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A Call for the Restoration of Monetary Order (II)

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This paper is a section of a recent presentation at the 99th Annual WEAI Conference in Seattle, Washington. It arises from the theoretical writings of the French, later Swiss, 16th century, Protestant reformist, Jean Calvin and the Austrian, later American, 20th century, economic theoretician, Ludwig von Mises.[1]

Since 1694 when the Bank of England became the world's first central bank and fractional reserve banking became institutionalized with the introduction of *statutory counterfeit,* the world has suffered endless monetary chaos. The *Roosevelt-Nixon Two-Step*, during which the US Government confiscated the American gold supply in 1933, untethered the US dollar from the post-World War II international "gold-standard" in 1971, and subsequently transformed American statutory counterfeit into a debt-based fiat currency, threatens not only the economic prosperity of the United States and many of its trade partners, but also the individual market freedoms of American citizens and those of nearly every other country in the world.

In 1912 Ludwig von Mises posed a question that went something like this:

> How is it that highly experienced CEOs — each in his respective industry of expertise — can make the same mistake at the same time and bring about across-the-board economic catastrophe?

His answer to this question was effectively:

> They cannot. Unless, of course, they are all confronted with the same important, but erroneous market signal.

[1] Jean Calvin. 16th Century. *Institution de la religion chrétienne.* The first Latin version was published in 1536. The final Latin and French versions were published in 1559 and 1560, respectively. [online documents (French)] <https://www.unige.ch/theologie/cite/calvin/institution>. Ludwig von Mises. 1912. *Theorie des Geldes und der Umlaufsmittel*. 2nd Edition (1924). Leipzig: Verlag von Duncker und Humboldt.

In February 1937 Irving Fisher, Professor Emeritus of Economics at Yale University wrote to Franklin Delano Roosevelt, America's 32nd President, the following:

> "Established practices, when retrogressive, have to be disestablished."[2]

Fisher proposed in so doing a return to 100 percent reserve banking. Although Ludwig von Mises promoted the same, he differed with Irving Fisher in one important aspect. The former advocated, in addition, a return to gold or silver specie. Fisher advocated fiat currency. Neither a return to 100 percent reserve banking, nor a return to specie, nor the introduction of fiat currency took place. The reasons for this were, of course, numerous, but one can well-imagine that the primary reason was the banking industry's reluctance to relinquish the lucrative racket of *statutory counterfeit* that it had carefully nurtured for nearly two-and-one-half centuries.[3]

Today, we have a system of fractional reserve banking with *statutory fiat* modeled as "modern" monetary theory (MMT) and its chief, but minor, crypto-competitor — *Bitcoin*. The goal of this paper is to nudge the contemporary economic community back to a *true market standard* of precious metal — either gold or silver — that is more in line with the natural order and accordingly, ecologically accountable.[4] Hopefully, this can be achieved by presenting a workable mathematical model that would reflect its behavior upon reintroduction.

A Theory of Money Based on Real Money

Jean Calvin distinguished between what I am calling *money-in-exchange* and *money-in-use*. *Money-in-exchange* is property whose title and subsequent use are surrendered in exchange for some real good or service provided by another. *Money-in-use* is the property of *money-in-exchange* whose use one surrenders for a specified length of time while retaining title to the property.

This theory of money assumes that each market agent — be it a firm, household, other free market agent, or even government — has a liquidity preference. This preference is determined by the ratio of one's *real liquid wealth* to his *illiquid wealth* or alternatively, as I shall soon make clear his *total real wealth*.[5]

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[2] Irving Fisher. "100% Reserves - An Old System Adapted to Modern Needs". Prepublication. Letter sent to Franklin D. Roosevelt , 32nd President of the United States, on February 10, 1937.

[3] Roddy A. Stegemann. "A Call for the Restoration of Monetary Order". First presented in Session 81 of the 99th Annual Conference of the Western Economics Association International (WEAI) in Seattle, Washington.

[4] Roy Sebag. 2022. *The Natural Order of Money*. Canada: Chelsea Green Publishing, 2023. Originally printed in the United Kingdom with Goldmoney Publishing in 2022.

[5] op cit. Ludwig von Mises, 1912.

