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Working Paper No. 257

Is Keynesianism Institutionalist? An Irreverent Overview of the History of Money from the Beginning of the Beginning to the Present

by
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It will not be a surprise to hear me answer the question raised in the title of this presentation affirmatively, but I'm not going to let you go to the bar just yet. As many of you will remember, the theme of the AFIT conference last year had to do with this question, so I'm going to share what I learned from the papers presented, and what I've been thinking about as I finished up a book manuscript.

Last year, Terry Neale told us about his training at Columbia University in the early post-war period.[1] It wasn't quite clear which war that was, but if you do the math, I think you can almost rule out the civil war. He said that Columbia at the time was full of institutionalists and they all thought the *General Theory* was perfectly consistent with institutionalist thought. However, in his presentation, Phil Klein argued that after Clarence Ayres, many institutionalists failed to see the commonalities, and, indeed, some institutionalists were downright hostile. Still, Phil did acknowledge that Fagg Foster recognized the similarities and I would add Dudley Dillard and Wallace Peterson as two others who consistently integrated the two approaches.[2]

If one looks at it the other way around, Keynes explicitly recognized the influence of institutionalist thought on his own work. Glen Atkinson noted in his presentation that Keynes had written to John Commons that there was no economist "with whose general way of thinking I feel myself in such general accord".[3] I think the mixed reaction to Keynes can probably be explained partially because, as Terry pointed out, that second generation of institutionalists had never been trained in macroeconomics--because it didn't exist--although it is clear that Thorstein Veblen and Wesley Mitchell were, of course, doing macro. More importantly, the bastardization of Keynes especially in America had removed virtually all the institutional components, a point to which I'll return.

First, let us look at what Keynes and Commons had in common, so to speak. Yes, both of them were thoroughly familiar with the institutions of the modern economy. Both of them acknowledged that any economy operates with the guiding visible hand of a host of institutions. And both of them were interested in developing institutions that could save capitalism. So, as Glen said, both rejected the dominant theory in which the invisible hand of the market generates an equilibrium of blissful optimality. But Keynes went on to write the *General Theory* [4] , which appears to use an equilibrium methodology that abstracts from those same institutions with which both he and Commons were so familiar. And then the thing got bastardized into ISLM analysis which with flexible prices, and Pigou effects, and Keynes effects, and Fisher effects, restored the old invisible hand of the market.

So we return to our question, what is institutional about the *General Theory* ?

And we can answer that in one word: money. Money is the key institution of the capitalist economy. Now, neither neoclassicals nor most institutionalists like it that way. Neoclassicals want to banish it from theory, while institutionalists want to reduce its influence in the real world. But like it or not, money makes the world go round.

They say it cannot buy you love or happiness, but those are the only reasons anyone wants it. People also say

that time is money, but people with the most time have no money while those with the most money have no time. You've got to have money to buy consumption goods but once you've got the goods they consume all your time. Indeed, the insane levels of consumption that were already apparent to Veblen are required in our monetary economy.[5] And, paradoxically, so is the waste of human capacity resulting from unemployment that is required by our provisioning process.

Neoclassicals claim that unemployment is a choice of leisure and incomes are determined by the value of the work performed. Bill Gates is rich because he contributes so much value. But it is obvious to everyone else that it is precisely the reverse: we value Bill Gates because he makes so much. We place little value on the daycare provider because she or he earns so little. Instrumental valuation would do it quite differently because it is hard to conceive of a more important and rewarding job, but that ain't the Way the World Works as Jude Wanniski tells us.[6]

As I said, neoclassicals banish the key institution--money--from their theory. In the original state, our homogenous globule of desire forefathers[7] (there weren't any foremothers back then so we don't have to be "PC") were inconvenienced by barter until, according to Paul Samuelson, they hit on the idea of using sea shells, huge rocks, landmarks, cigarettes, stone wheels, and wives as money.[8] Since it was hard to divide the wives into smaller denominations, at least in a useful way, precious metals were chosen through acclamation as the medium of exchange. These were later stamped to indicate fineness. In our natural state, none of this made any difference at all--money just facilitated exchange, lowering some transactions costs, but obviously people made exactly the same exchanges they would have made without money if transactions costs were as low as they could be while using money. Our forefathers further reduced transactions costs when they substituted paper credit for precious metal. With computers and all that today we even conserve the paper as we finally move toward that idealized state of instantaneous barter-based market clearing.

