Demetri Kofinas: What's up everybody? Welcome to another episode of Hidden Forces with me, Demetri Kofinas. Today I speak with Chris Burniske. Chris is a co-founder of Placeholder, a New York venture firm that specializes in crypto assets. Prior to Placeholder, Chris pioneered ARK Invest's Next Generation Internet [00:00:30] strategy, leading the firm to become the first public fund manager to invest in Bitcoin, transitioning to focus exclusively on crypto assets, 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.

In this episode, we blow the roof off of crypto economics exploring a model for valuing this new asset class amid the enthusiasm [00:01:00] and excitement of Wall Street and the general public. What are the most useful ways to think about crypto assets like bitcoin and Ethereum? How do we differentiate between the different currencies, DApps, and tokens? How do you judge the merits of a white paper, the seriousness of the dev team, and the enthusiasm of early adopters? How important is governance, volatility, and supply schedules as early indicators of the future success or failure of a crypto venture?

This is the most ambitious [00:01:30] episode I have produced yet on distributed ledger technologies and their economic applications. At times the conversation veers into the abstract realm of financial theory balancing mathematical variables in equations that can be hard to follow. In one particular part, starting shortly after the 21 minute mark and going for about 15 minutes, we tackle the topic of money velocity and its effect on the price of any given crypto asset using the quantity theory of money, otherwise [00:02:00] known as the equation of exchange, a macroeconomic theory from the 19th century that was put into algebra by the economist Irving Fisher in the early 20th.

If you feel lost at any point, don't worry, this is the only part of the conversation where we rely on mathematics and algebra. The rest of the discussion is easier to follow and very rewarding for anyone who has been frustrated by the lack of information around how to value this emerging asset class. I [00:02:30] highly recommend you stick it through.

As always, you can join our email list by visiting the show's website at Hiddenforces.io. If you listen to Hidden Forces on your iPhone or Android, make sure to subscribe. If you liked the show, write us a review. If you want a sneak peek into how each episode is made, or for special storylines told through pictures and questions, then like us on Facebook and follow us on Twitter and Instagram @HiddenForcesPod.

Now, [00:03:00] let's get right to this week's conversation.

Chris Burniske, welcome to Hidden Forces.

Chris Burniske: Thanks for having me.

Demetri Kofinas: It's a pleasure having you on. I mentioned to you that I had your other half Gil Luria on from the sell side. You are the first ... are you really, I mean, are you the first buy side analyst to have covered this space? You have the reputation.

Chris Burniske: Back in 2014 and 2015, it was only me on the buy side.

Demetri Kofinas: For our audience, for those listening in who don't know what a buy side analyst is or what the buy [00:03:30] side is, can you give them just a quick sort of summary of that?

Chris Burniske: The way to think of it is the buy side within the financial services is really the one managing the money directly. So the asset managers making the buys and sells, managing portfolios, whatever it may be. Being an analyst working on the buy side meant I was advising a portfolio manager who was managing assets for ARK Investment management's clients the firm owns at that time. On the sell side, you really have the service provider. Sell side research is a common vertical within [00:04:00] the sell side and that's where Gil Luria was one of the first sell side analysts in the crypto space.

Demetri Kofinas: In fact, Gil, I think was the only one that came on this show where we talked about the financial aspects of cryptocurrencies and we really dealt with the supply side a lot in dealing with it sort of viewing it as a commodity and sort of how do we determine value based on some of the supply side dynamics. But for the most part, we've covered this entirely from a technological standpoint, the underlying [00:04:30] technology and the use cases, besides all the other stuff we cover on the show.

You've written the best book I've found by far that attempts to put a financial framework around the cryptocurrency industry. In fact, this term I'm using as well is actually confusing. You actually do a good job of creating a taxonomy in the book and we're going to try to stick to your terminology. If I mess up, I hope you can correct me so that the audience doesn't get confused.

You break this down along three lines. You have cryptocurrencies, [00:05:00] crypto commodities, and crypto tokens, and those are all part of crypto assets. Why don't we start there and then we can sort of pick a part and ask questions as we go through?

Chris Burniske: Sure, and thank you for that. One of the most important things to get across when I'm using the term "crypto assets" is to broaden the conversation beyond currencies. If we stick to thinking of the thousand-plus crypto assets that are out there right now as strictly currencies, then it will take us down [00:05:30] a bunch of dead end conversations and arguments because a currency is a pretty specific use case within our world. Per the definition, a currency should serve as a means of exchange, store of value, and unit of account. A lot of crypto assets out there are not specifically focused on serving those three use cases on a global role. They're attacking other use cases.

That then brings us to, okay, what are those other use cases? Pulling back to this word "crypto assets," that [00:06:00] is the word I use and, increasingly, the industry is using to describe this asset class as a whole that stands up on its own against stocks or bonds or real estate or precious metals, or whatever it may be.

Now within that crypto asset class, there are verticals. Just like there are verticals within the equities asset class or the bond asset class or whatever it may be. Those verticals include cryptocurrencies, which we've just gone over, the ones specifically focused on being the means [00:06:30] of exchange, store of value, unit of account. Those include things like Bitcoin, Litecoin, Zcash, Monero, Ripple, so on and so forth.

Demetri Kofinas: Just to ... sorry to jump in there, but what about the fact that in practical terms Bitcoin is not a very great medium of exchange? Does that matter? Or in the taxonomy, is it simply the theoretical framework is such that you can use it technically as a means of exchange and, therefore, it qualifies?

Chris Burniske: That's a great point. I would say that when you look [00:07:00] at the different cryptocurrencies, some of which I mentioned, different ones of them specialize or are strong in different areas. So while they can all perform this universal suite of services, Bitcoin, for example, is really good at being a store value because of its disinflationary going on deflationary supply schedule. But that very same supply schedule actually makes it a somewhat poor means of exchange right now. It's a mediocre unit of account within the [00:07:30] crypto ecosystem specifically, and a poor unit of account outside of the crypto ecosystem. So this is where we start to see trade-offs.

It's also important to realize these are open source software systems. Just because Bitcoin is one way today, early in 2018, doesn't mean it's going to be that way in 2019 or 2020 or 2025. They can change.

Demetri Kofinas: That's also very important because your entire analysis here is based on an operational framework that is conditioned by the open source nature of the protocols you're dealing with. That adds [00:08:00] a certain parameters, expectations, assumptions, and also a layer of complexity, and because you're gaming out what it's going to look like. It's interesting what you said there about Bitcoin being a poor means of exchange as a result of its supply schedule. Is that what you think is, or maybe you were saying that it's a good store of value because of its supply schedule. How much of it is the supply schedule and how much of it simply is the sort of adoption of it, and the sort of the intangible belief structure of the community that [00:08:30] is investing in it and the network effect and everything else?

Chris Burniske: Well, I would say that many of those factors you just mentioned have been born from the supply schedule. Excitement around being able to adhere to a very fixed monetary policy and govern that monetary policy in a decentralized manner. That's very powerful, right? That has built everything around it. Now I should be clear around Bitcoin as a medium of exchange. I think someday it could get [00:09:00] to the point where it becomes a very widely used medium of exchange. I would argue it's quite important Bitcoin get to that point.

