

Keynes's Treatise on Money

While Keynes's General Theory presented the theory of aggregate effective demand that is now identified as "Keynesian theory", his earlier Treatise on Money provided a more detailed treatment of his monetary theory. The first volume of that work presents definitions of money that will be used in his analysis; a brief examination of these provides insights into the view of money adopted by Keynes.

According to Keynes, the "money of account" is the "primary concept" of a theory of money; the money of account "comes into existence along with Debts, which are contracts for deferred payment, and Price-Lists, which are offers of contracts for sale or purchase." (Keynes 1930:3) In turn, "Money itself, namely that by delivery of which debt-contracts and price-contracts are discharged, and in the shape of which a store of General Purchasing Power is held, derives its character from its relationship to the Money-of-Account, since the debts and prices must first have been expressed in terms of the latter." (Keynes 1930:3) He further clarifies the distinction between money and the money of account: "the money-of-account is the description or title and the money is the thing which answers to the description." (Keynes 1930:3-4)

Following Knapp, Keynes argued that the state gets involved by determining what will serve as the money of account as well as by dictating what "thing" will be accepted as money. "The State, therefore, comes in first of all as the authority of law which enforces the payment of the thing which corresponds to the name or description in the contracts. But it comes in doubly when, in addition, it claims the right to determine and declare what thing corresponds to the name, and to vary its declaration from time to time--when, that is to say, it claims the right to re-edit the dictionary. This right is claimed by all modern states and has been so claimed for some four thousand years at least." (Keynes 1930:4) The "Age of Chartalist or State Money" had been reached, when the state "claimed the right not only to enforce the dictionary but also to write the dictionary". (Keynes 1930:5) Let us emphasize that Keynes believed the "age of State money" to have begun "at least" four thousand years ago, as such, the "State theory of money" would certainly apply to all the "modern" economies even those living under the gold standard last century--even a gold-based "commodity" money is State money.

The state can thus declare that debt it issues is money. Privately issued debt--such as that issued by banks--might be accepted in settlement of transactions even if it is not declared by the government to be money; it can then circulate "side by side" with "State Money". (Keynes 1930:6) However, the state might "use its chartalist prerogative to declare that the [bank] debt itself is an acceptable discharge of a liability". (Keynes 1930:6) Bank money then becomes a "Representative Money". (Keynes 1930:6) "At the cost of not conforming entirely with current usage, I propose to include as State-Money not only money which is itself compulsory legal-tender but also money which the State or the Central Bank undertakes to accept in payments to itself or to exchange for compulsory legal-tender money." (Keynes 1930:6) In a footnote to this passage, he goes on: "Knapp accepts as "Money"--rightly I think--anything which the State undertakes to accept at its pay-offices, whether or not it is declared legal-tender between citizens." (Keynes 1930:6-7) Finally, "State money may take any of three forms: "Commodity Money, Fiat Money

and Managed Money, the last two being sub-species of Representative Money". (Keynes 1930:7) Commodity money is then defined as "actual units of a particular freely-obtainable, non-monopolised commodity which happens to have been chosen for the familiar purposes of money", or "warehouse warrants for actually existing units of the commodity". (Keynes 1930:7) Fiat money is representative money "which is created and issued by the State, but is not convertible by law into anything other than itself, and has no fixed value in terms of an objective standard." (Keynes 1930:7) This is distinguished from managed money, which "is similar to Fiat Money, except that the State undertakes to manage the conditions of its issue in such a way that, by convertibility or otherwise, it shall have a determinant value in terms of an objective standard." (Keynes 1930:8)

Managed money is according to Keynes the most generalized form of money, which can "degenerate into Commodity Money on the one side when the managing authority holds against it a hundred per cent of the objective standard, so that it is in effect a warehouse warrant, and into Fiat Money on the other side when it loses its objective standard." (Keynes 1930:8) In other words, a full-bodied--say, one ounce--gold coin valued at one currency unit would qualify as commodity money, while a paper note which is convertible to gold against which a fractional gold reserve is held would qualify as managed money--even if the conversion rate is one currency unit per ounce of gold. Thus, a gold standard system can be operated as either a commodity money or as a managed money. On the other hand, a representative money can take the form of either a managed money (a paper note convertible on demand to gold, or even to a foreign currency--eg a currency board system) or a fiat money (no promise to convert at a fixed exchange rate to precious metals, foreign exchange, and so on).