And so after 100 years of devotion of the best minds of the profession (and that is of course a joke; at best these are idiot savants[9]) neoclassical theory is finally perfected to the point that there is no room for the key institution of the economy it purports to study. No Nobel Prize has ever been awarded to anyone who studies this key institution, except Bill Vickrey--and he got the Nobel for other work, and fortunately for the profession died when it became clear he was going to use his Nobel money to study it. Thus we've come full circle, reducing money to insignificance in both theory and practice, right?

Well, not quite, because evil do-gooder governments came along and got control of money, continually debasing the coinage to obtain seigniorage, and as if that weren't bad enough, began to drop money from helicopters to cause inflation. Which wouldn't matter except that for some reason the globules of desire cannot get hold of the flight logs of those helicopters to find out when and where these money drops occur and so get all befuddled and mistake nominal price changes for something important like a relative price change, and therefore run out and do something silly that they later regret. And for an example you need to look no farther than the most befuddled, regretful and desirous globule, our own president, Slick Willy.

There is surely something fundamentally wrong with this picture. As Keynes said, and he bent over backward to credit the neoclassicals with some semblance of intelligence, at best this describes a cooperative, or barter, or real wage economy.[10] That is, paradoxically, the neoclassicals begin with atomistic globules but their economy requires a degree of cooperation and planning never achieved in any civilized society anywhere. At every step of the way, divine intervention would have been required to get those globules to behave as if guided by an invisible hand. Neoclassicals have self-sufficient producers deciding to specialize to produce for a market that does not yet exist. When they do start to barter, the globules have got to wait until equilibrium prices have been discovered before actually making any trades. Although neoclassicals would like to have it both ways, if you do get equilibrium then obviously you do not need money, and if you have money then you may not get to equilibrium because there is no reason to wait for the auctioneer.[11]

In any case, choice of something to be used as a medium of exchange requires common consent. I cannot imagine what sort of invisible hand led the Uap islanders[12] to settle on huge stone wheels as a cost-minimizing medium of exchange, let alone the sort of competitive higgling and haggling that led to the bright idea of using

wives as money. Crusoe does not want Friday's coconuts, so Friday uses his wife to buy Crusoe's fish. I don't think we need to go into all the potential asymmetric information and principal agent problems to smell something fishy. And the symmetric problems are even worse. Crusoe says "I've seen your wife and she ain't no Jackie Kennedy". Friday says "Well, bro, my wife has seen you and she says you ain't no JFK, neither."

Even gold is hard to swallow--figuratively, of course. To circulate as money, it must have had at least marginally greater value in exchange than in use. All the gold that was anywhere must have been somewhere, namely, in someone's pocket or gold mine, so monetizing gold instantly bestowed advantages on someone against the interests of everyone else, making it seemingly impossible to reach the sort of consensus required. But I suppose all of this is hardly here nor there because the facts are quite clear on these matters--it just didn't happen that way.

Let us see what history and anthropology teach us. This is, of course, what institutionalists are good at.

Tribal society had exchange, but it was ceremonial and mostly designed to increase social cohesion rather than to maximize the globule's utility. Further, there was no need of a medium of exchange or even of a numeraire since the exchanges were fixed by custom. We know that elaborate compensation schedules were developed to prevent blood feuds; these required measuring the debt one owed for injuries--actual and imagined--that were inflicted on others. The wergeld, bridewealth, cumhal, and so on, were specific and were established in public assemblies--they were not the result of individual higgling and haggling.[13] They say it cost four times as much to deprive a Russian of his moustache as to cut off one of his fingers, and while it is hard to imagine why, much less, how, one would go about doing that, the codes could easily provide a variety of payments for a variety of injuries and hence had no reason to determine that a moustache is worth four fingers, although modern day historians would want to calculate that as it makes a nice story and confirms our prejudice regarding Russian men.