It's just right now, given its massive popularity, Bitcoin in some ways has become a victim of its own success. Right? Too many people want to use it. That has made transaction fees high, which is something, if you're in the industry you're probably sick of hearing about by

now, and so the Bitcoin developers are working on solutions, scaling solutions to bring transaction costs down. [00:09:30] Again, it's going back to this idea that these are open source software protocols. Thus, they can change over time. It's really important for understanding just if a crypto asset is not good at doing one thing now doesn't mean that will forever be the case.

Demetri Kofinas: I do want to move over to crypto commodities and crypto tokens. But before I do, I want to posit with something that we'll circle back to, and that is, what would happen if you were able to solve the scalability problem within Bitcoin, how that would affect its price given some of the other work you've [00:10:00] done? Let's continue on with crypto commodities.

Chris Burniske: Sure. Crypto commodities were really kicked off by Ethereum, which is another crypto asset that some people may have heard of. The reason I use the term "crypto commodities" is because when I look at the physical world and I look at many commodities exchanges like the CME, I can trade different derivatives products on physical commodities like bananas, natural gas, oil, wheat, [00:10:30] whatever it may be. And those commodities, those physical commodities are building blocks to our world. So it makes sense that I be able to accurately price them and trade them, not only on prices of today, but three months from now.

Within the crypto space we are seeing the birth of many digital commodities markets that are just as important as our physical commodities markets. To make that more concrete, that's things like cloud storage, gigabytes of computer space, or bandwidth, [00:11:00] access to internet, or compute like GPU flops, or just logic like what Ethereum provides. But the point here being that we are seeing the birth of markets to price digital commodities just as we've had markets to price physical commodities for many decades now.

This feels like an inevitable trend and so we look at different assets out there beyond Ethereum. You have assets like Filecoin, so you can basically bring your computer to the network. You download the software, connect your computer to the network, [00:11:30] and you start storing other people's files and getting paid for doing. Just like you bring your car to the Uber network and you get paid for driving people around and giving them Uber rides. That's Filecoin.

There's things like Golem, which is GPU so graphical processing unit, flops so you could connect your gaming machine. Or maybe even your Tesla, which has an Nvidia drive PX in it. Your Tesla can actually be crunching through machine learning algorithms or rendering graphics as part of this global [00:12:00] GPU flop network. You can start to piece together how abstract, but also all encompassing, the idea of a crypto commodity or digital commodity can be.

Demetri Kofinas: Just to kind of further that point about it being a commodity, you're agnostic about where you're getting the commodity from. It's just the same as gold or oil, it doesn't matter whether it's coming from one refinery or another, it's oil. Similar sort of concept here, which is that if you're going to want a provision or distribute file storage or a

computation [00:12:30] out to some distributed application, you can create a basic framework for pricing that whether you're buying it from one or another because you're buying storage and there's a price for that.

Chris Burniske: Yes. The market will set the price, inevitably, of the dollar per gigabyte, say, of cloud storage. The key here, what has been unlocked, and this is has been inspired by Bitcoin, this whole lineage of crypto assets has been inspired by bitcoin. If we think of what Bitcoin did, it issued a scarce asset [00:13:00] and governed this distributed set of actors to provision some resource in exchange for that scarce asset.

With Bitcoin, it was minting new Bitcoin in exchange for clearing and settling Bitcoin transactions and the security around that process. With something like Filecoin, just to stick with that asset an example, you are minting new Filecoin and doling out that Filecoin in exchange for computers coming to the network and storing files. The same [00:13:30] logical leap can be applied to most any digital service or resource that you can think of.

Demetri Kofinas: Now let's talk about the different between crypto commodities and crypto tokens because for the cryptocurrencies, for me, there's a very obvious difference between those in the commodities. Because the cryptocurrencies, basically it's an accounting ledger, whereas the crypto commodities there's some level of smart contract going on there, there's some level of if now, if this, then that computation with the commodities. Correct?

Chris Burniske: [00:14:00] For many of them, yes.

Demetri Kofinas: Okay. From my own curiosity, what would be an example of something where that isn't the case?

Chris Burniske: Within the crypto commodity realm?

Demetri Kofinas: Right.

Chris Burniske: Well, I think of some of the protocols that will provision crypto commodities will be pretty thin in functionality. For example, Filecoin again, that's a pretty thin protocol. They're using a new consensus called proof of space-time. There is a lot, I shouldn't under-sell how much engineering [00:14:30] has gone into Filecoin's protocol, but it's more to emphasize that some of the functionality or just the service being provided by a crypto commodity is a pretty straightforward service. That's what allows it to become an all present building block. Right?

Demetri Kofinas: Right.

Chris Burniske: If we go back to this idea of the taxonomy of cryptocurrencies, crypto commodities, and crypto tokens, I really see the cryptocurrencies and crypto commodities as being building blocks. These ubiquitous protocols that provision these [00:15:00] digital resources. To use the physical world as an example again, within our

physical economies, we have currencies that pay for the exchange of commodities and commodities that form the raw building blocks for finished goods and services. In the crypto world, using that same analogy, we have cryptocurrencies and crypto commodities coming together to build the base layers upon which we can build more consumer-facing applications or [00:15:30] DApps, distributed applications.

This is where you're starting to see things like prediction markets or things like Aragon for governance, or even Steem, which is kind of like Reddit and Medium had a baby and added an incentive layer to it. Those crypto tokens are really the consumer-facing finished digital goods and services that rely upon the infrastructure built beneath that.

Demetri Kofinas: The value proposition, the value they're adding is more complicated [00:16:00] to value also because the fact that there's more that goes into it. It's in a layer, as you're describing.

Chris Burniske: Yes, and the farthest off, right? This is sort of the dream of the crypto space. Consumers using all of these distributed applications without necessarily having to know or worry about anything that's going on beneath them. Right? Just like when I swipe a credit card, I don't have to know how the whole merchant banking backend of credit card systems works.

Demetri Kofinas: What are some of the most exciting distributed applications [00:16:30] you've seen out there? You mentioned Filecoin, you mentioned Golem. These are not fully function-, well, certainly, Golem is not. Right?

Chris Burniske: Right.

Demetri Kofinas: I mean, there are issues around how these distributed applications can function given the scalability concerns on the underlying protocol, which also gets us into questions of proof of work, proof of stake, and what some of the developer communities and some of these, particularly Ethereum, are trying to do in order to solve that problem. I don't know how you want to tackle that, that was like a whole collision of [00:17:00] questions.

Chris Burniske: We can either go down the scalability thought trail or we can go down, okay, what are some of the more exciting use cases that we're seeing.

Demetri Kofinas: Let's do this, we'll circle back into the scalability later. Let's talk about the most exciting use cases given the constraints that we face today and reasonable expectations.

Chris Burniske: I would say one of the consumer-facing projects that caught most people's attention in the last couple of months [00:17:30] would be CryptoKitties. CryptoKitties being -- you could argue -- a fourth vertical within crypto assets, you could call them crypto collectibles. It's this idea that you can have non-fungible digital assets. A unique single digital asset that I can't trade for any other digital asset because it's unique.

