Sound Money Without Commodities

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May 24, 2011

Abstract

We propose a rule based monetary system that is self stabilizing and resistant to inflation and deflation. The system does not require any privileged individuals to issue or regulate the supply of money. The system was derived by recognizing the good the properties of commodity based money that were lost as it evolved and artificially restoring these properties in electronic money. We also propose a possible implementation of such a monetary system.

1. Introduction

Recent economic instabilities have provided an incentive to ask some fundamental questions about how the monetary system works and consider possible alternatives. A key question in this consideration centers around the concept of sound money and what is required for a monetary system to provide a stable source of money that is inherently resistant to inflation and deflation.

Most people think of money as paper currency or coins. They may think of it as the amount shown on their bank statements. But what really is money? Few people realize that *money is nothing more than an accounting system to facilitate transactions between two parties*. Even fewer realize that money is created out of nothing, and that it can be destroyed. There is no conservation law for money. Most people are used to seeing the value of their money depreciate over time. They have become so accustomed to inflation (rising prices) that they don't even question why it happens. It happens because the amount of money available is constantly growing. The reason for this proliferation of new money is that currency no longer represents anything. At one point, it was backed by gold or silver. There is no currency in the world today that is 100% backed by any commodity. Thus, more money can *easily* be created. *Sound money is money that represents a commodity,* and cannot be created without having acquired more of the commodity that it represents. This allows new money to be created without depreciating the value of the existing money. The only problem with this, is that if you don't have more of the commodity then you can't create more money even if you need to. This tends to cause a deflationary trend (falling prices). There is also the problem that a valuable commodity, such as gold, is being stored for the sole purpose of backing the money in circulation. Is it possible to have sound money without having the money backed by any commodity? If one observes the basic properties of money when it first emerged, it is possible to retain the good properties of money in a modern monetary system, and provide a stable source of money that is resistant to inflation and deflation, does not require a fiscal policy to control it, and does not require any commodity to back it.

2. Properties of money

To understand the basic properties of money, one has to start at the beginning, when money did not exist on this planet and people got along without it. They simply bartered; exchanging goods and services directly without any intermediate form of money. Of course, there would be situations where one person would not have something the other wanted and transactions weren't always possible. Over time, people discovered that some commodities were needed by everyone, and that if they exchanged their goods or services for these commodities, they could later use these to trade for anything else. But these commodities were often perishable, and could not be held for a long time; they had to be used or traded before they went bad. Civilizations all over the world eventually began using various forms of non-perishable commodities such as shells, sticks, metals, and gems as the central medium of exchange. Eventually, metals became the most popular form of intermediate exchange commodity. So much so, that the metal was mined, shaped into coins, and reserved for use as a currency instead of its usual use in jewelry. Since carrying the metal currency and keeping it safe was a problem, people started storing it with goldsmiths who issued them a paper receipt. People discovered that it was much easier to carry the paper receipts than the actual coins, and the paper receipts started being used as the medium of exchange. Over time people developed so much faith in the paper currencies that issuers stopped backing the currencies with precious metals. At this point it became a fiat currency; accepted only on trust that others would accept it as the medium of exchange. The advent of computers and networks allowed money to be stored and transferred electronically without ever having to be exchanged physically, thereby reducing the need for paper money and bringing money to its ultimate form.

The reason why money evolved from one stage to another was mostly for the convenience of the people that used it. However, over time, money lost some good properties that it initially had and acquired some bad ones as it evolved.

When money went from perishable commodities to non-perishable commodities, it allowed for the storage of wealth. Prior to that, no one could accumulate money and get overtly wealthier than someone else. Commodities had to be used or exchanged before they went bad. The ability to accumulate wealth by accumulating non-perishable commodities is bad because the accumulation of wealth by some will result in less money available for others to conduct transactions. Rather than helping to facilitate transactions, money itself will become scarce and drain resources for its safe keeping.

When money evolved to precious metal coins, it developed a strong intrinsic value. The metal had to be mined, melted, purified and shaped before it could be used as money. Thus making it valuable not only because the metal was rare, but also because extensive human effort went into transforming it into a currency. This imposed a natural limit on the rate and amount of new money that could be created. Having a natural limit on the production of new money provided stability for the money. Even if the natural resource was plentiful, the human labor required to transform it into money provided a limit on the rate of production that was proportional to the number of people available to make it and thus proportional to the number of people in the economy.