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MONEY IN EXCHANGE

In this paper we will substitute for the top-down, flow model typically attributed to Irving Fisher and defined as

$$MV = PQ$$

or

$$1 = \frac{MV}{PQ}$$

the following bottom-up, stock model of *money-in-exchange*:

$$l_i = \left(\frac{1}{V}\right)\frac{M_i}{A_i} \qquad \text{equation 1}$$

where $l_i =$ individual's liquidity ratio

$M_i =$ market value of individual's real money-in-exchange
$A_i =$ market value of individual's illiquid assets
$V =$ velocity of money

such that

$$M_i = P^M Q_i^M \qquad \text{equation 2}$$

and

$$A_i = \sum_{a=1}^{N_a} P_i^a Q_i^a \qquad \text{equation 3}$$

where $P^M =$ market price of the underlying commodity of money-in-exchange
$Q_i^M =$ quantity of commodity used as money and held by the ith market agent[6]

where P_i^a = the market price of the a[th] good to which the ith market agent has title
Q_i^a = quantity of the a[th] good to which the ith agent has title

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[6] This quantity can be represented by electrons or paper, but the representation must be one-to-one, and only one (the commodity) or the other (its digital or paper representation) can be used as *money-in-exchange* or *money-in-use*, which is a form of *money-in-exchange*. This eliminates all forms of fractional reserve banking. In other words, you cannot exchange or lend that for which you do not hold title. This prohibition follows the fundamental principle of common-law contracting known as *consideration*. You may like to refer to section one of my aforementioned paper entitled "A Call for the Restoration of Monetary Order I" [online document] for a better understanding.

In a *real economy* with *real money* the value of the *money-in-exchange* necessarily increases as the quantity (or alternatively, the quality that is not reflected in the value of Q^a, but rather in its price — namely, P^a for any or all a) of some or all other goods and services rises relative to the increase in the much scarcer quantity of *real money*. In the absence of a change in the velocity of money (V) this relative increase in the market value of the *real money* supply necessarily results in upward pressure on the *ratio* of the market value of liquid to illiquid assets. This is, of course, problematic, as the desire to purchase more *illiquid* assets to offset this upward pressure is encouraged, in part, by the inability of market agents to engage in smaller transactions and thereby easily reduce the total value of their real *liquid* assets.

In an economy with *real money* the chief determinants of the *velocity of money* are technological improvement and the denomination of the *money-in-exchange*. A perceived shortage in the *real money supply*, brought about by whatever cause, will necessarily result in an increase in the market value of the existent money supply. In the past, the failure to accommodate this increase in value with smaller denominations of the *existent real money supply* provided an important incentive for the issue of *statutory counterfeit*.[7]

In effect, it is not enough to increase the velocity of money through improved technology, smaller denominations of the *money-in-exchange* must be made available from time to time — what is more easily achieved today than in previous times.[8]

Accordingly, we can redefine V as

$$V = V(\upsilon) \qquad \text{equation 4}$$

where υ = the proportion of the total money supply
expressed in ever smaller units of money-in-exchange

such that $$\frac{\delta V}{\delta \upsilon} > 0$$

For most analyses (υ) will remain constant.

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[7] Roddy A. Stegemann. 2024. *Mount Cambitas - The Story of Real Money* by [online document] <https://cambitas.spiritof2021.online/>

[8] As this model deals with money stocks (real balances) and not with money flows, the interpretation of velocity is different. In the Fisher model velocity measure the frequency with which money exchanges hands; in this model it measures the size of the proportional units and the relative proportion of these units of what is held in total — namely, what is available for exchange. Accordingly, the issue of technology is included in the supply function of money; rather, than its demand, as is soon revealed in the subsequent discussion.