No, we have to look elsewhere for money. We could look to early Egypt but there the evidence is somewhat murky, partly because they had a habit of writing on papyrus that mostly did not survive. Historians say the pyramids were built without money, and while I think that is doubtful, we'll probably never know for sure. However, fortunately, Mesopotamia had a lot of clay and not much else, and so when they invented writing and numbers to keep track of debts, they wrote it on clay tablets. As a result, we probably know more about the finances of Sumer in the 3rd millennium BC than we will ever know about the dealings of the Japanese Finance Ministry in 1997.

As I said, there wasn't much reason to standardize wergeld payments. If you lost a moustache or beard and the payment was a cow, that would be fine and dandy because unless you were exceedingly unlucky you'd probably only lose one or two or a half dozen moustaches over your lifetime and receive one or two or a half dozen cows in restitution. As a consequence, there would be little danger of becoming satiated in cows. Besides, it might begin to look a little suspicious, or at least tacky, if you lost a moustache in order to demand a horse.

On the other hand, the reasons for standardizing payments to the temple and palace are obvious. In the beginning, the temple could just demand that the village give 10% of everything produced, and since most of what the village produced was barley, and since barley is also what the temple mainly wanted and consumed, that was a nice neoclassical double coincidence. But when the palace was full of barley and wanted goats or bricklayers or mercenaries, it would have to impose a goat tax or bricklayer tax or mercenary tax, or find a bricklayer or mercenary or goat who happened to need barley. So the tax debts and payments were standardized in the mina money unit, which represented 60X60X2 grains of barley, which weighs about a pound, and from which all the modern weight units and money units come: The shekel, the lira, the pound sterling--whatever, as Bob Dole says.[14]

The palaces then farmed-out tax collections to tax collectors who took the wives as bond servants and forced the villages into perpetual tax and interest indebtedness. Here it would not matter what the wife looked like, since she was merely collateral, unless she did happen to look like Jackie and the creditor happened to look like JFK, in which case happy double coincidences, or something like that, might generate some debt relief. After the Monica affair, you all get the picture.

The clay *shubati* ("received") tablets record these and other debts.[15] Each tablet indicated a quantity of grain, the word *shubat* i, the name of the person from whom received, the name of the person by whom received, the date, and the seal of the receiver. The tablets were either stored in temples where they would be safe from tampering, or they were sealed in cases which would have to be broken to get to the tablet. Unlike the tablets stored in temples, the "case tablets" could and did circulate. A debt could be cancelled and taxes paid by delivering a tablet recording another's debt, whereupon the case could be broken to verify the debt terms.

And so it went for several thousand years before King Pheidon of Argos issued the first coin in the seventh century BC.[16] In other words, taxes, debts, and price lists existed for thousands of years before anyone had the bright idea of reducing transactions costs by creating money through stamping coins. Well, they were slow learners. Or were they? Were coins the first money? Were they created to reduce transactions costs in markets? Did they reduce transactions costs? Were coins important in market exchanges?

No! Markets got along just fine without coins both before and after their invention. From the earliest times, markets operated on the basis of credits and debits. We are not speaking here solely of wholesale trade among merchants, for even the smallest sales to consumers took place on credit, which would be carried on the books of the merchant for years before being cleared.[17] Furthermore, if anything, coins increased market transaction costs, as we shall see in a moment.

Let us skip forward a couple of thousand years to medieval Europe, where coins were certainly well-known, but little used. As Mitchell Innes said: "For many centuries, how many we do not know, the principal instrument of commerce was the tally."[18] This was a stick of hazelwood, notched to indicate the amount of the purchase or debt, created when the "buyer" became a "debtor" by accepting a good or service from the "seller" who automatically became the "creditor". The date and the debtor's name were written on two opposite sides of the stick, which was then split so that the notches were cut in half with the name and date on both pieces of the tally. The split was stopped about an inch from the base of the stick so that one piece, the "stock" was longer than the other, called the "stub". The creditor would retain the stock (from which our terms capital and corporate stock derive) while the debtor would take the stub (a term still used as in "ticket stub") to ensure that the stock was not tampered. When the debtor retired her debt, the two pieces of the tally would be matched to verify the amount of the debt. Of course, wooden tallies were not the only records as there was nothing unique about hazelwood. There appear to be copper tallies from Italy from 1000 to 2000 years B.C., purposely broken at the time of manufacture to provide a stock and stub. And, really, the encased shubati tablets were nothing more than tallies, with the case resolving the tampering problem so that no stub was required.

