

Wray, L. Randall

Working Paper
Money

Working Paper, No. 647

Provided in Cooperation with:
Levy Economics Institute of Bard College

Suggested Citation: Wray, L. Randall (2010) : Money, Working Paper, No. 647, Levy Economics Institute of Bard College, Annandale-on-Hudson, NY

This Version is available at:
<http://hdl.handle.net/10419/56952>

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.



Working Paper No. 647

Money

by

L. Randall Wray

Levy Economics Institute of Bard College

December 2010

The Levy Economics Institute Working Paper Collection presents research in progress by Levy Institute scholars and conference participants. The purpose of the series is to disseminate ideas to and elicit comments from academics and professionals.

Levy Economics Institute of Bard College, founded in 1986, is a nonprofit, nonpartisan, independently funded research organization devoted to public service. Through scholarship and economic research it generates viable, effective public policy responses to important economic problems that profoundly affect the quality of life in the United States and abroad.

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

ABSTRACT

This paper advances three fundamental propositions regarding money:

(1) As R. W. Clower (1965) famously put it, money buys goods and goods buy money, but goods do not buy goods.

(2) Money is always debt; it cannot be a commodity from the first proposition because, if it were, that would mean that a particular good is buying goods.

(3) Default on debt is possible.

These three propositions are used to build a theory of money that is linked to common themes in the heterodox literature on money. The approach taken here is integrated with Hyman Minsky's (1986) work (which relies heavily on the work of his dissertation adviser, Joseph Schumpeter [1934]); the endogenous money approach of Basil Moore; the French-Italian circuit approach; Paul Davidson's (1978) interpretation of John Maynard Keynes, which relies on uncertainty; Wynne Godley's approach, which relies on accounting identities; the "K" distribution theory of Keynes, Michal Kalecki, Nicholas Kaldor, and Kenneth Boulding; the sociological approach of Ingham; and the chartalist, or state money, approach (A. M. Innes, G. F. Knapp, and Charles Goodhart). Hence, this paper takes a somewhat different route to develop the more typical heterodox conclusions about money.

Keywords: Money; Credit; Debt; Uncertainty; Default; Unit of Account; Heterodox; Circuit Approach; Godley; Minsky; Knapp; Schumpeter; Endogenous Money

JEL Classifications: E4, E5, E6, E11, E12, B5, B15, B22

The exposition here will rely on three fundamental propositions regarding money:

1. As Clower (1965) famously put it, money buys goods and goods buy money, but goods do not buy goods.
2. Money is always debt; it cannot be a commodity from the first proposition because if it were that would mean that a particular good is buying goods.
3. Default on debt is possible.

These three propositions will provide sufficient structure to build a theory of money. I will link the discussion to common themes in the heterodox literature on money. The approach taken here is not meant to replace the more usual Post Keynesian (Davidson 1978; Harcourt 2008; Kaldor and Trevithick 1981) and Institutional (Dillard 1980) approaches, but rather is meant to supplement them. For example, this discussion will be linked to Minsky's (1986) work (that relied heavily on his dissertation advisor, Schumpeter [1934]), to the endogenous money approach of Moore (1988), to the French-Italian circuit approach (Graziani 1990; Lavoie 1985; Parguez 2002), to Davidson's (1978) interpretation of Keynes that relies on uncertainty, to the approaches that rely heavily on accounting identities (Godley 1996)—and the “K” distribution theory of Keynes (1930, 1964), Kalecki (1971), Kaldor (1955–6), and Kenneth Boulding (1985)—to the sociological approach of Ingham (2000, 2004), and to the chartalist or state money approach (Innes 1913; Knapp 1924; Goodhart 1998; Wray 1998, 2004). Hence, we will take a somewhat different route to develop the more-or-less heterodox conclusions about money.

1. GOODS DON'T BUY GOODS

The typical orthodox story of money's origins is too well-known to require much reflection: because of the inefficiencies of barter, traders choose one particular commodity to serve as the money numeraire (Innes 1913; Wray 1998; Ingham 2000). A hypothetical evolutionary process runs through the discovery of a money multiplier (notes issued on the basis of reserves of the money commodity) to government

monopolization of the commodity reserve and finally to the substitution of commodity money by a fiat money (Wray 2004). What's important is not the historical details of this transformation, but rather the view of the role played by money. Since the market and commodity production analytically precede money, money is not essential, although it plays a lubricating role. This is why it is tempting to do "real analysis" and to presume that in the long run, money must be neutral. Note that it is not only neoclassical economics that falls victim to this mistake (see Kregel 1985).

If we begin with the proposition that goods cannot buy goods then we must look elsewhere for the nature of money. And we cannot presume that markets come before money for the simple reason that until money exists there cannot be "exchanges" (sales). Further, money is not something that is produced—it is not a commodity that is produced by labor (otherwise it would be a "good buying a good"), nor is it something sought to directly satisfy the kinds of individual needs or desires that motivate production of commodities. At most, we can say that we seek money because it provides access to the commodities that satisfy those desires. (To be sure, Post Keynesians follow Keynes in asserting that money hoards "quell the disquietude"—but that in turn is because possession of money provides some measure of certainty in an economy that limits access to livelihood to those with money.)