MARKET FOR MONEY IN EXCHANGE (DEMAND)

From equation 2 we aggregate across all individuals to obtain the total market value of the *current real money supply*.

$$M_i = P^M Q_i^M$$

$$\sum_{i=1}^{N} M_i = \sum_{i=1}^{N} P^M Q_i^M$$

$$M = P^M \sum_{i=1}^{N} Q_i^M \qquad \text{equation 5}$$

From equation 3 we aggregate across all individuals to obtain the market value of *total real illiquid wealth*.

$$A_i = \sum_{a=1}^{N_a} P_i^a Q_i^a$$

$$\sum_{i=1}^{N} A_i = \sum_{i=1}^{N} \sum_{a=1}^{N_a} P_i^a Q_i^a$$

$$A = \sum_{i=1}^{N} \sum_{a=1}^{N_a} P_i^a Q_i^a \qquad \text{equation 6}$$

Substituting the values of A and M obtained from equations 5 and 6 into equation 1 we obtain the *real liquidity ratio* for the entire economy.

$$l = \frac{1}{V} \frac{M}{A} \qquad \text{equation 7a}$$

which we can rewrite, after summing across Q_i^M as

$$l = \frac{1}{V} \frac{P_M Q_M}{A} \qquad \text{equation 7b}$$

Solving for Q_M obtains an economy-wide demand function for *real money-in-exchange*.

$$Q_M = V \frac{lA}{P_M} \qquad \text{equation 8a}$$

or

$$Q_M^d = Q_M\left(P_M; V, l, A\right) \qquad \text{equation 8b}$$

where $\frac{\delta Q_M^d}{\delta P_M} < 0 \quad \frac{\delta Q_M^d}{\delta V} > 0 \quad \frac{\delta Q_M^d}{\delta l} > 0 \quad \frac{\delta Q_M^d}{\delta A} > 0$

Holding the liquidity ratio (l), quantity of money (Q_M), and the velocity of money (V) in equation7b obtains

$$\bar{l} = \frac{1}{\bar{V}} \frac{P_M \bar{Q}_M}{A}$$

and recalling equation 6

$$A = \sum_{i=1}^{N_i} \sum_{a=1}^{N_a} P_i^a Q_i^a$$

it becomes clear that any increase in A brought about by an increase in any Q^a for all i, or some number of i, results in an increase in P_M and a subsequent rise in the value of the total money supply — namely, a rise in $P_M \bar{Q}_M$.

As $\bar{Q}_M$ is the standard against which all other goods are priced, a rise in P_M necessarily results in a subsequent fall in the price of all other goods (P^a for all a). This implies that in an absence of a change in V that P_M and A must rise proportionately, and that Q^a for any or all a is rising faster than P_M. This is because the value of the available money increases in value relative to all other goods and services, and incremental, general price deflation occurs. As a result, the transaction of smaller valued items is diminished due to the existent, now larger valued, monetary units. This can result in a constraint on economic activity, as trade for smaller valued items is stifled. This problem is overcome with the creation of smaller denominations of some portion of the available money and a subsequent increase in the velocity (V).

MARKET FOR MONEY IN EXCHANGE (SUPPLY)

An alternative resolution of the aforementioned problem would be an increase in the supply of money (Q_M^s) resulting in a depreciation in the unit-value of the existent supply and an overall fall in the price of money (P_M). This is what occurs when statutory counterfeit is added to the mix.

We can represent the supply of *real money-in-exchange* as follows:

$$Q_M^s = Q_M^s\left(P_M; P_f, \tau, \nu\right) \qquad \text{equation 9}$$

where P_M = the price of money
P_f = the price of fuel
τ = the level of mining and other money-related technology
ν = new ore discoveries

and $\dfrac{\delta Q_M^s}{\delta P_M} > 0 \quad \dfrac{\delta Q_M^s}{\delta P_f} < 0 \quad \dfrac{\delta Q_M^s}{\delta \tau} > 0 \quad \dfrac{\delta Q_M^s}{\delta \nu} > 0$

MARKET FOR MONEY IN EXCHANGE (EQUILIBRIUM PRICE AND QUANTITY)

Combining equations 8b and 9 we can solve for the equilibrium price of money (P_M^*) and quantity (Q_M^*):

$$P_M^* = P_M\left(V, l, A, P_f, \tau, \nu\right) \qquad \text{equation 10a}$$
$$Q_M^* = Q_M\left(V, l, A, P_f, \tau, \nu\right) \qquad \text{equation 10b}$$

MONEY IN USE

THE CREDIT CONSTRAINT

In a *real economy* with *real money* one neither lends, nor sells purchasing power into existence. In a *real economy* with *real money*, one can neither pretend to own what one does not own, nor create purchasing power out of thin air.[9] In a *real economy* with *real money* if you wish to enjoy the material wealth produced by others, then you must produce material wealth of your own.