When money evolved to paper notes backed by precious metals, it went from being distributed to being more centralized. It required a central authority which everyone trusted to store the precious metals in safe keeping and issue the notes. It also required trusting the issuer of the notes to stand behind the promise that it could be exchanged at any time for the precious metal it represented, as well as not issuing notes which could not be backed. It empowered the issuer of the notes by transferring trust to this central authority.

When money was no longer backed by a precious metal it lost its intrinsic value. If money has no intrinsic value it can still function just fine as long as everyone has faith in the issuer, but once confidence is lost, the money becomes worthless and won't be accepted for transactions. In order to maintain a demand for the money, the issuer can cooperate with the local government to require that taxes be paid with the issued money and maintain its stability and value. Of course the issuer could be the government itself. However, if there is no limit on the creation of money, then the issuer can dilute the value of money by creating more of it. When the issuer creates more money, the result will be experienced as inflation in the prices of goods and services.

In addition to losing its intrinsic value, paper money can actually acquire a negative intrinsic value. Anyone creating new money is considered to be counterfeiting, unless they are approved by the issuer. If the issuer is not the government, and is instead a private organization that has been commissioned by the government to issue money, then even the government is not allowed to produce new money without approval from the issuer. If the government can't meet its expenses with the money collected from taxes, it sells government bonds to the issuer and other investors to get the money to cover the expenses. Government bonds have value based on the government's ability to tax its citizens and employees. This not only dilutes the money held by the people, but it also makes the money debt based. The government has in effect taken a loan by using its future tax revenues as collateral. When someone exchanges a good or service for debt based money they are giving away something of value and receiving a loan which needs to be paid back to the issuer with interest. This type of paper money is even worse than a neutral currency issued by a government. Its intrinsic value is not zero, but negative.

Paper money that has a negative intrinsic value requires the monetary system to have perpetual inflation in order to sustain it. The money needed to pay the interest due to the issuer and other investors does not exist and must again be borrowed and introduced into the economy to keep it going. This further dilutes the existing money and supports perpetual inflation.

The evolution of money from a physical form to a purely electronic form is still in progress. It will make the money even more centralized; require even more dependence on trusting the issuer and make it extremely unstable since any amount of it can be created without incurring even the cost of producing paper. In terms of convenience though, it is the ultimate form of money. But the convenience comes with a very big hidden cost. Every transaction made with electronic money is processed by computers, stored in databases and is easily traceable and viewable without the consent or knowledge of its owner. Also electronic money can easily be frozen at any time to prevent the owner from using it. Thus, the hidden cost of using electronic money is a loss of privacy and the potential to instantly lose access to the money.

In order to remove the bad properties of money and retain just the good properties it should be backed by a commodity such as gold or silver. But is that really required? Is there something fundamentally wrong with money having no intrinsic value? If money is nothing more than an accounting system to facilitate transactions between two parties, then why is it required for the numbers used in the accounting system to have an intrinsic value? It is really to protect against the issuer of money from abusing the trust granted by the people.

3. Rule based money

If money is viewed as a point system used in an ongoing game where players enter the game, play for a while and leave then it becomes clearly obvious that giving some players the privilege of issuing points at will is not at all fair to the rest of the players and that there should be well defined rules by which points are created and destroyed. There should not be some players who have total control of the points. Rather, there should be well defined rules that govern the point system used in the game such that there is no need for anyone to serve the role of the issuer. A monetary system based on a fair set of rules will in fact be sound money without needing to be backed by physical commodities. There is no reason to tie up valuable commodities to represent the points.

There are only a few basic principles needed to make the game fair to everyone.

1. The amount of money in circulation should be proportional to the number of people in the economy. This can be achieved by observing the following two rules.

2. Money should be created by periodically giving an equal amount to all individuals in the economy.

3. Money should be destroyed by periodically removing a proportionally equal amount from all participants in the economy.

Here is one particular example of these rules:

* Every 7 days 200 units are given to each individual in the economy. This is followed by immediately removing 0.02% of the total units that have been accumulated by the individual.

However, when applying this rule in the real world we have to take into consideration that people can cooperate to create organizations such as corporations, governments, clubs, etc. Also we have to consider what happens when people pass away and individuals who cannot make decisions about money such as children or mentally handicapped adults.

* Organizations do not receive any new money, but periodically have a proportionally equal amount removed.

* When a participant (individual or organization) exits the economy the units they have accumulated are given to the other individuals, and organizations specified by the participant. Any units not given away are removed.

* Individuals who cannot make decisions about money on their own will be treated just as any other individual in terms of being given money and having a portion of the accumulated money removed. However, rules will be setup by the local society to allow a guardian to help them.

4. Implementation

How could these rules be implemented in the real world? It would require the creation of companies that provide the services of banks for a fixed fee and do not loan the money deposited with them.