Readers will recognize the similarity to Keynes's (1964) argument that money has "a zero, or at any rate a very small elasticity of production," meaning it "cannot be readily produced" so that "labour cannot be turned on at will by entrepreneurs to produce money" (1964: 230), and as well to the argument that "unemployment develops, that is to say, because people want the moon—men cannot be employed when the object of desire (i.e., money) is something which cannot be produced and the demand for which cannot be readily choked off" (1964: 235). He also notices that "the characteristic which has traditionally supposed to render gold especially suitable for use as the standard of value, namely, its inelasticity of supply, turns out to be precisely the characteristic which is at the bottom of the trouble" (1964: 235–6).

Keynes is making a slightly different point here—he is linking money to unemployment that cannot be resolved by shifting displaced labor to the production of the money commodity. Yet elsewhere—especially in the drafts to the *General Theory*—

he explicitly presumed that the *purpose* of production in a monetary economy is to accumulate money (Wray 1990, 1998). Indeed, this recognition must underlie these statements above, for it is the desire for money that causes its return as the “rooster” that sets the standard to rise above what can be obtained on nonmoney assets. That, in turn, is what causes effective demand to be so low that unemployment results, and it is because labor is not involved in any significant way in the production of money that the labor cannot be diverted to its production. Hence, Clower’s argument that “goods do not buy goods,” that money is not a commodity produced by labor, must underlie Keynes’s view.

The claim that a capitalist economy is a “monetary production economy” is of course also adopted by Marx and Veblen and their followers (Dillard 1980). The purpose of production is to accumulate money—not to barter the produced commodities for other commodities. As Heilbroner (1985) argues, this provides a “logic” to production that makes it possible to do economic analysis. Analysis from Marx’s departments, to the circuit approach, to Godley’s (1996) sectoral balances and stock-flow consistency, to Kalecki’s (1971[1936]) profits equation, and even to GDP accounting all rely on this “logic.” On one level, this is obvious. We need a unit for accounting purposes to aggregate heterogeneous items: wages, profits, rents; investment, consumption, government spending; apples, oranges, and widgets. As Keynes (1964[1936], chapter 4) argued there are only two obvious units of account at hand—labor hours or the money wage unit. The Classical tradition focused on the first while most of Keynes’s followers focused exclusively on the second, although some, like Dillard, followed Keynes’s lead by using both.

The Marx-Veblen-Keynes monetary theory of production means to say something more than that we need a handy universal unit for accounting purposes. Money is the *object* of production—it is not merely the way we measure the value of output. It is because money does not take any particular commodity form that it can be the purpose of production of all particular commodities. It is the general representation of value—it buys all commodities and all commodities buy (or, at least attempt to buy) money. Actually, if a commodity cannot buy money, it really is not a commodity—it has no market value. Commodities obtain their value—they *become* commodities—by exchanging for the

universal representation of social value, money. By the same token, obtaining money allows us access to all commodities that are trying to buy money.

This presents the possibility of disappointment: the fruits of production enter the market but fail to buy money. There are consequences following on the failure to sell produced commodities, including a decision to cease production. Labor power, itself, is a produced commodity (separate from the free laborer, of course, who cannot be bought or sold) that seeks to exchange for money but may find unemployment instead. However, not only is the purpose of production to obtain money, but the production process itself is one of “production of commodities by means of commodities,” as Sraffa (1960) put it. And those commodities (including labor power, as well as other produced means of production) can only be purchased with money. In other words, the production process itself begins with money on the expectation of ending up with more money (M-C-C'-M'). Not only is production required to result in sales for money, but it must begin with money. Production is thoroughly monetary. It cannot begin with commodities, because the commodities must have been produced for sale for money. Analysis must also therefore begin with money.

We cannot begin with the barter paradigm. We cannot remove money from the analysis as if it were some veil hiding the true nature of production. We cannot imagine that in some hypothetical long run money will somehow become a neutral force, just as it was back in the days when Robinson Crusoe bartered with Friday.

2. MONEY IS DEBT

We have argued that money is not a commodity, but we have not said much about what it is, beyond arguing that it is a unit of account. However, a unit of measurement is not something that can ever be obtained through a sale. No one can touch or hold a centimeter of length or a centigrade of temperature. We have said that we buy money by selling commodities, but it is clear that if money is just a unit of account—the dollar, the euro, the yen—that is impossible.

