Nick Tomaino [Follow]
Founder @1confirmation
Aug 6, 2017 · 5 min read

On Token Value

Millions of new people have entered the crypto space this year as a result of the soaring prices of cryptocurrencies.

A question that I consistently hear from new entrants is: **what is the value underlying cryptocurrencies and crypto tokens broadly?** It's clear that speculation is the main driver of prices, but what may not be clear is that there actually is fundamental value underlying the speculation. With the proliferation of new tokens being created though, some tokens offer holders fundamental value while many others do not. How does one differentiate the value from the junk in such a noisy space?

artwork courtesy of http://cryptograffiti.com/
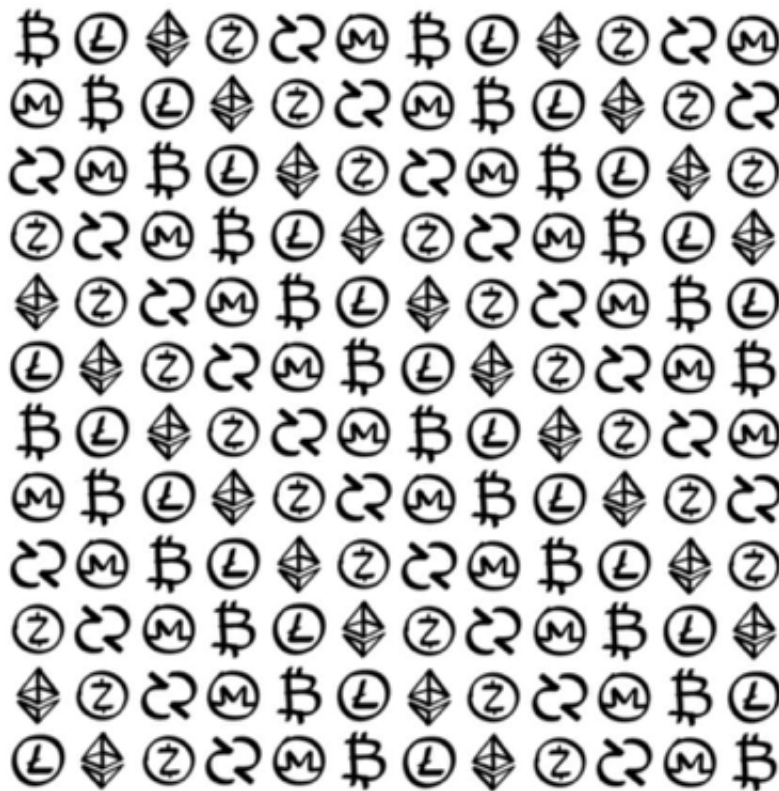
Not all tokens are the same

The first thing to realize when thinking about this question is that there are different tokens that offer different types of fundamental value. The four major token types are: **traditional asset tokens**, **usage tokens**, **work tokens, and hybrid tokens**. People may use other mental models to think about this as well, but I've found it works well for me and it also seems to be digestible for newcomers. If a token does not fit clearly into one of these categories, I tend to be very skeptical of its ability to maintain any long-term value.

Token type	Function	Examples
Traditional asset token	To represent a traditional asset cryptographically	USDT, DGD
Usage token	To provide access to a digital service	BTC, ETH, BAT
Work token	To provide the right to contribute work to a decentralized organization	REP, MKR
Hybrid (usage + work)	To provide access to a digital service and the right to contribute work	FIL, ETH (with Casper)

Breaking down token types

Traditional asset tokens

The token type that has obvious fundamental value is any type of **traditional asset token** that cryptographically represents underlying traditional assets such as equity, real estate, gold, etc. The value underlying tokenized traditional assets is well understood and outside the scope of this post. I think we will see a proliferation of traditional asset tokens as regulatory clarity increases because of the liquidity and global nature of tokens on blockchains. To date though, this is the least common and interesting type of token in my view (of the top 10 tokens by market value today, none of them represent traditional assets).

The more interesting types of tokens where fundamental value is less obvious are usage tokens, work tokens and hybrid (usage + work) tokens.

Usage tokens

A **usage token** is a token where a digital service is offered and the token is *required to access that digital service that no centralized party controls*. Protocol is the sexy word that people tend to use but its easier for an average person to simply think of a protocol as a public digital service.