* Money registrars are profitable organizations that have been given authority to operate as money registrars by the local society. They allow an individual or organization to setup an account with them and provide the service of maintaining the balance in the account and transferring money to other accounts (at the same or different registrar) in exchange for a service fee. Money registrars are responsible for implementing the rules defined for the creation and deletion of money. Money registrars may not loan money or extend credit. Although there can be multiple registrars to choose from, an individual or organization can maintain only one effective account with only one registrar. They can at any time move their account to a different registrar. Every 7 days all registrars publish the balance and type of all accounts. The account holder is identified by a code which is shared between only the registrar and the account holder. This allows everyone in the society to be aware of the total amount of money in the society and how it is distributed. The money registrars are periodically audited by an oversight committee setup by the society. It is important to ensure that these companies remain independent of one another so that there is no collaboration and the fees they charge are competitive. Each money registrar serves a local community where it could meet face to face with the individuals to check their identity and allow them to

create an account. There can be multiple money registrars which offer the service in the same area.

* Applications on mobile devices and smart phones could be offered by money registrars to allow their users to transfer amounts easily by simply entering the amount to be transferred and selecting the receiving device which is within wifi or blue-tooth range. Money can also be transferred by providing the email address of the recipient.

* Investment funds are profitable organizations that sell shares to raise money and loan the money it has raised to individuals or organizations in the society at market rates. It can also pay dividends to its shareholders if it chooses to do so. Investment funds cannot provide the service of money registrars. These organizations serve the loan function provided by current banks, but the only difference is that people will understand that their money is at risk when they buy the shares of these organizations.

* The money in this system can be converted to other currencies by profitable organizations that operate as exchange brokers that trade currencies using a buy and sell spread.

* Government institutions can have an organization account with money registrars and the same rules for money creation and deletion apply to government accounts. Government organizations may not create any money and can only obtain it by providing services to the individuals and receiving revenues through taxes determined by the society.

5. Justifications

A monetary system based on these simple principles will provide a sound and stable money supply without needing to use physical commodities or requiring external intervention. In addition it will be impossible for the system to fall into an inflationary or deflationary cycle. For the example given earlier this system essentially simulates individuals being able to harvest 200 units of a commodity per week. Over time the commodity erodes and loses about 1% of its value per year. One million units will lose exactly 200 units per week. Thus, if the population is constant the system will reach equilibrium with each individual on average having one million units. If the population increases the amount of money in circulation will also increase. If the population decreases the amount of money in circulation will also decrease.

It may seem strange that all people in the society are given money which is created without any initial source. This is possible because money is nothing more than an accounting system to facilitate transactions. It can be created and destroyed. The important thing is that the rules by which it is created and destroyed be fair and consistent to the participants.

One may say that such a system of giving money to individuals will encourage them to not work and become lazy. However, the prices of goods and services will adjust so that the amount given periodically will likely not be sufficient to survive and people will have to seek employment or own a business. But as automation increases and human labor is needed less and less the prices of goods and services will reduce so that the amount given periodically will be more than sufficient. The system will self adjust the cost of living to encourage human labor when it is needed and provide a welfare system when human labor is not needed.

When the human population of planet Earth was much smaller, a new being on the planet would be able to find natural resources like land, water and food and take from it what was required for survival. As the planet became more populated and all resources were claimed a new being coming into the planet can no longer take anything and thus cannot survive without being enslaved to the earlier inhabitants who have already claimed ownership to all the resources. A monetary system based on periodically giving all individuals an equal amount of an exchangeable resource gives every new being an opportunity to survive even when all natural resources have been claimed.

One may say that an individual who does not work and survives only on the amount given periodically has not contributed anything useful to society. However, even such an individual has contributed by merely spending the money that was received. The individual has lived resourcefully and has applied intelligence to decide which products and services to spend the money on. The individual has in effect cast a monetary vote for the companies of the chosen products and services. This is in a way similar to the work done by investors on Wall Street who cast a monetary vote by deciding which companies to buy.

It may also seem strange that everyone loses about 1% of their savings each year. This is actually a property of perishable physical commodities that is being carried over to electronic money. This loss is just enough to offset the fixed amount given periodically so that the total money supply will reach an equilibrium when the number of individuals in the society are relatively constant. This is a key feature needed to maintain price stability and prevent inflation or deflation without external intervention. As the population of a society increases or decreases the quantity of goods and services produced will also increase or decrease. For example the number of shoes produced will be proportional to the number of people in the society. If the average amount of money held by each individual is constant then the price of the shoes will remain constant even as the total money supply increases or decreases along with the population size.