We can get somewhat closer if we think of the analogy to the electronic scoreboard (with an array of LED lights that can display numbers) at a sporting match—

say American football. When a team scores a touchdown, the official scorer awards points, and electronic pulses are sent to the appropriate combination of LEDs so that the scoreboard will show the number six. As the game progresses, point totals are adjusted for each team. The points have no real physical presence, they simply reflect a record of the performance of each team according to the rules of the game. They are valuable because the team that accumulates the most points is deemed the “winner”—perhaps rewarded with fame and fortune. Further, sometimes points are taken away after a review by officials determines that rules were broken and that penalties should be assessed. The points that are taken away do not really go anywhere—they simply disappear as the scorekeeper deducts them from the score.

Similarly, in the game we call the “economy,” sales of commodities for money lead to “points” credited to the “score” that is (mostly) kept by financial institutions. Unlike the game of football, in the game of life, every “point” that is awarded to one player is deducted from the “score” of another—either reducing the payer’s assets or increasing her liabilities. Accountants in the game of life are very careful to ensure that financial accounts always balance. The payment of wages leads to a debit of the employer’s “score” at the bank, and a credit to the employee’s “score,” but at the same time, the wage payment eliminates the employer’s obligation to pay accrued wages as well as the employee’s legal claim to wages. So, while the game of life is a bit more complicated than the football game, the idea that record keeping in terms of money is a lot like record keeping in terms of points can help us to remember that money is not a “thing” but rather is a unit of account in which we keep track of all the debits and credits—or, “points.”

However, the financial institution is not simply an uninterested scorekeeper. The “scores” on its balance sheet are liabilities—its IOUs are the points credited to players. We will have much more to say about the role played by financial institutions in the next section. Here we only want to focus on the “dual” debt nature of the money “scores.”

First, as discussed above, production must begin with money, and that money is a “score” that represents an IOU. Typically, it is a demand deposit liability of a bank. It is matched on the other side of the bank’s balance sheet by a loan, which represents the debt of the borrower in whose name the bank’s IOU is issued. In other words, one who wants

to undertake production of commodities (by means of purchasing commodities) must issue an IOU to the bank (a “loan” held as the bank’s asset) and obtain in return a bank deposit (the bank’s liability). The commodities to be used as means of production are then purchased by transferring the deposit (the bank debits the producer’s deposit and credits the deposits of the sellers of means of production). When the producer finishes the production process and sells the produced commodities, her deposit account is credited and the purchasers of the sold commodities have their deposit accounts debited. At this point, if the producer desires, she can use her deposit account to “repay” the loan (the bank simultaneously debits the demand deposit and the loan). All of this can be done electronically and is rather like our scorekeeper who takes points off the scoreboard.

However, if we end up back where we started—with the deposit and the loan wiped clean—the producer seems to have engaged in an entirely purposeless endeavor, borrowing to produce commodities sold to repay the loan. The money created in the first step is simply retired in the last. That of course is not the monetary production economy of Marx, Keynes, and Veblen—which must aim to end up with more money than it starts with. Further, the bank’s engagement in this process would also be senseless—it accepted an IOU and created one, and finally ends up with all “scores” back at zero. Hence we have to account for profits of producers and interest (hence, profits) earned by banks. In a moment we will turn to that issue. For now let us conclude that the debt of the producer is retired by selling the produced commodities (“realizing” the monetary value) and retiring the loan by surrendering its deposits accumulated through the sales. The bank cancels its debt (demand deposit) at the same time that it cancels the producer’s IOU (loan).

The second sense in which the producer is indebted is Schumpeterian: the producer commands some of society’s means of production at the beginning of the production process before actually contributing to society. The producer’s IOU (held by the bank) represents a social promise that she will temporarily remove commodities on the condition that she will later supply commodities to society. We can view all commodity production as social, beginning with commodities that were already socially produced in order to combine them in some manner to produce a (usually) different set of commodities. When those newly produced commodities find a market (buying money), the entrepreneur’s social debt is redeemed. Schumpeter (1934) argued that when the

entrepreneur removes means of production from the sphere of circulation this can lead to temporary inflation. However, if the production process actually results in commodities of greater total value, the redemption of the debt to society more than makes up for the temporary inflation, imparting a long-term deflationary tendency.

For Schumpeter, this is expected when the entrepreneur innovates—a new production process that increases capacity to produce commodities. Hence, Schumpeter focused on the role played by banks in financing innovation—providing credit to allow the entrepreneur to claim social productive resources for a new production process that will increase social production. While he recognized that all production begins and ends with money, he did not view money as very important when it comes to normal production and circulation of commodities. A given quantity of money can circulate a given amount of production, as something like Keynes's (1973: 208) "revolving fund of finance." But new credit allows the innovative entrepreneur to break free from the circular flow, creating new purchasing power that shifts resources from some existing use toward the innovative practice. If successful, the debt is repaid—in both senses: the producer can retire her debt to the bank and to society as a whole.

