Beyond money…

Digital Coin

A Design for a Technologically Innovative, Sustainable and Self-correcting Software Medium for Trade and Capitalization of Production

By Paul Grignon. January 1, 2008. Revised August 14, 2009

Topics

Appendix

Premise
As we witness the painful disarray of the growth-addicted fractional reserve monetary system, people around the world are looking for a new way to create a medium of exchange so as to make possible a *sustainable economic system*. A sustainable economic system cannot be dependent on *exponential growth of debt* and *endless growth of the real economy* to provide the world with a supply of money.

It is becoming increasingly clear that the limits to growth have been reached in the physical world, a fact that is *not* acknowledged by our current debt-at-interest monetary system, a system that can only collapse in system-wide insolvency if growth of the money supply even slows down.

And, if the money supply must continually grow, so must the real economy or there will be destructive inflation. As unending economic growth on a finite planet is a recipe for self-destruction, this proposal is offered as an alternative to the untenable and unjust money-as-debt-at-interest system that currently enslaves the planet and threatens the lives of us all.

Scope
For those not familiar with the root of my concern, I recommend viewing my 47 minute animated feature, Money as Debt and its 77 min. animated sequel Money as Debt II, Promises Unleashed. (moneyasdebt.net). Also recommended is Ellen Hodgson Brown's comprehensive and up-to-date book, *Web of Debt*. (webofdebt.com) and for a full picture of monetary theory and history that is easy to read, Stephen Zarlenga's "*The Lost Science of Money*" (monetary.org). A very useful book for learning specifically about alternatives to "money" to date is Thomas Greco's "The End of Money" (http://beyondmoney.net/the-end-of-money-and-the-future-of-civilization) as is the 2001 classic, Bernard Lietaer's The Future of Money (http://www.transaction.net/money/book/)

In this Proposal, I shall presume we understand that there is a systemic problem with money lending and money creation as currently practiced, and proceed to put forth for your consideration an innovative, comprehensive and detailed *solution to the* problem based on the simple and proven principle of *self-issued credit* applied with *new technology.*

It has many times been suggested that the world needs *a global currency*. But with the debt-based monetary system now prevalent, a world currency on the same basis would mean that *everyone in the world would have to be in debt to the world central bank* or they would have no money. We can see from examining recent history, that the International Monetary Fund and the World Bank have clearly demonstrated the destructive effects on peoples' lives that such centralized monopoly control over the credit supply could be expected to deliver.

And the pivotal question remains, *why in the world should bankers get to create money*?

Goal
It is the goal of this proposal to present a design for a *practical, liberated, diverse, scalable, self-generating, and self-balancing* global trading medium.

This trading medium is *not* bank credit. It is *not* government fiat money. And it is *not* a commodity.

Instead it is *a claim upon specific real products and services* and derives its value from being *a promise of redemption in real goods and services only.*

It is *not* redemption in gold, nor any other precious metal. Nor is there any need for a specific commodity or basket of commodities to be agreed upon as a monetary standard.

This design of Digital Coin avoids the distortions caused by monetizing a commodity like gold by *making it possible to monetize ALL goods* and services.

Technology
Emerging technology now makes it possible to create a "digital coin". Digital Coin, like the gold coin of old, is a *thing*. It is a ***unique serial number*** that instructs the Digital Coin software to perform various functions, simply by reading the serial number. Digital Coin software can:

1. find, display and act on information relevant to any specific Coin;
2. subdivide and appropriately re-denominate Coins;
3. perform calculations according to pre-set formulae, and,
4. autonomously access the Internet for variables to input into said formulae.
5. digitally "sign" each Coin so that only the signatory can spend it.

Digital Coin can be *instantly transferred* via the Internet but *never copied*.

Digital Coin's *usefulness as a trading medium* is unprecedented and unsurpassed. Nothing like it has ever existed before. For the first time in history, money "objects" can now be exchanged instantly over long distances, *anonymously and without accounting*. The use of bank credit "promises to pay money" in place of "money itself" is no longer necessary.

Although images of digital coins moving instantly from place to place are used to illustrate the concept, in reality the Digital Coin does not need to move from one physical storage to another. All Digital Coin would be stored in a worldwide redundant data "cloud". The data is physically stored on a system of networked hard drives all over the planet, not on any individual user's computer. What actually happens is simply *a transfer of ownership.* Each unit of Digital Coin will be *digitally signed* by its owner while in that owner's possession. No one else will be able to spend it.

Parties to transactions may be *anonymous*, using a Digital ID, verified by self-authentication. The digital signature is completely erased when the next owner's digital signature replaces it maintaining *anonymity.*

Structure and Method
This Proposal calls for two fundamentally different classes of Digital Coin, one permanent and the other temporary.

1. Perpetual Coin
Perpetual Coin is to be the foundation of the system and *the unit in which all things are priced*. Perpetual Coin is to be a *permanent and anonymous unit of trade*, much like a gold coin.

The essential purpose of Perpetual Coin is to be the *unit of value.* Functionally it could just be a definition and not need to exist as an object at all. However, establishing a standard of value is the challenge.

Many ways have been proposed for establishing a "value standard". The most common is a "basket of goods". However, what basket of goods is equally relevant to everyone? And, if the value of "money" is based on a basket of goods, what happens to the value of that "money" when some of the goods in the basket increase in price in that "money" relative to other goods in the basket? Do we not encounter "hall of mirrors" recursive effects? And who would enforce such a standard and how?

Another commonly proposed standard of value is the *unskilled labor-hour.* But this seems like an unworkable idea too. An unskilled child in some parts of the world would work hard all day just for food, while other unskilled children expect an allowance for making their bed.

If a workable way can be devised for establishing a reliable unit of value, it could replace my proposed method. However, the frustrating thing about *value* is that it is *always a variable* and *always subjective*.

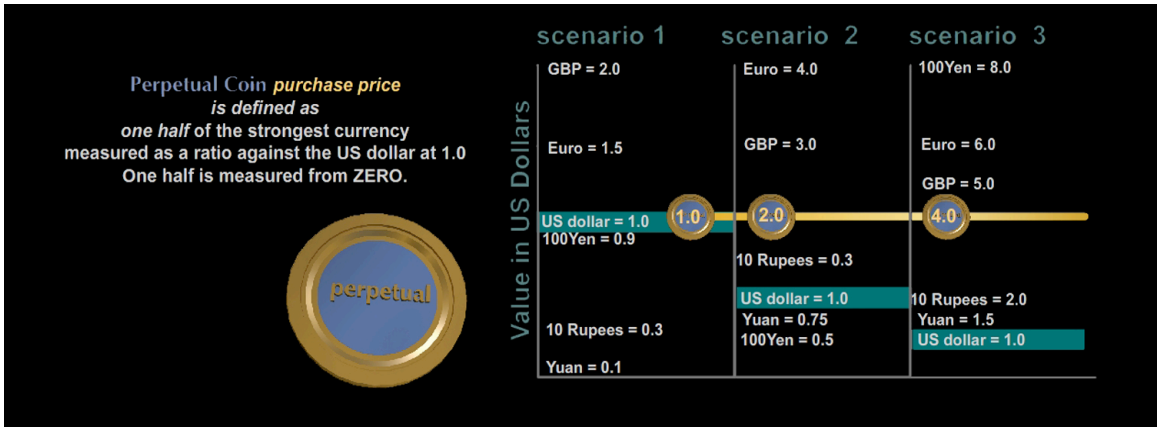
For *a liberated* trading medium, *we cannot assume the existence of any authority*. Nor do we really want to. Therefore all means of *dictating the value* of Perpetual Coin are not just *unavailable* but also *unwanted*. This excludes just about every means of establishing a monetary standard of value that I have ever heard previously proposed.

Therefore I have resorted to the only method I can think of for creating the initial stock of Perpetual Coin so that it will acquire value naturally by entirely liberated means. That is through "historical connection" to existing value as expressed in existing "monies'.

I propose that Perpetual Coins be exchanged for existing national currencies. The national currency spent to purchase Perpetual Coins, will be held in trust so that the Perpetual Coin can always be redeemed for the exact same amount of the exact same national currency that was paid for it.

Perpetual Coin is a product. It is a useful "thing" sold by the software developer who can set the price as they please. In this case, to make Perpetual Coin "useful", the price of Perpetual Coin in national currency can be set by an *arbitrary formula* that makes Perpetual Coin *the most stable trading medium to use in international trade.*

To accomplish this goal, the price of Perpetual Coin in US dollars can be defined as one half of the ratio of the strongest major currency in a consistent selection of major national currencies, against the US dollar arbitrarily defined as 1.0. Three different scenarios are presented in the diagram below.



Using the formula, *the price of one Perpetual Coin in any national currency*, including those not in the "selection", can be established by reference to the Foreign Exchange market.

The illustration shows how this would tie the price of Perpetual Coin to the *midpoint value* of a select basket of the world's major currencies without being tied to any one of them. National currencies could experience extreme fluctuations relative to each other, but the price of Perpetual Coin would always remain steady at the precise midpoint of the range.