A merchant holding a number of tally stocks against customers could meet with a merchant holding tally stocks against the first merchant, "clearing" his own tally stub debts. In this way, great medieval "fairs" were developed to act as "clearing houses" allowing merchants to settle their mutual debts and credits without the use of a single coin". While textbooks teach that these fairs were great, early, markets, actually the retail trade originated as a sideline to the clearing house trade.[19]

There are several problems with the textbook, marketplace story. First, the tally debts (in the form of clay tablets) are at least 2000 years older than the oldest known coins. Second, the denominations of all the early precious metal coins (even the least valuable) were far too high. For example, the most common denomination of the earliest electrum coins would have had a purchasing power of about ten sheep.[20] They might have sufficed for wholesale trade of large merchants, but they could not have been used in day-to-day retail trade. It is also quite unlikely that coins would have been invented to facilitate trade, for Phoenicians and other peoples with sophisticated trade managed without coins for many centuries. Indeed, the introduction of coins would have been a less efficient alternative in most cases.

Finally, while we are accustomed to a small number of types of coins (always issued by government, with perhaps one coin for each denomination) the typical case until recently was a large variety of coins, sometimes including many with the same face value but different exchange value, issued by a wide variety of merchants, kings, feudal lords, barons, and others. Indeed, in Gaul at one point there were 1200 different coinages.[21] Note

that the textbook story relies on choice of a particular precious metal precisely to reduce the transactions costs of barter. However, in reality, the poor consumer was faced with a tremendous number of coins of varying weight, denomination, alloy, and fineness. Indeed, it is difficult to believe that the typical member of these societies would be more able to assess the value of a coin than she would be able to assess the value of, say, a cow. Rather than reducing transactions costs by using precious metals, it would likely have reduced transactions costs to use cows! Note it does no good to argue that cows are less divisible, because the coins were far too valuable to have been used in daily transactions, anyway. In other words, lower-cost alternatives to coin were already in use. Surely hazelwood tallies or clay tablets had lower non-monetary value than did precious metals. Thus, it is unlikely that metal coins would be issued to circulate competitively (for example, with hazelwood tallies) unless their nominal value were well above the value of the embodied precious metal. So it is not surprising that the value of a coin was almost always well above the value of the embodied precious metal.

What then are coins, what are their origins, and why are they accepted?

Coins appear to have originated as government "pay tokens" (in G.F. Knapp's colorful phrase[22]), as nothing more than evidence of debt. Given the large denomination of the early coins and uniform weight (although not uniform purity--which probably could not have been tested at the time), coins were most likely invented by kings to make a large number of uniform payment in the form of precious metal to reduce counterfeiting. Indeed, according to R.M. Cook, coins were probably invented to pay mercenaries. It was likely recognized from the very beginning that the purpose of the coin was to give the population a convenient means for paying taxes. Use of these early coins as a medium of exchange was an "accidental consequence of the coinage"[23], and not the reason for it.[24] So from the very beginning, coins were intentionally minted to provide "state finance". This explains the relatively large value of the coins, which were evidence of the state's debt to "soldiers and sailors".[25] The coins were then nothing more than "tallies" as described above--evidence of government debt.

Coins, then, are mere tokens of the crown's debt, like the tally. But why on earth would the crown's subjects accept hazelwood tallies or token coins? Innes supplies the answer:

"The government by law obliges certain selected persons to become its debtors. This procedure is called levying a tax, and the persons thus forced into the position of debtors to the government must in theory seek out the holders of the tallies and acquire from them the tallies by selling to them some commodity in exchange for which they may be induced to part with their tallies. When these are returned to the government treasury, the taxes are paid."[26]

The vast majority of revenues collected by inland tax collectors in England as well as the majority of government spending were in the form of the tallies. Each taxpayer did not have to individually seek-out a crown tally, for matching the crown's creditors and debtors was accomplished "through the bankers, who from the earliest days of history were always the financial agents of government".[27] Note, also, that use of the hazelwood tallies continued in England until 1826 when they literally went out in a blaze of glory. After 1826, when tallies were returned to the exchequer, they were stored in the Star Chamber and other parts of the House of Commons. In 1834, in order to save space and economize on fuel it was decided that they should be thrown into the heating stoves of the House of Commons. "'So excessive was the zeal of the stokers that the historic parliament buildings were set on fire and razed to the ground."[28]

