

Hyperbitcoinization and Other Arguments by Bitcoin Maximalist

Pierre Rochard

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Bitcoin [maximalists] envision an endgame where an implementation of Bitcoin will be a massively adopted cryptocurrency that is both a store of value and a medium of exchange. - Murad Mahmudov and Adam Taché.

INTRODUCTION

Pierre Rochard has researched and written about Bitcoin since February 2013. He co-founded the Satoshi Nakamoto Institute in 2014 to curate the best primary source literature. In addition to developing Bitcoin software, Pierre is an outspoken advocate for Bitcoin's decentralized governance. In 2017 he began co-hosting the Noded Bitcoin Podcast. Pierre is widely recognized as an authority on the investment case for Bitcoin.

WHY DO I CARE?

It's hard *not* to get excited when exploring bitcoin maximalism. The community is more engaged and energized than any other I can easily think of. Members are so tribal that many tattoo their twitter profiles with bracketed, lighting emojis [>]. Their community is the envy of social media, and their ideological framework – one that puts bitcoin on the inevitable path towards becoming the global currency standard – is alluring for the newly initiated and ordained alike.

I am no bitcoin maximalist, and yet, I find merit in many of its arguments. My issue is not with the possibility of a world ruled by bitcoin but by the notions of its inevitability, as well as some of the assumption made to support the arguments of hyperbitcoinization. Most of all, however, I'm interested in how, amid the crashing sea of exploding crypto bubbles, bitcoin has managed not only to survive, but indeed to thrive as an ideological, monetary movement unlike any we have seen since, perhaps, the gold buggery of the 1970's and early 80's.

My goal in this conversation is to explore the arguments that Pierre and other maximalists are making in favor of hyperbitcoinization. I want to test some of their assumptions and possibly challenge some of their more assertive conclusions. I also want to understand how this culture has come together, where it congregates, how the conversations happen, and how the ideas spread. I want to understand the role of Austrian economic theory

Bringing an anthropologist's perspective



as an intellectual, economic framework for maximalists, the importance of anarchism and libertarianism as ideological frameworks, how leaders emerge from this anarchic, political stew, and the role played by faith in putting a floor on the price of the network. In short, I'm borrowing a page from Gillian Tett's, "[Anthropologist's Field Guide](#)."

INITIATION

Early Encounters — **Q:** Everyone in this space seems to have an initiation story. What is yours?

Austrian Theory — I listened to an interview of yours on the "[WHAT BITCOIN DID](#)" podcast and was blown away by how developed your understanding of Austrian economics is and how effortlessly you deploy that framework in the service of forming hypotheses and testing arguments. As someone who was also strongly influenced by Austrian theories of money and the business cycle, I'd love to explore how you found this school (or how it found you) and what the experience of initially applying its theories to the world was like for you. Speaking personally, I was introduced to the Austrian school through the newsletters of [Kurt Richebächer](#). The experience was like being suddenly handed a map that I could actually use to navigate the world that was highly predictive and extremely satisfying in its explanations about why things worked the way they did. **Q:** How did you come into contact, for the first time, with the Austrian school? What was that experience like? **Q:** How did you come to reconcile the discrepancies between the [Samuelsonian school](#) (which forms the foundation for much of what passes as "economics" on college campuses) and the [Austrian school](#)? **Q:** How do you view economics today, and have you managed to incorporate any new frameworks into the Austrian tapestry in order to create a more interdisciplinary view? **Q:** Is it possible, in your view, to understand the bitcoin philosophy without understanding the arguments made by the Austrian school?



Supply-Side — You have [said in a tweet](#) that "bitcoin is a medium of exchange with the most legitimate, credible, and sound monetary policy," and that "this is why it has a 9-year track-record of extraordinarily rapid adoption," and that therefore it "makes sense to speculate on it." But, [bitcoin's supply schedule is not fixed in stone](#). It is code, and code can be altered. It is bitcoin's community and culture, as well as its adherence to the principle "[Code is Law](#)," that speculators are depending on. One could say that something similar is true in the case of America's legal institutions: they are grounded in the American constitution, but the constitution can be changed.



What is Bitcoin, really?

Q: How much of Bitcoin's success, in your view, is attributable to its supply schedule, governance, and innovative protocol? How much is attributable to the circumstances of its birth? **Q:** Would BTC have succeeded to attract so much capital if it had launched in 1999? **Q:** If bitcoin launched *today* how would it do?

