Series: The Ideal Digital Currency (2)

Digital Currencies and Initial Currency Offerings (ICOs) Need a Reserve Backed System

This is a continuation from the prior article positing that digital currencies need a more thoughful monetary system besides a fixed supply system if they expect to grow to reasonable size and be the basis of a thriving economic system. It turns out that we believe that many, if not all new digital currencies likely also need a reserve backing for their networks; if only at the outset.

The reason for this is because currency and money really is about confidence. As a means of exchange, modern money is typically nearly worthless on its own face value. This is true of paper money and also true for digital money. Their value lies in the consensus agreed upon implicitly by those who accept the currencies for transactions. For example, one USD is only able to buy some item, say 1 loaf of bread because the owner of the loaf of bread accepts that as the value of his bread in USD, and expects that he would be able to at any time turn around and exchange that one USD for other goods or service that he believes is on par in value with his 1 loaf of bread. Why and how that value settled at 1 USD and not, say 100 USD is determined from a history of the currency and market forces of demand, supply, and costs of production. Let's take a look at that history.

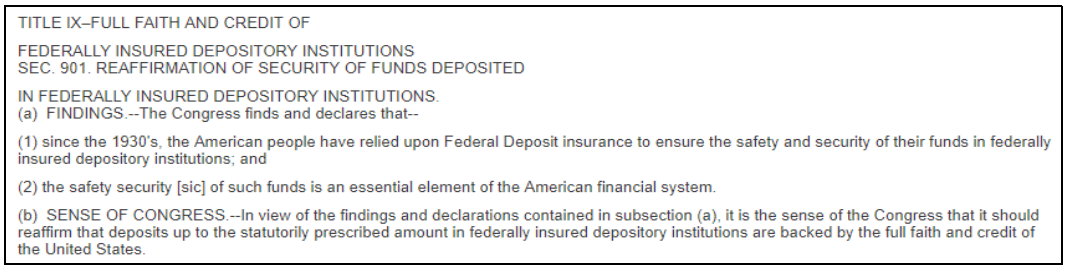
History of the Dollar Value

During its creation, inserted into Article 1 of the US Constitution, in a clause known as the Commerce clause, that required the debt of the nation and effectively the dollar be backed by gold and silver. Later on, the Gold Standard Act of 1900 effectively pegged the dollar solely to gold, specifying that the dollar be equivalent to twenty-five and eight-tenths grains (about 1.67 g at the time) of gold of some specified purity level. This guaranteed the dollar could be convertible at any time to a specific amount of gold. Effectively, the dollar was thus backed by one ounce of gold to $20.67. Much of the currencies in Europe were also backed by gold during that period.

The Gold Reserve Act of 1933 modified the rate to $35 per ounce of gold. Following that period, other currencies began to be valued in terms of the US dollar, and thus remained effectively pegged to gold.

However, inflation put a strain on this arbitrary peg, and eventually in 1971 following the oil crisis, President Nixon canceled the convertibility of the dollar to gold, and allowed the dollar to determine its own equilibrium value.

The dollar is currently effectively backed by faith in the United States government and its history and obligation to the currency. Other countries, and commodities markets, such as the price of oil, have basically continued to peg their values to the dollar. Deposits in dollars, for amounts less than $250,000 have also been backed by the United States government via the Federal Deposit Insurance Fund – a reserve, such that users know that the amounts they have in the system at any point is secure to some extent in terms of the value they put into it to buy it (the goods or services they exchanged for it). That FDIC reference provides an interesting perspective on the intention of the reserve and would make a good short read separately. It would be imperative not to throw away some of the desirable aspects of an old system while trying to replace it with a better, and technologically more advanced one.



TITLE IX–FULL FAITH AND CREDIT OF

FEDERALLY INSURED DEPOSITORY INSTITUTIONS
SEC. 901. REAFFIRMATION OF SECURITY OF FUNDS DEPOSITED

IN FEDERALLY INSURED DEPOSITORY INSTITUTIONS.
(a) FINDINGS.--The Congress finds and declares that--

(1) since the 1930's, the American people have relied upon Federal Deposit insurance to ensure the safety and security of their funds in federally insured depository institutions; and

(2) the safety security [sic] of such funds is an essential element of the American financial system.