There are no free rides in a *real economy* with *real money* that are not provided as voluntarily given charity for the sake of one's fellow human-beings and the genuine good-feeling that comes with the presentation of such kindness. Ill-gained real wealth, posing as freely given charity, is *a self-aggrandizing racket*, It is not motivated by compassion for other people; rather, it is motivated by contempt for the human race.

[9] See my paper entitled "A Call for the Restoration of Monetary Order" at [online access] <https://cambitas.spiritof2021.online/_documents/monetary_grand_theft.pdf> for an explanation of the concept of *consideration* in common law contract theory. In effect, you cannot sell an empty promise and have it be binding in a court of law.

Pretending that your goal is price stability and then rarely, if ever achieve it, and further pretending that you are providing otherwise, unavailable investment opportunity by perverting the very market signal that allows a society to realize its preference for future consumption, is at best disingenuous.

We have created a society in which the majority of its citizens are either indebted and living from paycheck-to-paycheck, or are provided for, to a great extent, by the same who are indebted and living from paycheck-to-paycheck by the force of government. It is absurd on its face, and thoroughly corrupt when carefully examined.

In a r*eal economy* with r*eal money* a transfer of *liquid wealth* with a promise to repay necessarily diminishes the liquidity of the lender and increases the liquidity of the borrower. Similarly, the promise to repay increases the *illiquid wealth* of the creditor and diminishes the *illiquid wealth* of the debtor. Equations 11a and 11b below capture this result mathematically.

Once again, we start from the bottom and work our way up from each market agent to the market as a whole.

Creditor

$$l_i = \left(\frac{1}{V}\right)\frac{M_i - c_i M_i}{A_i + c_i M_i} = \left(\frac{1}{V}\right)\frac{M_i^{adj}}{W_i} \qquad \text{equation 11a}$$

and

Debtor

$$l_j = \left(\frac{1}{V}\right)\frac{M_j + d_j M_j}{A_j - d_j M_j} = \left(\frac{1}{V}\right)\frac{M_j^{adj}}{W_j} \qquad \text{equation 11b}$$

where $c_i =$ the individual's fractional propensity to lend
$d_j =$ the individual's fractional propensity to borrow
$W_i =$ real market wealth of the creditor
$W_j =$ real market wealth of the debtor

The need to borrow and lend is both psychological and practical. It is practical in so far as markets are rarely ever stationary, and the need for additional market liquidity from time to time is something that everyone experiences. It is psychological in so far as dependency (or, at least, interdependency) is a natural state of humankind, and the

creditor-debtor relationship is the natural market reflection of this natural state.[10] Hence, we can speak about an individual's fractional propensity to lend or borrow. Some of us are more inclined to borrow and others are more inclined to lend.

As one must always pay back in real wealth more than one has borrowed, the tendency to borrow for the sole purpose of consumption in a *real economy* with *real money* is diminished, and the inclination to borrow for the purpose of investment and increased future reward is enhanced. As a result, fewer resources are squandered.

Now, in a world of real money it must be true that

$$\sum_{i=1}^{N_i} c_i M_i = \sum_{j=1}^{N_j} d_j M_j \qquad \text{equation 12}$$

where N_i = total number of lending market agents
N_j = total number of borrowing market agents

Notice that N_i and N_j need not be the same, and are likely not. This is because bond sales that are, of course, a form of lending might have only one *seller-borrower* and many *buyer-lenders*, for example.