Demand-Side — A currency's gets its value from people's willingness to hold it, not from the limits on its supply. Anyone can limit supply, but only the market (and governments) can create demand. **Q:** How important is utility in determining the price of a cryptoasset like bitcoin? **Q:** Can an asset serve as a long-term store of value without providing utility beyond serving as a secure unit of account? **Q:** Is bitcoin's value the faith of its Hodler's?

Store-of-Value vs. Medium-of-Exchange — You [said in a tweet](#) that you "don't think drawing a dichotomy between SoV and MoE makes any sense both in theory and in practice." **Q:** What do you mean?

Uniqueness and Open Source — You wrote in a post titled, "[Bitcoin Investment Thesis](#)," from the summer of 2018, that "the strengths associated with openness could be a headwind for cryptoassets as they attempt to become long-term stores of value. The fact that current mainstream cryptoassets are freely available to copy limits their ability to establish uniqueness, a possible precursor for value permanence." **Q:** Are you saying that in an open source development environment

Value is an outcome, agnostic of the degree of centralization or governance. *We should attempt to avoid forming rigid partisan stances and instead focus on the optimal mix of decentralization characteristics that produce the highest overall value. We should acknowledge that utility value will likely dictate the long-term value of cryptoassets, including their desirability as stores of value.* A completely independent, fully decentralized X-coin that is not widely used will likely not retain its value compared to a more centralized Y-coin that has tremendous demand and utility. — [Alex Treecce](#)

where competing currencies to bitcoin are created without some type of legal protection that any value-adding innovations which could help differentiate a disruptive competitor will be incorporated into the bitcoin network by its developers and therefore, *any attempt to displace BTC becomes ever more difficult over time?*

First-mover Advantage & Open Source

Decentralization — **Q:** How do we measure "decentralization?" **Q:** What is the most effective allocation of power in the hands of developers, miners, owners, the protocol, etc., so that bitcoin can achieve maximum decentralization across the network, while still taking into account performance and security objectives? **Q:** What is the distinction between decentralization and security? **Q:** Is decentralization synonymous with [network security](#), in your view?

Failing to Scale vs. Scaling to Fail — Transaction throughput on the bitcoin network is limited primarily by the 1) [block-size](#) and 2) the difficulty of solving a reverse hash for purposes of [leader election](#) and [Sybil resistance](#). I'd like to get into some of BTC's scaling solutions later. **Q:** What is your view on the limitations/advantages of using [proof-of-work](#) to limit [transaction throughput](#) in return for higher [security thresholds](#)?

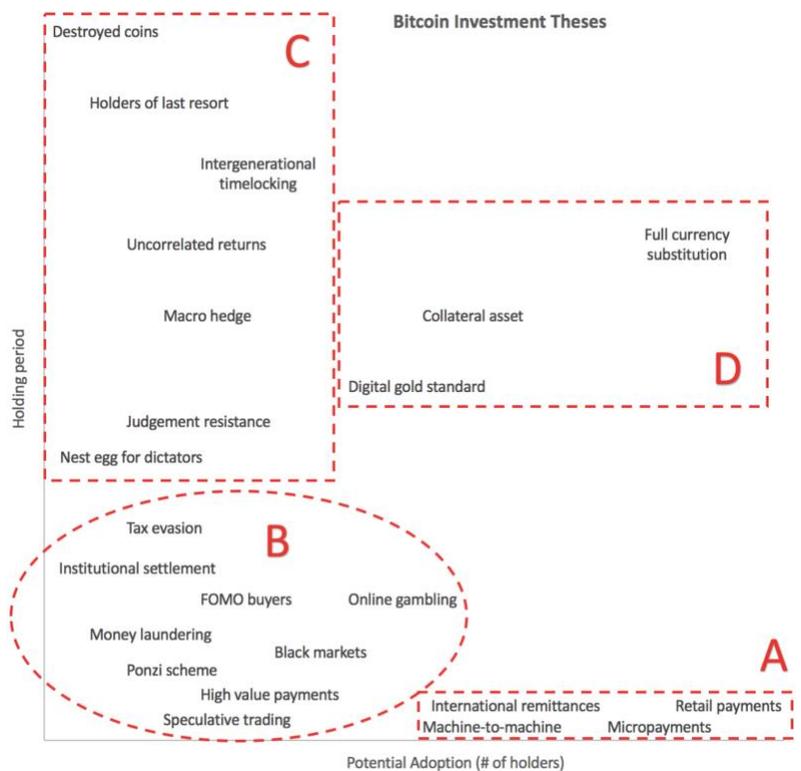
Scaling Alternatives — **Q:** What is your view on alternative scaling solutions, most notably those proposed by [Ethereum's developers](#)? **Q:** What would be your objections to using proof-of-stake (PoS) as a mechanism for Sybil resistance and leader election?