Note that Keynes argued even a gold standard, whether a commodity money system or a managed money system, operates on the basis of State money. Under the commodity money system, the State accepts "commodity" gold in payment of taxes,

levying the tax liability in the form of gold (for example, one ounce per head), payable in actual gold or "warehouse receipts" for gold. Under the managed money system, taxes are levied in the form of dollars (say, \$32 per head), with the value of the ounce of gold established by the State (say, at \$32 per ounce); while the conversion rate is determined by the State, there is no requirement of one-hundred percent backing (money can be converted in theory to gold, but it cannot be converted in reality if all rights to convert are exercised). Under the commodity money system, government can change the tax liability by changing the gold levy (eg, from one ounce to two ounces); under the managed money system, the State can revalue gold (for example, to \$16 per ounce) and keep the tax liability constant (say, at \$32), or can keep the dollar value of gold constant and raise the tax liability (eg, to \$64). In either case, the State can always "rewrite the dictionary", for example, by adopting a silver standard and a conversion rate (one ounce of gold for four ounces of silver).

State money can be held by banks, by the central bank, and by the public. "The State-Money held by the Central Bank constitutes its "reserve" against its deposits. These deposits we may term Central Bank-Money. It is convenient to assume that all the Central Bank-Money is held by the Member Banks--in so far as it may be held by the public, it may be on the same footing as State-Money or as Member Bank-Money, according to circumstances. This Central Bank-Money plus the State Money held by the Member Banks makes up the Reserves of the Member Banks, which they, in turn, hold against their Deposits. These Deposits constitute the Member Bank-Money in the hands of the Public, and make up, together with the State-Money (and Central Bank-Money, if any) held by the Public, the aggregate of Current Money." (Keynes 1930:9-10) When the state accepts the "member bank-money" at its pay offices, it becomes "state-money"; any payments to the state will cause member banks to lose "central bank-money" or "state money held by the member banks"--that is, reserves.

As we will explore in more detail below, and as Knapp recognized, "member bank-money" is the primary "thing" answering to the "description"--money--used in private transactions (or, within the "private pay community"). When accepted in payment of taxes, it is also used in the "public pay community"--but it is not "definitive" or valuta money from the perspective of member banks because they must deliver reserves (mainly "central bank money") whenever taxes are paid using "member bank money".

In summary, with the rise of the modern state, the money of account ("the description") is chosen by the state, which is free to choose that which will qualify as money (the "thing" that answers to the description). This goes beyond legal tender laws--which establish what can legally discharge contracts--to include that which the state accepts in payment at its "pay-offices". The state is free to choose a system based on commodity money, fiat money, or managed money. Even if it chooses a strict commodity system, the value of the money does not derive from the commodity accepted as money, "[f]or Chartalism begins when the State designates the objective standard which shall correspond to the money-of-account". (Keynes 1930:11) "[M]oney is the measure of value, but to regard it as having value itself is a relic of the view that the value of money is regulated by the value of the substance of which it is made, and is like confusing a theatre ticket with the performance." (Keynes 1983:402) Instead, the state determines the value of the commodity (eg, an ounce of gold) relative to the money-of-account; this merely establishes the price in terms of money at which the state is willing to purchase the commodity, or, alternatively, the quantity of the commodity it is willing to provide upon redemption of state money. Once it is recognized that the state may "write the dictionary", it becomes obvious that the value of a commodity (or managed) money cannot be derived from the value of the "objective standard"; it is then a small step to a "fiat money" with no "objective standard", for in all three cases, the state determines the value of money.

The Endogenous Money Approach

In recent years, many theorists have contributed to the development of an "endogenous money" approach. (Davidson 1978, Kaldor 1985, Minsky 1986, Moore 1988, Rousseas 1986, Wray 1990) There are two fundamental precepts: a) the "supply" of money expands to meet the "demand" for money; and b) the central bank has no direct control over the quantity of money. To some extent, all the economists examined here, as well as most economists until the present century, at least implicitly adopt an endogenous money approach. It is only in this century that the majority of economists have come to accept the "exogenous" money view that the central bank can directly control the quantity of money and that the money stock can be taken to be "fixed" such that it does not respond to "money demand"; rather, the "exogenous" approach generally holds that money demand adjusts to the exogenously given money supply. In contrast, the endogenous money approach--following the approach of most nineteenth century economists (and, as shown above, Smith)--argues that for the most part, money supply responds to "meet the needs of trade", as represented by "money demand". In this section we only briefly examine contributions directly related to arguments made above.

