

Making Sense of the Crypto Market and Learning How to Model a Cryptoeconomy | Chris Burniske

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The goal is not to predict the future, but rather to prepare investors for a variety of futures. – Chris Burniske

INTRODUCTION

What's up everybody? Welcome to this week's episode of Hidden Forces, with me, Demetri Kofinas. My guest for this episode is Chris Burniske. Chris is a cofounder of Placeholder, a New York venture firm that specializes in cryptoassets. Prior to Placeholder, he pioneered ARK Invest's Next Generation Internet strategy, leading the firm to become the first public fund manager to invest in bitcoin. He then transitioned to focus exclusively on cryptoassets, paving the way for Wall Street to recognize it as a new asset class. His commentary has been featured on national media outlets, including the Wall Street Journal, the New York Times, Fortune, and Forbes. Chris graduated Phi Beta Kappa with a BS from Stanford.

WHY DO I CARE?

In our first year, we have focused almost exclusively on the technology underlying distributed consensus, as well as its most compelling use cases. Almost all of our financial/economic episodes are macro oriented and focused on non-correlated, alternative investment strategies that *do not include* cryptocurrencies. Given the size of this market, I want to rotate some of our coverage into exposing our audience to ideas that allow them to develop a framework for understanding the business ecosystem of DLT, the value propositions, and how to value individual cryptoassets (as defined herein).

THE TAXONOMY OF CRYPTOASSETS

1. Cryptocurrencies – a cryptocurrency fulfills three well-defined purposes: to serve as a means of exchange, store of value, and unit of account.
2. Cryptocommodities – in contrast to cryptocurrencies, which send value between parties, cryptocommodities send information between programs.

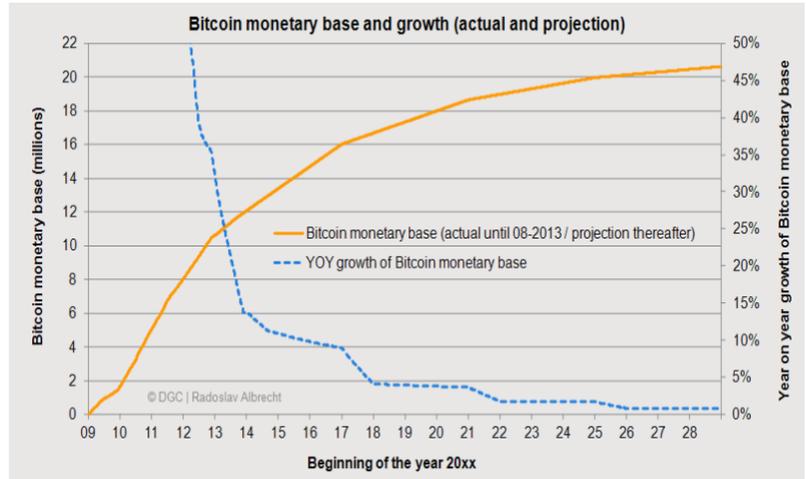


Ether, for example, is a type of fuel that is required for paying for the distributed applications that sit atop Ethereum. Smart Contracts (conditional transactions) are possible on such platforms.

- a. Ethereum – Vitalik Buterin and the founding community of Ethereum developers have very high hopes for the platform. What can this platform do right now? It can theoretically process commands?
 - b. Other decentralized computers? - Dfinity, Lisk, Rootstock, Tezos, Waves, etc. Anything out there worth mentioning?
 - c. How do you think about proof-of-stake and staking relative to PoW when thinking about store of value?
3. Cryptotoken – The difference between what constitutes a cryptotoken and a cryptocommodity boils down to whether a raw digital resource is being provisioned (cryptocommodity) or if the dApp is providing a consumer-facing finished digital good or service (cryptotoken). Most cryptotokens are not supported by their own blockchain. Often these cryptotokens operate within applications that are built on a cryptocommodity's blockchain, such as Ethereum. This is comparable with writing software for an

operating system (token) vs. creating your own operating system that developers need to access for a fee (commodity).

- What are some of the most promising dApps out there? What do you look for when investing in a token?
- Many or most of these dApps are being developed to run on multiple platforms. **How important is ease of portability in your investment thesis?**
- What happens if an entirely new ledger comes on board that starts to eat market share away from existing ones? Wouldn't that make platform agnostic tokens less risky than the cryptocommodities themselves?