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Just like people find certain baseball cards to be unique, or stamps or coins or artwork or whatever it may be. But there was a marketplace [00:18:00] created for these rare digital cats and they were provably unique and rare. Therefore, that scarcity creates value. Right?

Demetri Kofinas: Fascinating.

Chris Burniske: They are cute in their descriptions and all that kind of stuff. The application was so popular it quickly clogged Ethereum's network because we're in the early days of these technologies scaling. But again, that's a good sign. Ethereum there was a victim of its own success because CryptoKitties put to use [00:18:30] Ethereum's platform to create this end user DApp. I think that's a good example.

There are other examples out there like Leeroy, which is a decentralized Twitter. You can access it using Toshi, which is an app that Coinbase puts out. Just like we have web browsers like Safari or Chrome, or whatever it may be, to explore the web, there are browsers like Toshi, which are DApps, so distributed application browsers, so that you can browse [00:19:00] all of these use cases that are being built and use them with cryptocurrency, with crypto commodities, and those kinds of things.

Demetri Kofinas: How important is portability and the application being built in a modular fashion so that it could be platform agnostic to you and looking at distributed applications to invest in?

Chris Burniske: Well, that's a deep question and a very important one. Just to rephrase, this idea that a distributed application could be built to run on top of Ethereum [00:19:30] but it could also run on top of Ethereum Classic or Dfinity or EOS, or whatever it may be. There's any number of sort of these multi-purpose general compute platforms. Even Rootstock, which has been built on top of Bitcoin, provides a virtual machine very similar to what Ethereum provides.

I would argue that, increasingly, we're going to see distributed applications at the very least need to have a back-up plan. Right? Let's say, Ethereum goes down, God [00:20:00] forbid, what is the immediate back-up plan? Because all of these DApps can't be reliant on a single point of failure. Whether that means they run on two chains simultaneously is to be seen, it's not free to do that. Right? You have to continually keep your application in sync on these two separate chains, which is not only a lift from the engineering perspective, but also just cost, you have to pay to use these chains.

Demetri Kofinas: Well, what about just having the optionality to switch [00:20:30] to something, let's say, something better comes along that people didn't foresee, the ability to switch to a different platform?

Chris Burniske: That's been done and that can continue to be done. For example, Storj, which you could think of it as a competitor to Filecoin, they switched from running on top of Bitcoin, I think they're running on top of Counterparty, which was a smart contracting solution on top of Bitcoin. They switched from that to Ethereum. The basic

thinking is you replicate [00:21:00] stake, which is effectively if you were to take a snapshot of where all of the users and all of the data and every ... yeah, a snapshot is the best way to sum it up, and replicate that snapshot onto another chain, and then start that chain running again from there. You can port to a different chain, it's just not a fun or easy process.

Demetri Kofinas: Right. There's something else that is important to note here while we're talking, and that is, that all of these -- the tokens, the commodities, and the [00:21:30] cryptocurrencies, crypto commodities and crypto tokens -- are all investible. You can invest in all of these and you can speculate in all of these. That brings us to some really great work that you did using the equation of exchange, which I want to get into as we think about valuing these currencies, and in terms of speculating and determining value.

I have to tell you something. I mean, I'm not, most of them, ton of shows here that are financial, my background is in that area, I've never [00:22:00] had to think about this equation in this manner and that forced me to deconstruct it in ways that I only had a few days to do, like I told you I started reading your work this weekend. So, I preface that in case I sort of say anything that sounds incoherent please correct me, but let's go down this route. First of all, why don't you explain this to our audience, what does equation means, and I'll do my best, as we move along, to try to interject where I can to provide some clarity, and how you use it in structuring and understanding and trying [00:22:30] to value the current and future utility value of these currencies and commodities and tokens.

Chris Burniske: Yes. I'll start by saying while I have been an advocate for using the equation of exchange within valuing crypto assets that we're still very early days in terms of valuing these things and having a grasp on how everything will work. I don't want listeners to think, well, this is all said and done, this is how to value these crypto assets, this [00:23:00] is a green field territory, and I'm not necessarily right.

Demetri Kofinas: Good. You make me feel better, because I do want to feel comfortable spit balling with you. Go ahead, Chris.

Chris Burniske: Yes.

Demetri Kofinas: Let's spit ball.

Chris Burniske: The equation of exchange is: MV = PQ. M being the monetary base. We're just going to use a traditional economy and fiat currency to set this up. M being the monetary base, say, of the US dollar, which is $4 or $5 trillion right now.

Demetri Kofinas: That's the amount of money the Federal Reserve has generated that's [00:23:30] a reflection of its balance sheet, which is the liability structure.

Chris Burniske: Yes. The amount of US dollars in the float, depending on if you're looking at and M0, M1, M2, it's all different. But we're just going to stick to this generalized idea of M. V is the velocity, so the number of times a currency will change hands in the air. If

I pass you $1, that's a velocity of 1; you pass it back to me for another good or service, velocity of 2, and you count those over a year. US dollars velocity [00:24:00] right now is around 5.

Then, on the other side of the equation, the PQ. You have P, which is the average price of a basket of goods. Q is the quantity of goods. When you multiply those two together, P times Q, that's typically a representation of the GDP, the gross domestic product of a nation.

When you have the monetary base taking the US dollar of, say, four trillion turning over at a velocity of five, [00:24:30] that means 20 trillion has changed hands in that year and, lo and behold, the US economy is approaching 20 trillion. This is how those two sides of the equation match. Now, to translate that to the crypto world, we can think of each one of these crypto assets as supporting their own native economy.

Demetri Kofinas: That's a very good point.

Chris Burniske: Yeah. That's been the most useful, one of the most useful analogies I've come up with to really [00:25:00] sort of think through these things. I've done it, it's not a solo effort, I should call out to Joel Monegro and Brad Burnham, two of my partners who have helped me think through this a lot.

Within this economy, there is a digital goods or service that is being provisioned at price P. Let's use another example. Let's just use a mesh network for internet connectivity. So, there's $1 per gigabyte of internet connectivity, that's P. And there's a quantity of gigabytes provisioned by that [00:25:30] network over any given year. To project out the size of that economy for 2018, 2019, 2020, I have to project out the price, the average price charged by that network for that gigabyte of connectivity each year, which is relatively simple to do in the context of other technology modeling where you have a cost of client curve and you drag that out over an extended period.

The Q is harder, because Q is representative of [00:26:00] the adoption of this network and it should look like an S-curve, a technology adoption S-curve. To figure out the quantity of gigabytes provisioned by a mesh network, I would have to look at, okay, what's the total addressable market of gigabytes provisioned for internet connectivity? What subset of that is suitable to a mesh network? And then what is this specific mesh networks penetration within this target market?

When I have those two variables, with lots [00:26:30] of assumption that goes into them, multiplying P times Q will give me the annual, say, GDP of that crypto asset. When I have that side of the equation done-

Demetri Kofinas: That's the monetary expression of the size of the addressable market.