(b) SENSE OF CONGRESS.--In view of the findings and declarations contained in subsection (a), it is the sense of the Congress that it should reaffirm that deposits up to the statutorily prescribed amount in federally insured depository institutions are backed by the full faith and credit of the United States.

The history described above serves the purpose of demonstrating that at the outset, for users to gain confidence in a currency, they initially need to know that if they buy the currency; which they effectively do by exchanging their goods or services for it; they can expect to retrieve roughly that value back at any time. The value they can retrieve back represents a floor on the value of their goods or services. Later, once the currency is established, the currency could set its own rate based on its strength and what its users determine is its exchange value.

Bitcoin seems to have bypassed this path. However, it continues to experience volatility that is almost not conducive to every day commerce. The argument from a digital currency enthusiast would be that pegging digital currencies to any fiat money, which is typically inflated, simply removes one of the key drivers behind the creation of the digital currency in the first place and would effectively stymie their appreciation. **However, this is not a peg of the digital currency to the fiat money but the peg of a separate reserve that serves as a floor initially for holders of the new digital currency**. The reserve does not imply that users must exchange back their digital currency for the reserved value. They could continue exchange at the market rate same as is currently done for digital currencies. This can be better explained with ICOs (initial coin offerings,) and is similar to the idea behind Bancor. It should be noted that Bancor seems to be proposing a reserve system where its token sort of plays the role in the ETH ecosystem that the USD does to other national currencies.

Note that while the reserve idea in Bancor for new digital is good, the price discovery formulation in the Bancor protocol has been well criticized and is yet to be proven. In addition, the point of the reserve is to peg a new digital currency to a more established one that users have confidence in. In addition, a predetermined reserve price known to the user before purchasing the new currency, and without any exotic price discovery schemes, is currently preferred in this article.

A Case for Reserve Value for ICOs

Now consider a new coin offering where members of the public are being offered some new digital currency. Typically, the ICO offers some units of the currency for the dollar; usually via some other digital currency such as bitcoins or ETH. For instance, to avoid naming any specific ICO, let's say a new ICO, symbolized as NEW is sold at 1000 NEW to 1 USD. This is how several of the million dollar ICOs have raised money recently. However, it turns out that users can not usually turn around and exchange their NEWs back into USD at that same rate once the currency gets on digital currency exchanges. This means that the digital currency is immediately not liquid at its outset reducing confidence in the currency.

What if the issuers of the currencies put aside that 1 USD received in exchange for the 1000 NEWs into a dollar reserve such that users are guaranteed that by merely exchanging their dollar for NEWs they have exchanged it for another currency that is just as liquid, and can obtain back that value for it? That sets NEW up as a real, fully liquid currency right out of the gate. If the ICOs is advertised as a development ICO, then a percentage of the ICO could also be disclosed upfront as intended for development and the rest placed in the reserve. This would address the situation where several ICOs have simply received large sums upfront from investors, without much accountability, and without disclosure of how much of the collected amounts is intended for development.

The reserve arrangement does not prevent NEW from diverging positively from its pegged reserve value in time by operating a non inflationary monetary system that would see it appreciate. In other words, this does not stop a digital currency from being the same digital currency with any of its preferred limited supply settings. It simply removes one important confidence subtracting element from the currency whereby issuers are essentially entrusted with other people's valuable assets without much convincing assurances of any kind.

In fact, the digital currency will likely appreciate as discussed in prior articles here and here. And the reserve fall back would be one that holders of the digital currency will not exercise since the market rate of the currency would eventually surpass its reserve rate. For instance, the trajectory of this hypothetic digital currency could be seen as follows:

- New Digital currency is issued at 1000 NEW = 1 USD. The USDs exchanged for NEWs are placed in reserve. For an already developed system, holders of NEW can choose to exchange back their NEWs for USDs at any time at the rate of 1000 NEW = 1.0 USD. For ICOs in which users are initially informed that a portion, such as 10%of the ICO value would be used for development, then the reserve rate would be set at 1000 NEW = 0.9 USD.

- Subsequently, economic activity is being conducted in NEWs. NEWs maintains a deflationary supply level and begins to appreciate. The market value of NEWs after *x* months is now, say 1000 NEW = 1.2 USD. Holders of NEWs can trade them in that ecosystem for that value.