As Minsky (1993) argued, Schumpeter's "vision" did not really allow him to see how profits (and interest) are generated at the aggregate level—because he did not have a theory of effective demand. However, in his department's approach, Marx anticipated the "K" theory of Keynes, Kalecki (1971[1936]), Kaldor (1955–56), and Kenneth Boulding (see Boulding 1985) that recognizes the social creation of a "surplus" from which profits and interest are derived. There are many ways to approach this, but the most straightforward is through the Kalecki equation: aggregate profits equals the sum of investment plus the government deficit plus the trade surplus plus capitalist consumption (or, consumption out of profits) and less worker saving (saving out of wages). There is no need to go through this in detail. The basic idea is that because the wages received by workers who produce consumption goods represent only a part of the receipts from the sales of those goods (in other words, workers in the investment, foreign trade, and government sectors also buy consumer goods), the capitalists producing consumption goods receive gross profits (equal to total sales receipts less costs of producing the goods—which can be simplified to equal the wage bill in the consumption goods sector).

A great number of extensions can be made—workers can save and receive profits; capitalists can consume; we can analyze distributional effects as well as equilibrium growth paths; and so on.

We can also return to our initiating bank loan and analyze a complete monetary circuit to repayment of the loan, as discussed above (see Graziani 1990; Lavoie 1985; Parguez 2002; Parguez and Seccareccia 2000). It can be shown that if we have two sectors (investment and consumption) profits can be realized in the form of bank deposits by one sector (consumption) equal to the wage bill in the other (investment). These profits can then be used to purchase the output of the second sector (i.e., investment goods—the production of the investment goods generates the profits needed to finance their purchase). However, it is more difficult to show how the second sector gets profits, and how interest on loans can be paid. A variety of solutions has been offered—banks pay interest on deposits so firms can pay equivalent interest on loans (which begs the question of bank profitability, sometimes resolved by having banks serve as a third sector that buys commodities). Or everything can be put in terms of rates of growth: the profits “*deus ex machina*” can be found in heterogeneous and overlapping production periods and circuits (only a portion of outstanding loans are retired), or by having ever-growing bank balance sheets (with interest essentially lent).

One of the most interesting approaches is that of Vallegeas (2004), who follows actual accounting practice and argues that we should not take the “ending up with more money” dictum of monetary production too literally. Much production remains within the firm (for example, inventories) that is valued at market price—adding to accounting profit (“more money”). It is the “record keeping” that matters: profits are accounted for in monetary terms but do not have to be literally realized in the form of accumulated bank deposits. In any event, all of this amounts to technical detail that is not necessary for our exposition here.

We conclude: money is debt. It need not have any physical existence other than as some form of record—mostly, an electrical entry on a computer. Money always involves two entries: debt of the issuer and asset of the creditor. Delivering an IOU back to the debtor results in its extinction: the debt is stricken, and so is the asset of the creditor. In practice, creation of money usually requires four entries: a prospective producer issues an

IOU to a bank and receives a demand deposit as an offsetting asset; the bank holds the producer's IOU as its asset and issues the demand deposit as its liability. By convention we say that the producer is a "borrower" and the bank is a "lender"; we call the bank's acceptance of the borrower's IOU a "loan," and the bank's IOU "money." However, that is rather arbitrary because both have borrowed and both have lent; both are debtors and both are creditors.

If money is debt, then as Minsky (1986: 228) said, anyone can create money by issuing an IOU denominated in the social unit of account. The problem is to get it accepted, that is, to get someone to hold your IOU. To become a debtor requires finding a creditor willing to hold the debt. But there are two sides to the equation: each must be willing to "create money" (issue an IOU) and each must be willing to "hold money" (hold the other's IOU). And that raises many issues, of which we can only touch on a few. In the next section we address two issues related to willingness to hold money IOUs: liquidity and default.

3. LIQUIDITY AND DEFAULT RISKS ON MONEY IOUs

In an excellent essay, Goodhart (2008) argued that the reason that orthodoxy cannot find a role for money or for financial institutions in its rigorous models is because default is ruled out by assumption. All IOUs are equally safe because all promises are always kept as all debts are always paid. (This is the so-called "transversality condition." Indeed, many such models employ a representative agent who is both debtor and creditor and who quite rationally would never default on herself in a schizophrenic manner!) This means that all can borrow at the risk-free interest rate and that any seller would accept a buyer's IOU; there is no need for cash and never any liquidity constraint. Nor would we need any specialists such as banks to assess credit-worthiness, nor deposit insurance, nor a central bank to act as lender of last resort. Obviously, almost all interesting questions about money, financial institutions, and monetary policy are left to the side if we ignore liquidity and default risk.

Let us begin with the most fundamental question about debt: just what is owed when an IOU is issued? All IOUs share one common requirement: the issuer must accept

back her own IOU when it is presented (Innes 1913; Wray 2004). As we discussed above, the bank takes back its own IOU (demand deposit) when a debtor presents it to pay off a loan. If you issue an IOU to your neighbor for a cup of sugar, the neighbor can present it to you to obtain sugar. Refusing your own debt when submitted for payment is a default.