Chris Burniske: That's the monetary expression of the size of the economy. P times Q for a crypto asset in any given year can be thought of as the GDP of that crypto asset in that year.

Demetri Kofinas: For you, the total addressable [00:27:00] market is a subset of the actual total economy?

Chris Burniske: Yes, but then there is a penetration percentage within that addressable market for a specific crypto asset.

Demetri Kofinas: Okay, I got it.

Chris Burniske: It kind of goes total addressable market, then percentage that's even suitable given the constraints of this crypto network, and then the actual percent penetration into that.

Demetri Kofinas: To be clear, what you're basically trying to identify is, what is the sort of ceiling that I can [00:27:30] hit in terms of the total size that I can penetrate?

Chris Burniske: That's the starting point.

Demetri Kofinas: Okay.

Chris Burniske: That's the very starting point. But then to get to an actual Q for any given crypto network, I have to boil down, okay, this is the max, what is the percent penetration into that max I expect in 2018, 2019, 2020, so on.

Demetri Kofinas: Right. Okay.

Chris Burniske: It's really to get the gigabytes, the gigabytes of network or internet connectivity provisioned. If I have the gigabytes and I multiply that [00:28:00] by dollars per gigabyte, I get a dollar value, which represents the GDP of that crypto network in that given year.

Now, if I'm solving for or if I want to figure out the necessary price of this crypto asset, I really need to solve for the monetary base necessary. So, on the other side of the equation, we have MV. If I divide both sides by velocity, I get monetary base equals PQ, which we've already solved for, divided [00:28:30] by V.

This is where we need to do a lot more research, and I'm engaged in more research with professors, but a lot more research on the natural velocity, the resting velocities of these crypto assets. It might be too early. I've backed out for Bitcoin as a means of exchange. Its velocity is roughly 15. In aggregate, Bitcoin expresses a velocity any given year of five or six. There's even nuances to how we calculate velocity.

But before we fall down that rabbit hole, just [00:29:00] to finish this idea, you divide an economy, a crypto economy of size PQ by the velocity of the asset in that economy in that year and you get a necessary monetary base to support that economy. To get the necessary price of a given crypto asset, you need to divide that monetary base by the number of crypto assets in the float. Let's say 10 million or 100 million, or whatever it might be, to get $1 [00:29:30] per token of current utility value for that crypto asset in that year.

Demetri Kofinas: Okay. Let's focus on the variable of velocity for a second because this is something that people don't intuitively grasp, which is that, as velocity rises the monetary value of a given crypto asset or token can drop, assuming money supply remains constant and the quantity of goods provisioned by the use of that particular token doesn't rise. Can [00:30:00] you talk about that a little bit? Let's see if we can play around with this variable and help make sense of it for our audience?

Chris Burniske: Okay. Velocity is a tricky one and it continues to trip me up to this day. If we go back to this idea that we're solving for the size of the monetary base, the higher velocity goes, actually the smaller the monetary base needs to be to support an equal-sized economy. Let's say, just to use examples, if the economy is worth $100 [00:30:30] and the velocity is 1 or 2, then the monetary base needs to be 50 in order to support that economy. But if the velocity is 10, the monetary base only needs to be 10 in order to support that economy. Same sized economy, different velocities, smaller monetary base.

Demetri Kofinas: And support the price level is another way to support that.

Chris Burniske: Yeah. Although we didn't get all the way to market prices, but we'll loop back to that maybe at the end. This idea of velocity is confusing, right? Because it's saying, okay, the more [00:31:00] this asset changes hands, the more in some ways it's used, the lower the value of the monetary base actually needs to be. To pick that apart, because it's missing a few components to really help people understand the dynamics, if we go back to a crypto asset within its crypto network supporting this economy, then that asset within that protocol is serving as a currency. Just [00:31:30] within that protocol. As a currency, it's facilitating the exchange for the resource that's provisioned by that network, but it's also storing value.

When I try and figure out the velocity of different crypto assets, I end up doing a weighted average based on how that crypto asset is being used. If you take something like Bitcoin, we see an expressed velocity of roughly 6 any given year, for all Bitcoin outstanding. Now, [00:32:00] that 6 is composed of a certain percentage of Bitcoin that was just held with the velocity of 0 and another percentage of Bitcoin that was actually used, that was actually in the float circulating as a means of exchange.

Okay. We have Bitcoin's high velocity of 6, from some work I did with Coinbase a couple years back, we estimated roughly 60% of users are using Bitcoin as a store of value. [00:32:30] That's 60% times a velocity of 0, which leaves 40% times some means of

exchange velocity has to equal 6. So, 40% times 15, equals 6, which reveals to us the means of exchange velocity. Bitcoin is actually 15.

This is where it's important to decompose for any given crypto asset. How much of it is going to be held either as a store of value or as part of the consensus mechanism that gets into staking, and [00:33:00] those kinds of things? How much of it is going to be held versus how much of it is going to be circulating?

The percent of the asset that is circulating could have a very high velocity and if that velocity goes too high it could unwind the value of the crypto asset. But there is this balance of, say, 60% can be held as a store of value, 40% can circulate at a relatively high velocity, and the crypto asset can still retain value because of that hybrid velocity-

Demetri Kofinas: Would it be fair to say that when you're looking at an ideal [00:33:30] store of value, an ideal crypto asset to invest in if you want to protect the value of your money or to grow it over time, you want to have a propensity for hoarding in the asset itself that can help to offset the potentially high levels of velocity that would come with having a digital asset that could be used, let's say, as fuel, if you're talking about something that's being used, like Filecoin for example?

Chris Burniske: There's a balance between [00:34:00] the store of value guys and the means of exchange guys. The store of value guys are continuing to hold the asset because they expect it to be used on a greater scale as a means of exchange going forward. The means of exchange guys continue to use it because on this given date it provides a better service than anything else competitively out there. It is a balance because if 100% is hoarded and there's no actual means of exchange turn over to the asset, then it could become the house of cards. Right? But the way [00:34:30] in which you sum it up does strike at the balance.

Demetri Kofinas: Is another way to put this that M times V is a measure of an expression of availability? If you have a lot of the coin at stake, let's say, your algorithm incentivizes a large percentage of the monetary base to be outside of the float, that leaves a smaller amount to be available and so that puts downward pressure on the price. Now we're getting [00:35:00] mixed up here because we're talking about relative values. It makes the currency more valuable assuming other variables having to do with the velocity for the float itself.

Chris Burniske: To take what you're saying and put it into math, because you are onto a correct point here, if we go back to calculating the rational market price for a crypto asset, we went through that process of calculating PQ dividing it by a V to get a necessary monetary base. [00:35:30] When I then divide the monetary base by a certain number of tokens outstanding, the number of tokens I use, or crypto assets I use, are only the crypto assets that are in the float. If 60% of crypto assets are bonded and being held, those are in the float, so there's actually fewer crypto assets in the float and, therefore, the value per crypto asset is greater.

Now just to tie this sort of all in a bow, people need to remember market prices are based on expectations [00:36:00] of future values. This is why when we started this conversation, I was talking about projecting this outside of 2025, calculating the value, the utility value of a token in 2025 and then discounting that value back to the present to get a rational market price today.