The gradual decay of money also removes the advantage that it otherwise has over physical commodities. As individuals gain wealth they seek a medium to convert the wealth to in order to retain it forever. All physical assets degrade over time, and have a cost for storage and safekeeping. If electronic money is a perfect store of wealth that does not degrade and has very little cost for storage and safekeeping then money will be hoarded to store the wealth and thus reduce the money supply available for transactions. This in turn would cause prices to go down and encourage even more hoarding. The gradual decay of electronic money helps to discourage hoarding and encourages spending.

The amount added per week and the decay rate also control the resolution of the currency and the propensity to save versus spend. A higher decay or more money given each week encourages spending while a lower decay rate encourages saving. The members of society can collectively decide the value of these two parameters.

By using investment funds instead of traditional banks the system significantly reduces the money multiplier effect caused by fractional reserve banking. This removes the need for centrally controlled reserve limits and interest rates. The interest rates offered by the investment funds will be controlled by market pressures as long as such institutions are not allowed to collaborate. There will still be some money multiplier effect but it will be much less because money borrowed from an investment fund will be deposited with a money registrar and not another investment fund. The borrower of the money will not need to earn interest on it to keep up with inflation and maintain its value. The justification for dividing the function provided by traditional banks is that even though they offer a better proposition to the individual by offering a return on their money without any risk of losing it, they are in aggregate bad for the society because they multiply the amount of money in circulation and thereby cause inflation. Thus the proposition, although attractive on the surface, is false because the money stored in the bank even with the interest it earns may not be able to keep up with inflation that fractional reserve banking causes. The individuals of the society would have been better off storing their money with an institution that does not loan it or pay interest, but provides the usual services of a bank for a service fee. The money registrars provide this function while investment funds provide the function of loaning money.

The system makes a clear distinction between individuals (humans) and organizations (corporations, governments, trusts, etc.). The reason being that organizations exist to serve individuals. This is incorporated into the system by the rule that only individuals receive new money flowing into the system. Organizations must create products and services for individuals in order to earn a profit and pass on dividends to their owners in the case of corporations. Government organizations may not create any money and can only obtain it by providing services to the individuals and receiving tax revenues determined by the society.

Another reason why only individuals receive new money and not organizations is because any individual can create multiple organizations. If organizations also received money periodically then individuals could create organizations that serve no purpose other than collecting money for their owner.

The actual amount of money in circulation does not really matter as long as the money provides sufficient resolution to facilitate even the smallest value transactions in the economy. What matters much more is the direction in which the money flows. If new money originates from the issuer passes through the government then corporations and finally to the individuals, it will in effect empower these organizations over the individuals. It is vital that new money originate from individuals and then flow to the corporations and government.

6. Conclusion

There are three types of paper money. Asset backed paper money which is exchangeable for the commodity it represents. It may be partially backed so that exchanging \$100 dollars does not buy \$100 dollars of gold but rather \$10 of gold. This would be considered 10% backed by gold. The issuer needs to obtain more of the commodity before issuing more currency. The second type of paper money is fiat currency that is not backed by any commodity and has an intrinsic value of zero. The issuer has no limit on how much currency can be produced. A government can issue this type of currency and require taxes to be paid with it to create a demand for the currency. The third type of paper money is debt based money. The issuer of the money actually receives an asset in exchange for issuing the money. The asset is usually in the form of government bonds which are exchanged for the money. The debt based money must eventually be paid back with interest. The currency representing this form of money is actually a debt, but it can still appear to be an asset if the government requires taxes to be paid with it.

In today’s society the issuers of fiat money have many problems to deal with. In order to retain their control as the issuer of money, they must maintain a demand for their money. The issuers have to do whatever it takes to keep the people's faith in the issued money. This is done by requiring government taxes to be paid using the issued money. This is also done by forcing countries to accept payments for key commodities such as oil in their issued money. Politicians and laws have been manipulated to allow the issuer the privilege to control the money supply rather than allowing the people to control it.

The main reason for using commodities to back paper money is to prevent the issuer from abusing the trust granted by the people and promote a responsible monetary policy and financial stability. However, a sound monetary system which self-adjusts the money supply and is inherently resistant to inflation and deflation can be achieved without requiring commodities if it is based on a set of simple rules that are fair to the participants and does not require an issuer to control the money supply. Eliminating the need for privileged individuals to issue money will remove many problems faced by the world including poverty and economic instabilities and bring the world into a new era where people can focus their efforts on productive and enjoyable endeavors.