Another promise that many *monetary* IOUs carry is convertibility on demand (or on some specified condition such as a waiting period) to *another* monetary IOU or even to a commodity. For example, on a gold standard the government might promise to convert its currency (an IOU stamped on coin or paper) to so many ounces of precious metal. Or, a country on a fixed exchange rate might promise to convert its currency to so many units of a foreign currency. Banks promise to convert their demand deposit IOUs to domestic high powered money (currency or reserves at the central bank).

It is important to note, however, that a promise to convert is not fundamental to issue of an IOU—it is in a sense voluntary. For example, modern “fiat” currencies on floating exchange rates are accepted with no promise to convert. Many attribute this to legal tender laws. Historically, sovereign governments have enacted legislation requiring their currencies to be accepted in payments. Indeed, paper currency issued in the US proclaims “this note is legal tender for all debts, public and private”; Canadian notes say “this note is legal tender”; and Australian paper currency reads “this Australian note is legal tender throughout Australia and its territories.” By contrast, the paper currency of the UK simply says “I promise to pay the bearer on demand the sum of five pounds” (in the case of the five pound note; the promise appears to be the Queen’s, whose picture appears on the note). On the other hand, the euro paper currency makes no promises and has no legal tender laws requiring its use.

Further, throughout history there are many examples of governments that passed legal tender laws, but still could not create a demand for their currencies—which were not accepted in private payments, and sometimes even rejected in payment by government. (In some cases, the penalty for refusing to accept a king’s coin included the burning of a red hot coin into the forehead of the recalcitrant—indicating that without compulsion, the population refused to accept the sovereign’s currency; see Wray 1998 and Knapp 1973 [1924].) Hence, there are currencies that readily circulate without any legal tender laws (such as the euro) as well as currencies that were shunned even with

legal tender laws. Further, as we know, the US dollar circulates in a large number of countries in which it is not legal tender (and even in countries where its use is discouraged and perhaps even outlawed by the authorities).

Modern currencies are often called “fiat currencies” because there is no promise made by government to redeem them for precious metal—their value is proclaimed by “fiat” (the government merely announces that a coin is worth a half-dollar without holding a reserve of precious metal equal in value to a half-dollar). Many students in economics courses are shocked when they are first told that there is “nothing” backing the currency in their pockets. While they had probably never contemplated actually taking the currency down to the Treasury to exchange it for gold, they had found comfort in the erroneous belief that there was “something” standing behind the currency—perhaps a reserve of precious metal available for redemption. The UK currency’s “promise to pay the bearer on demand the sum of five pounds” appears to offer a sound basis, implying that the Treasury holds something in reserve that it can use to make the promised payments. However, if one were to actually present to the UK government a five pound note, the Treasury would simply offer another five pound note, or a combination of notes and coins to sum to five pounds! Any citizen of the US or Australia would experience the same outcome at their own treasuries: a five dollar note can be exchanged for a different five dollar note, or for some combination of notes and coins to make five dollars. That is the extent of the government “promise to pay”!

If currency cannot be exchanged for precious metal in many countries, if legal tender laws are neither necessary nor sufficient to ensure acceptance of a currency, and if the government’s “promise to pay” really amounts to nothing (except exchanging its currency for its currency), then why would anyone accept a government’s currency? One of the most important powers claimed by sovereign government is the authority to levy and collect taxes (and other payments made to government including fees and fines). Tax obligations are levied in the national money of account—dollars in the US, Canada, and Australia. Further, the sovereign government also determines what can be delivered to satisfy the tax obligation. In all modern nations, it is the government’s own currency that is accepted in payment of taxes. While it appears that taxpayers mostly use checks drawn

on private banks to make tax payments, actually, when government receives these checks it debits the *reserves* of the private banks—reserves that are the central bank’s IOU.

Effectively, private banks *intermediate* between taxpayers and government, making payment in currency and reserves on behalf of the taxpayers. Once the banks have made these payments, the taxpayer has fulfilled her obligation, so the tax liability is eliminated.

We are now able to answer the question posed above: why would anyone accept government’s “fiat” currency? Because the government’s HPM (currency plus reserves) is the main thing (and usually the only thing) accepted by government in payment of taxes. It is true, of course, that government currency can be used for other purposes: coins can be used to make purchases from vending machines; private debts can be settled by offering government paper currency; and government money can be hoarded in “piggy banks” for future spending. However, these other uses of currency are all *subsidiary*, deriving from government’s willingness to accept its currency in tax payments. It is because anyone with tax obligations can use currency to eliminate these liabilities that government currency is in demand, and thus can be used in purchases or in payment of private obligations. The government cannot really force others to use its currency in private payments, or to hoard it in “piggy banks,” but government can force use of currency to meet tax obligations that it imposes.