How do we measure "decentralization?"

Does scaling matter?

Does utility matter?

How important is the faith of Hodler's?



What will cause hyperbitcoinization?

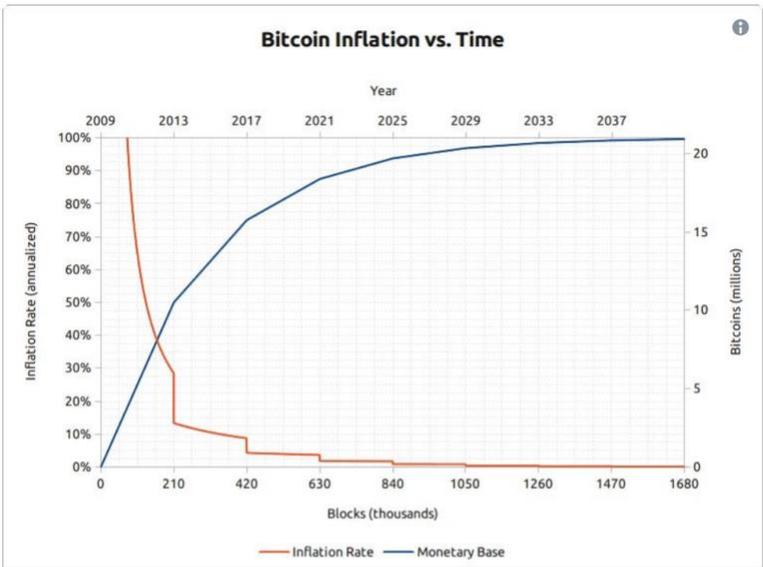
Hyperbitcoinization — In a [different interview](#), you compared speculative attacks against fiat currencies (British pound, Thai Baht, etc.) as being analogous to this notion of “Hyperbitcoinization.” You also refer to the breakdown of Bretton Woods and the rise in the price of gold vis-a-vis the dollar [less than ten years](#) later (in 1980, gold reached \$850 per ounce from the roughly \$40 per ounce 1971 price at which it was trading in the secondary market set up by the London gold pool in 1968) as a “speculative attack by gold against the US dollar.” Walk me through your argument. **Q:** What rate of inflation would we need to see in the dollar in order to make hyperbitcoinization likely? **Q:** If there is a sufficiently liquid alternative to the USD that also serves as a viable medium of exchange, why would people not move into that instead? **Q:** Even if there is no viable fiat alternative that is traded in free and open markets, why would traditional financial assets (including gold) not continue to serve as the primary store of value for most of humanity? **Q:** What makes bitcoin more valuable than gold, in your view?

Latency & Energy Consumption at the Limit

Up-and-Away — **Q:** How high does the price go in your hyperbitcoinization thought experiment and how much energy would need to be expended at those levels? **Q:** How much would each transaction cost and how long would it take the average user to move X amount of bitcoin if transaction volume increases by 100x, 1000x, or more over time?

Bitcoin's Custody vs. Gold's Custody

Gold & Survivability — I've seen you and others site the “[Lindy Effect](#)” is support of the long-term viability of bitcoin. **Q:** Is your view that cryptocurrencies exhibit higher compounding mortality rates than say, something like gold, because of some extraordinarily high survival pressures that are unique to their ecosystem? **Q:** Are you saying that we cannot make a direct comparison between Gold's durability as an asset class and bitcoin's durability by making direct comparisons based on the # of years they have been around, because the later compounds faster? **Q:** Does this mean that if gold has been around for 5,000 years, maybe we should expect it to be around for another 5,000, but bitcoin compounds at some multiple of gold's mortality rate, so that we can expect it to surpass gold's life expectancy at some time 't'? **Q:** Do you ever worry that the compression of time caused by the exponential rates of change that we have experienced, particularly in recent decades, are distorting our view of the durability and lifespan of social trends? In other words, do you ever worry that “[this time is not different?](#)”***Gold is *harder* to confiscate...[EO #6102](#) "forbidding the hoarding of gold"