Demetri Kofinas: Right. Just to be clear also, these are theoretical frameworks that we're using to try to work this out in our head, but there are so many assumptions and it's so complex. I don't want to give our audience the idea that somehow, we're talking about nice and neat equations here that we can figure [00:36:30] out the value of Bitcoin and all yours is overpriced or it's a mean or whatever.

Chris Burniske: Yeah. It's very, very messy these days. Super early, lots of assumptions, not even totally ... I guess I feel some pressure because I have really advocated for MV equals PQ and a fair number people look to me for crypto valuation stuff, and I do spend a lot of time doing it. But we're all novices in the space. We're all trying to figure it out.

Demetri Kofinas: Let's move past that, because I've hurt the sensibility [00:37:00] and brains of my audience enough. Let's move into some of the other aspects and ways of valuing cryptocurrencies. I've got a few of them written out here. One of them though is the white paper, which is super important. I'm curious how important that is to you? One. Two, and how important it is given the fact that, at least in my experience having tried to evaluate white papers and having sought out experts, even the foremost authorities I've been able to find have hesitated to give [00:37:30] a definitive opinion on whether or not this is going to work, because there's so many other aspects, because market adoption ultimately is so important and viability and proof of concept. How important is the white paper to you in the equation of valuing and evaluating something? How do you go about doing that? Yeah, that's my question.

Chris Burniske: Well, it really depends on the white paper in terms of how many details the white paper gives. Can I, from those details, even start to piece together some kind of model on what the future [00:38:00] value of this crypto asset will be? That said, I really use the white paper as a gut check on the seriousness of this team.

Demetri Kofinas: Yeah.

Chris Burniske: Because I, and maybe this is too old-school of me, but if you go back to Bitcoin's original white paper, it was a pretty short white paper, it doesn't discuss the market opportunity. It just focuses on how the protocol is going to work. It's a pretty austere, clean, to the point white paper. [00:38:30] That's because a white paper should cover the technical aspects. There can be an associated one-pager or a specific paper on the crypto economics.

I understand combining together protocol mechanisms and crypto economics, because both are really important, but what I don't like to see is white papers that start with the

market opportunity and how much this token is going to appreciate and how all investors [00:39:00] that buy in now are going to get rich. Right?

Demetri Kofinas: Yeah, those are scams.

Chris Burniske: That is an immediate red flag for me. I guess to back up even more, when I'm approaching any project, I'm approaching it from technology, crypto economics and governance. Which is slightly different from how we phrase it in the book. The book we go into a bit more detail on things. But just for your listeners to chunk it into those things, I think that investigating any project from those three angles should be enough. That said ...

Demetri Kofinas: [00:39:30] By crypto economics, you're talking about some of the stuff we've talked about before, like the utility, the supply schedule, everything.

Chris Burniske: Yes, and even are the incentives strong enough to get people to bring their laptop to the Filecoin network?

Demetri Kofinas: Because these are open source, which is an important point.

Chris Burniske: Yeah. If I'm only making three cents a year, I'm probably not going to be incentivized.

Demetri Kofinas: That brings us to the question of the developer community and how important that is. Now that's, I mean, obviously, it's super important. It's much easier to evaluate the qualifications [00:40:00] of a developer community for a platform like Ethereum, which is established. But for something that's brand new, let's say, how do you do that? How you do it overall?

Chris Burniske: Frequently, developers that are launching new projects they have track records. Right? It may not be in LinkedIn. Hopefully, it's on GitHub, and the other projects they've worked on. That's really a merit-based track record. There's also the social aspect to crypto. It used to be that this community was pretty small and [00:40:30] it wasn't that everyone knew everyone, but you were only a leap -- at most, two -- away from people. Certainly with 2017 and now into 2018, the space is growing really quickly and so some of that familiarity is falling by the wayside.

That said, I would always go back to, what are the priors of the developers and how accountable are they to this project? If you can't even figure out who the developers are or they're [00:41:00] shady links into who they are and you can't really confirm their identity, then there's no accountability to the project. I think point number one is making sure there's accountability. Then, point number two, okay, what are the proof points, what are the priors that prove to me this developer team will be able to launch this protocol? Because it's easy to talk about these distributed systems, it's really hard to build them.

Demetri Kofinas: You mentioned governance as well, let's talk about that because that is a huge [00:41:30] thing.

Chris Burniske: Absolutely.

Demetri Kofinas: I think it's under-discussed and under-appreciated, because this is an open-source, you're talking entirely about blockchain-based protocols here, in all our conversation.

Chris Burniske: Yes.

Demetri Kofinas: These are open source protocols that are being used. Talk to me about the importance of governance and how you evaluate that.

Chris Burniske: Governance is the third part in what I mentioned a little bit ago - technology, crypto economics, and governance. We've done a decent job of covering technology and crypto economics. The reason that's [00:42:00] important to start with is technology is table stakes for this network to even work. Crypto economics is table stakes for bringing actors to the show.

Demetri Kofinas: What do you mean table stakes?

Chris Burniske: Table stakes as in if you don't have good technology you don't stand a chance in this space.

Demetri Kofinas: Yeah. I just didn't know what that expression was.

Chris Burniske: Yes, and crypto economics is the same thing. The third variable that is defensible is governance. To emphasize why this is the point, if we think of blockchains [00:42:30] as open data layers that are coordinating all of these actors around a particular asset or resource, then, as an open data layer, you can copy the code and the data layer, you can copy that whole protocol, replicate it, and spin up an entirely new protocol, which is a fork.

That's like taking Facebook, replicating the whole user graph, all of your data within it, and spinning it up on a separate set of [00:43:00] servers, which Facebook doesn't own and now you and I own. If Facebook has not governed their community well and there's this easy forking mechanism to spin up the exact same service over here with slightly different incentives, or maybe I have control of my data over Facebook having control over my data. If Facebook hasn't governed their community well, then you could get a flood of defectors that come over to this new protocol.

This is where these crypto networks need proper [00:43:30] governance, need fair governance where their constituents feel loyal and feel committed to stick with this protocol because otherwise that protocol could get forked to death, and basically commoditized in the way that I just described.

Demetri Kofinas: That's a very, very good point. In some ways there are pros and there are cons to this, to having open source. Right? The pro is one that you just identified

there, which is that let's say the community of developers are not filling the promise or people aren't happy about it, it's very easy for a renegade [00:44:00] group to fork and create their own version. But you could also have a sort of malevolent form of anarchy, sort of mob rule, and you have all these forks and you don't really have any major progress.

In reading your book, my sense was that you think, universally speaking, open source approaches to building distributed databases and applications, distributed consensus is the only ideal way, but the best way to go about doing this. Why do you feel that way?

Chris Burniske: Well, the [00:44:30] history of information technology has taught us to never bet against open. I mentioned Joel Monegro earlier, but this is something Joel and I talk about a lot and he's really stuck in my brain, and that is, it doesn't matter what platform you look at, but probably the most important recent one was the internet. There were a bunch of private intranets and a lot of the incumbents like the Telco's wanted to create their walled gardens where people could connect to one another and [00:45:00] they put out brutal campaigns.

