The problem with Bitcoin

The value of Bitcoins — which trade on what is best described as an OTC basis — has been soaring of late. And suddenly everyone is talking about bitcoins. Yadda yadda yadda.

Here’s the latest bubblicious chart, courtesy of Bitcoin charts:

Some have linked the recent spike to the move to impose haircuts on Cypriot depositors. Others suggest it’s just that Bitcoin’s time has finally come.

Either way, the ascent has even got even, you know, serious analysts talking about the phenomenon.

Here’s SocGen’s Sebastien Galy:

Bitcoin – after so many requests I had to give up and do something. Bitcoins have a money supply that is theoretically increasing following an algorithm approximating the effort of mining. With far more rapid advances in the technology of processing than mining, the rules have already been changed to stop some form of mining. This is effectively a form of revaluation of the currency.
“Monetary Approach” – One way to value bitcoins would be to compare the money supply of the US vs bitcoins. That simplistic approach would make bitcoins very valuable if they end up being able to buy the same USD asset. This is a supply approach and easily insolvable.

Law of one price approach – On the demand side, a dollar is used to purchase say a piece of software or game tokens within a game or to pay someone for watching a video. There the reality meets the rubber. As far as I can see within a game, the value the bitcoin is devalued as games introduce their own tokens (e.g. Metal storm has now three different levels of tokens depending on whether it is externally tradable, internally). If the bitcoin becomes too expensive it loses its usefulness as a numeraire used for exchange.

Legal framework – From a technical point of view, the bitcoin is not yet a currency in the sense that the currency is not anonymous. Volume is low and hence it is easy to influence the price. There is no certainty that the supply of bitcoins will follow the original rules, these rules have already been changed and presume a trust in the ones able to issue the currency. In many countries, printing money is a state privilege that will come to bite in the future as this like gambling is regulated for good reasons.

**Technical**s – From a trading point of view, we broke out of the upward trending channel in an exponential upswing typical of aggressive bubbles. As all bubbles there is a good story behind it, the trick would be to measure both the supply side and more importantly demand side value of bitcoins.

That’s a fair analysis.

But there are some points that the newbies are missing. Galy mentions the rules have been changed, but he doesn’t really point out the key problem about the rules.

Bitcoin’s programming ensures there can never be more than 21m coins in existence. Part of the “bubble” effect, no doubt, is linked to a realisation that we are quickly approaching that limit. According to the latest data from Bitcoin charts, for example, there are currently 10,986,175 bitcoins in issuance. Yes, we still have some room to go, but given exponential dynamics, the fact that we’ve reached the “half-way point” in supply is no doubt meaningful.

Of course, as the original White Paper by Satoshi Nakamoto (the “anonymous” creator of Bitcoin code) pointed out, it’s really all about CPU power. Anyone who has the CPU power to create new coins, also has the power to replicate existing coins. The Bitcoin system assumes, however, it is more logical for these entities to create new coins rather than steal back existing
ones. And given that, this is why the system has a type of inflation/deflation check.

Nevertheless, there is still the 21m limit issue. If the limit is reached, the future of Bitcoin supply has to go down the path of fractional reserve banking, since only re-lending existing coin, or lending on the basis that settlement can one day be made in Bitcoin — a la conventional banking practice — can overcome the lack of supply. Unless somehow the rules are broken, of course, but that’s another subject.

But given that a certain element of the Bitcoin fan base is made up of “fiat sceptic” types who, when not advocating Bitcoin are actively professing a love for gold, it all does feel somewhat ironic — Bitcoin, being the most fiat-like of all currencies.

And on that note, we think the following conversation between Chris Cook — a senior fellow at UCL’s Institute for Security and Resilience Studies — who has been advocating peer-to-peer platforms for more than a decade now, and an Austrian Libertarian inclined critic, is worth putting up (with Cook’s permission).

It really gets to the heart of the issue:

As Chris Cook first explains to FT Alphaville:

> Bottom line is firstly that a unit of currency and a unit of account are two different things (although in the case of fiat currency and Bitcoin they are the same). Secondly, to be generally acceptable, a currency should be returnable in payment for something with use value over time (utility). Third and last, currency is not necessary for credit creation and for trade.

> Wherever a barter system involves credit the result is a monetary system.

Credit creation and clearing – on the other hand – IS necessary to cover the time-lag between ‘split barter’ transactions. VISA and Mastercard do not involve deposits, but they net and out and settle net balances in fiat currency.

The WIR and Bartercard barter systems use centrally-issued complementary currency for settlement of credit obligations and therefore PRICE in fiat as a unit of account but do not SETTLE in fiat.

With a decentralised P2P credit clearing system what happens is that you have open bilateral (OTC) obligations A>B; B>C ; C>D. Then when D sells to A a software bot (like Ripple) generates a Brent-style Daisy chain A>B>C>D>A and the open obligations settle. Of course, the use of currency would help, but it’s not strictly necessary, although a unit of account is necessary. In summary, Bitcoin is the Napster of payments – the flawed writing on the wall for banking as we know
it. Anyway.