This would create a *smooth curve out of potentially wild fluctuations*. In this way a graceful exit can be made from monetary chaos into monetary calm. However, for the benefits to last, it has to be a *one-way trip* into the Digital Coin system.

To explain further, the *only information* Perpetual Coin will carry is *the amount that was originally paid for it in national currency*. This information will only be revealed if the Coin is returned for *redemption in national currency*. Otherwise, no one will know what was paid for any given Perpetual Coin. *It will trade at the current price*.

An objection would be that, having received a Perpetual Coin at $4 US, I find I can only redeem it for $1 US. This provides a good reason to stay with the Perpetual Coin. This is one feature that those entering would have to understand.

[The only other choice would be trying to "grow the money" to stay ahead of devaluation by investing and putting the trust money at *greater risk* than depositing it in banks which may all collapse anyway. We should all accept that *all of our "money', and in fact our lives are at risk in the current system* and, therefore taking a "risk" on a mathematically sustainable alternative is somewhat like taking the risk of jumping into a lifeboat from a sinking ship. You really just want to find the lifeboat most likely to float]

The national currency will be held in trust in insured savings accounts within the conventional banking system. The fate of the conventional banking system is beyond our control. However, this could potentially put large amounts of conventional money into savings accounts.

Perpetual Coin will always be redeemable for its original price in national currency, just as gambling casino chips are always redeemable for their original price upon leaving the casino.

In this way no one will ever get "stuck" with Perpetual Coin. However, the redemption value of Perpetual Coin in national currencies would be a gamble.

One limitation would seem wise to impose. To prevent currency speculation in Perpetual Coin, redemption must be by means of a purchase of *goods and/or services* which The Perpetual Coin System would pay for with the national currency. *Redemption in real things* is fundamental to this entire proposed system, as it is the only way to eliminate money "gaming".

Those who enter trade with Perpetual Coin and *don't redeem it for national currency* will endow the Perpetual Coin System with a potentially large amount of bank credit that will have to be deposited in a bank, as bank credit cannot exist outside the bank credit system. Interest paid on this bank credit will go towards the costs of administering the Perpetual Coin System that have to be paid, for now, in national currency.

As it is expected that national currencies will continue to lose value as a result of their expand-forever structural imperative, at some point it will be necessary to decouple Perpetual Coin from this general slide into hyperinflation by *ending the sale of Perpetual Coin for national currencies*. This will give Perpetual Coin a *starting valu*e representing the *real value* that went into earning the currency with which it was last purchased.

Why would anyone purchase Perpetual Coin? One reason could be that, for those whose national currencies are devaluing faster than the midpoint of our chart, Perpetual Coin would give them a lower rate of devaluation than if they were operating with their national currency.

In the chart on the previous page, which is arbitrary and not meant to be prophetic, if I buy a Perpetual Coin (PC) in the first frame it costs me $1 US. In the second frame, the US dollar has sunk in value and someone buying a PC has to pay $2 US. In the third frame a PC costs $4 US. Thus for the buyer in the first frame, if he has saved the PC he bought, he has quadrupled his money, compared to holding the national cash, but only so long as he stays in PC. If he redeems his PC for national currency, he will only get the $1 he paid for it, which now has only ¼ the purchasing power it had when the PC was bought.

But the fundamental advantage of Perpetual Coin, during the time it is still for sale for national currencies, would simply *be the smoothing out of currency fluctuations*, making the outcome of international transactions over time more predictable.

Yet another is that, if, as expected, national cash/bank credit currencies hyper-inflate into worthlessness and collapse, it is distinctly possible that, once de-coupled, an independent Perpetual Coin could experience a *rise in val*ue simply due to its stability and exceptional usefulness, delivering early adopters some significant bargains in terms of *real goods and services*. Thus it is a *speculative investment* with both a downside risk and an upside reward.

2. Credit Coin
Credit Coin is, in contrast to Perpetual Coin, *a temporary* form of this "trading medium".

Credit Coin is a time-limited *contract* between the Issuer of the Coin and the Bearer of the Coin.

Credit Coin is *redeemable for the specific goods and/or services* of the Issuer of the Coin.

Credit Coin is the *functional medium of trade* expected to fully displace Perpetual Coin.

Once the use of Credit Coin is established, the only probable use of the actual physical Perpetual Coins would be for savings. Otherwise, the essential purpose has been served. A rational "historical connection to value" has been established by selling Perpetual Coin for the midpoint of major national currencies. This would give Perpetual Coin an undefined and yet widely understood, regionally variant starting value as the "standard unit" of the Credit Coin system.

Credit Coin could be issued by anyone as a contractual claim upon whatever the Issuer produces or provides in services. However, any given Credit Coin would have to be *specifically accepted by the acceptor.* Non-acceptance is the default.

Credit Coin is directly *backed by real products and services*, not an artificial intermediary of value like gold or silver. And, the Issuer of Credit Coin is only responsible for providing its own products and or services in return for its Credit Coin, never "money" in any form.

This is a very important point. In the Credit Coin System, an Issuer's ability to honor its credit is never dependent on the general availability of "money" in the economy, the way the ability to pay back bank loans are. The Issuer's sole responsibility in issuing Credit Coin is that *the Issuer must be able to redeem its own Credit Coin with its own products and/or services.*

And customers will only want the Issuer's products and/or services if they are of desirable quality and competitive price compared to others. Therefore, the Issuer must endeavor to offer the best product at the best price. There is no shelter from competition, just because you issue your own "money". If too much of an Issuer's Credit Coin is spent relative to demand for that Issuer's product, that Issuer's Credit Coin, and *only* that Issuer's Credit Coin, will devalue.

As today, the best position for an Issuer is to be taking in a "profit". In the Credit Coin system, that means selling your goods for more than it costs to make them, just as in the current system. However, as will be explained later, in the Credit Coin System, *profits can only be realized by spending them*.

Should an Issuer be *unable* to honor its Credit Coin with goods and services, the contract with the Bearer is ultimately backed by a claim upon the *assets of the Issuer* in liquidation. Therefore, it is expected that only *limited liability corporate entities* would be inclined to take on the risk and responsibilities of being an Issuer of Credit Coin. That would be governments at all levels, corporations, cooperatives and societies..

Credit Coin is to be identified by its Circulation Extent, the Issuer and the contract that governs it.

Credit Coin is a contract to reward the Bearer with a *bonus redemption* compared to all other Credit Coin and Perpetual Coin. This is the Issuer's *contractual promise of a return* to the Bearer.

Credit Coin will only be acceptable within its Circulation Extent, if that is limited.

Credit Coin is always *refused by default* and must be deliberately *accepted* by the other party.

The issue of *relative values* of different Credit Coins will be explored later.

The central mechanism of the system is the "bonus redemption" the Bearer receives when purchasing the Issuer's products and/or services with the Issuer's own Credit Coin.

Simply put, *the Issuer redeems its own Credit Coin at a higher value than any other*.

From the purchaser's point of view, this can be looked upon as *a bonus in product* or a *discounted price* that is the reward the purchaser gets if the purchaser uses *the seller's* Credit Coin in order to make the purchase.

From the seller-Issuer's point of view, *the bonus redemption* is the *planned for (i.e. regular) price*.

The truth is that those who purchase with Perpetual Coin or any other Issuer's Credit Coin would be *penalizing themselves* and *profiting the Issuer* b*y* not first trading that Coin for the Issuer's.

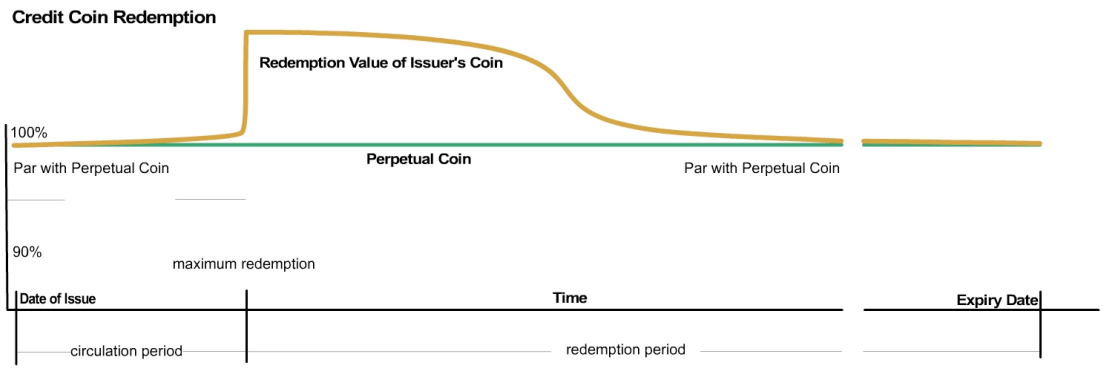
That is because purchasing with another Issuer's Coin would require the Issuer to use that Coin to buy its own Coin. But having NOT given the bonus redemption, the Issuer "profits" in that it has more product left to sell. If that product is in demand, that would allow the Issuer to issue *more Coin as spending*, thus realizing a *profit*.

