

Competing for Legitimacy: A typology of virtual currencies

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This discussion does not represent
the views of the Federal Reserve
Bank of Cleveland, the Board of
Governors of the Federal Reserve
System, nor the Deutsche
Bundesbank.

They are only my own.

**This paper is somewhat different
from what I normally discuss**

Rather than a formal economic theory
or an econometric examination of data,
this is a discursive taxonomy of current
virtual currencies.

It is also work in progress at a fairly early stage, so that my comments I hope might be useful in the next draft.

Taxonomies can be quite important.

- Consider Linneaus, the inventor of the term.
- He fumbled around in an attempt to classify living things, following Pliny and others:
 - Are we more like ostriches than seals, which are more like codfish?
- While he did not invent the idea of taxonomy (nor genus, nor species) he certainly lived it.
 - “If I have only the lower jaw of a mammal and the arrangement of its teats,...”

What do we get from this?

- Obviously a way to catalog
 - Note how this requires the binary classification measurement: either the animal has this characteristic or it does not. No grey areas (or if they are, they are digitized.)
- Non-obvious patterns can be seen
 - Milk producers are all warm-blooded. Why?
- The patterns can lead (with a lag) to new theories which lead to paradigm shifts.
 - The importance of measured empirical observation on catalogs for inductive reasoning cannot be overemphasized.

So this paper

- Starts by defining some of the advantages of money
 - Store of value
 - Unit of account
 - Etc.
- Then defines a four-way combination for classification:
 - Government vs. non-government
 - Money as asset vs. money as credit

What is a Money?

- Here we lack John Ray's insight on species. "A species will reproduce with others like it."
 - It is not clear that we can classify money systems completely. Some systems look very much alike, others differ, but only subtly, and so forth.
- In some sense, perhaps monetary systems are like a tool, and so should be classified by their situational usefulness.
 - Just as a magic spell might be listed under spells for healing warts, rather than spells that require silver and moonlight.

Situational awareness would have helped in the first section's description

- For example, we see smart phone credits used in Haiti because of the prevalence of street robbery. This is digital currency being used, but except for the fact that it is easier to hide larger amounts from potential robbers, it is really just commodity money.
- Cigarettes are used in prisoner-of-war camps but for other reasons. (Wright, 1998, but I disagree with him on this.)

This could have used many studies focusing on the situations

- What digital currencies might we see when the main currency is experiencing a hyperinflation? What factors of virtual currency make hyperinflations less problematic.
- How about situations of large capital flight?
- Optimal currency zones?
 - Does an RTGS help bind a set of currency zones together so that home bias is mitigated?

Another approach

- The internet literature on the new moneys works with a block chain vs non block chain
- Block chain is further broken down into permissive vs non-permissive
 - This is not unrelated to the purpose taxonomy just described. What purposes are best suited for a more anonymous currency versus the needs of society to have a well documented history available to all (or at least to a subset of regulators.)

Further comments on the Intro

- “acceptance is an empirical question not pursued here.”
 - Yet acceptance is central to any money and any currency competition has to confront this.
 - Further, any transaction is between a finite number (often two) agents, both of whom are only partially informed about the other (and the information held by the other.) So acceptance is not only about the money, but what it conveys about the counterparty.

Indeed the intro points up the vast differences between people with marvelous minds (like Hayek) and those people in the present who must confront the recent history with its new technologies.

Not so long ago....

- Kocherlakota gave a talk on the “color of money” where money was a number on the real $0,1$ interval giving the entire history of the payer.
 - Everyone in the room thought it was too weird and odd to ever be conceptually useful. I liked it only because it was different.
- Yet now we are confronted with the potential of knowing the entire history of an agent and money as information provider has huge traction.

In my opinion...

- We are confronted with a new set of trade-offs and definitions of money that should be central in the discussion of taxonomy:
 - fraud versus anonymity
 - systemic risk versus efficient use of liquidity
 - anti-money laundering versus fear of a corrupt (or at least human) central government or independent central bank.
 - the need for speed versus the dangers of transacting too quickly.

In this context money as asset or liability, or money as store of value versus medium of exchange become less important than money as information.

What do we mean by information becomes more important as a taxonomy delimiter.

This taxonomy: Decentralized versus centralized

- Perhaps one aspect that must be confronted is the observation of Ritter (in a formal model) in the early 1990's or King Phillip of Massachusetts in the early 1670's
 - If there are two competing currencies, and if only one is acceptable for taxes then this one will dominate.
- This becomes the standard to judge (like the competitive model.) If the currencies coexist, why? Where does the simple model break down and not represent reality.

This taxonomy: money as credit vs asset

- The money as credit examples could use more clarity.
 - non-centralized example is Ripple currency.
 - How does this differ from a net settlement system?
 - Isn't Ripple currency worse than a simple netting employed even in Gross settlement systems periodically to reduce liquidity needs?
 - When the system breaks down, is there a simpler algorithm in Ripple than Eisenberg-Noe to allocate the remaining assets to the surviving agents in the system?

Further clarity would help...

- Centralized currency as credit:
- “If full payment systems could be offered at ...sufficiently low cost ... a complete migration of an economy’s payment community to the central bank’s retail payment system.”
 - Fear of this led to the cost recovery of the Fed. It had no effect.
 - We still have the coexistence of payment settlement systems with those of the central bank’s.
 - Don’t we also have credit based money issued in unsecured credit such as credit cards?

Final Conclusion could be expanded for clarity

- What constitutes legitimacy? Why is a central government authority not legitimate? The tradeoff between inefficiency of decentralized authority in monetary systems versus the illegitimate but efficient government monetary system of the conclusion is hardly mentioned in the paper.

Final Comment

- A very ambitious paper on an approach that could potentially offer insight into the new moneys.
- I look forward to the next draft.
- Thanks for the opportunity to read and comment on this paper.