The view that the "supply" of money expands to meet the "demand" for money can be traced back at least to the Banking School in the early nineteenth century (if not to Adam Smith), although this terminology was not used. (Wray 1990) It was the position of the Banking School that bank notes are issued to meet the needs of trade (essentially a "real bills" argument), that bank notes could never be excessive so long as they were redeemable on demand, and, thus, that no other restrictions on note issue would be required. Their contemporary opponents, the Currency School, wanted to strictly regulate the quantity of notes issued so that it would equal the quantity of coin specie--essentially, a 100% reserve backing--to make the system operate as if all circulation were conducted on the basis of full-bodied coin (Keynes's "commodity money"). This, they believed, would

tame or eliminate the business cycle, which they believed to be caused by excessive note issue. In contrast, the Banking School concluded that private bank note issue could never be excessive, so long as notes were convertible, because they would reflux to banks (a position quite similar to that of Smith, examined above); however, a nonconvertible (government) fiat money could be excessive because it would not reflux. (Note that neither school appeared to recognize that state fiat money does indeed reflux as taxes are paid--which, as Smith recognized, is the mechanism that can ensure state note issue is not excessive. The Currency School also did not appear to recognize Smith's argument that the volume of trade will be higher if the quantity of notes issued were to exceed the quantity of gold reserves.)

Others after this controversy similarly held the view that the supply of credit expands more-or-less in step with the needs of trade. Marx, for example, argued that during an expansionary phase, credit substitutes for money, functioning as the primary medium of exchange and allowing the volume of transactions to rise. In a crisis, however, only "narrow money" (Knapp's "valuta" money) is desired, where it functions primarily as a means of payment to retire debts (and pay taxes) rather than as a medium of exchange. In crisis, "the circulation of [bank] notes as a means of purchase is decreasing" even though "their circulation as means of payment may increase". (1909 p. 542) "It is by no means the strong demand for loans...which distinguishes the period of depression from that of prosperity, but the ease with which this demand is satisfied in periods of prosperity, and the difficulties which it meets after a depression has become a fact" (1909, p. 532). In other words, banks readily advance loans (creating "member bank money") in expansion but refuse to grant credit in the downturn.

As discussed above, Keynes also recognized that banks normally can increase loans to finance an increase of spending. (This is even clearer in his 1937 articles, after publication of The General Theory. See Keynes 1973.) Many of his followers later held to

similar positions. This was developed by Kaldor (1985) into what has come to be known as the "horizontalist" endogenous money approach. (Moore 1988) A similar, but mainly independent, path led to the Circuitist approach. Before Keynes, Schumpeter had developed a view of dynamic and innovative banks, in which credit expansion was the key to allow entrepreneurs to finance innovation. Indeed, credit was seen as "essentially the creation of purchasing power [by banks] for the purpose of transferring it to the entrepreneur". (1934 p. 107) Building on Schumpeter's views, the Circuitist approach to money independently reached many of the same conclusions reached by the Post Keynesian endogenous money approach. (See Deleplace and Nell 1996)

What is important to note is that this means that the "quantity of money" is not "exogenous" in the sense of being determined either through monetary policy (such as control over bank reserves) or by the quantity of a precious metal reserve (as under a "commodity money" or "managed money" system). While the state defines money, it does not control the quantity. The state is able to control its initial emission of currency, but this is through fiscal policy rather than through monetary policy. That is, the quantity of currency created is determined by purchases of the state (including goods, services, and assets purchased by the treasury and the central bank); much of this currency will then be removed from circulation as taxes are paid. The rest ends up in desired hoards, or flows to banks to be accumulated as bank reserves. Monetary policy then determines how many reserves will be drained (or removed from member bank accounts) through bond sales. As Boulding (1950) had argued, fiscal policy has more to do with the quantity of money issued by the government, while monetary policy has to do with regulation of financial markets (most importantly, with determination of short term interest rates).

Hyman Minsky presented a view of money that was based on the Chartalist approach. His views were related to his belief that the fundamental characteristic of modern capitalism is the need for financing of positions in assets, including capital. The

approach emphasized the "endogeneity" of money, that is, the view that money is created during the normal, and important, processes of a capitalist economy--and is not created and dropped by helicopters. For the most part, bank money is created as banks "make loans".

"Money is unique in that it is created in the act of financing by a bank and is destroyed as the commitments on debt instruments owned by banks are fulfilled. Because money is created and destroyed in the normal course of business, the amount outstanding is responsive to the demand for financing. " (Minsky 1986:249)

A "loan" is nothing more than an agreement by a bank to make payments "now" on the basis of a promise of the "borrower" to "pay later". "Loans represent payments the bank made for business, households, and governments in exchange for their promises to make payments to the bank at some future date." (Minsky 1986:230)

All of this occurs on the balance sheets of banks; the "money" that is created is nothing more than a credit to another bank's balance sheet. According to Minsky, there is a pyramid of liabilities with the liabilities of the Fed at the top. Bank "money" normally expands on demand, depending on creditworthiness of borrowers, as banks accept liabilities and issue their own. Their liabilities are convertible on demand into Fed liabilities, which are used for inter-bank clearing (as well as conversion of bank liabilities to "cash" held by the public, resulting in a net reserve drain).