The ideal of "success" in this system is to reap back in sales all the Coin that was sown as expenditure. If this can be done leaving *extra product that is in demand*, then additional Coin, the "profit", can be spent on *the distribution of extra purchasing power via spending*. Otherwise, *the value of the Coin will go up and less be taken in per product.* If this happens, the customers are getting even more than the bonus redemption and all the benefit of the profit will go to the Issuer's customers, not the Issuer.

The simplest idea would be that Credit Coin would always return the bonus redemption. But then a Coin issued an hour ago could come back without circulating. Therefore it is proposed that all Credit Coin have a Circulation Period during which bonus redemption is not offered. This is analogous to holding bonds to maturity. The penalty for early (or late) redemption is *no bonus*.

This would make all Credit Coin *redeemable at all times,* but, during a specified period of time, it would be *worth mor*e, trailing off to its minimum value again at which point it becomes unacceptable and can *only* be redeemed at its Issuer. Finally, at a certain date, a little over one year after issue, the Coin would expire.

The diagram on the next page shows one possible configuration, where the Credit Coin reaches "maturity" or maximum redemption value at a certain date and maintains that value for a period of time, later to lose that bonus and eventually expire.



Issuers could design redemption curves that fit their seasonal production plans and sales expectations. Issuers would have not only the *opportunity* to create the purchasing power to buy all of their products, they would have the *necessity* of doing so in order to succeed.

The general availability of "money" in the economy would be of no concern to the Issuer as the Issuer itself has provided the general economy with 100% of the purchasing power required to sell all of its products, and *all of its Credit Coin must return to it in sales at some value or other,* and *during the time period specified by the Issuer.* Otherwise the Coin will *expire*.

Credit Coin would be nominally at par with Perpetual Coin. However, in trade, its actual value in Perpetual Coin would be determined by *the ratio of buy offers to sell offers* for that Coin. This will be examined later in this essay.

The responsibility for maintaining any Issue of Credit Coin at parity with Perpetual Coin will rest entirely upon the Issuer. And the effects of devaluation or overvaluation will concern only the Issuer and those who hold its Coin. The political unit as a whole would not necessarily be affected as occurs under the current system when business failures and defaulted debts directly impact the value of national currencies.

Diversity and Self-generation
Diversity and self-generation are principles of Nature. Diversity and self-generation are also principles of the Digital Coin System.

Imagine, worldwide, as many different Credit Coins as there are Issuers. No one needs to go to a bank. There would be a global marketplace open to all.

There would be natural submarkets of commercially interrelated Issuers. There could be natural groupings in which Issuers like productive industries trading in unfinished goods, could use their Credit Coin exclusively with each other.

The technology could even scale to the community currency level in which membership-limited Credit Coins never leave the village and yet share a common value unit with every other Credit Coin in the world.

Scalability and Exclusivity
As mentioned before, Digital Coin is simply a unique serial number, the ownership of which can be transferred to anyone who will accept it. *Acceptance is not the default*. Acceptance is based on an "accept only" list to which Issuers can be added or removed by the acceptor.

This serial number can be up to 500 numbers long. Let us then imagine that the first part of this string of numbers is used to create alphabetical identifiers such as those currently used for national currencies (CAD, EUR, USD).

Using nothing more than the serial number, it would be feasible to limit the circulation of any given Credit Coin to a specific circle of users by a unique identifier.

For instance if the Coin's first identifier were WORLD then it would be eligible to be spent anywhere in the world by anyone, dependent on whether that specific Issuer's Credit Coin is accepted by the seller.

If its first identifier is TOTNES (a transition town in the UK) the circulation of this Coin could be limited to those who share the TOTNES identifier. All Issuers and all users wishing to exchange within the exclusive TOTNES circulation would first have to obtain a unique digital identity that begins with TOTNES. As limited circulations would be based on membership, there would have to be some TOTNES body who decides who can and who cannot have the TOTNES identifier.

On a larger scale, trade could be restricted to say, EUROPE, or STEEL INDUSTRY. All of these limited circulation currencies would share the same Perpetual Coin unit so that value could be directly compared, but one could not trade one limited circulation Credit Coin for another limited type or the universal type, except through the intermediate step of buying *real goods and services.*

In this way, exclusive circulations on vastly different scales, ranging from physical communities, to global industrial sectors, to completely universal would be possible, all conveniently *unified by a common value unit.*

Credit Coin Marketplaces
Coins could be traded privately or via centralized online marketplaces. In volume, Coin would need to be traded online via automated central markets and such markets would be an essential component of the Credit Coin System at any scale.

There would be constant movement of Credit Coin as it has a lifespan within which it must be spent and a time when spending it is most advantageous. Those wishing to buy from an Issuer would be seeking that Issuer's Coin at maximum redemption. Those with Credit Coin from Issuers whose products or services they DO NOT want, and especially those with Credit Coins nearing expiry, would be seeking to trade this Coin for Credit Coin they DO want, or at least Coin that is not nearing expiry.

The value in Perpetual Coin of any given Issuer's Credit Coin would be determined by the ratio of offers to buy to offers to sell the Issuer's Coin in this online automated marketplace. There would be no bidding. *The number is automatically determined by the actual market demand.*

The relative value of Credit Coins used in *private exchanges* would also be automatically governed by the values determined in this automated marketplace. In the process of each transaction, the Credit Coin would access this marketplace to ascertain its current buy/sell ratio. It would then multiply itself by this ratio to express its value in Perpetual Coin.

At all times, the Issuer must redeem its own Credit Coin for the same value in product that it would give in exchange for a Perpetual Coin. This means that a Credit Coin when redeemed at the Issuer, cannot lose more than the value of its bonus redemption. No matter how devalued in the marketplace, one *Credit Coin is always worth at least one Perpetual Coin at the Issuer.*

Redeemable Currency
In contrast to national currencies, which are no longer redeemable for anything, nor anchored to gold or any other real good or service, *Credit Coin is solidly anchored to and redeemable for the goods and/or services the Issuer will provide in exchange for it.*

Now, many people seem to consider gold to have some mystical intrinsic value and that money should be backed by gold. The "only true money" they call it. But if you were starving, and two trucks pulled up, one with gold and the other with food, which one would you pick? In reality, very few of us have any essential use for gold. But we all have an essential use for food. The same goes for all of our needs in declining priority. Hardly anyone NEEDS gold or silver. So why is gold thought to be "real" money?

It's value is artificial and was created by the need to create a common unit between national fiat currencies. It is most commonly used as a way to transfer wealth out of fiat currencies to avoid losses. However, this strategy depends entirely on gold maintaining or increasing its value, when hardly anyone has a practical use for gold, other than this strategy. In any case, the gold market is full of "paper gold" and manipulated, and the only true security is in physical possession.

In the Digital Coin System, which is being proposed as a qualitative transformation in the evolution of money, *the most reliable Credit Coin would be issued by those who produce our absolute necessities*, products and services for which there is not just demand but NEED. Isn't food more REAL as "intrinsic value" than the stuff jewelry is made of?

Credit Coin is a contract for delivery of goods and services by the Issuer to the Bearer within a specified period of time. Unlike all types of conventional money in existence today, *Credit Coin is NOT a commodity whose value is dependent on the total quantity of Coin in circulation.*

The value of any given Credit Coin is precisely what the Issuer will give the Bearer in exchange for it. The value of any given Credit Coin is affected only by the balance-of-trade of that particular Coin determined by the buy/sell ratio for that Coin. The total quantity of Credit Coin in existence and the relative values of other Credit Coins are irrelevant.

What about general price inflation or deflation?
Every Credit Coin must compete for acceptance in a free marketplace. So, clearly, there would be more competitive appeal to a Credit Coin that was in essence a "futures contract". That is to say, *the price of the Issuer's goods at time of maximum redemption is guaranteed to be the same as it was when the Credit Coin was issued.* This could be a considerable price stabilizing feature.

With Credit Coin, the natural condition would be to spend x amount of Credit Coin on production, dividends, capital expansion and maintenance, and sell the end product for x amount of Credit Coin. Expansion or contraction depends on the value of x.

Profits can only be realized by *spending more Coin* thus putting that Coin back into the hands of the customers so that all Coin is *fully recycled*. *All credit is only redeemable in real things*, so there is *no money debt* and *no interest* to pay.

Because there is no interest to pay and no secondary lending, there is *no money supply growth imperative*, and thus *no impetus for inflation*. Because there is no money debt, should general *deflation* occur it would represent greater productivity and be *a blessing* not a disaster.

Does this Eliminate the Growth Imperative?
In the Credit Coin System, there is no debt-at-interest to a bank. There is no financial growth imperative because there is no interest in *money* or trading medium to pay and profits are always realized in *real things* not "money".

With no financial growth imperative, there is no economic growth imperative. Economic stasis or shrinkage is no longer the disaster it is in the growth-addicted house-of-cards debt built upon debt structure of the bank credit system.