And here’s the discussion referred to above:

**Chris:** Value is subjective, and utility – in terms of use value over time – is objective. Location has use value over time; energy (material and immaterial) has use value over time; intellect – either what is between your ears or in the form of IP – has use value over time. These may therefore be the basis of generally acceptable currency, and the only absolute unit there is – energy – is the only objective standard unit of measure for value, akin to a metre for length or a kilogramme for weight. Few people would not accept a credit returnable in payment of location use value; or a credit returnable in payment for energy; or would not accept an IOU/credit based on the use value of IP, or the capacity of individuals to provide goods and services – provided always that there is a suitable – voluntary – framework of trust. Bitcoin has no utility by the above definition, but it does have – like all use-less but trusted currencies, like gold, bitcoin and fiat – a subjective value insofar as people trust it. Gold is essentially trust in solid form. Since it has zero utility (use value over time), the intrinsic value of bitcoin is zero. It is therefore in a bubble, and will in due course revert to its intrinsic value once people lose faith in it – which will occur when the hype ends and the bubble is spiked as the smart money exits and the dumb money loses.

**Critic:** The entire premise of your argument is that money must have utility outside its use as money. This is patently false, and therefore your entire argument is undone. <snip> As I’ve already repeated, Bitcoin has important properties that make it exceedingly attractive as money. Being inflation resistant is one. Being free from government and bank manipulation or confiscation is another (even more so in our current bank deposit confiscation climate). It’s these properties (among others) that give it its value. Value is subjective. As long as Bitcoin (and gold) continue to possess the qualities that make it so desirable, it will continue to have value in the eyes of many. And at the end of the day, that’s all that matters.

**Chris:** The basis of my argument is that a unit, token or voucher which is returnable in exchange for the use value of a productive asset over time is a credit object acceptable in exchange. I do not say that the unit of currency is useful in itself: I say that in order to be objectively valuable in exchange it must be based on utility over time. If that is not consistent with any school of economics you have heard of I frankly do not care <snip> Value is indeed subjective, and Bitcoin is only subjectively valuable. Its complete absence of any utility (and I do not regard anonymity as utility) is why it is in a bubble, and its price by reference to other
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forms of value – or claims over value – will swing wildly with the madness of crowds.

**Critic:** 1. Objective use value/utility over time is simply not relevant to a currency. This is not an important characteristic of sound money. Your thesis is not especially pertinent. 2. You can never run out of units of account for cryptocurrencies either, since they are effectively infinitely divisible. But even gold can be handled in digital form (e-Gold, GoldMoney, etc.) thus giving it infinite divisibility as well.

**Chris:** We have a fundamental conceptual difference here. For me the fact that I may return an IOU to its issuer (either an individual against goods and services or an asset owner against use) in return for an agreed amount of value (a ‘real bill’) is the reason why I accept it. 2/ A standard unit of account is an abstract Unit. It is not an object like the units of currencies which may be priced against it. A Bitcoin is a credit object, with a subjective value relative to a unit of account. Bitcoin cannot be a standard unit of measure for value because its value is entirely subjective and infinitely variable. 3/ A unit of energy has absolute intrinsic value: it is unchanging in itself, but everything else varies in value and hence subjective price by reference to it. The more units of energy currency you own, the richer you are, and the more you can achieve. Abundance of energy does not lead to inflation: it leads to an economy of abundance. 4/ If gold and bitcoins require more energy to produce, then I think of this as their energy cost or cost denominated in energy. If new technology comes along which makes energy more abundant, then by reference to what denominator or unit of account is it ‘cheaper’? 5/ Subjective value = faith by definition. But inflation is another subject. The principal causes of inflation are quite simply, through double entry accounting identity: (a) demands for profit or rent in excess of cost by intermediaries; (b) wage demands. In a dis-intermediated economy there would be no inflation, because all credit is directly based upon sources of value, including productive labour (P2P credit) and productive assets (Peer to Asset credit).

**Chris:** The fact is that a unit of account and a unit of currency are two different things, even though we are used to fiat currency being used as both. Bitcoin works technically as a decentralised messaging system and currency token, but since it has only subjective value it has no objective basis in the material world. It is therefore literally use-less as a unit of account by reference to which value judgements are made. The fact that fiat currencies are similarly use-less is irrelevant: I’m not defending them. To be sustainable, a currency unit must be stable, but that is the
last thing Bitcoin can ever be, because it is – demonstrably – subject to the ‘madness of crowds’.

Make of that what you will.

Though the key point really seems to be that if you are going to have a fiat currency like Bitcoin, even with inbuilt inflation checks, unless the fractional reserve end-point is shuttered — which seems an impossibility, because shutting down the potential to create credit or fractional reserve systems in unregulated and decentralised systems is like trying to stop a barman offering reliable customers the option to have a tab — the system inevitably becomes unstable because it is always subject to the madness of crowd effect.

Conclusion being, fiat works best in a regulated central banking type context. When fiat is not an option, some sort of system that links to real value (and determining what that is, is hard in itself) is probably a better option. Chris Cook’s argument is that in our current environment energy is probably the best example of real (yet still scarce) value.

For more on Bitcoin, check out this excellent presentation by Adrianne Jeffries at the Lift2012 conference.

**Related links:**
The WIR bank model, or back to barter – FT Alphaville
Gold to grey - FT Alphaville
Turning mobile money into M0 - FT Alphaville
Virtual money, from real central bank mistrust – FT Alphaville

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