"The payments banks make are to other banks, although they simultaneously charge the account of the customer. In the receiving bank, the payments are credited to a depositor's account. These payments are from the account or line of credit of some customer at the paying bank and are credited to a particular account

at the receiving bank."

"For member banks of the Federal Reserve System, the interbank payments lead to deposits shifting from the account of one bank to the account of another at Federal Reserve banks. For nonmember banks, another bank--called a correspondent--intervenes, so that the transfer at the Federal Reserve banks are for the accounts of correspondents." (Minsky 1986:230-1)

Thus, "payments" among banks occur on the balance sheet of the Fed; banks use "Fed money" (reserves) to settle net debits from their accounts. "Whereas the public uses bank deposits as money, banks use Federal Reserve deposits as money. This is the fundamental hierarchical property of our money and banking system." (Minsky 1986:231) This is, of course, the same hierarchical arrangement noted by Knapp (in his "public and private" pay communities) and by Keynes.

In an argument very similar to Knapp's Chartalist view, Minsky explained that people accept bank money in part because they can use it to meet their own commitments to banks.

"In our system payments banks make for customers become deposits, usually at some other banks.... Demand deposits have exchange value because a multitude of debtors to banks have outstanding debts that call for the payment of demand deposits to banks. These debtors will work and sell goods or financial instruments to get demand deposits. The exchange value of deposits is determined by the demands of debtors for deposits needed to fulfill their commitments." (Minsky 1986:231)

The "borrower" retires his/her promise to the bank by delivering bank liabilities at the future date, and the need for bank liabilities to retire one's own liabilities to banks leads

one to accept bank liabilities in payment for goods and services delivered. Rather than focusing on money as a medium of exchange, this focus is on money as means of payment-to retire liabilities. One accepts bank money because one has, or might have, liabilities to banks.

This led Minsky back to the Smith/Knapp recognition that taxes give value to the money issued by the government.

"In an economy where government debt is a major asset on the books of the deposit-issuing banks, the fact that taxes need to be paid gives value to the money of the economy.... [T]he need to pay taxes means that people work and produce in order to get that in which taxes can be paid." (Minsky 1986: 231)

Returning to the primary Chartalist theme, Abba Lerner insisted that

"[W]hatever may have been the history of gold, at the present time, in a normally well-working economy, money is a creature of the state. Its general acceptability, which is its all-important attribute, stands or falls by its acceptability by the state." (Lerner 1947:313)

Just how does the State demonstrate acceptability?

"The modern state can make anything it chooses generally acceptable as money.... It is true that a simple declaration that such and such is money will not do, even if backed by the most convincing constitutional evidence of the state's absolute sovereignty. But if the state is willing to accept the proposed money in payment of taxes and other obligations to itself the trick is done. Everyone who has obligations to the state will be willing to accept the pieces of paper with which he can settle

the obligations, and all other people will be willing to accept these pieces of paper because they know that the taxpayers, etc., will accept them in turn. On the other hand if the state should decline to accept some kind of money in payment of obligations to itself, it is difficult to believe that it would retain much of its general acceptability." (Lerner 1947:313)

This seems to be about as clear a statement as one can find: even if it has not always been the case, it surely is now true and obvious that the state writes the "description" of money when it denominates the tax liability in a money of account, and defines the "thing" that "answers to the description" when it decides what will be accepted at public pay offices. The "thing" which answers to the "description" is widely accepted not because of legal tender laws and not because it might have (or have had) gold backing, but because the state has the power to impose and enforce tax liabilities and because it has the right to choose "that which is necessary to pay taxes" ("twintpt"). This right, as emphasized by Keynes, "has been so claimed for some four thousand years at least". While Keynes is no historian and while one might quibble over the exact number of years since states first claimed these rights, there can be no doubt but that all modern states do have these rights. As Lerner said "Cigarette money and foreign money can come into wide use only when the normal money and the economy in general is in a state of chaos." (Lerner 1947:313) One might only add that when the state is in crisis and loses legitimacy, and in particular loses its power to impose and enforce tax liabilities, "normal money" will be in a "state of chaos", leading, for example, to use of foreign currencies in private domestic transactions.