There is no third party like a bank involved at all. Ultimately the debt created by the issuance of Credit Coin is *payable by the Issuer in goods and services only*. Everyone who has given value in

exchange for the Issuer's Coin has *invested in the Issuer's product* for the time they held the Coin. However, *the final investor who reaps the bonus redemption* will be the customer who buys the Issuer's product with the Issuer's Coin.

Nowhere in this system is there any money debt that needs to be inflated away because it can never be paid off.

Losses, Private and Socialized
In the current bank credit system, when businesses operating on bank credit take huge losses and fail, this can affect the entire bank that was financing them, all those who have money deposited at that bank, and even the national banking system itself. Most of those adversely affected probably had nothing whatsoever to do with the failing business and become innocent victims of circumstances beyond their control.

To prevent catastrophic losses to individuals and businesses, the taxpayer has to backstop bank credit with deposit insurance and ultimately bailouts, which are simply added to the ever-mounting already un-payable public debt that has already reached absolutely absurd proportions.

In the Credit Coin System, if the Issuer goes bust, their Credit Coin will also. However, only those that have that Credit Coin will lose out, and to have that Credit Coin they had to have chosen to put it on their "accept list". In a fully functioning Credit Coin system, Coin brokers would research Credit Coin Issuers and provide "accept lists" to clients.

As a Credit Coin devalued, if it were traded frequently as a "hot potato" (another feature that can be programmed in), each transactor would experience only a very small loss, the difference between the PC value when accepted and the PC value when spent. The losses would be widely and possibly imperceptibly absorbed by large numbers of people, all of whom made the choice to accept that Credit Coin in trade.

Philosophically, losses to Coin holders can be justified as a *positive feature of the system*. People do need and want things. Other people make the effort to fulfill those needs and wants and take the risk that their products will not be accepted due to quality, price, a superior competitive product, a change in taste or situation, or unanticipated technological obsolescence.

Under the current system, our morality seems to assert that by taking the risk of such losses, successful businesses are entitled to *all the profit they can make*. And, if they make profits, they can spend these profits as they please *without any obligations* to anyone.

In the Credit Coin system the Issuer's profits *must be spent* so that the Issuer's customers can earn and spend them again. This is a *symbiotic cycle* that must be maintained for the business to work. Therefore, it can be argued that those who wanted the products the Issuer endeavored to supply are the other half of that relationship and should *share in the risk* as well as the benefits just as equity shareholders do. They do this by accepting and holding the Issuer's Coin, and sharing in any benefits or losses that may result.

The Coin User's Experience
Few people know how a car works but many people drive them quite successfully. The same would be true of most users of the Digital Coin system.

Many people are now familiar with using PayPal. Simply log in from any computer and send "money", remarkably convenient. But… you have to login to PayPal, whoever that is… PayPal has a record of all your transactions. PayPal will automatically convert payment in your national currency to the price in another national currency. PayPal takes a small percentage for its services, and may pass on who knows what information about you to who knows who.

With Digital Coin, the user's experience would be almost identical to using PayPal but the mechanics would be significantly different.

Step 1. You would log in to the software on the computer in front of you, which could be anywhere in the world. The significant difference is that this login is just between you and the software, not a third party. You are not logging in to PayPal or any other entity. You would input your username, PIN and password, just one more box to fill in than PayPal requires.

Step 2. You would pay the seller by transferring ownership of the Credit Coin you have to the seller. All prices are in Perpetual Coin. Therefore the actual Credit Coin payment will be automatically computed, taking into account each Credit Coin's current PC value (buy/sell ratio). Which Credit Coin gets spent first will be automatically determined according to defaults or preferences you may have set. The seller may reject some Coin as not being on its accept list. All this happens "under the hood". The user just agrees to the price and pays it.

Step 3. You log off and all trace of you is erased. No records are created unless you create them. No one knows this transaction happened unless you want them to know.

Thus we can say that the Digital Coin user's *experience of buying and selling* would be *identical to using PayPal.* It would be just as easy and convenient. The differences are: *no password has been transmitted, no third party was involved, no third party is aware of the transaction, no fees have been charged, and no records have been generated except those you chose to keep.*

Currency conversion would be unnecessary as all prices are denominated in Perpetual Coin, a universal unit.

This does mean, however, that every time the Coin user checks how much Coin they have in their online Vault, *the total will be slightly different*, because the Credit Coins will vary in Perpetual Coin value over time and relative to each other.

For most of us who normally use only one currency that would be a bit disconcerting at first. Our bank accounts don't change their balances from day to day unless we add or subtract bank credit from them. However, for those who do business and have accounts in several currencies, it would be no different than summing up all their various currency holdings in one currency. If I have bank balances in US dollars, Euros, Yen and Swiss Francs, the total amount of "money" I have, computed in any one currency, will also vary from moment to moment.

Those holding a very wide variety of Credit Coins might reasonably expect that overvalued and undervalued coins would balance each other and variations would be small change. Those holding mostly the Coin of their employer, or the main local industry, would have clear monetary motivation for keeping that Coin at par or just above.

Employees of Issuers

Another powerful feature of the Digital Coin System is that employers would naturally want to set pay scales in their own Coin as if it were at exact par with Perpetual Coin. Therefore the weekly paycheck of everyone in the company would vary in real purchasing power directly according to the buy/sell ratio of their employer's Credit Coin.

A fixed wage payment of 1000 Credit Coin could be worth more or less than 1000 Perpetual Coin, depending on the *buy/sell ratio* of the Issuer's Credit Coin at the moment.

Accordingly, everyone in the company would be acutely concerned about keeping up the value of the Coin that they get paid in. The only way to do that is by *maintaining balance-of-trade.*

This really puts everyone in the same boat as performance rewards and penalties affect everyone proportionately and immediately. There is no way to fudge the books to make a bad situation look

good, thus allowing it to continue. There would be no way to put off the day of reckoning by borrowing new money that can't be paid back.

Physical Cash
Issuers could also issue Perpetual Coin denominated paper cash into the system. This would *not* be eligible for bonus redemption, and would not be affected by the online market.

This is made possible by another of the *necessary features of this system*. The Issuer *must contract* to honor its own Credit Coin at *no less than it would honor a Perpetual Coin*.

That is to say the Issuer's Coin is always worth at least one Perpetual Coin at the Issuer, even if the marketplace (buy/sell ratio) has devalued it beyond that. This sets a floor value of one Perpetual Coin with zero redemption bonus *at the Issuer.* Therefore paper notes and coins could simply be "floor value" money.

It would seem a useful simplification to have *only government issue paper notes and coins* with the "floor value " being payment of taxes. This would create a practical reality that would be similar to today's but even simpler. There would be two kinds of "money".

There would be government paper cash that is denominated in Perpetual Coin. It would be the debt and interest free variety simply *spent into existence by government* and collected back in taxes that many monetary reformers have been calling for. Government cash would be redeemable for taxes at the "floor value" while government Credit Coin would receive bonus redemption.

There would be a PayPal-like experience of being able to buy anything in the world from any networked computer in the world, using Credit Coin.

Physical cash could be bought with Credit Coin and vice versa.

Trading Credit Coins
For everyday purchases, most people would simply spend whatever Credit Coin they have at whatever value it comes up without paying any attention to it whatsoever. Convenience would outweigh small advantages.

However, reaping the benefits of maximum redemption by obtaining a specific seller's Coin would only require a few minutes at a computer making trades. For individuals making major purchases, the savings would always be worth the effort. For businesses, competition would ensure that *there would be no choice but to obtain the maximum redemption possible at all times.*

Coin Brokerage
Trading for maximum discount Coin from specific Issuers would be mandatory practice for businesses dealing in large numbers like wholesale distributors. In fact, this would be the logical level at which most bonus redemptions would be reaped if most Issuers were producers. If wholesalers were also Issuers, then retailers would seek maximum redemption from them and if retailers were Issuers, customers might bother to trade for maximum redemption as well.

The development of a professional Coin brokerage industry could also be expected. Mankind's natural "moneychangers', those who love to make their living by shaving small percentages would find this system provides a potentially very well paid, socially important and benign task.

Coin brokers would ensure that, on the one hand, clients get *the Coin they want to spend* at the *maximum redemption possible*.

On the other hand, clients have Credit Coin that they have saved and don't want to spend. This Coin must be replaced before expiry. So the broker sees to it that that the client's Coin is traded

to someone who wants to spend it at maximum redemption. In trade it acquires for its client the most reliable replacement Coin it can obtain, and takes a small percentage of that Coin in payment for the service.

By doing so, Coin brokers would become de facto *credit ratings agencies*, *paid by the acceptors of credit,* and paid in the *same credit* they supply their clients, *eliminating conflict of interest.*

Coin brokers would *assess the reliability of Issuers* to maintain parity Coin and stay in business. The broker's track record in delivering reliable replacement Coin to its clients would determine how well the broker stays in business, and how well off and influential in the brokerage industry the broker will be. This would have to be a competitive business to be truly "liberated". However, lacking competitive private brokers, it could also be a government commissioned social service.