For this reason, neither reserves of precious metals (or foreign currencies) nor legal tender laws are necessary to ensure acceptance of the government’s currency. All that is required is imposition of a tax liability to be paid in the government’s currency. The “promise to pay” that is engraved on UK pound notes is superfluous and really quite misleading. The notes should actually read “I promise to accept this note in payment of taxes.” We know that the UK Treasury will not really pay anything (other than another note) when the five pound paper currency is presented. However, it will *and must* accept the note in payment of taxes. This is really how government currency is *redeemed*—not for gold, but in payments made to the government. Like all debtors, government must accept its own IOUs when presented to it, so tax obligations to government are met by presenting the government’s own IOUs to the tax collector. This is the fundamental

requirement of debt: the issuer must take it back in payment. A promise to convert can be added—as discussed below—but the promise to “redeem” its IOU in payment is primary.

We can conclude that *taxes drive money* (Wray 1998). The government first creates a money of account (the dollar, the pound, the euro), and then imposes tax obligations in that national money of account. In all modern nations this is sufficient to ensure that many (indeed, most) debts, assets, and prices will also be denominated in the national money of account. The government is then able to issue a currency that is also denominated in the same money of account, so long as it accepts that currency in tax payment. It is not necessary to “back” the currency with precious metal, nor is it necessary to enforce legal tender laws that require acceptance of the national currency. For example, rather than engraving the statement “this note is legal tender for all debts, public and private,” all the sovereign government needs to do is to promise “this note will be accepted in tax payment” in order to ensure general acceptability.

This gets us part way to an explanation of why money IOUs are almost without exception denominated in some state’s money of account—what Goodhart (1998) calls the “one nation, one money” rule that is rarely violated. The sovereign power chooses the money of account when it imposes a tax liability in that unit. Keynes also recognized the state’s role in choosing the money of account when he argued that the state

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, vol. 1: 4)

Enforceability of monetary contracts is part of the reason nongovernment money IOUs are written in the state’s money of account.

In addition, money IOUs are often made convertible to the state’s IOUs—high powered money. This can make them more acceptable. Here’s the problem, however: merely agreeing to accept your own IOU in payment is a relatively easy promise to keep. But promising to convert your IOU to another entity’s IOU (especially on demand and at

a fixed exchange rate—which is necessary for par clearing in a money of account) is more difficult. It requires that one either maintain a reserve of the other entity's IOUs, or that it have easy access to those IOUs when required to do the conversion. Failure to meet the promise of conversion is a default. Hence, there is additional default risk that arises from a promise to convert, to be weighed against the enhancement to its general acceptability.

This gives rise to the concept of liquidity: how quickly can an asset be converted with little loss of value? Generally, the most liquid asset is the state's own IOUs, so the conversion of other liabilities is often to HPM. Banks hold some HPM so that they can meet demands for conversion, but it is access to deposit insurance as well as to the central bank that makes the bank's promise to convert secure. We can think of a pyramiding of liabilities on banks—IOUs issued by other institutions and households are convertible to bank liabilities (Bell 2001; Foley 1989). These other entities then work out arrangements that make it more likely that they can meet demands for conversion, such as overdraft facilities. Everything is then pyramided on the state's IOUs—we can think of that as a leveraging of HPM (Wray 1998).

All promises are not equally valid, however—risk of default varies on the IOUs. There is another fundamental principle of debts: one cannot pay one's debt using one's own IOUs. As discussed, when the sovereign is presented with its own IOU, it promises to exchange that IOU for another of its IOUs or it allows the presenter to “redeem” it in payment of taxes. To be sure, the state can retire its liabilities—by running a budget surplus—but it does not have to pay them down by using another's IOU. All other entities must provide a second party or third party IOU to retire debt. For most purposes, it will be the liability of a bank that is used to make payments on one's debt.

Default risk on a bank's IOUs is small (and nonexistent in the case of government guaranteed deposits), hence bank liabilities are widely accepted. Banks specialize in underwriting (assessing credit-worthiness of) “borrowers”—those whose IOUs they hold. Not only do banks intermediate between government and its taxpayers, but they also intermediate by accepting borrowers' IOUs and issuing their own IOUs. The IOUs they hold generally have higher default risk (except in the case of government debt) and are less liquid than the IOUs they issue. For this service, they earn profits, in large part

determined by their ability to charge a higher interest rate on the IOUs they hold than the rate they must pay on their own. Again, the image of a debt pyramid is useful—those lower in the pyramid use the IOUs issued by entities higher in the pyramid to make payments and to retire debt.

This leads us to the interest rate, which as Keynes said is a reward for parting with liquidity. Since government-issued currency (cash) is the most liquid asset, it does not have to pay interest; bank demand deposits can be just as liquid and for many purposes are even more convenient so they do not necessarily need to pay interest (in some cases banks charge fees for checking accounts; in others they do pay positive interest—this has to do with regulation and competition, issues we will not address). Other IOUs that are less liquid must pay interest to induce wealth-owners to hold them. In addition, interest compensates for default risk; this is in addition to the compensation for illiquidity of the asset. In chapter 17 of the *General Theory*, Keynes (1964 [1936]) develops a theory of asset pricing based on a preference for liquidity in a world in which the future is uncertain. Asset prices adjust (causing yields to change) until all of them are held. “Money,” the most liquid of these, sets the standard because it best satisfies the preference for liquidity. He goes on to explain how the desire for liquidity constrains effective demand and results in unemployment—topics beyond our scope (Keynes 1964 [1936]; Davidson 1978).