The inordinate focus of economists on precious metal coins and market exchange then appears to be misplaced. The key concept is debt, and specifically, the ability of the state to impose a tax debt on its subjects; once it has done this, it can choose the form in which subjects can "pay" the tax. Certainly the government's tokens can also be used as a medium of exchange, but this derives from its ability to impose taxes, and indeed is necessitated by imposition of the tax (if one has a tax liability but is not a creditor of the crown, one must offer things for sale to obtain the crown's tokens).

There are other matters that we could go into, such as the wide-spread belief that evil kings purposely debased

their coins by reducing gold content to obtain seigniorage--which is nonsense since the value of the coins wasn't determined by the gold content anyway.[29] The coins were nothing but evidence of the crown's debt. Instead, kings periodically "cried-down" the nominal value of their token coins as a well-recognized method of taxation; rather than delivering one coin to pay a tax, one had to deliver two, so one had better get out ones's sword to serve in the King's army to earn another coin to avoid being on the receiving end of the tax collector's sword. I could also go into the relatively recent development of the gold standard, which occurred partly in response to the crying-down but also due to a great deal of confusion and mystification that came to see gold as the guardian of the value of the currency. And this is quite interesting because it is only after the purposeful and visible hand of government imposed the gold standard that we finally achieved anything like the sort of monetary system that the orthodox economists imagine to have sprung from the minds of atomistic globules of desire.

But I don't have time for that because we need to get back to Keynes and the *General Theory of Employment, Interest, and Money* . Note that interest makes up a third of the *General Theory* , at least according to the title. Terry told us last year that no one at Post-War Columbia paid much interest to interest, which is rather a strange omission if anyone had read the title. Or had read the Bible.

Let us go back to those tax collectors who would pay the tax for the village, putting it in debt bondage at an interest rate of about 33% per year.[30] That is pretty high. I suppose those at Columbia had the typical view of interest--that it should matter for investment. But, as Terry said, when you think about fluctuations of the MEC schedule, they can easily swamp even a 33% interest rate.[31] And that is true but it is not the point. If, instead, one thinks about the interest rate as the rate of growth of liabilities--as Kenneth Boulding did--one gets closer to the problem.[32] From the Babylonians to Keynes it was recognized that debt claims on income have a tendency to rise more quickly than the ability to pay because of the miracle of compounding. This is the so-called Soddy principle.[33] Hence, from the time of the first debts, debt cancellation was the means to wipe slates clean to prevent mounting debts from concentrating all wealth in the hands of the creditors. When a temple was built, all debts were cancelled. When a new ruler came to power, all debts were cancelled.

Babylonians and everyone else until the time of the Roman empire had a circular view of time. The world begins in year one with a clean slate, when the emperor cancels all debts, and then debts grow at about the rate of interest until he dies or reaches the 30th year of his reign, when a clean slate restores the natural way of things and time begins anew. Hence, the Biblical references to Redemption and Forgiveness and Hallelujah, too--not spiritual relief, but real world debt relief. What is the good news to which the gospel refers? Debt cancellation. It is no coincidence that much of the Ten Commandments as well as the Code of Hammurabi have to do with debt and interest. "Don't covet thy neighbor's wife"--that had nothing to do with sex, until the uptight Paulines got hold of it, but rather with coveting her as a bondmaid.[34] So, clean slate, debt cancellation, redemption.

What does Keynes call it? Euthanasia of the Rentier.[35] Why not debt cancellation? Because we adopted Roman Law--a law of property and a linear view of time. We cannot go back, we can never begin anew with a clean slate. Debts are never forgiven; property is never returned to the debt bondman. Diamonds aren't forever, debt is. Thus, all we can do is to drive the interest rate to zero. We will always be in debt, but at least it won't grow at a compounded rate.