In the Credit Coin System, Coin brokerage acceptance lists would be like Moody's or Standard & Poor's ratings today. It should be remembered, that rejecting someone's Credit Coin in a transaction may result in the loss of a sale, so there would be *motivation to accept all Credit Coin*, along with a desire for clear warnings of which ones *not to accept*.

Balance of Trade
The Credit Coin that people would primarily have to concern themselves with would be the one they get paid in. Issuing Credit Coin *in excess* of the ability to get it back would lead to devaluation of the Coin. Conversely, a shortage of Issuer Coin would raise its value. Valuation of any given Credit Coin would be according to the formula:

CC =buy/sell PC

Buy refers to the amount of CC sought by the Issuer's customers, and sell refers to the amount of that Issuer's CC being offered by people getting rid of it. If demand is greater than supply, the value of the CC is greater than 1.0 PC. If demand is less than supply, the value of the CC is less than 1.0 PC.

This must be done via *automated* computerized comparison of buy and sell offers. Balance of actual trade must be the measure of a Credit Coin's parity with Perpetual Coin. *There must be no bidding, no opportunity for anyone to manipulate this number.*

Global AND Community Currency
In any given community, the major industries and local governments would be the logical Issuers, and the value of their Credit Coin in the global market would be of great importance to their employees and every business dependent on their spending.

Issuers would pay their employees with their Credit Coin. It is expected that Issuer "pay" would be on the basis of parity with Perpetual Coin, even if that were not the case. This would result in the pay of all of the Issuer's employees, from the CEO to the lowest paid, as well as all those using the Coin peripherally, being directly affected from week to week, by the relative value of the Issuer's Credit Coin. One might expect this to help build solidarity within the business as well as the community it is located in, or trades in, because *everyone takes a proportional pay cut* in Perpetual Coin if the Issuer's Credit Coin is devalued.

Communities would have an incentive to make all their local currencies collectively strong, stable and at par with Perpetual Coin, promoting local cooperation and mutual support. There would be no need to sit by helplessly as the national currency nosedives in value.

Productive communities operating on their own Credit Coin and maintaining a balance of trade, *would not be affected by the failure of other communities or their governments* to do likewise. There would be no more mixing of bad credit with good credit as we have now with homogenous national currencies. Every Issuer would be responsible for maintaining their own balance of trade

and thus the value of their own credit, and ONLY their own credit. Unlike uniform national currencies, a balanced issue of Credit Coin would not be affected by the business failures of others, government overspending, or parasitic currency speculation.

These factors combined would go a long way towards accomplishing what community currency activists seek to accomplish… local, independent and cooperative economics in the interests of the community as a whole.

Given the anticipated re-localization of economic life due to declines in energy availability, an important feature of Credit Coin is that sufficiently large and diverse local economies could fund themselves autonomously, keeping their Coin in circulation within a limited geographical area, as conventional community currencies are designed to do.

However, this may not be necessary as *the Issuer's Coin must return to the Issuer* in any case.

The advantage of a *universal Credit Coin* over conventional local currencies is that universal Credit Coin would be able to perform all the valuable functions local currencies do, *funding the local economy internally and independently* while at the same time *being acceptable worldwide without conversion*.

A universal Credit Coin could be *both local and global at the same time*.

Bankruptcy
It is important to note that an Issuer can only be forced out of business by *a failure to honor its own Credit Coin in goods and/or services*. There is no such thing as bankruptcy from money debt because there is no money debt.

In this system, if a business is failing to be profitable, its Credit Coin must be in excess supply compared to demand and it is unlikely that the Issuer is unable to *supply* product, just unable to *sell* it.

So the business is probably in no danger of being forced to close. But everyone being paid in its Coin will be *losing real purchasing po*wer unless the excess Coin in circulation is reduced by a reduction in spending.

Not being in danger of "bankruptcy" provides an *indefinite opportunity* to make the business profitable. *Reduced pay for everyone* provides *urgent motivation* to do so as quickly as possible.

Spending more than one can reap back in sales results in devalued Coin. This cannot be avoided or hidden. And, the ONLY way a Credit Coin can be restored to parity with Perpetual Coin is by *reducing the Issue* of that Credit Coin. That would mean a business *contraction.*

Trying to increase the valuation of one's own Coin by *expanding sales* would be self-defeating as one usually increases sales by *lowering prices*. But lower prices would just result in FEWER Credit Coins being taken in per sale, leaving *more* excess Coin in the marketplace.

The only way to avoid business contraction in this situation would be by attracting new equity investment from outside. In the absence of new outside investment, temporary business contraction would be inevitable but parity could again be achieved. Extreme business contraction could be fatal.

Unless a business wrapped up it affairs neatly by redeeming all of its Credit Coin before closing, businesses that closed would leave void-for-trade Credit Coin in circulation. These would then become "creditor" *claims upon the real assets* of the Issuer, to be handled by the liquidator.

Mortgages
Today, most money is created by the issuing of mortgages. And as we have witnessed recently, when the math of mortgages goes negative, the repercussions can sink the entire economy.

Mortgage math goes negative because mortgage borrowers are obliged to pay back Principal plus Interest when only the Principal has been created. One hundred percent of the money banks take in as interest *must be spent* so that its *borrowers can earn it over and over again* in order to be able to make all payments. This does NOT happen.

The result is a condition of systemic bankruptcy by design that necessitates a continuous exponential expansion of the money supply/aggregate debt. In the absence of this expansion, the system produces foreclosures, evictions, bank failures and, ultimately, monetary and economic collapse.

In the Credit Coin system there is no growth imperative of the money supply because ***final payment, interest and profit can only take the form of real goods and services***, never any form of "money***".*** And… ***there is no possibility of monetary debt collapse because there is no monetary debt!***

Builders, providers of one of life's big necessities, would be standing next to farmers at the front of the line as the best candidates for being a Credit Coin Issuer.

Builder-Issuers would issue Credit Coin to pay for materials and labor. They would not be carrying any debt, except their obligation to provide the products they promised, and could capitalize new construction anytime by issuing new Credit Coin. There would be no bankers to beg credit from, no payments to make and no "interest clock" to beat . That is because the Builder-Issuers' only creditors are the Coin holders, and all that is owed them is *product ready on time,* never money.

The Issuer, in any business, has both *the ability and the responsibility* to create enough Credit Coin with which customers can buy *all of its product*. If the Issuer fails to do so, the system itself ensures this by *adjusting the value* of the Issuer's Coin according to its buy/sell ratio. This would apply to Builders as well.

Using the Credit Coin system, the Builder would sell a *partnership in the home,* with the purchaser gradually buying out the Builder. Payment would be made directly to the Builder and the timeline of payment could be adjusted any time by mutual agreement. All of this is important to keep in mind because the Credit Coin system makes possible good things that are unimaginable in the current system.

For example, in a building *boom*, an Issuer's outflow of Credit Coin could be *increased* debt-free. It would be spent to build more homes. This increase in the outflow would be balanced by the increased inflow of payments from new sales and therefore, the builder's Credit Coin would remain at parity with Perpetual Coin.

In a housing *slowdown*, the builder's outflow of Credit Coin would be *reduced* as fewer homes need be built. If this is due to a major economic downturn, customers may experience difficulty maintaining payments. The builder may have to lay off much of its workforce. However, the Builder is NOT in debt for "money".

The Builder's only legal obligation is to provide product in exchange for its own Credit Coin. And, because slowdowns usually result in *excess inventory*, the builder probably has sufficient product to fulfill demand. That is not where his problem lies.

The problem is the inflow! The builder needs to balance incoming Coin with outgoing Coin to keep its Coin at par. And *outgoing Coin has been reduced.*

Therefore, one way the builder could cope with a housing slowdown would be by *reducing its customers' payments* to keep the pace of inflow equal to the pace of outflow. Another would be to maintain the same outflow by using the extra income to *support the laid off workers*. Yet another would be to *invest in new business opportunities creating new employment.* The builder could also *spend lavishly on himself*.

Whichever course is chosen, no Issuer–Builder would be forced to go bankrupt, and no home buyer need lose his or her home simply due to some inescapable math. Construction workers would still see their work reduced, but otherwise, this would be a very different scenario than today's, where the entire house-of-cards debt money system and economy is put in peril of collapse every time residential housing growth slows down.

Big Business
Investment Coin
Large projects with long lead times would be financed by equity share sales as they are now. Investment banking and the stock market would continue to function.

Instead of additional bank financing, as is the current practice, special 'Investment Coin' could be issued. This Investment Coin would also be denominated in Perpetual Coin, but would have much longer-term maturity dates than Credit Coin, and potentially much higher yields. As this type of Coin should only be traded amongst willing participants in the Investment marketplace, it would carry an identifier as such and would only be accepted by those who choose to do so.

Profits
Today, businesses that survive make profits. And, in the Credit Coin System, successful Issuer businesses large and small, could also charge more for their products than it costs to produce them, thus realizing a "profit".

However, in the Credit Coin system, Issuer *profits can only be realized by spending them*. Why?