We solve for $c_i M_i$ and $d_j M_j$ in equations 11a and 11b, respectively.

$$c_i M_i = \frac{M_i - l_i V A_i}{1 + l_i V} = \frac{M_i}{1 + l_i V} - \frac{l_i V A_i}{1 + l_i V} \qquad \text{equation 13a}$$

and

$$d_j M_j = \frac{l_j V A_j - M_j}{1 + l_j V} = \frac{l_j V A_j}{1 + l_j V} - \frac{M_j}{1 + l_j V} \qquad \text{equation 13b}$$

[10] We all spend a large portion of our lives as children — what is a completely dependent relationship on our parents. Younger siblings are typically dependent on older siblings, and this relationship tends to endure throughout the lifetime of the siblings. Employees are dependent on their employers for both workplace guidance and income, while they are employed. And, in any merit-based institution those less advanced are dependent on those more advanced for their training, knowledge, and professional advancement. In effect, human society is one of built-in, asymmetric interdependence in which some are more inclined toward dependence than others who are more inclined toward sustaining the dependence of others. Many of us may seek independence, but it is rarely ever achieved. In the end we are social creatures, and the best that most of the independent among us can achieve is a balance between dependence and sustaining the dependence of others.

Substituting equations 13a and 13b into equation 12 and summing across all i and j, respectively, obtains

$$\sum_{i=1}^{N_i} \frac{M_i}{1+l_iV} + \sum_{i=j}^{N_j} \frac{M_j}{1+l_jV} = \sum_{i=1}^{N_i} \frac{l_iVA_i}{1+l_i} + \sum_{j=1}^{N_j} \frac{l_jVA_j}{1+l_j}$$

If we assume $l_i = l_j = l$, we can show that

$$l = \frac{1}{V}\frac{M}{A} = \frac{1}{V}\frac{M}{W} \qquad \text{equation 14}$$

Once again, this is a basic axiom of money that is ignored by the top-down, flow-model developed by Irving Fisher in 1911.[11]

THE MARKET FOR *MONEY-IN-USE*

Let us assume further that there exists a market for loaned and borrowed money, and that the fractional propensities to lend and borrow are influenced by the market rate of interest and business outlook.

So,

$$c_i = c_i\left(r, \varphi\right) \qquad \text{equation 15a}$$

where r = real rate of interest
φ = business outlook

such that $$0 \le c_i \le 1$$

and $$\frac{\delta c_i}{\delta r} > 0$$

$$\frac{\delta c_i}{\delta \varphi} \ge 0$$

Once again, the idea is that you cannot lend more than you own — a *real economy* is mostly honest. Accordingly, higher real rates of interest and an optimistic future encourage greater lending.

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[11] Fisher, Irving. 1911. *The Purchasing Power of Money*. 2nd Edition, Macmillan Co., New York. By 1937 even Fisher had already argued for several years for an end to fractional reserve banking. Unfortunately, it was not a system based on *real money* founded in the *primary* economy. See Irving Fisher. "100% Reserves, An Old System Adapted to Modern Needs". *Commercial and Financial Digest*, June 1937.

In contrast,

$$d_j = d_j\left(r, \varphi\right) \qquad \text{equation 15b}$$

where r = real rate of market interest
φ = business outlook

such that $d_j \geq 0$

and $$\frac{\delta d_j}{\delta r} < 0$$

$$\frac{\delta d_j}{\delta \varphi} \geq 0$$

The idea here is that a borrower with good credit can borrow up to any amount, that higher *real rates* of interest discourage borrowing, and that an optimistic future promotes it.

Substituting for c_i and d_j into equation 12 yields

$$\sum_{i=1}^{N_i} c_i\left(r, \varphi\right) M_i = \sum_{j=1}^{N_j} d_j\left(r, \varphi\right) M_j \qquad \text{equation 16}$$

Recall equation 5 and substitute for M_i and M_j. This obtains

$$\sum_{i=1}^{N_i} c_i\left(r, \varphi\right) Q_i = \sum_{j=1}^{N_j} d_j\left(r, \varphi\right) Q_j \qquad \text{equation 17}$$

P_M drops out.