A FRAMEWORK FOR CRYPTOVALUATION

Equation of Exchange Variables (MV = PQ):

- Mathematically Metered Supply (M) – the supply function for any cryptocurrency is programmable and bounded by an initial set of assumptions. Bitcoin's protocol, for example, is inherently deflationary and has a sublinear supply trajectory, peaking at 21 million coins.
- Velocity (V) – turnover in the supply of a unit of the cryptoasset required for transacting on the network (prices can only come into being when goods and services from the TAM are exchanged for the currency in question)
- Total Addressable Market (TAM) – the maximum size of the market that can be theoretically captured by the currency (how does this relate to DEUV and EUV?)
- Price (P) – the general price level for some basket of goods and services available for purchase in the TAM

QUESTIONS:

A key differentiator between a scam and good intent is the communication and rationale of the developer team behind the issuance model. – Chris Burniske

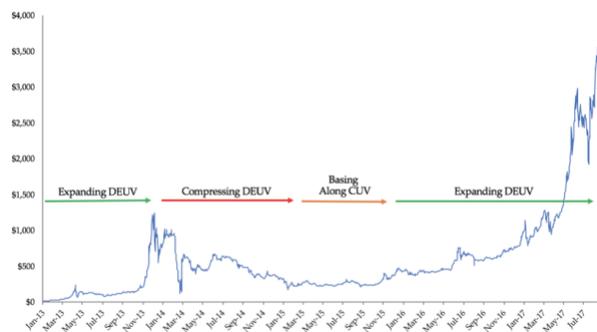
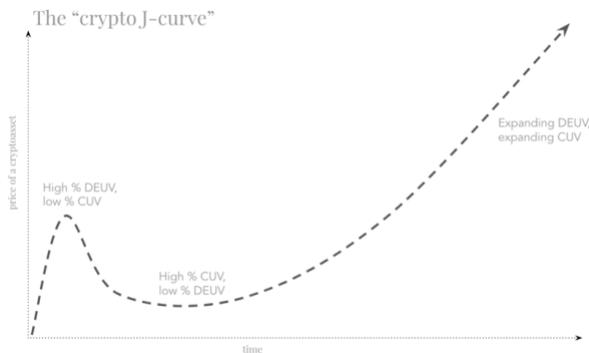
Bitcoin is processing a bit less than 3 transactions per second (...) Ethereum is doing five a second. Uber gives 12 rides a second. It will take a couple of years for the blockchain to replace Visa. – Vitalik Buterin

- Optimal Velocities – Velocity is a function of certain constraints. Real economies have constraints that virtual ones do not (physical laws of space-time, energy requirements and saturation points, etc.). Virtual economies are different. Both economies have saturation points under different conditions and at different times. **Considering that you are using this equation to evaluate each and every currency, commodity, or token, how do try and approximate the upper bound? In other words, doesn't velocity have different effects on price dependent on the market in question? If we see velocity in the housing market pick up, that would suggest a rising price for houses, but that velocity would mean something very different in the market for foreign exchange. How do you take that into account when looking at these different assets?**
- Use Case + Monetary Architecture & Supply Schedule - **How are you able to make informed speculations on that take into account a) the use cases of the currency and b) the staking/architecture of the protocol in order to make a bet on its potential optimization as a store of value? Where does the current set of candidates rank? How do you consider the emergence of a competitor, and how much of a role do**

network effects play as barriers to entry? What about the cost of infrastructure and know-how (the replacement cycle is short)?