To the extent that the digital service is useful and supported by a scarce and unique set of resources, the value of the token underlying that digital service will persist. **The fundamental value of usage tokens is**

determined by the uniqueness of the resources underlying the digital service and the utility of the decentralized digital service itself.

Usage tokens are the most popular type today and Bitcoin is the best known example of a usage token to date. One needs bitcoin (BTC) to use the Bitcoin blockchain, which is secured by more hashing power than has ever been aggregated before. The resources that power the digital service Bitcoin provides are: the hashing power that secures the blockchain, the users and the developers. To the extent that these resources remain unique and differentiated and people get utility out of a secure, public, distributed ledger, Bitcoin will maintain some level of fundamental value.

	Market value (billions)	Type	Notes
₿bitcoin	$53.60	Usage	Most successful example of a usage token
ethereum	$23.20	Usage	Will become hybrid when Ethereum transitions to proof of stake
ripple	$7.10	?	Ripple network can be used without XRP. I struggle to categorize XRP
Bitcoin Cash	$3.70	Usage	
litecoin	$2.40	Usage	NA
nem	$2.00	Usage	NA
ethereum classic	$1.50	Usage	NA
DASH	$1.40	Hybrid	The only hybrid token in the top 10
IOTA	$1.10	Usage	NA
MONERO	$0.70	Usage	NA

The top 10 tokens by market value (as of 8/5, data courtesy ofwww.coinmarketcap.com)

Of the 10 highest market value tokens today, 9 of the 10 are usage tokens (see above). Other notable usage tokens outside the top 10 include Brave's native token Basic Attention Token (BAT) and Kik's native token Kin (KIN).

When evaluating a usage token, the most important questions to ask are: will the resources that power this digital service remain unique and differentiated over time and will people increasingly get utility from the digital service the decentralized organization is providing?

Work Tokens

A **work token** is a token that gives token holders *the right to contribute work to a decentralized organization* to help enable that decentralized organization to function. In some cases there are fees rewarded for that work, but not always. **The fundamental value of a work token is determined by the utility that token holders get from the decentralized organization.** That utility can come in the form of fees (a more direct utility) or good will (a less direct utility).

Work tokens are far less understood than traditional asset tokens and usage tokens to date. There are a few good examples of work tokens, like Augur's Reputation (REP), and Maker DAO's Maker (MKR), but not many. In Augur, one does not need REP to use the decentralized prediction market, but REP instead gives stakeholders the right to report on outcomes of events, which is necessary for the whole system to function properly. In the case of Maker, MKR stakeholders are the governors of the decentralized organization, providing a number of services required to make the organization function properly (including being the backdrop of CDPs in the system).

When evaluating a work token, the most important question to ask is: will people continue to get utility from the service being provided by the decentralized organization?

Hybrid Tokens

Many future tokens may function as both usage and work tokens. When Ethereum switches from proof of work to proof of stake, ETH will be both a usage token (you need gas to use the EVM) and a work token (ETH gives you the right to validate transactions and earn in exchange for that work). Based on the white paper, the upcoming Filecoin (FIL) from Protocol Labs looks to be another example of a token that functions both for usage (one needs FIL to use the decentralized storage system) and work (one needs FIL to contribute storage space to the system as well).

I believe that it is likely that we will see many more hybrid tokens in the top 10 total market value in the future.

Quantifying Value

Wall Street types are eager to create metrics to quantify the value of crypto tokens (like P/E ratios and cash flow statements are used to quantify the value of publicly traded stocks). I've even tried to do it myself and wrote about it in February (see The Investment Case for ETH). In retrospect, the piece was directionally right but too conservative in magnitude of direction.

I am now of the belief that it's generally far too early in the space for models and metrics to accurately quantify value. If fundamental value as described above truly underlies usage tokens, work tokens and hybrid tokens, they'll create many orders of magnitude more in value in the future (orders of magnitude not typically grasped by traditional analysis, much like early stage startups).

.   .   .

About me: I run <u>The Control</u> and am an investor at <u>Runa Capital</u>, an early stage venture fund. Previously, I worked on business development and marketing at <u>Coinbase</u>. Follow me on <u>Twitter</u> and sign up for our <u>newsletter</u>!