Now, at the individual level, we have the clean slate, bankruptcy. The average millionaire has been bankrupt five times before making the first million. I suspect most of you have not been bankrupt the requisite 5 times, which is why you aren't millionaires. Generally speaking, societies cannot declare bankruptcy. Instead, the debt burdens grow and the portion of income devoted to interest payment grows. President Clinton has nearly got us a balanced budget, but 17% of that budget goes just to pay interest. Well, actually, economies do occasionally get clean slates. Germany and Japan got clean slates as punishment for losing WWII.[36] It is often claimed that they did so well after WWII because we had destroyed their plant and equipment so they got to start with the newest stuff, but that is silly. If we had wiped off all our debt we could have had the old plant and equipment and the new on top of it.

Of course, part of the reason we also did so well in the early Post War period is because the Great Depression wiped out a lot of our debt. Hyman Minsky called it balance sheet simplification, and that is what depressions used to do.[37] But they had other bad effects, and with the Soviet Union providing a depression-free example of what could be achieved without debt and interest, we decided we'd keep the debt but banish the depressions. Which worked fine for a few decades, but now the US and even more so Germany and Japan, as well as all of our WWII allies, are together stumbling along with low growth rates and higher interest rates, and thus growing debt burdens. This is important because when the growth rate falls below the interest rate, only Ponzi finance that capitalizes interest can save the economy.[38] Sure, if I am optimistic and that MEC curve is way out there, I'll still invest when the interest rate is 8%, but if the economy only grows at 4% something has to give.

During the 1970s we got by with inflation. Real growth was miserably low, but nominal growth was sufficient thanks to inflation. High inflation was the cost of maintaining that debt burden. We also had to invent all sorts ways of conspicuously consuming in order to ensure that our globules desired growing indebtedness. But now we live in a world of zero inflation--probably deflation--and have a government that believes that economic growth greater than 2.5% will generate that mother-of-all evils, inflation. With interest rates triple that, even the Babylonian textbooks from 4000 years ago know what is going to happen, but, of course, the textbooks from today haven't a clue because interest is just a payment to a factor of production for its marginal contribution.

Well, that is two-thirds of the *General Theory* , money and interest, and I'd better be more than two-thirds of the way through or we'll have an impeachment even without a sex scandal. What about employment?

Keynes said that the two outstanding features of the monetary economy are its tendency to generate an arbitrary and inequitable distribution of income and its failure to provide for full employment.[39] The first we have dealt with: interest rewards no genuine sacrifice, and compounding ensures that the distribution will go to the rentier. As we all remember, Keynes linked unemployment to the desire for liquidity; only monetary economies have unemployment. By definition, whatever is technically feasible in a nonmonetary economy can get done. If you are the pharaoh and there are some idle men about, you put them to work to build a pyramid. Financing can never get in the way. It is only the modern economy that is financially unable to do what is technically possible. The US and Japan and Germany have to suffer unemployment because we are too poor to put the unemployed to work as our governments are broke--they simply don't have the money to employ those without jobs.

Now wait a minute. Why can't we do what the pharaoh did? Print up some paper, put the President's picture on them, and call them Bills. All the early governments recognized that they issue money to buy what they need; they tax to generate a demand for that money; and then they accept the money in payment of the tax. If a deficit results, that just lets the population hoard some of the money. The deficit is of no consequence to the government--it is not even worth keeping track of. If the government wants to, it can let the population trade the money for interest earning government bonds, but the government never needs to borrow its own money from the public. Taxes and bonds, therefore, have nothing to do with financing a government's spending, and, indeed, are after the fact as they necessarily follow spending rather than proceed it. I can't go into that in more detail--it is the Chartalist view of money.[40]

This does not mean that the deficit cannot be too big, that is, inflationary; it can also be too small, that is deflationary. And that is where we currently stand--Clinton's deficit is hundreds of billions too small. How do we know? There are millions of people who need jobs. In a monetary economy, unemployment is de facto evidence that the deficit is too small. We can hire up all those unemployed at some announced fixed wage, letting the deficit float as high as necessary, without worrying about inflation since by setting the wage, the government sets the price. I call this the employer of last resort program, and it is very similar to what Wendell Gordon advocated in the September JEI issue.[41] Sweden used to have something like this, and interestingly, justified its full employment program on the argument that Sweden was too small and too poor to afford unemployment, thus, it needed to have everyone working in order to compete. This is of course an Institutionalist view and has got the thing the right way around. The US is too poor not to adopt full employment policies. We have more than 20% of our children living in poverty; literally tens of millions of people are without adequate shelter; central cities are in disgusting shape; and at the same time we have untold millions of unemployed.