- Operators of NEW continue to automatically put USDs in reserve for NEWs purchased off new issues via the monetary supply system described in the prior supply article of this series. In other words, all existing digital currency in circulation remains backed by reserves. Any newly issued supply is also similarly backed by additions to the reserves.

- Holders of NEW would theoretically never need to exercise purchase from reserves since the reserve rate will always typically be lower than market rate. In the event that they do need to avail themselves of the reserves, it would always be available for such situation.

Note that the reserve system is mostly an operational attribute, and the nature and programming of the digital currency itself does not change much due to its existence.

Operating a Reserve System

So how can a reserve system be operated such that the transparent nature behind the adoption of digital currencies is preserved? Firstly, it would be difficult to establish such a system with a digital currency in which all newly issued coins are provided to miners. Effectively, such a system has simply replaced a non transparent reserve body or central governing authority with a slightly more transparent group or body – this time miners. In an ideal system, the gains of economic activity in the entire system, as disseminated through new supply, should be a reward to all users participating in the system, not just to miners. (In the final article in this series, we demonstrate that the existence and participation of users in a bounded economic system results in creation of economic value.)

In the ideal scenario, the procedure for operating the reserve should be as transparent and autonomous as possible. In the supply-side procedure described in the earlier article, the process of placing a reserve against all newly issued digital currency could also be automated. But then, how will things add up when some of the new supply are block creation reward to miners? The answer to this is two-fold. Firstly, if the supply is limited and the currency appreciates, then even fractions of all new supply will contribute

sufficiently to the reserves at the initial reserve rate (note that the successful digital currencies that have achieved network effects have grown over 1000% from their initial starting value). Continuing the prior bullet point from above, placing in reserve assets against newly created digital asset can be described as follows.

- The market value of NEWs after *y* months is now, say 1000 NEW = 2 USD. Let's say the supply-side algorithm results in the creation of 20,000 NEWs. Assuming out of the 20,000 NEWs, 5,000 is for rewards to transaction processors or miners, while 5,000 is issued as interest to those who have digitally frozen (save or staked) some of the currency, while 10,000 is issued to creators of new economic activity (for creative activities such as grants, agricultural loans, physical mining, philanthropy; as listed in the prior article in the series). At the reserve rate, the sale of the 10,000 new units effectively covers the necessary reserve for the newly issued currency.

- The reserve rate could also be programmed to increase in value, similar to how Satoshi included the block halving supply mechanism into bitcoin. In other words, the reserve rate could be set to increase by 10% each year until the tenth year, for instance, where the reserve would be abolished. The reserve life span is set to a point by which time the digital currency would be established and all participants in the ecosystem would have had all opportunity to avail themselves of the use of the reserve to retrieve their original value, even if not at the going market rate.

Secondly, if the amount reserved falls below the circulating digital asset at the reserve rate, the system could also build into its constitutional algorithm a requirement to sell some of its own digital currency holding on its balance sheet to replenish the reserve. If the digital currency is not inflated compared to its reserve currency, the purchase of relatively small portions of the digital currency should easily overcome the shortfall.

Finally, an ideal feature of the system described here would also include the transparent and dynamic publishing of the amount in reserve, compared to the total amount in circulation; where the amount in f digital currency in circulation can actually already be inspected from the public ledger or blockchain.

Conclusions

In this second article in the series pointing out improvements to digital currencies, or attempting to envision the ideal digital currency, we describe a system of reserves that would see this ideal digital currency with the following attributes:

1. Perfectly liquid against original fiat currency in its domain right from the outset. Members of the digital currency's economic ecosystem have confidence that the digital currency they hold can be exchanged back to local fiat currency on demand.

2. Reserve procedure is transparent and automated and programmed into the blockchain logic.

3. The reserve price by nature of the limited supply will slowly become lower than the market price as the digital currency appreciates against its reserve currency.

4. The reserve price is programmed to appreciate year on year, up to a number of years at which point the reserve is no longer needed, and the digital currency is no longer pegged.

5. Supply of the digital currency is limited but controlled such that its value remains stable and appreciating (from the prior article on supply and monetary policy.)

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