You couldn't possibly trust the open internet. Why would you let anyone wander around out there? They're going to get infected with all kinds of viruses and see all kinds of nasty things, so on and so forth. Now intranet still marginally exists to this day. They do provide utility to the world, but not nearly as much as internets. The same goes for proprietary software versus open source software, private cloud versus public cloud, all kinds of examples.

For me, having learned those lessons [00:45:30] and grown up a millennial, it just feels so obvious to me that you should never bet against open.

Demetri Kofinas: Is it an important point to differentiate between open source and walled garden in this case? You're describing with AOL, it was a walled garden.

Chris Burniske: Yeah. I guess I should be more precise. Open source is typically referring to the way in which code is created.

Demetri Kofinas: It's freely available and not owned by anyone and controlled.

Chris Burniske: Yeah, and can be built upon.

Demetri Kofinas: Yeah.

Chris Burniske: That's open code development [00:46:00] versus walled garden or proprietary code development, which would be more like Microsoft. But then there's also just open networks versus closed networks, which isn't necessarily open source, per se, as much as an open network. Anyone can join it, anyone can become a machine on it versus a closed network where you have to have an ID and get through the bouncer at the door.

Demetri Kofinas: I was bringing it up because there's this one particular protocol that we focused on earlier. I don't know if you're familiar [00:46:30] with it. It's called Hashgraph, and it is patented. They have not released a public ledger yet, and I'm not privy sort of to all the details about how they're going to do it. But I think it's an interesting thing to look at and I'm considering it, and thinking about it.

For example, Apple had a very controlled approach to how they built their ecosystem, but you could argue that they provided a tremendous amount of value as a result of how they did that. It's just an interesting thing as I look at the problem of scalability [00:47:00] and trying to solve, what is the problem we're looking to solve? Anyway, that's why I mentioned it.

Chris Burniske: You raise a good point with Apple. It's kind of this idea of sometimes the most decentralized forms of governance are not the most efficient forms of governance. There are trade-offs there. A dictator can move quickly and very literally break things in which in the short term is more efficient for what he's specific or she specifically wants to get done [00:47:30] versus maybe a really decentralized democracy that plies along in this painstaking manner, but make sure to take into account everyone's opinion.

I would say to contextualize the idea of open even more and the importance of what's going on here requires a little bit of a walk through the history of information technology. If we go to, first, there was really the hardware era, say, the '40s, '50s, '60s ruled by [00:48:00] IBM and those were all verticalized systems where IBM controlled the whole stack starting from the hardware. Then, in 1971, about comes the microprocessor from Intel that is a standard open unit of hardware really.

That starts to commoditize hardware and, on top of that, the software industry explodes. Software industry famously gets consolidated by Microsoft, which can put more CDs on more shelves than anyone else. They have distribution and they also have [00:48:30] lock in proprietary contracts with the hardware providers. Lo and behold, what starts to unlock the software industry is it's the open source movement for software creation, but also distribution of information in the form of the web. You start to commoditize the software industry and you give explosion to the web industry, which is really a data industry.

Now, Placeholder, the firm I'm a partner at, we would argue that we're in the data era of value creation where hardware and software have largely been commoditized. [00:49:00] They still produce value as industries but they're not where the fattest margins are. The fattest margins are with the data aggregators like Facebook, Amazon, Netflix, Google and we are seeing a consolidation of the web around those data aggregators.

Now just as the microprocessor did, and just as Linux and the web did, the only way to compete against consolidating incumbents is to actually release a service that makes the very monetization model of the prior generation [00:49:30] obsolete, and that's by making that service free. We made hardware effectively free. We made software effectively free. Now blockchains make data effectively free because the very way in which a blockchain

operates and the network on top of it relies is that the data be shared and open and free amongst all nodes that connect to the network.

Demetri Kofinas: Right, which is the public ledger.

Chris Burniske: Which is the public ledger.

Demetri Kofinas: Let's talk about something else. We went and kind of geeked out a little bit there on the sort of tech. [00:50:00] This would actually be considered a geeking out what I'm about to do right now but it'll be more on the financial side. I was thinking about volatility and I was thinking about the effect of having all these different little microeconomies where their tokens are tradable, and the potential volatility that could be caused and the effect that it could have on the underlying business models of companies that are using it.

Let's say you're an airline and you're using a software, [00:50:30] a distributed application that's built on top of a blockchain or whatever, and it's using a particular type of token. That token is analogous to oil, the way that oil is used or jet fuel or whatever. Let's say that in this universe of all these relative tokens and relative commodities and cryptocurrencies, investors decided to pile into that because they see a really good opportunity for an appreciation. That could drive up the price of that underlying token, which could negatively impact the business model of this business that's using it.

I was just thinking about that. I [00:51:00] don't know if you think about that at all.

Chris Burniske: Definitely. That's a great point and there's a couple of ways to approach it. On one hand, you're right, that if price appreciation of the crypto asset makes the actual underlying utility of the crypto asset more and more expensive, then I would argue that's a bad crypto economic model. There are some crypto assets out there with that model and they have reasons for doing that.

What is much more scalable, certainly, is sort of this two-tiered [00:51:30] model, which Ethereum has implemented, where you have an exchange rate for ether, which is set by these global 24/7 exchanges. But then you have an exchange rate from ether into something called gas. Gas is what you need to use to pay for logic to run within Ethereum's world computer. You can actually, using this model, you can change the exchange rate of ether to gas so that you [00:52:00] have to pay fewer ether for units of gas as the price of ether goes up. What then happens is the dollar value of using the network can remain the same, even though the price of ether itself is going up.

Demetri Kofinas: It decouples the store of value component from the utility component.

Chris Burniske: Yes, and so that's important.

Demetri Kofinas: That's also important bringing us back to the question of velocity, because if you're going to have a utility aspect to your network that's going to demand higher amounts of velocity, [00:52:30] it's going to generate higher velocity. That's going to decrease the price. Did I make a mistake by even venturing back into this conversation, Chris?

Chris Burniske: They can-

Demetri Kofinas: I just sort of avoided it entirely.

Chris Burniske: Well, just to wrap it up again, because I can see it's on your mind, there's a bunch of levers here. Right? If, say, the percentage of the asset being held is decreasing at the same time that the velocity of the means of exchange guys is increasing, then that's a recipe for a vicious unwind-

Demetri Kofinas: That's a double [00:53:00] whammy.

Chris Burniske: Yeah, and value. Now, if velocity is going up and people are saying, "Hey, this networks being used more. Look at all of this transaction volume in exchange for the good or service," then maybe that velocity going up can also attract more investors, which are actually holding a greater and greater percentage of the crypto asset.

Demetri Kofinas: Right.