Conclusions

In the Chartalist approach, the public demands the government's money because that is the form in which taxes are paid. In the modern economy, it appears that taxes are paid using bank money, but analysis of reserve accounting shows that tax payments always lead to a

reserve drain (that is, reduce central bank liabilities). Because the public needs the government's money, the government is free to determine what the public must do to obtain it; this means the public will have to provide goods or services to the government to obtain "that in which taxes are paid". The government does not "need" the public's money, which, after all, is nothing but a government liability. This means that neither taxes nor bonds "finance" government spending. Enforcement of the tax liability gives value to money; without an effective tax collection system, the value of money would quickly fall toward zero. This indicates that money is accepted not due to legal tender laws, but due to the authority of the State to impose and collect taxes. Neither are bond sales a part of "fiscal policy", required so that the government might borrow money in order to spend in excess of taxes. Since the public needs and wants government money, the government does not have to sell bonds to run deficits. Rather, bond sales are designed to "drain excess reserves" to provide an interest-earning alternative--mainly to banks, but others also like to hold interest-earning government bonds. The government could just as well pay interest on bank reserves, in which case bond sales would not be required; deficits would lead to rising reserves, placing downward pressure on interest rates, but these could not fall (much) below the rate paid on reserves. Bond sales are a part of monetary policy, which exogenously determines the short-term (or overnight) interest rate, but this could just as well be determined exogenously by setting an interest rate on excess reserves.

The Chartalist approach makes it clear that conventional analysis is mostly confused. While hyperinflations are attributed to government "printing too much money", they are really due to collapse of the tax authority; while conventional analysis blames government deficits for high interest rates, it is true only in a superficial sense: monetary policy sets the interest rate target and then bonds are sold to drain reserves to hit that target. Monetary policy could set the interest rate target lower, and would then find (all else equal) that fewer bonds would need to be sold to hit the target. While conventional analysis worries that the government might try to sell bonds to run a deficit only to find no buyers, Chartalist analysis shows that government can always buy that which is for sale in

terms of the domestic currency; if it ever found no buyers for its bonds, this would merely indicate that the public prefers to hold non-interest-earning currency over interest-paying government bonds--surely nothing for the government to lose any sleep over. Finally, while deficits can be too large (or too small), and while deficits do increase the quantity of money, this does not mean that deficits necessarily reduce the value of money. So long as government imposes a sufficiently large tax liability and requires sufficient effort to obtain "that which is necessary to pay taxes" (twintpt), deficit spending need not "cause inflation".

REFERENCES

Boulding, Kenneth. A Reconstruction of Economics, New York, John Wiley & Sons, 1950.

Davidson, Paul. Money and the Real World, London, Macmillan, 1978.

Deleplace, Ghislain and Edward J. Nell, editors. Money in Motion: the Post Keynesian and Circulation Approaches, New York, St. Martin's Press, Inc., 1996.

Kaldor, N. The Scourge of Monetarism, London, Oxford University Press, 1985.

Keynes, John Maynard. The General Theory, New York, Harcourt-Brace-Jovanovich, 1964.

----- . A Treatise on Money: Volume 1: The Pure Theory of Money, New York, Harcourt-Brace-Jovanovich, 1976 [1930].

----- . The Collected Writings of John Maynard Keynes, Volume XIV, The General Theory and After: Part II Defence and Development, edited by Donald Moggridge, London and Basingstoke, Macmillan, Cambridge University Press, 1973.

----- . The Collected Writings of John Maynard Keynes, Volume XI, Economic Articles and Correspondence, Academic, edited by Donald Moggridge, London and Basingstoke, Macmillan, Cambridge University Press, 1983.

Knapp, Georg Friedrich. The State Theory of Money, Clifton, Augustus M. Kelley 1973 [1924].

Lerner, Abba P. "Money as a Creature of the State", American Economic Review, vol. 37, no. 2, May 1947, pp. 312-317.

Marx, Karl. Capital, Volume III, Chicago, Charles H. Kerr and Company, 1909.

Minsky, Hyman P. Stabilizing an Unstable Economy, New Haven, Yale University Press, 1986.

Moore, Basil. Horizontalists and Verticalists: The Macroeconomics of Credit Money, Cambridge, Cambridge University Press, 1988.

Rousseas, Stephen. Post Keynesian Monetary Economics, Armonk, New York, M.E. Sharpe, 1986.

Schumpeter, J.A. The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle, Cambridge, MA, Harvard University Press, 1934.

Smith, Adam. The Wealth of Nations, The Cannan Edition, New York, The Modern Library, 1937.

Wray, L. Randall. Money and Credit in Capitalist Economies: The Endogenous Money Approach, Aldershot, Edward Elgar, 1990.