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Crypto-currency investing fundamentals:

1. Soundness of monetary policy (hard cap)
2. Credibility of monetary policy (enforced by decentralized p2p network of full nodes)
3. Legitimacy of monetary policy (issuance by proof-of work)

♡ 168 11:36 AM - Sep 9, 2018

The **Lindy effect** is a concept that the future **life expectancy** of some non-perishable things like a technology or an idea is proportional to their current age, so that every additional period of survival implies a longer remaining life expectancy.^[1] Where the Lindy effect applies, **mortality rate decreases** with time. In contrast, living creatures and mechanical things follow a **bathtub curve** where, after "childhood", the mortality rate **increases** with time. Because life expectancy is probabilistically derived, a thing may become extinct before its "expected" survival. In other words, one needs to gauge both the age and "health" of the thing to determine continued survival.



Populist, Government Intervention

Existential Risk — Q: How do you incorporate the possibility of government intervention in bitcoin in the event that we enter a phase where energy costs are rising, global warming is imposing ever greater costs on our environment, and fears about deficits are leading to austerity and/or double-digit inflation? Q: What stops governments from enacting capital controls and jailing people who use bitcoin? I'm imagining an environment similar to the 1970's stagflation, which I know you are familiar with, and which I think many maximalists like yourself believe would be bullish for bitcoin. I am taking the opposite position by suggesting that anything short of hyperinflation (i.e. complete loss of faith in government) will actually be bearish for bitcoin, as governments will be incentivized to kill it. What I'm imagining is a populist groundswell not unlike the [free silver movement](#) of the late 1800's, which was a populist backlash against the [money trust](#) (or gold trust) in rural America. It was a response to the growing wealth divide and the tight control of credit by the banking system, which was still on the gold standard. Farmers needed access to credit and they couldn't get it. This was part of what led to the creation of the Fed. Q: Do you believe that the public would support the existence of an alternative cryptocurrency with such a lopsided [Gini coefficient](#)?



Case for Alt's

'Local' Economies — Along the lines of my argument about the free-silver movement, economies benefit from having their own currencies if they are otherwise unable to obtain satisfactory levels of credit. In a frictionless, digital economy, one could foresee other cryptocurrencies sprouting up to support niche online communities. Q: Could alternatives to bitcoin with smaller market caps serve these virtual communities, helping to further drive the re-organization of 'local' economies around the world?

Hyperbitcoinization...Soviet-Style — What you are describing, in terms of hyperbitcoinization, is similar in texture to what I imagine [citizens of the Soviet Union experienced](#) after the dissolution of the USSR. You are talking about a cataclysmic reorganization of value. Q: How would people experience this change? Walk me through the process from a human, experiential point-of-view.

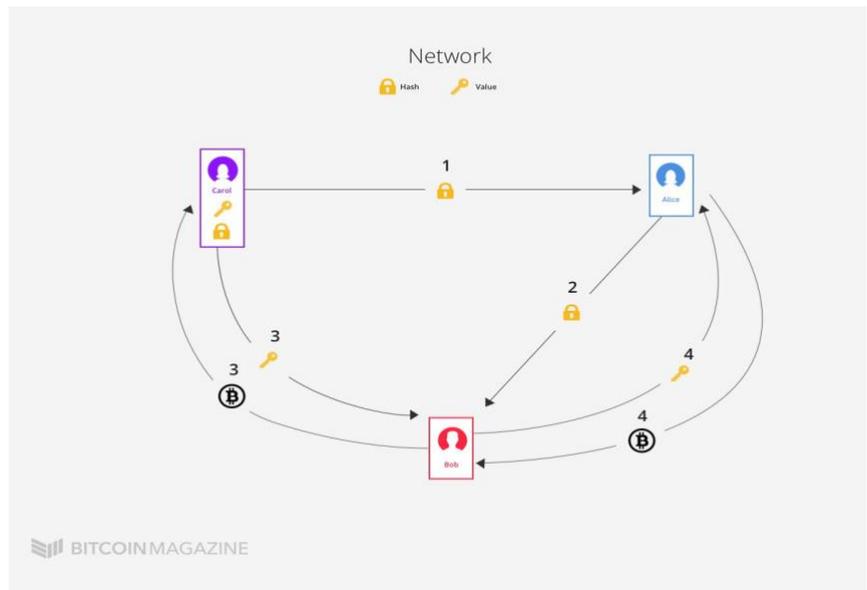
The Problem with Exchanges — You have said that bitcoin's market depth/liquidity needs to increase before hyperbitcoinization becomes a realistic scenario and that part of that is about "having very good exchanges that are good fiat on-and-off ramps so that speculators can be accumulating and dumping bitcoins easily." Exchanges are centralized points of attack. Q: If the price of bitcoin gets high enough, won't the same cybercriminals who are currently stealing hundreds of billions of dollars every year in fiat money turn instead to targeting these exchanges and their wallets rather than traditional financial institutions? Q: Aren't we back to a world where we need to trust third-party custodians again? Q: If this is the case, doesn't the argument for bitcoin's adoption then focus more on its immutability and supply schedule and not on its security or censorship resistance?