The left-side of equation 17 obtains the credit supply function

$$Q^s_{credit} = Q^s_{credit}\left(r; \varphi\right) \qquad \text{equation 18a}$$

where $$\frac{\delta Q^s_{credit}}{\delta r} > 0 \qquad \frac{\delta Q^s_{credit}}{\delta \varphi} > 0$$

and the right-side of equation 17 obtains the credit demand function

$$Q^d_{credit} = Q^d_{credit}\left(r;\varphi\right) \qquad \text{equation 18b}$$

where $\frac{\delta Q^d_{credit}}{\delta r} < 0 \qquad \frac{\delta Q^d_{credit}}{\delta \varphi} > 0$

and solving for the equilibrium rate of interest and quantity of credit yields, of course

$$r^* = r\left(\varphi\right)$$
$$Q^*_{credit} = Q_{credit}\left(\varphi\right)$$

or

$$Q^*_{credit} = Q^*_{debt} \qquad \text{equation 19}$$

Because, the market must clear at equilibrium.

Note that the supply and demand for credit depend neither on the price of money (P_M), nor its velocity (V).

THE MARKET FOR REAL MONEY

Unlike in economies characterized by Fisher's *Quantity Theory of Money*, in a *real economy* with *real money*, money is a carefully selected, energy embodiment that must be obtained from the earth.[12] It is neither the *statutory counterfeit that* we experienced with the *gold standard* of the British Empire, nor is it the *gold-exchange standards* that came into being with the Genoa Agreement (1922) in the wake of World War I and the Bretton Woods Agreement (1945) in the wake of World War II. Nor, is it the now equally popular vehicle for *real wealth transfer* — namely, the more commonly known *fiat currency* that we have experienced since the *Roosevelt-Nixon Two-Step* was completed in 1971 — from the productive many to an undeserved, commanding elite and their less than productive voting constituencies.[13] That we, in America, never adopt a CBDC![14]

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[12] Once again, you are encouraged to read my paper entitled "A Call for the Restoration of Monetary Order I" at [online access] <https://cambitas.spiritof2021.online/_documents/monetary_grand_theft.pdf>

[13] In 1933 Franklin Delano Roosevelt (32nd US President) confiscated the gold of American citizens and took the US off the American domestic gold-exchange standard. In 1971 Richard Milhous Nixon (37the US President) withdrew the US from the Bretton Woods Accord agreed in 1944. This effectively destroyed the world's gold exchange-standard and introduced the *Petro-Dollar*.

[14] Central Banking Digital Currency (CBDC)

INCREMENTAL DEFLATION, MARXISM, AND CRYPTO-CURRENCY
A Few Notes in Passing

Unlike in a *real economy* with *statutory counterfeit* or *fiat currency* a *real economy* with *real money* experiences incremental deflation that keeps lending in check and avoids the boom and bust cycles that have plagued us since the coupling of the industrial revolution with *statutory counterfeit* and the introduction of mass production. It is in this financially corrupt, market context where the proponents of Karl Marx find fertile ground for their critique of the voluntary, free-market system. Marx gave this corruption a name; he called it *capitalism*.

Further, in a *real economy* with *real money*, the price of money is not the rate of interest of borrowing and lending. *Real money* does not serve the interests of dishonest bankers; rather, it serves the honest interests of those who trade with it across time and space — the people. Honest bankers insure that excess *real balances* find a proper use.

As already alluded, if the supply of the commodity that serves as the basis of *real money* is exceptionally scarce, and the economy is forever growing, the denominations of the money must become ever-smaller in order to accommodate the general, but incremental relative fall in goods and services prices and ever greater market value of the agreed *base-monetary unit*. This can easily be achieved through the issue of a paper or electronic money that is a matched, one-to-one, increment and true representation of the real thing! This agreed, *base-monetary unit* must be matched with a fixed, immutable amount of the underlying metal. In the United States this could be achieved with a constitutional amendment; it should not be left up to the temporal vagaries of an ever changing, politically charged, congressional body of politicians or the president.

Although *crypto-currency* — especially Bitcoin — has very real advantages over both *statutory counterfeit* and *fiat currency*, crypto-currency is born and maintained in the energy consuming *secondary economy*, and thus a poor measure of the more important energy-providing, *primary economy*. Real money is also far less dependent on critical and vulnerable infrastructure for its existence — what is important in time of war and large natural disasters.[15]

ROLE OF GOVERNMENT

Government in a *real economy* with *real money* is much like a common household, but different. It receives income, makes purchases, and provides services. This said, its source of income is taxation, and unlike the common household it uses a partial, but important monopoly on the use of force to extract them. Also, the state tends to dance

[15] op cit. "A Call for the Restoration of Monetary Order I"

to the rhythm of its own drum, and its decision to borrow or not to borrow, has more to do with its tax revenue and spending decisions than market performance. In time of war, for example, there is no end to how much the state is willing to borrow and spend. It will exhaust an entire economy to stave off defeat.