Chris Burniske: They become these variables. I would say over time we will see these networks trend towards equilibrium and there are different theories on how cleanly or messily a crypto network [00:53:30] will operate at equilibrium. One other point to emphasize, going back to volatility, if you have a fixed supply asset base, something like Bitcoin, which will ultimately converge upon 21 million units, that asset should be inherently more volatile than something that you can modulate the supply because the supply is fixed and so price will fluctuate around it. It's a supply rule versus a price rule where, say, you fix [00:54:00] price to keep that very stable and modulate supply, which is effectively what the gold standard was. Right?

Even fiat currencies today they're backed by these central banks, which are making these very small decisions around the Fed Funds rate in order to control the supply of money within the economy to influence the way in which the volatility of a fiat currency, and really the economy as a whole, they're targeted and inflation rate works.

[00:54:30] The central bank system and fiat currencies has become very, call it sophisticated but opaque, over time. Crypto, as it currently stands, the monetary policies are pretty rudimentary but they're totally transparent. So we can continue to iterate and iterate on these monetary policies to optimize for specific use cases. I would say we're just in the earliest days of doing that.

Demetri Kofinas: This may be a little premature, [00:55:00] and this kind of touches again back on money velocity because money velocity has dropped since the crisis even though the monetary base has expanded. That's a reflection of the large outstanding private levels of debt.

Chris Burniske: The velocity specifically has dropped because of how much the monetary base has expanded. If we go back to the equation, if PQ has remained roughly flat it's right on the middle, but that is divided, now if we divide by M, by a bigger monetary base, the velocity can [00:55:30] actually be less in order to serve the economy because you have more US dollars to service the economy.

Demetri Kofinas: You're saying that the drop in velocity, I mean, the expansion of the monetary base pushed down the velocity?

Chris Burniske: Mm-hmm (affirmative).

Demetri Kofinas: But I'm saying that let's say you had zero debt in the economy and you expanded the monetary base, you could have hyperinflation, which means your velocity would go off the charts. What I'm saying is that the drop in velocity is the reflection of the gravitational pull of the debt in the economy, which is creating an artificial demand for staking, [00:56:00] for holding, for hoarding the currency. Does that make sense?

Chris Burniske: That makes sense.

Demetri Kofinas: I was bringing that up in the context of thinking of what would be the consequence of introducing liabilities and fixed income securities within the context of cryptocurrencies. Now we're going way up.

Chris Burniske: That is down the rabbit hole. That is also a very good question.

Demetri Kofinas: We don't have to go down that rabbit hole. Let's go now to a more practical rabbit hole here, so the futures market. Now, we're going down all these different financial derivatives market holes or whatever. The [00:56:30] futures market, recently the CFTC and the CBOE launched cash-settled futures derivatives contracts and products on Bitcoin. What has the influence of that been? What have you seen? What do you think it'll be going forward? Is it problematic in your view that these are cash-settled? Would it be ideal to see more sort of physical settled contracts?

Chris Burniske: First order, I would say this is great. We need more hooks into the traditional [00:57:00] financial system, more ways for capital market investors to get access to crypto assets. Still to this day, a lot of retail and institutional investors don't know how to get access, or maybe even can't get access, to Bitcoin, let alone other crypto assets. Vehicles like futures or ETFs or mutual funds, or whatever it may be, they basically take any given crypto asset, let's just use Bitcoin for now, and they fit [00:57:30] it into this neat wrapper that plays nicely with all the other infrastructure that's been created around the financial services space. That's great.

We've seen with things like oil through the '80s that as the open interest, the amount of interest in futures contracts, as that grows it can actually increase the liquidity of the underlying asset, which in that case was oil, in this case would be Bitcoin. As more and more institutional investors get comfortable with Bitcoin futures, maybe over time [00:58:00] they get comfortable with Bitcoin itself. So it's a funnel that's pulling more and more people into Bitcoin. That's the first point that I would emphasize.

The second in terms of cash-settled versus in-kind, I think someday we will have in-kind. It's just another leap, right? Because then you're talking about delivery of Bitcoin and what does delivery of Bitcoin look like, and how do you make sure it's secure? A big one here is just custody. Directly holding an asset [00:58:30] that a lot of people are still trying to wrap their heads around in terms of its classification, its regulatory status, who custodies it. All those kinds of things that just right now for a lot of institutions just getting exposure and cash-settling is all they want.

Demetri Kofinas: That's the thing, it's so interesting. Right? I'm sure that you're not the first person that's thought of this perverse sort of idea that you're investing, you're not in really investing in the asset class, you're speculating on top of a speculation. You're trying to introduce an asset [00:59:00] into your portfolio, but you're not actually getting exposure to it.

Chris Burniske: Well, you are getting exposure to it. You're just not directly holding the underlying.

Demetri Kofinas: Well, I would say that's true if in a physical settled futures market. But in a cash-settled futures market, aren't you simply just using it as a proxy for making bets with other people? That you could use a ping-pong ball to do the same thing, my point being..

Chris Burniske: You are using a proxy and I would say you're always better off having autonomy over the asset [00:59:30] that you hold. Right? If I own a claim on one Bitcoin, I feel less secure than holding the actual private key that can move that Bitcoin directly. I understand your point there, but I would say this is still important for getting people to dip their toes in the water and just start to get exposure.

Demetri Kofinas: Right.

Chris Burniske: Now one last point there, because you do bring something up that is a little amusing. I would say that securitizing crypto assets with traditional financial instruments, [01:00:00] and I say this actually having spent about a year-plus of my life having worked on similar projects, it's a bit of a bastardization.

Demetri Kofinas: Of course, and it's very ironic.

Chris Burniske: Yeah. You're taking a native asset that can be transacted globally 24/7 low fee, and you're wrapping it inside this old vehicle-

Demetri Kofinas: Right, legacy architecture.

Chris Burniske: -old wrapper. I think that might have been the point you're emphasizing.

Demetri Kofinas: Yeah, I know. It's interesting, but it also speaks to the issue of that, ultimately all that has to do or much of it has to do, not just with familiarity and comfort and [01:00:30] regulations in the financial industry but, also with these scalability issues. That's related, or relevant, in the case of exchanges and the challenges that exchanges have and sort of all the transactions that happen on exchanges that don't actually happen on chain and all these interesting aspects of this ecosystem that we can't possibly get into, Chris, because we don't have the time and I don't have the brainpower today. But I'm going to get there, Chris, because I'm going to get your back on.

Two more things before I get you off, one of them has to do with government regulations. We'll get there, we'll [01:01:00] end on that. But I also noticed that you used a lot of Modern Portfolio Theory in your book, and Gaussian distributions. Is that something that you do? Do you work off Modern Portfolio Theory when you think about allocating portfolios for clients? I say that because there has been a move among some fund managers away from those models and towards more complex ways of viewing stock, moving some prices, so I'm curious about.

Chris Burniske: I should be clear that my role [01:01:30] in the crypto asset industry has changed a lot over the years. My first three years, from mid-2014 to mid-2017, was at ARK Investment Management, which is a public fund manager, much more involved say day-to-day in portfolio construction. I'm now a partner and co-founder of a firm called Placeholder, which is a venture capital firm that specializes in decentralized information networks incentivized with the token. Now, my job is much less [01:02:00] about day-to-day portfolio construction. I still have to think about, okay, we're making this investment in this new team, what are the ramifications for doing that in the context of the broader portfolio? But I don't focus on things like volatility or absolute returns or the Sharpe ratio, all that kind of stuff as much as I used to.