Central Points of Attack

Lightning Network — As I understand it, [lightning network](#) is a protocol for creating a network of payment channels with the objective of scaling a transaction layer (a 'layer 2 solution') for bitcoin. In its most



rudimentary implementations, I can see how this would work. If Alice and Bob both know and trust each other, they can open a payment channel and send money to each other back-and-forth in exchange for goods and services. When they are done transacting, they can reconcile their accounts to the main bitcoin blockchain. I can see variations of this working for coffee shops or car mechanics with whom one has some social interaction and/or in cases where the amounts transacted are sufficiently low and the consequences of cheating sufficiently high so as to dissuade fraud or theft. However, I find it difficult to understand how a system like this can scale



beyond a few payment channels or beyond small use cases. Lightning seems to borrow conceptually from packet-switching protocols like UDP and TCP/IP, where the network dynamically routes payments through intermediaries with whom you already have an open channel, so that you don't need to create an infinite number of direct connections. **Q:** But, how does this 'bitcoin packet switching' not create an enormous gap in security? **Q:** How is this any different than just sending a cryptographically secure message over the internet? **Q:** Is it fair to say that layer two solutions like lightning are not a network for sending bitcoins, but rather, a network for bitcoin certificates? **Q:** What's the difference between layer two, three, etc., solutions and what we have today in our modern banking and credit systems other than the hard money settlement layer of bitcoin?

Governance — **Q:** What is bitcoin governance? **Q:** What is the purpose of bitcoin's governance? **Q:** How does the current bitcoin governance process work? **Q:** Can you walk me through an example of how governance operated in the case of SegWit and SegWit2x? [Research → Proposal → Implementation → Deployment → Enforcement]

Financialization — **Q:** What are your views on ETF's, derivatives, and cash settled futures? The arguments I've heard in favor of them are that they will drive more adoption of bitcoin by making people more familiar with it. **Q:** Does the bastardization of bitcoin concern you at all?

Crypto Forecasts — **Q:** What are your expectations about the price of bitcoin over the next 3, 6, and 12 months? **Q:** What tools do you use in order to make decisions about when and how to buy or are you simply always looking to offload fiat currency in favor of bitcoin?

Market Forecasts — You [said in a tweet](#) that "Trump is going to abrogate the Fed's independence and thus the credibility of a sound USD monetary policy. I don't think we're heading towards a debt deflation crisis!" **Q:** Do you think that the Fed's independence is going to be challenged and Powell is going to bend to Trump's demands similarly to how Arthur Burns did to Nixon? One of the arguments I used to hear in support of adding bitcoin to one's portfolio was that it is anti-correlated to the broader market. This was not true of the recent downturn. **Q:** Has the anti-correlation relationship changed, and if so, why do you think that is? Is it a sign of a maturing asset class? *** the Maximalist argument is not one of technology or governance...it is one of monetary integrity.

I think that the Internet is going to be one of the major forces for reducing the role of government. The one thing that's missing, but that will soon be developed, is a reliable e-cash, a method whereby on the Internet you can transfer funds from A to B without A knowing B or B knowing A. The way I can take a \$20 bill hand it over to you and then there's no record of where it came from. — [Milton Friedman](#)