We return to Goodhart’s (2008) argument that orthodoxy has no room for money because there is no default risk. For Keynes, neoclassical economics (what he called “classical” economics) lacks a plausible theory of money holding precisely because there is no fundamental uncertainty, which is necessary to explain why liquidity has value. The two arguments are related, and explain why financial institutions are important: they issue liquid IOUs with little (or no) default risk. This is the reason why their IOUs are frequently classified as “money” while the money IOUs of others are not—in apparent contradistinction to Minsky’s (1986: 228) claim that “everyone can create money,” but, he goes on, “the problem is to get it accepted” (Minsky 1986).

Banks are special in another way: almost all the assets they hold are purchased by issuing IOUs. Typically, a bank has 5–8% equity against its assets, meaning that its liabilities are equal to 92–95% of the value of its assets. This is an extremely high

leverage ratio (its asset to capital ratio is from 12.5 to 20). As Minsky (1986) put it, they finance their positions in assets by issuing debt. Without guarantees of access to the central bank (to make their liabilities more liquid) and to government insurance (to reduce default risk on their liabilities), banks could not operate with such leverage ratios. Note also that banks are strange firms: they do not produce commodities and mostly do not utilize commodities in their “production”—they are not a case of Sraffa’s “production of commodities by means of commodities.” They are true “intermediaries,” making profits not out of commodity production but rather by providing the liquid “money” needed for commodity production—creating their IOUs to purchase the IOUs of others, and reaping profits from the interest rate differential. It is this “alchemy” that leads to so much suspicion about the legitimacy of banks that seem to create “money” out of “thin air.” To be sure, it is also the potential source of financial crisis—another topic beyond our scope, but one whose importance was highlighted with the financial crisis that began in 2007!

Finally, IOUs are not just held or presented for payment (of your own liability). They are also to varying degrees transferable. For example, your neighbor might transfer your sugar IOU—perhaps in payment of some sugar debt—to another neighbor, who could present it to you with a demand for sugar. Transferability of your IOU is limited to those who know you well and who trust that you are good for the sugar. Since “money” is commonly associated with transferability of a debt amongst third parties it is not surprising that government currency as well as bank liabilities are most often included in definitions of money. The liabilities of nonfinancial corporations or households are not usually called money because they do not circulate readily among third parties. (Securitization of home mortgage loans—as well as various kinds of insurance plus certified credit ratings—made them transferable to some degree.) What the lay person usually identifies as money is usually even narrower, something that can be used in a market as a medium of exchange—to buy a commodity. And that, of course, must be a monetary IOU that is highly acceptable—a government IOU, a bank IOU, or an IOU closely backed by a bank (such as your credit card debt).

4. CONCLUSION

This brings us back to Clower's dictum: money buys goods and goods buy money, but goods do not buy goods. That surprisingly insightful statement has led us on a long path through theory, institutions, and even a bit of monetary history and law. To be sure, we just barely scraped the surface of many of the issues of what turns out to be a complex and contentious topic. Indeed, "money" is arguably the most difficult and controversial subject in macroeconomics—what is money, what role does it play, and what should policy do about it are the questions that have busied most macroeconomists from the very beginning. The three basic propositions examined in this chapter have allowed us to construct the beginnings of answers to these questions.

REFERENCES

- Bell, Stephanie. 2001. "The role of the state and the hierarchy of money". *Cambridge Journal of Economics* 25(2): 149–163.
- Boulding, Kenneth E. 1985. "Questions about Distribution." *Challenge* 28(5): 4–11.
- Clower, Robert. 1965. "The Keynesian Counter-Revolution: A Theoretical Appraisal." in F.H. Hahn and F.P.R. Brechling (eds.), *The Theory of Interest Rates*. London: Macmillan.
- Davidson, Paul, 1978. *Money and the Real World*. London: Macmillan.
- Dillard, Dudley. 1980. "A monetary theory of production: Keynes and the institutionalists". *Journal of Economic Issues*. 14: 255–273.
- Foley, Duncan. 1989. "Money in Economic Activity." in John Eatwell, Murray Milgate, and Peter Newman (eds.), *The New Palgrave: Money*. New York and London: W.W. Norton.
- Godley, Wynne. 1996. "Money, Finance and National Income Determination: An Integrated Approach." Working Paper 167. Annandale-on-Hudson, NY: Levy Economics Institute of Bard College.
- Goodhart, Charles A.E. 2008. "Money and Default." in Mathew Forstater and L. Randall Wray (eds.), *Keynes for the Twenty-First Century: The continuing relevance of the General Theory*. New York: Palgrave Macmillan.
- . 1998. "Two concepts of money: implications for the analysis of optimal currency areas." *European Journal of Political Economy* 14: 407–432.
- Graziani, Augusto. 1990. "The theory of the monetary circuit." *Economies et Societes* 24(6): 7–36.
- Hahn, Frank H. 1983. *Money and Inflation*. Cambridge, MA: MIT Press.
- Harcourt, Geoffrey. 2008. "The structure of Post-Keynesian economics: the core contributions of the pioneers." in Mathew Forstater and L. Randall Wray (eds.), *Keynes for the Twenty-First Century: The continuing relevance of the General Theory*. New York: Palgrave Macmillan.
- . 2006. *The structure of post-Keynesian economics: The core contributions of the pioneers*. Cambridge, UK: Cambridge University Press.