The Issuer must spend the same amount of Credit Coin it takes in. If it spends *less*, the value of its Coin will rise and the Issuer will automatically take in less Credit Coin per its product's Perpetual Coin price. This corrects the lack of purchasing power and pushes the Issuer's Coin back towards parity. But it does so by giving the "profit" to the Issuer's customers, not the Issuer.

To balance their Credit Coin inflow with outflow, and maintain parity with Perpetual Coin , the Issuer would have to spend the "profit" for their own purposes, in ways that will make it available to its customers. Capital improvements, employee bonuses, shareholder dividends, charitable donations or equity investments would all put "profit" Coin into general circulation.

Investment in other businesses
Issuers would not need external investment for short-term investment because they could create their own as Credit Coin. Therefore, "profits" seeking further investment would be channeled into *long term equity investments* in Issuers and investments of all types in non-Issuers, including new enterprises lacking a track record that would allow them to be Issuers themselves.

Executive Greed
Of course the executives could just *pay themselves the profits*. The Coin still must be spent in such a way that it comes back as income to the business or the executives will kill their golden goose. The design of the system cannot prevent executive abuse of the shareholders or employees, nor any kind of inequities that happen within companies. However, these social issues might cease to be such a problem in a society in which full recycling of purchasing power was a principle universally practiced and understood. But the system itself can't en*force* justice.

Individuals and Small Businesses
While anyone could incorporate and attempt to issue their own Credit Coin, unknown startups would find blanket non-acceptance of their Credit Coin, as no one would be aware of them and have them on their accept list. No one would know how to rate their credit or their product.

Thus individuals and small businesses would most often be constrained to conducting business with whatever Issuer's Coin was in circulation in their sphere of operations, just as we do with "money" today. As this mode of operation would be free of the obligations that bind Issuers, it seems probable that most individuals and small businesses would *gladly* operate without becoming Issuers.

There would only be a problem if there were not enough Issuers to provide an adequate circulation. In this situation, government, at any level, could increase the pool of its Credit Coin in circulation or more smaller businesses could take on the role of Issuers. No one would be forced into economic stagnation by an artificial shortage of "money".

Savings
Savings will not bear interest, as digital coin will not be stored in a bank. Users will have a securely encrypted Coin Vault online. Most digital coin in circulation will be Credit Coin, designed to *depreciate* to minimum value after its target redemption date has passed and, at some point in time, expire.

Thus Credit Coin would *not* be desirable for long-term savings. Savings would have to be stored in Perpetual Coin, precious metals, real estate, durable goods, or other equity investments.

It is very likely that there would be a great deal of specific Issuer Credit Coin kept out of circulation, saved for near term purchases from that Issuer. One way or another, Issuers must always issue enough purchasing power to absorb their product. However, in any given locality this may be too little or too much to fund the associated economy by circulation prior to redemption. When it is too much, it is reasonable to assume that people, having an abundance of Coin would save it up for future purchases earlier in its circulation period thus reducing the circulation. When it is too little, government, at all levels, could fill whatever gap was required.

Government
Government at all levels could fund itself by issuing Credit Coin. This could be in conjunction with the traditional issuance of physical cash. As an Issuer, Government is analogous to a service-delivering business. It would have to create the demand for its Credit Coin and cash by imposing taxes and user fees for government services, again payable at a discount in the government's own Coin.

Gross Income from taxes would have to equal the Credit Coin issued or else, as with any business, that government's Credit Coin would devalue in the marketplace, thus making deficit spending completely *self-defeating.*

Self-funded in this way, government could avoid devaluation of its Coin by freely picking targets to tax, such as wasteful and harmful industries, without becoming dependent upon them for revenue as is the case with tobacco and alcohol.

Ultimately, in the absence of other means, taxes and user fees would have to be used to recapture government Credit Coin. Given that the Credit Coin system yields no information about transactions, it would be very difficult to tax transaction and income taxes as is common today.

Instead, governments would be forced to adopt the Henry George principles of taxing "private use of the commons". Government would have to tax that which cannot move offshore or hide itself. Therefore the private use of land and especially the private use of natural resources would have to be the basis of taxation. This taxation would ultimately be paid by the consumer in prices, with those using more of "the commons" paying more than those using less.

Therefore, it could be expected that the adoption of the Credit Coin system would result in *the elimination of most current forms of taxation*, compensated for by a *general rise in prices*, as the *taxes would be incorporated in prices*. Overall, without interest payments to the private banking system, *taxation levels would be much lower.*

In a functioning democracy, the choice of how to tax would be ultimately a matter of voter preference. Of course, functioning democracies are hard to find, and the choice of who gets taxed is always a power struggle.

There would, however, be no hiding place behind unredeemable debt for pork-barreling politicians. The cost of government relative to the productive economy, locally, provincially and nationally would be immediately apparent in the level of each government's taxation as none of these costs could be laid upon the shoulders of unborn generations by means of bank credit.

Thus, there would always be popular pressure to lower the general level of taxation by avoiding war, cutting government and military spending, taxing socially negative activities, raising resource royalties, and imposing user fees, probably in that order of preference.

Government debt would be held by whoever was in possession of that government's Credit Coin at the time. The amount of government Credit Coin in circulation would always represent the value of something the government actually spent it on, presumably in the public interest. None of it would be interest on debt to private banks. The absence of interest payments would greatly enhance government's ability to balance its budgets.

In a Digital Coin economy there would be no room for any Issuer, private or government, to escape the rigors of balanced budgets, while having no theoretical limit to the credit that can be self-created as long as it is justified by demand.

Governments could augment the electronic Coin system with traditional physical cash where necessary. The cash system could be in addition to the Coin system or it could be integrated, wherein the cash token would represent Credit Coin taken out of circulation.

Summary

1. Credit Coin could only be issued against existing or near-future production of real goods and services and must have a near term expiry date. A little over a year would be the logical maximum as this would allow for annual sales patterns.

2. There would never be any limit on the creation of Credit Coin as long as a market existed for buying the corresponding amount of the Issuer's product or service. The total quantity of Credit Coin in existence has no effect on the value of any specific Coin because that value is specifically defined by what the Issuer will give the Bearer in exchange for the Coin.

3. The penalty for excessive issue of Credit Coin would be a proportionate *devaluation* of the Coin, automatically countering any advantage gained by spending more than was earned. The penalty for issuing insufficient Coin would be *overvaluation*, which if uncorrected by additional Coin spending, gives the Issuer's potential profit to its customers, not the Issuer.

4. *Profit can only be realized by spending it*.

5. The Issuer's *minimum guarantee* is to honor its own Coin as if it were *Perpetual Coin*.

6. Dishonored Coin would become *void-for-trade* and a *claim on the real assets* of the Issuer.

7. The system automatically tends to correct under-par or over-par Coin. Success consists of maintaining Coin-at-par in a stable or expanding volume of Issue.

8. An Issuer's fiscal state would be apparent to everyone by the value of its Credit Coin. Any Issuer with devalued Coin has obviously spent more than they have taken in and must contract its Issuance in order to restore the value of its Coin. Any Issuer enjoying parity has a balance of trade. Any Issuer enjoying a market premium on its Coin is free to create more Coin in order to give employee bonuses, expand production, or invest in another business. There will be no way to hide this information and no way to "cook the books".

9. Credit Coin is not a number that can be endlessly manipulated. It is a *thing* that can only exist in one place at one time. And, as these things will be so easy to create as long as there is a market for product, there should be little need for anyone to borrow Credit Coin itself at interest from a third party, and no possibility of anyone cornering the market in the medium of exchange as there is with a *limited quantity* form of "thing" money like precious metals.

Real World
Ultimately, all things come from the real world. The value of a working trading medium comes from its usefulness in adapting to the real world, which in our case is one in which knowledge-based resources can still increase exponentially but physical resources are hitting the wall of finite supply.

We are soon going to have to make do with much less. It is only logical that the world cannot continue with a money system that can only function in the context of infinite exponential growth. What is needed is a trading medium equally capable of contraction, expansion or equilibrium.

As we can see around us, a mathematically unstable system built on debt-at-interest can have only one final result. It must ultimately collapse from the bankruptcy inherent in its design. Many suspect the collapse has been both anticipated and prepared for, in the form of the techno-police state we see growing around us to defend against "terror".

Implementation
Perpetual Coin and Credit Coin could be put into worldwide use in little more than the time it takes the world to download and install *free software*. *The obstacles are not technical.*

The obstacle is the existing way of doing things that will not change.

However, ***what is impossible today could be unavoidable tomorrow***.

In our situation today, alternative currencies seldom "catch on" because everyone is forced to buy so many necessities outside of their membership. And this requires having national money.

Globalization is clearly the path to *complete dependency* on other people far away, which enriches all sorts of middlemen. It also depends on cheap energy to transport goods long distances. Rising energy prices, reduced margins and rising security concerns make it is reasonable to predict that we may be *forced* in the near future to rely on more *local sources of production.*

The problem with this forced “re-localization” is that, for societies that have outsourced all of their production*, there won’t be any local suppliers*, everyone will be *dead broke* and all governments and financial institutions will have gone *bankrupt*.