So we close with the normative aspect of institutionalism: money should be neutral. The Neoclassicals claim it already is, but that is pure nonsense. We can make money neutral by euthanizing the rentier, that is, by driving the interest rate to zero. And by moving immediately to full employment and stable prices through an employer of last resort program.

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Endnotes

1. Four papers that were presented at the AFIT 1997 conference were used in preparation of my presentation:

> Glen Atkinson, "Commons and Keynes: Their Assault on Laissez Faire";
> Philip Klein, "Normative Macroeconomics: Keynes and Institutionalism";
> David Hamilton, "Keynesian Institutionalism or Institutional Keynesianism"; and Walter Neale, "".

2. See the special December 1981 issue of the *Journal of Economic Issues*, which contains the collected papers of J. Fagg Foster; *The Economics of John Maynard Keynes*, Dudley Dillard, Prentice Hall: New York, 1948; and "Macroeconomics and the Theory of a Monetary Economy", Wallace Peterson, in *Political Economy for the 21st Century*, Charles J. Whalen, ed., M.E. Sharpe: Armonk, New York, 1996, pp. 151-170.

3. Letter from John Maynard Keynes to John R. Commons, reproduced in John R. Commons Papers (microfilm edition, 1982), State Historical Society of Wisconsin. See "Uncertainty and the Institutional Structure of Capitalist Economies", Hyman P. Minsky, *Journal of Economic Issues*, XXX(2), June 1996, pp.

357-368.

4. *The General Theory of Employment, Interest, and Money* , John Maynard Keynes, Harcourt Brace Jovanovich: New York and London, 1964.

5. *The Theory of the Leisure Class: An Economic Study of Institutions* , Thorstein Veblen, The Modern Library: New York, 1931.

6. *The Way the World Works* , Jude Wanniski, Simon and Schuster: New York, 1978. This is one of the primary texts on "supply side" economics.

7. The terminology comes from one of the most famous statements in the history of economic thought:

"The hedonistic conception of man is that of a lightning calculator of pleasure and pains, who oscillates like a homogenous globule of desire of happiness under the impulse of stimuli that shift him about the area but leave him intact... Self-imposed in elemental space, he spins symmetrically about his own spiritual axis until the parallelogram of forces bears down upon him, whereupon he follows the line of the resultant. When the force of the impact is spent, he comes to rest, a self-contained globule of desire as before." (*The Place of Science in Modern Civilization* , Thorstein Veblen, B.W. Huebsch: New York, 1919, pp. 73-4).

8. According to Paul Samuelson,

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

9. A *New York Times* headline proclaimed "Economics is a form of brain damage" [Wednesday, February 17, 1993, p. A5].

10. Keynes defined a barter economy "as one in which the factors of production are rewarded by dividing up in agreed proportions the actual output of their co-operative efforts", and "it might perhaps be better to call it a real-wage economy, or a co-operative economy as distinct from an entrepreneur economy". [*The Collected Writings of John Maynard Keynes* , Volume 29, MacMillan: London, edited by Donald Moggridge, 1979, pp. 66-67.

11. This is recognized by Frank Hahn, one of the most important developers of modern general equilibrium analysis, who argues "The most serious challenge that the existence of money poses to the theorist is this: the best developed model of the economy cannot find room for it." *[Money and Inflation* , Frank H. Hahn, MIT Press: Cambridge, 1983, p. 1]

12. See *The Island of Stone Money: Uap of the Carolines* , William Henry Furness, 3rd, J.B. Lippincott: Philadelphia&London, 1910.

13. "The general object of these laws was simple, that of the provision of a tariff of compensations which in any circumstances their compilers liked to envisage would prevent resort to the bloodfeud and all the inconvenient social consequences that might flow therefrom.... The tariffs for damages were established in public assemblies, and the common standards were based on objects of some value which a householder might be expected to possess or which he could obtain from his kinsfolk. Since what is laid down consists of

evaluations of injuries, not evaluations of commodities, the conceptual difficulty of devising a common measure for appraising unrelated objects is avoided." *The Origins of Money* , The Creighton Lecture in History, 1970, Philip Grierson, The Athlone Press, University of London, 1977, pp. 19-21.