Notwithstanding its important negotiating leverage due to its size and political influence, in a *real economy* the state is subject to the same market interest rates as everyone else. In addition, once a state goes into debt, it rarely comes out of it; rather, it balances the interest that it must pay on what it owes with its ability to tax and borrow at the moment that its interest becomes due.

With these thoughts in mind we can adjust equation 17 as follows:

$$\sum_{i=1}^{N_i} c_i\left(r,\varphi\right) Q_i^M = \sum_{j=1}^{N_j-1} d_j\left(r,\varphi\right) Q_j^M + d_g\left(r,D\right) Q_g^M \qquad \text{equation 20}$$

where $d_g\left(r,D\right)$ = goverment propensity to borrow

r = market rate of interest
D = government debt
Q_g^M = quantity of money held by government

$$\frac{\delta d_g}{\delta r} < 0$$

$$\frac{\delta d_g}{\delta D} < 0$$

Because this model is built from the bottom up

$$l_i = \left(\frac{1}{V}\right)\frac{M_i}{W_i}$$

rather than from the top down

$$MV = PQ$$

separating out government from the aggregation of individual debtors is only one example of the usefulness of starting with individual market agents. In effect, one could separate out small firms from large firms with all firms in the same group sharing the

same liquidity preference (l). The possibilities of the recombination of market agents are numerous and rely only on a shared liquidity ratio (l) within each group.

Conclusion

This model is only a first step to set you on your way toward understanding what the study of macroeconomics might look like in the absence of *statutory counterfeit*, *fiat currency*, general price inflation, and the booms and busts of financial dishonesty, exploitation, and misguidance associated with these corrupt and negligent monetary forms.

The transition from *real money*, that is close to nature and places the needs of the *primary economy* over those of the *secondary economy*, to *statutory counterfeit* and *fiat currencies* that emphasize the priorities of the state, corrupt bankers and their closest associates in the *secondary economy* was fairly sudden and not completely understood at the time of transition.[16] The resulting three-hundred-year illusion of monetary sophistication that resulted has not only led humanity down a painful, tortuous path, but it now threatens to destroy the very political and economic liberties that have brought Western civilization the greatest material prosperity the world has ever known.

In this paper, I have offered not only a different way of modeling the role of money, but have struck at the roots of today's failed monetary system. In the end, the path to the restoration of *real money* is as simple and straight forward as was the path to its demise. What stands in our way today is the absence of courage and wisdom on the part of economists around the world to take a moral stand and compel our respective states and banking industries to amend their corrupt ways.

Pierre-Joseph Proudhon, the 18th century anarchist who condemned private property as the source of all human conflict, demonstrated clearly why the right to own property is NOT a natural right, and how unfair it is that only a small number of the world's population owns land.[17]

Land and labor are what sustain all human endeavor. As every economist knows, land is also an important source of rent. As the market value of the *primary* and *secondary* economies increase through technological innovation, the value of the land on which these two economies sit automatically increases in value. Small pieces of gold formed into coin or bullion are a piece of land that everyone can own and from which everyone can collect rent in harmony with their individual endeavor and nature's resources.

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[16] op cit. *Mount Cambitas - The Story of Real Money*.

[17] Pierre-Joseph Prouhdon. 1840. Qu'est-ce que la propriété? Ou recherches sur le principe du droit et du gouvernement. Premier Mémoire. Chapitre Première. "Méthode suivie dans cet ouvrage - Idée d'une révolution". p. 1, § 1.

Were gold or silver the sole source of our money supply, everyone would share in its ever-rising value.[18] What could be more equitable?

[18] Although gold, among the precious metals, is the demonstrably superior energy embodiment, silver may be, politically speaking a better alternative to gold. It is a matter for another paper. Important is that we do not fall into the trap of bimetalism.