The existing monetary system will strangle itself and everyone else with debt.

Many will retreat into gold and guns. And this may indeed be the regression of humanity back to earlier armed levels of relating.

However, the peaceful, life-affirming and potentially prosperous path out of this situation is as simple as understanding and putting into practice a system of *self-issued credit,* promises of real goods and services, not payment in money.

As illustrated in my animated cartoon “the Essence of Money”, a credit voucher could just be a signed piece of paper attached to a small square of unique material, like an old dress torn up and used at a local barter exchange. It could come to that.

But should we have the option of putting the Digital Coin system in place using the best technology, producers seeking to expand production without money could issue Credit Coin.

This could happen simultaneously and independently. Separate *local* Credit Coin systems could expand organically as people download the software and put local Issuers they want to buy from on their accept list. Accept lists could grow to include more suppliers as they gain confidence that the Coin they accept can be spent on what they need.

More suppliers would become Issuers as the liberating advantages of self-issuing credit became more and more apparent. Issuers would be those who provide *necessities* for which minimum demand would be *reliable*. Being able to buy many *necessities* within the Credit Coin system is the accomplishment that would propel the transformation further and faster.

Natural “economic networks” could grow just as online “social networks” are growing now. Which is to say… very quickly. Ultimately a global network would *generate itself*.

No guidance or control would be needed. No debt would be involved. And approximate balance-of-trade in real goods and services is the only trade relationship possible. Everyone would do business *only in the Credit Coin they have approved to accept*, which would ultimately prove to be a *democratic power of global reach* far more effective than representative democracy.

Thank you for your interest in this proposal. Questions, comments and critiques are welcomed.

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Appendix

Example Scenarios

Scenario 1
Company A has a hot product that everyone wants. It is capable of commanding a substantially higher price than what it costs to make. The higher price that is possible is charged. The result? There is not enough Company A Credit Coin in existence to buy all of Company A's product at this price and more people will be seeking to exchange for Company A Credit Coin than offering it in exchange.

This drives Company A Credit Coin above 1.0 PC according to the formula buy/sell PC.

But all prices are in PC. Therefore *the higher value of the A Coin will mean that less A Coin will be taken in per Company A product.*

The customers holding Company A's Coin will therefore get a further price break making Company A Coin even more desirable and driving its value higher while driving the return to Company A *lower*.

Therefore to "profit" from this situation, *Company A must spend more Company A Credit Coin.*

Some choices would be to issue new Credit Coin as:
1. employee bonuses. A bonus would be the simplest way to put the needed extra purchasing power into circulation;

2. capital spending, buying things from other suppliers;

3. dividends to shareholders who may spend it or invest it in equity;

4. investment in a new enterprise;

5. charitable donations;

Thus in the Digital Coin System, an Issuer's "profits" can only be realized by spending them in such a way that its customers can earn them. Charging more than something costs to make is self-defeating otherwise.

Scenario 2
Company B's sales are not bringing in as much Credit Coin as was spent on production. Therefore, Company B's Credit Coin is below par and slowly sinking further.

It cannot attempt to stimulate sales by lowering prices because all prices are in PC and as a result of the CC=buy/sell PC formula, doing so will only devalue the Coin further by leaving even more excess Coin on the market.

Company B, therefore, has to cut back on its issue of Credit Coin. There is no other choice. Everyone from wage earners to executives are paid in Company B Coin at *nominal parity*. Undervalue Company B Coin means a cut in real purchasing power for everyone in the Company, as well as a loss of reputation. Therefore, it is in everyone's interest to cut spending.

Questions & Answers

Question 1:
If a company goes out of business, then its Credit Coin is void-for-trade. A new startup would have no credit record. Would this scare people away from accepting payment from smaller startups, putting new companies in a very bad spot?

Credit Coin is a legal contract to deliver goods and service either immediately or in the short term. And users of the Credit Coin system would have an “accept only” list so that the Coin of new unknown Issuers would automatically be refused acceptance.

Startups would not be in a position to offer products in the near term and could not get acceptance of any Coin they issued. Therefore, the normal process of seeking investment, and doing business with other Coin in circulation would be necessary.

It would largely be a matter of established “profitable” Credit Coin Issuers seeking ways to spend their profits by investing in startups.

Question 2:
In terms of the Issuer’s ability to give out Credit Coin, how can the redemption price be set by them and maintained fairly?

The value of an Issuer's Coin, expressed in Perpetual Coin is not set by the Issuer. It is set by solely by the Issuer’s balance of trade.

Let's say the Issuer issues 100M CC promising the investors a 5% discount in product 6 weeks later. The Issuer uses the 100M CC to pay shareholder dividends, ongoing capital costs, executive salaries, employee wages, rents and material costs to produce its product. As the Issuer is issuing its own credit, there are no loans-at-interest from third parties, thus no "cost of money" to be paid in money.

The Issuer has planned the whole operation to be sustainable if it succeeds in selling some or all of its product for the 100M CC. If the product is a winner, the price it can command may bring in *more than* 100M CC.

In conventional economics this is a chance to make a profit in “money”. How does it work in the Credit Coin System?

A higher price for the product results in a *shortage of the Issuer’s CC* with which to buy the Issuer’s product. Uncorrected, this will drive up the value of the Issuer’s Coin.

The shortage will also result in the Issuer making un-discounted sales for PC and other CC, thus commanding real goods and services from other Issuers. The Issuer can’t save this profit as money, as it will devalue and eventually expire. It has to spend it.

To realize a profit in goods, the successful company could sell the CC it took in for the CC of their own suppliers.

Thus, a real profit could be realized in lower material costs, which would allow the successful company to:
1. maintain production while reducing issue of Credit Coin. In conventional economics, this cost cutting is considered a good idea as it allows the taking of more profit. However in the Credit Coin

System, cost cutting *for profit* is self-defeating.

Reducing costs reduces the issue of CC. This would push the value of that CC up even more, relative to any price the Issuer sets for its product. The value of this CC is probably up already, due to the shortage of it.

The Coin is now worth more in terms of real goods & services. At first thought this sounds good. But it isn't. The premium is nice when spent but an even bigger premium in product is required to buy the Coin back!

Say, due to the spectacular success of its widgets, widget-Coin is now trading at 1.1 PC. If the price of the Issuer's product is 10 PC, and its discount 5% then, at parity, 9.5 Issuer CC makes up 10 PC.

But the Issuer's Coin is trading at 1.1 PC. So sale of the product has to be for 9.5/1.1 = 8.64 CC.

The Issuer has budgeted that one unit of product will recapture 9.50 of its CC but is required by contract to sell one unit of product for 8.64 of its CC.

Thus, allowing Credit Coin go above par is self-defeating as it automatically lowers the amount of Coin received per product. In this way the extra purchasing power that is needed for balance comes into existence by itself. However, all the advantage goes to the customer. There is no advantage for the Issuer.

2. A second choice would be to increase production while maintaining the same recycled volume of CC. This would allow lowering the price of an already successful product making it even more successful. However, if the product price were *not* lowered to keep the balance, you get the same scenario as 1. But why do this if your product is already successful at its current price?

3. The third choice would be to *increase production while increasing the volume of CC*. As long as everything stays in balance, the only limit to growth is demand. Clearly this is the only way profit and "success" can happen in this system, greater productivity in real goods & services that people really want and wages exactly sufficient to buy them.

4. The best way to *quickly* counter too high a valuation of one's Credit Coin would be to pay one's employees more, especially the ones most likely *spend it into circulation immediately*, a *bonus* having the most instantaneous results.

What is the redemption price with *devalued* Credit Coin?

We tend to think of value in terms of price but here it is better to start by envisioning two boxes of widgets. The smaller box is what you get if you *don't buy* with the widget vendor's Credit Coin. You get a bigger box if you do, because the *extra widgets are the dividend*, not "money".

This is a fundamental principle.

How much bigger a box? If the Credit Coin discount curve for today says I get a 5% discount, that means (1/.95 = 1.0526) 5.26% more widgets. *BUT* the widget-makers Credit Coin has dropped to 0.98 PC in the Coin Market. Therefore I get only 0.98 x 105.26% = 103.15%

Now, in reality, there is only a standard case of widgets priced at 100PC. Even though the widget Vendor's CC is somewhat devalued, it is still desirable because it gets me 3.15% MORE than a PC. I

have to spend 96.95 widget-vendor CC (1/1.0315) to make up 100 PC.

As the Issuer expects to sell pretty much all of their product for their own Coin at the maximum discount (functionally the *regular* price) the price they plan for is 95 PC per item. Now, due to the devaluation of their Coin, they are taking in 96.95 CC per item. This will help correct the devaluation by increasing Coin recapture.

The Issuer's options are:

1. continue production at the same rate, building up excess stock that might become obsolete before it is sold. Add the fact that the company Coin will continue to devalue, robbing company workers of purchasing power just as if you had laid them off and well, … not really an option.