14. See *The Collected Writings of John Maynard Keynes* , Volume XXVIII, edited by Donald Moggridge, Macmillan: London and Basingstoke, 1982, pp. 236-267.

15. See "What is Money?", A. Mitchell Innes, *Banking Law Journal* , May 1913, pp. 377-408.

16. See Innes (op.cit.) and "Private Property, Debts and Interest or: The Origin of Money and the Rise and Fall of Monetary Economies", Gunnar Heinsohn and Otto Steiger, *Studi Economici* , no. 21, 1983, pp. 3-56.

17. See "Money Lending on the Periphery of London, 1300-1600", Marjorie K. McIntosh, *Albion* , 20(4), Winter 1988, p. 557.

18. Innes, op. cit., p. 394.

19. "The clearing houses of old were the great periodical fairs, whither went merchants great and small, bringing with them their tallies, to settle their mutual debts and credits.... At some fairs no other business was done except the settlement of debts and credits... Little by little as governments developed their postal systems and powerful banking corporations grew up, the value of fairs as clearing houses dwindled..." [Innes, op. cit., pp. 396-397].

20. See, for example, "Speculation on the Origins of Coinage", R.M. Cook, *Historia* , 7, 1958, pp. 257-262.

21. See *The Evolution of Coinage* , MacDonald, 1916, pp. 29-35.

22. See *The State Theory of Money* , Georg Friedrich Knapp, Macmillan: London, 1924.

23. "Money and Exchange in the Roman World", M. Crawford, *Journal of Roman Studies* , 60, 1970, pp. 40-48 [46].

24. See also Cook, op. cit.

25. Innes, op. cit., p. 399.

26. Innes, op. cit., p. 398.

27. Innes, op. cit., p. 399.

28. *A History of Money from Ancient Times to the Present Day* , Glyn Davies, University of Wales Press: Cardiff, 1997, p. 663).

29. "[T]he general idea that the kings wilfully debased their coinage in the sense of reducing their weight and fineness is without foundation." (Innes, op. cit., p. 386).

30. For an examination of debt, interest, and "clean slate" (or debt cancellation), see *Bronze Age Finance, 2500-1200 BC: How Mesopotamian Traditions of Debt Cancellation Shaped Judaism and Christianity* , The Tyranny of Debt, Volume I, Michael Hudson (forthcoming).

31. The neoclassical version of Keynes posits an inverse relationship between the rate of interest and investment, as the firm undertakes projects which have a marginal efficiency of capital (MEC) greater than the interest rate. Keynes's own exposition was much more complicated; see, for example, "Alternative Theories of the Rate of Interest", L. Randall Wray, *Cambridge Journal of Economics* , 16(1), 1992, pp. 69-89.

32. See "Kenneth Boulding's Reconstruction of Macroeconomics", L. Randall Wray, *Review of Social*

Economy , LV(4), Winter 1997, PP. 445-463.

33. This is named after Nobel Prize winner Frederick Soddy.

34. Michael Hudson, "How the Debt Overhead Led to Fiscal Crises In Antiquity: From Babylonia to Leviticus, Financial Tensions Between Tax Collectors and Creditors", lecture given at the Jerome Levy Economics Institute, 6 March 1998.

35. See Keynes's *General Theory* , Chapter 24.

36. In order to reduce the probability that the fascists would profit after the war, domestic debts were cancelled. [Hudson lecture at the Levy Institute, op. cit.]

37. See *Can "It" Happen Again?* , Hyman P. Minsky, M.E. Sharpe: Armonk, New York, 1982.

38. According to Minsky (op. cit.), a "Ponzi" unit is one whose income flows are insufficient to cover interest payments on outstanding debt, so that payments can be made only by "capitalizing" interest (borrowing simply to pay interest).

39. Again, see Chapter 24 of Keynes's *General Theory*.

40. See "Money and Taxes: The Chartalist Approach", L. Randall Wray, Working Paper No. 222, Jerome Levy Economics Institute, 1998.

41. "Job Assurance--the Job Guarantee Revisited", Wendell Gordon, *Journal of Economic Issues* , vol 31, September 1997, pp. 826-834.