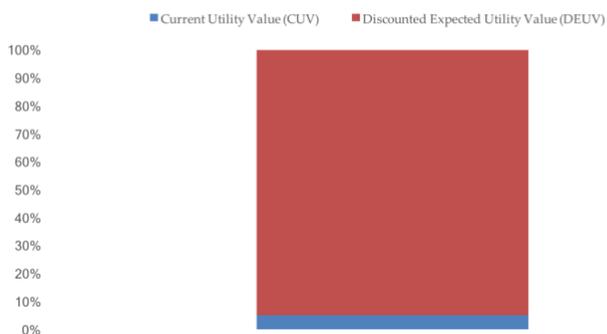
3. Switching Costs – How do you value the network effect of N people storing value on bitcoin's ledger? There is certainly immense value as digital gold, but it doesn't have thousands of years of demand. Its story is very new. How do you account for the risk of people rotating out?
4. Liability Structure – Have you thought about how introducing debts denominated in the underlying currency or token being considered will affect the price dynamics going forward?
5. Valuing the Developers – How do you value the team of developers? Whose development cycle is the benchmark for you? How would you value a non-permissioned network with a proprietary consensus mechanism? The incentive structure for the developer community would be different....
6. White Paper – tell me what you guys do here, because THIS is the most difficult part of the equation. Assuming you could hire a team of the most brilliant cryptographers in the world, do you believe that the white paper would be the most important roadmap? Even then, I've found that it'
7. Governance – How important is governance, and how do you go about projecting the viability of governance in the ecosystem of developers, miners, stakeholders, etc., in an open-source system like blockchain? What are the pros and cons of forks?
8. Current Utility Value (CUV) vs. Discounted Expected Utility Value (DEUV) – how do you measure utility value? How are you able to determine how much of the value is based on speculation and how much is based on current value? Are you able to project future utility to a place where you feel confident about whether or not a mania is in progress?
9. Retail Appeal – Is there a sex-appeal to cryptocurrencies that taps into pop-culture? Is there something about using a native, digital asset as a store of value that has tapped into a condition of digital man?
10. Capital Invested – Do we know how much money has been invested in creating some of the platforms, like Ethereum, for instance? How do you calculate (and subcategorize) the capital invested in a public ledger? How much of that is human vs. material capital, and given the short lifecycle of the material, is it really just the human capital that contributes to switching costs for developers?
11. Volatility – How do you deal with the potential, structural volatility that would come from having so many currencies that are defacto fuels? How would American Airlines operate its flights if the price of oil was as volatile as bitcoin? If each application has its own fuel, and there are industries and even sectors using tokenized fuel for essential parts of the business, how do you prevent speculative attacks or simply spikes in volatility that come from the natural arbitrage opportunities that open up?
12. Futures Markets – What are the pros and cons of the cash settled futures markets we have seen in bitcoin? Assuming we see a proliferation of derivatives markets on currencies, commodities and tokens, what impact would this have? (Also, ETF?)
13. Uncorrelated Return Profile – What is the advantage of including BTC and other cryptoassets into your investment portfolio and how do you take advantage of the non-correlated nature? Is this changing for BTC with investor adoption? How would a rise in the correlation coefficient for cryptomarkets change your overall portfolio approach? How do you recommend % of exposure to these assets for investors?
14. Regulations & Government Action – how is the risk of overregulation or even draconian actions (like shutting down exchanges or worse) factored into your risk models?
15. Modern Portfolio Theory – there has been a move away from MPT among an array of fund managers over the years. You use Gaussian distributions and past performance quite a bit in your book as part of your investment management framework. Is that, right? How are you hedging your book for multi-order standard deviation moves?

The Crypto J-Curve: Pricing Utility

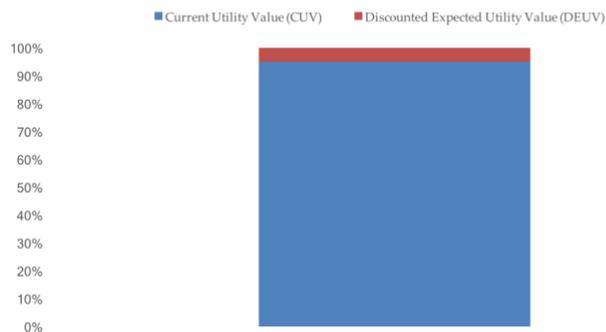


CUV vs. DEUV

Value Composition of a Cryptoasset Upon Release



Value Composition of a Cryptoasset at the Bottom of a Bear Market



- i. Litecoin – you make a point to emphasize the supply characteristics of litecoin. What about the security concern associated with using a less computationally intensive hash function?
- ii. Convergence – are these ultimately winner-take-all-markets? Is there going to be one cryptocurrency that will dominate the future?
- iii. Ripple – what accounts for its \$71,106,084,021 market cap? How does their supply schedule model work? Is this a hybrid of a permissioned and non-permissioned? How has this evolved? How does the protocol work?
- iv. Monero (Bytecoin) – is Monero a good example of how open source blockchains can be forked by the developer community away from the original intentions or goals of the founder/founding team for the benefit of the larger community?
- v. Dash –
- vi. Zcash – Can a currency that puts so much emphasis on privacy fight the uphill battle of regulation towards acceptance as a medium of exchange?