2. continue production and give away the excess stock. You could give your excess product to poor people who could never afford to buy it! If that stimulated sales back up to balance with the fixed level of production it would be a wonderful idea. But really, how is that going to happen?

The only reliable option is to:
3. cut back production. This requires the usual hardships of contraction but there is no third-party debt or interest clock hanging over everyone. A layoff would dry up the issue of new CC reducing the volume in circulation, in conjunction with the increased rate of Coin recapture due to devaluation.

A business with devalued CC is obviously one in which spending has exceeded earnings. There is no magic fairy of bank credit to turn to for artificial money and no way to cook the books to paint a rosy picture. But there is also no need to declare bankruptcy either, because the system itself is not inherently bankrupt as the debt-at-interest system is designed to be. The remedy is simply to *reduce Credit Issue and production back into balance with sale*s and try not to repeat the mistake.

A more extreme example is still not a disaster.

If the market value of the Credit Coin being redeemed in product is way down at 0.90 PC then an item priced at 100 PC would, by the same formula, cost 106 Issuer CC (95/90 x 100).

This would be non-functional as there would be no motivation to return the Issuer's CC to the Issuer. Therefore the Issuers must guarantee to sell us their product for no more than the undiscounted price at par, which is 100 CC. This is part of the contract imprinted on the Coin.

So, the Issuer is now taking in 100 of their CC for each product.

This is a known limit that can be planned for. As the devaluation was caused by too much Coin for the demand, the increase in Coin per product helps soak up the excess Coin at one end, while a cutback in production has the same effect at the other.

The downside is that the company now has a "reputation" for not being able to deliver its discount. Sub-par Coin always means more spending than sales, usually requiring production cuts or at least cost-cutting to redress the imbalance.

On the upside, no one is in debt to anyone except the people who have the company's Coin, and all that is owed them is product. There is never any need to declare bankruptcy unless there is company Coin demanding redemption in product that the Issuer cannot honor. That becomes ground for suit to liquidate the Company's assets.

Unredeemable Coin naturally becomes worthless in the Coin marketplace. By this point, the Issuer should be closing shop. When that happens the Issuer's Coin becomes void-for-trade. It is now cause for suit and a claim upon the real assets of the Issuer. Those holding large lots of this Coin will be after their share along with the equity shareholders.

However, if this unredeemable Coin were widely dispersed in tiny amounts, most Coin holders would not even notice its disappearance. In this way, much of the loss could possibly be spread in a way that, so many people absorbed it, no one really suffered.

Question 3:
If Credit Coin is never redeemed does it naturally go back to the same value as Perpetual Coin?

No, demand for an Issuer's product ultimately determines the value of that Issuer's Coin. An Issuer's Credit Coin *loses* the discount after the target redemption period has passed. After some reasonable length of time it expires and becomes void-for-trade. Why would anyone not spend it while it is still worth a premium? Or for sure before it expires?

Maybe it was hoarded in volume despite the loss of the discount. This could drive up the market value of the Issuer's Coin due to there being insufficient Issuer Coin to buy the Issuer's products. If that was what the hoarder was hoping for, it could only be because they have not grasped how the system works.

The Issuer would, in that situation, have to defend itself by increasing its Issue, most effectively by giving its employees a bonus. When the hoarded Coin came back into circulation, its redemption by the Issuer would require less product to redeem, but might still result in production cutbacks, effectively taking back the bonus.

It would be a nuisance for the Issuer and their workforce, but the only result for the hoarder would be losing their discount as well as being stuck with a lot of Coin that would devalue as soon as they made it available. Therefore, for profit-seekers, it would not be a viable strategy.

If the Coin were not redeemed because there was more of the Issuer's Coin than there was demand for its product, that's a double whammy - it has lost its discount and no one wants it anyway. This would have to be a severe situation because the Coin is always guaranteed to be worth 1.0 PC if spent on its Issuer's product. Otherwise, if it is not redeemable in product, the Issuer is out of business and the Issuer's Coin will become void-for-trade.

Spending Credit Coin at maximum redemption is rational self-interest everyone can understand. Therefore, most Issuer's Credit Coin will very probably get redeemed. If not, it will either expire in time or become void-for-trade as a result of the Issuer's liquidation.

Question 4:
Can you think of a way crooks could flood the system?

Counterfeiting, fraudulent Issuers, and a tendency for *all Issuers* to issue excess credit are three possibilities. Issuers secretly planning to *go out of business* could go on a Credit Coin spending spree leaving Coin holders with the losses.

Preventing counterfeiting is a purely technical challenge that has to be met in the technical realm and would certainly be *priority number one forever*.

Fraudulent Issuers would be prevented by an automatic “accept only” filter. All users would have an acceptance list to which they would add or remove Credit Coins from specific Issuers. Unknown Coins would automatically be barred from trade. It is expected that if this system were widely adopted, professional brokerages with the capacity to research Issuers would provide reliable “accept only” filters for their clients.

General devaluation of CC could happen, but unlike devaluation of national currencies, it would not affect whole nations. There would be many Issuers worldwide and there would probably be lots of CC that remains at par.

Any widespread devaluation of Credit Coin would be independent of national or other political boundaries. Devaluation affects only those Issuers issuing too much Coin. Wide spread devaluation would simply result in a straightforward transfer of real wealth from holders and Issuers of devalued Coin to those who hold and issue Coin at par. That is to say good management will be richly rewarded. Bad management will be inescapably punished.

An Issuer secretly planning to go out of business could go on a Credit Coin spending spree, leaving Coin holders with losses that could only be made up, and then only partially, by claiming the real assets of the Issuer in liquidation. This would be the one scenario to really worry about.

But why would anyone want to wrap up a profitable company? Therefore the warning signs would be a company that is not profitable and doesn’t have much chance of ever being profitable.

Question 5

How would mortgages work? While the builder can be an Issuer and finance new construction with Credit Coin, what happens when the buyer wants to sell? How does a second buyer purchase the first buyer’s equity if there is no borrowing from banks?

Mortgages would take the form of partnerships. Initially the builder would form a partnership with the first buyer. There would be no need of a down payment. The buyer simply undertakes to buy out the builder’s ownership interest over time and as long as the buyer is making payments and otherwise acting according to the agreement, the builder has only “silent partner” status.

Should the buyer fail to make the agreed upon payments, or otherwise violate the agreement, the builder would be entitled to “active partner” status, and could legally force the first buyer to sell their equity in the property, either to the builder to re-sell or directly to another party.

In the case of a secondary sale, the second buyer would not have the option of going to a bank and just creating new money to buy out the equity of the first buyer. This ability to create almost unlimited amounts of credit is what fuels asset speculation, flipping, debt bubbles and inflation. Instead, the second buyer would enter into the partnership agreement to buy out both the builder and the first buyer (now silent partners) over time.

Builders would issue Credit Coin in exactly sufficient quantity to absorb their entire product. As well they would specifically design their redemption curves to allow the accumulation of short-term savings in order to purchase their products. It is, therefore, anticipated that the factors of much lower price, abundant Coin, easily accumulated savings and no interest payments would drastically shorten mortgage payment periods.

Question 6
Who would manage this system? How would the total quantity of Coin be controlled? Would there be any entity like the central banks we have now?

No one would manage the system as central banks to today. Issuers would manage their own Issue. As governments would be among the largest Issuers, and capable of applying laws on other Issuers, government would have some ability to manage how the system operates within their own jurisdiction. However, as this is conceived of as a global system, and many Issuers would be global corporations, it seems unlikely that any individual government would have the power to dictate the operating principles of the system as a whole.

The total quantity of Credit Coin in existence is not an issue. Why? Because every Credit Coin created is a claim on *a real product from a specific Issuer*. If a Credit Coin buys a loaf of bread from its Issuer, then its value is that loaf of bread. The Credit Coin's value is defined by what its Issuer will give in exchange for it, modified by the buy/sell ratio for that specific Credit Coin. The total quantity of Credit Coin in circulation does not alter that value.

The only variable that would need to be dealt with would be the ratio of Issuers to non-Issuers. As mentioned previously, if there were a great abundance of Coin, more of it would likely be set aside earlier as short-term savings for specific purchases. If there were a shortage of Coin, there would be room and motivation for the emergence of more Issuers. Failing the emergence of new private issuers, government could step in and increase its Issue of Credit Coin.

This system would provide a lot of employment for economists. With full knowledge of the exact amount of Coin in circulation, the exact volume of transactions per time, yield curves designed for specific product cycles and seasonal sales patterns, the economist would be endowed with a very powerful toolbox for operating a sophisticated economy. Management would consist of maintaining the value of Issuers' Credit Coin at par with PC via rigorous balance of trade.

Given the analysis presented so far it would seem plausible that a Digital Coin economy would be structurally immune to deflationary spirals and runaway inflation alike. With its built in formulae and automated valuation methods, a Digital Coin economy would also provide no opportunity for speculation, manipulation, or cheating. In a world in which infinite exponential growth is no longer an option, a Digital Coin economy would be capable of expansion, contraction or equilibrium with equal grace.