That said, I think that the reason I highlight Modern Portfolio Theory, or have highlighted it so much in the past, is to contextualize what's [01:02:30] going on with this asset class for people coming from the traditional financial industry. Because Bitcoin's place in a portfolio is very value-add just from a Modern Portfolio Theory perspective. You don't have to even believe necessarily in the long-term prospects of the technology or the developers or the community or any of that.

If you just look at the fact that most crypto assets are near-zero correlated with other assets that you hold in your portfolio, [01:03:00] then that near-zero correlation of returns means you can add - in many instances, we've seen this in the data - you could add, say, 1% of Bitcoin to your portfolio, so you swap out, say, 1% stocks into Bitcoin and there have been many periods where that actually decreases the volatility overall of the portfolio, which blows people's minds. Right? Because you're adding this super risky volatile asset

but you're actually decreasing the volatility of the overall portfolio because of the very tenets [01:03:30] of Modern Portfolio Theory.

Then on the other side, that can also increase the absolute returns. Not only have you increased the returns, you've decreased the volatility of the overall portfolio and that's what every investor looks for. So, that's why I just use Modern Portfolio Theory to contextualize things.

Demetri Kofinas: We did a show on volatility. It was Episode 5 and our guest Christopher Cole used this analogy, he called it "adding Dennis Rodman to your portfolio." Because when you look at how the Bulls played when they had Dennis Rodman, they were all these sort of intangibles [01:04:00] and it would show up in the portfolio.

Chris Burniske: Yeah.

Demetri Kofinas: It should be like sort of the performance of the team. Last question is regulations and government action. Because this is a huge unknown and I don't think we're out of the woods by any measure whatsoever. I know that Wall Street is super happy that they have the financial products and everything else. But I'm not at all sort of convinced that we're past the point where governments are not going to all of a sudden turn back in the other direction and regulate the shit out of this, or shut things down, or whatever like we've seen in China, obviously, China is different country. But how do [01:04:30] you evaluate the risk of that and what would be some of the signals you would look for to raise your alarm bells on?

Chris Burniske: First things first, you mentioned China. China has been a case in point that what any single nation state does, does not necessarily break cryptos back. If you go to the end of 2016, the Chinese Yuan accounted for over 95% of Bitcoin trading volume. [01:05:00] January of 2017 is when the People's Bank of China came out and effectively started banning Bitcoin trading; it was a slow rollout. But you ended 2017 with less than 5% of global trading volume for Bitcoin happening through the Chinese Yuan and nonetheless, Bitcoin rallied 15, 20X in 2017.

I use all of that to remind people that it was the Bitcoin space's worst fear that the Chinese government do something regarding Bitcoin at the [01:05:30] end of 2016. That happened at the start of 2017, and then Bitcoin rallied 20X through the year. We've seen time and again with this space that any single nation state regulating or clamping down on crypto really aggressively actually just leads to this game of whack-a-mole where activity goes elsewhere. That's point number one.

Demetri Kofinas: True. But that's capital flight, so point being it does have a negative impact on the value of the currency within the borders or within the boundaries of the country.

Chris Burniske: In some sense, [01:06:00] yes. It certainly reduces access to that crypto asset, which is a shame.

Demetri Kofinas: In China right now, let's say, you have a million dollars' worth of Bitcoin, can you get it in China?

Chris Burniske: If you have the right VPN, virtual private network. The right VPN to basically fool the Great Firewall of China that you are not based in China, so you're accessing GDAX, or itBit or Bitstamp, or whatever it may be from the Philippines.

Demetri Kofinas: How would you convert that into Yuan?

Chris Burniske: [01:06:30] If you were to access whatever exchange, you would then need one of the fiat currencies or other currencies that that exchange deals with. You wouldn't necessarily have Yuan-

Demetri Kofinas: I see what you're saying, you're saying that the exchanges would assume that you're coming in from a foreign country-

Chris Burniske: That you're a citizen.

Demetri Kofinas: -you're setting up a fake bio case. You're basically, yeah, okay, fine, fine.

Chris Burniske: Right, because you're at that point-

Demetri Kofinas: Okay, all right [crosstalk 01:06:51]. Definitely not the retail customers.

Chris Burniske: No.

Demetri Kofinas: Or financial product of choice.

Chris Burniske: No. But going back to regulation, even though I painted this picture of crypto [01:07:00] will survive no matter what, I have been reassured to see how actually US regulators by and large are dealing with this. The Securities and Exchange Commission, SEC, through 2017 was increasingly active and communicative in how it's approaching the space. They said things like the DAO, the famous fiasco summer of 2016, that was clearly a security. They said other of these assets can be securities. They did in one of their memos point out that Bitcoin and [01:07:30] Ethereum are likely not securities and so they've been starting to, say, paint the boundaries of what's out there.

I think more regulatory and enforcement action will be put into place in 2018 so we'll see more of that, and rightfully so. I think there has been a fair amount of bad behavior in 2017. But most of all, what I want to emphasize is that I'm encouraged that regulators are working with industry. There's people like Coin Center advocating for crypto. There's people like me and others [01:08:00] in the industry that meet and talk with regulators consistently. I just hope that those channels of communication remain open because right now I'm optimistic about things.

Demetri Kofinas: I do think that there's good reason to be optimistic for something like Bitcoin, for example, because it is a store of value and it's not currently competing for transaction volume. Also there's a challenge in terms of the IRS and filing your taxes. That's a huge thing. That's the problem.

Chris Burniske: IRS, the tax man is definitely coming. Well, and that's the thing, there's so many regulators just in the US, let alone globally.

Demetri Kofinas: [01:08:30] Transacting in a cryptocurrency, one of the biggest, if not the biggest sort of headwind against it is the fact that you have to reconcile those transactions to pay taxes. I might be wrong, but that was just my thought on that. The other thing is what happens if we get to a point where there is a distributed ledger technology or a blockchain or something that can actually issue loans, like large amounts of loans? That, I just don't know at that point, you're talking about a huge threat to the banking system and I still think we're in uncharted waters.

Chris, listen, [01:09:00] man, this was a great conversation. I sure hope that I didn't sound too uninformed when we went through that whole morass of like 20 minutes.

Chris Burniske: Me, too.

Demetri Kofinas: This was at least a painful learning process and I'm going to make a point to study hard and think about all the stuff we discussed and cover it again in the future for our audience.

Chris Burniske: Well, thanks for having me.

Demetri Kofinas: I hope you can come back on in the near future.

Chris Burniske: Sounds good. Thank you very much.

Demetri Kofinas: Okay.

That was my episode with Chris Burniske. [01:09:30] I want to thank Chris for being on my program. Today's episode was produced by me and edited by Stylianos Nicolaou. For more episodes, you can check out our website at Hiddenforces.io. Join the conversation through Facebook, Twitter and Instagram at @HiddenForcesPod or send me an email. Thanks for listening. See you next week.