- Ingham, Geoffrey. 2004. "The emergence of capitalist credit money." in L. Randall Wray (ed.), *Credit and State Theories of Money: the contributions of A. Mitchell Innes*. Cheltenham, UK: Edward Elgar.
- . 2000. "'Babylonian madness': on the sociological and historical 'origins' of money." in John Smithin (ed.), *What is Money?* New York: Routledge.
- Innes, A. Mitchell. 1913. "What is money?" *Banking Law Journal* May: 377–408.
- Heilbroner, Robert. 1985. *The Nature and Logic of Capitalism*. New York and London: W.W. Norton and Company.
- Kaldor, N. 1955–56. "Alternative theories of distribution." *Review of Economic Studies* 23: 83–100.
- Kaldor, N., and J. Trevithick. 1981. "A Keynesian perspective on money." *Lloyds Bank Review* January: 1.
- Kalecki, M. 1971. *Selected Essays on the Dynamics of the Capitalist Economy, 1933–1970*. Cambridge, UK: Cambridge University Press.
- Keynes, John Maynard. 1976[1930]. *A Treatise on Money*, Volumes I and II. New York: Harcourt, Brace & Co.
- . 1973. *The Collected Writings of John Maynard Keynes*, Vol XIV. Edited by Donald Moggridge. London and Basingstoke: The MacMillan Press, Ltd.
- . 1964[1936]. *The General Theory of Employment, Interest and Money*. New York and London: Harcourt Brace Jovanovich.
- Knapp, George Friedrich. 1924[1973]. *The State Theory of Money*. Clifton, NY: Augustus M. Kelley.
- Kregel, Jan A. 1985. "Hamlet without the prince: Cambridge macroeconomics without money." *American Economic Review* 75(2): 133–139.
- Lavoie, Marc. 1985. "Credit and Money: The dynamic circuit, overdraft economics, and Post Keynesian economics." in Marc Jarsulic (ed.), *Money and Macro Policy*. Boston, Dordrecht, Lancaster: Boston-Dordrecht-Lancaster.
- Minsky, Hyman P. 1986. *Stabilizing an Unstable Economy*. New Haven and London: Yale University Press.
- . 1993. "Schumpeter and finance." in S. Biasco, A. Roncaglia, and M. Salvati (eds.), *Market and Institutions in Economic Development*. New York: St. Martin's Press.

- Moore, Basil J. 1988. *Horizontalists and Verticalists: The Macroeconomics of Credit Money*. Cambridge, UK: Cambridge University Press.
- Parguez, Alain. 2002. "A monetary theory of public finance." *International Journal of Political Economy* 32(3).
- Parguez, Alain, and Mario Seccarrecia. 2000. "The credit theory of money: the monetary circuit approach." in John Smithin (ed.), *What is Money?* London and New York: Routledge.
- Samuelson, Paul. 1973. *Economics*, 9th edition. New York: McGraw-Hill.
- Schumpeter, J.A. 1934. *The Theory of Economic Development: An inquiry into profits, capital, credit, interest and the business cycle*. Cambridge, MA: Harvard University Press.
- Sraffa, Piero. 1960. *Production of Commodities by Means of Commodities*. Cambridge, UK: Cambridge University Press.
- Vallegeas, Bernard. 2004. "For a Keyneso-Classical Sythesis and a 'Detransformation' theory." Paper given at the 8th International Post Keynesian Conference, University of Missouri, Kansas City, June 26–29. Available at: <http://cas.umkc.edu/econ/economics/faculty/Vallageas>.
- Wray, L. Randall. (Editor) 2004. *Credit and State Theories of Money: the contributions of A. Mitchell Innes*. Cheltenham, UK: Edward Elgar.
- . 1990. *Money and Credit in Capitalist Economies: The Endogenous Money Approach*. Aldershot, UK: Edward Elgar.
- . 1998. *Understanding Modern Money: The Key to Full Employment and Price Stability*. Cheltenham, UK: Edward Elgar.