Adam: **[00:04:45]** All right, welcome to the GestaltU Podcast. I'm here today with Rodrigo Gordillo, co-host and we have the honor of hosting David Fauchier from Nickel. David welcome to the show.

David: **[00:04:56]** Thanks very much for having me.

Adam: **[00:04:58]** This is exciting and timely, I think obviously with all the excitement that's going on in the crypto markets. We're recording this the Monday morning after the infamous Saturday Night Live appearance from Elon Musk, which enormous amount of anticipation for many in the crypto market. And I think ended up being a little bit of a *buy the rumor sells the news* type event. But maybe tell us a little bit about your background and what you guys are doing at Nickel? Kick us off.

<u>Backgrounder on Crypto</u>

David: **[00:05:24]** I like to say I came to crypto by way of a history degree, which is odd but I did like an accelerated. They do these four-year Masters in Scotland, which I did in history. Did a lot of economic history while I was there, but also like the history of thought, political, etc etc. And the way they teach out there which I think is wonderful, is sort of they give you an unfamiliar subject area. Forty books, five essay questions to pick from and you sort of go away for two weeks right, now say come back and defend it. So, it was very much kind of a process of learning how to learn. And coming out of that I went into tech and I discovered crypto around the same time. This is like 2012. Crypto at the time was really just the Bitcoin white paper and it was this kind of wonderful coming together of protocols and how the internet works, how open source works.

<u>Monetary Regimes and the History of Crypto</u>

That whole kind of culture around building open source, mixed in with like monetary policy and what is money and the history monetary regimes. Which I think unless you're older or well versed in history, we tend to think of monetary regimes as being quite permanent. But they tend to last 50 to 100 years kind of going back 400 years if you look at these. I would say very much not. And so, Bitcoin was this wonderful crazy insane and insanely elegant I thought, experiment. Because you know if you look at the original specifications of the internet. Like the HTTP kind of specs, you have errors mapped out for payment failed / payment succeeded etc. In designing the internet, it was always the idea that there would be an internet native money, and people had just been failing at doing that for 20 years because it was a really hard problem.

It was just really interesting to look at and I thought it was totally nuts and fun to research. And so, I started meeting more and more of the engineers in that space and then the fund managers, really starting in kind of 2014. It's like four or five managers in the world that were really kind of investing in crypto on a professional basis. And at the time, you know speaking of Dogecoin like there was Bitcoin, Dogecoin, Litecoin, people were experimenting with Colored Coins. They were talking about smart contract platforms but not much was really getting done. Namecoin was another, but it was a handful of ideas plus Bitcoin. And as that space kind of started to mature, I started to meet with more of the managers.

It was, you really had this kind of turning point in 2017 when Ethereum came out and abstracted a lot of the complexity around kind of building cryptocurrencies. And that led to an explosion in the number of cryptocurrencies, and we went from like 5, 10, 20 to like a thousand, pretty much overnight. And suddenly that kind of broadened out the ways that you could go and get exposure to the space. We sort of moved from, you can buy and hold Bitcoin or you can invest in like picks and shovel businesses, like exchanges, remittance companies, micro payment companies at the time. That was sort of it, if you look at the really early kind of venture portfolios. Then suddenly you add all of these new assets that you can trade and importantly the volumes went up a lot. And so, this attracted OTC players and suddenly you could short. Like you could go to an OTC desk and borrow like a million bucks of Bitcoin at sub 10% interest rate, with kind of not insane amounts of collateral. And you could kind of go short in size at reasonable rates.

This was kind of the first time that was possible. So, suddenly like we go from a very kind of concentrated venture long only type approach, to long/short and then we started having really with BitMax the first kind of delta one derivatives that were liquid and actually had real volume behind them.

Rodrigo: **[00:08:50]** It's almost like you have to say month and year in the crypto space.

David: **[00:08:53]** It's really in like summer of 2018 that this stuff was actually liquid and you could put a proper basis trade on. So, it's *doggy* as in in crypto, but yeah I mean this is three years ago like the space pretty much didn't exist. So, I was working in tech at the time and kind of evenings and weekends in crypto, just following this very much on the view that this is super interesting. You're going to go into this at some point, but there's a 20-year time horizon here. And like it's really going to take its time. I was working tech and I was watching kind of the effects of the internet and the innovations that had been made really in the 90s in terms of architectures. That were playing themselves out in the real world in 2010, 2015. It really takes a long time and so I was really in no rush.

In 2017, through kind of a long series of coincidences, I was pretty much told like, 'hey do you think there's space to do a crypto fund.' I was like, 'absolutely, this is how I'd do it.' And they said, 'Go figure it out and we'll write you a blank check.' We ended up never working together but the idea was sort of there. We went, raised, built a team and built one of the early fund of funds called Cambrial. And this was in late 2017, started working on it. We focused exclusively on market neutral. The idea was to start with that. We never got beyond it, because there was just so much work to do there. And the idea was you know we don't want to take directional views. There are some wonderful kind of VC funds that do that. What we're really interested in is the market neutral side. Which was completely absent from kind of the discourse around crypto.

No one was talking about this, very few people focused on it. Even fewer from the traditional world, like traditional quant world actually doing stuff.

It was guys in SF that were good at building API connectors, who figured out that there was a spread and you could do like spot arbitrage, and that you had these like persistent three five ten percent spreads across different assets. Then they figured out themselves how to put on a basis trade. These guys had never done fixed income trading before and didn't really know what it was. And out of that kind of evolved like a cottage industry of market neutral. And then really rapidly from 2019 early 2020 onwards, the quantity and quality of managers in market neutral has completely taken off. I think that's been a function of greater volumes and enormous amount of product innovation. And therefore, a lot of opportunity that also has capacity, and you get kind of the prototypical guy or girl coming out of the quant, prop shop space. It's like someone who's got 20 years' experience who was doing exotic FX arbs 10 years ago and like there were no regulations. It was all just kind of crazy and you were like sitting on the floor like plugging cables in and just pioneering.

I think the big trope that I get in crypto is these guys are giving up like enormous salaries and high capacity strategies, where they're doing very well. They're moving into crypto to manage like a million bucks, 5 million bucks 20 bucks, tiny amounts of money but they're doing it because it's fun. There's just a lot for them to do that. It's been kind of an interesting journey and so I've spent the past kind of three and a half years professionally in the space and professionally interviewing quant market neutral managers in crypto full-time. And one of our first investments at Cambrial, which was the fund of funds, was in Nickel. That's how I got to know the partners there. Two of the three partners are senior to me. Our CIO was you know trading in the 90s at Banker's Trust, fixed income arb, vega. He ran his own fund, managed you know got into crypto arbitrage trading in 2017. Managed a big book for Brevan Howard.

He teamed up with a senior guy out of Goldman and a younger guy called Alec, who trading and macro and kind of quant stat backgrounds. They set up this really interesting arbitrage fund which we ended up seeding and they outgrew us very rapidly, were extremely successful and built a what I think is now a really wonderful kind of arbitrage fund. And then they started sort of building new products. One of those products that they had in mind was a multi-manager platform. So, instead of doing a fund of funds you know having individual traders, external traders running pods. A lot of my learnings at Cambrial were very much pushing me towards that model. I think it's a far better way of approaching market neutral and crypto for lots of different reasons.

They sort of called me up, and you know do you think this is a good idea, are we being stupid. I was like, 'I think it's a great idea and this is how I do it and good luck.' I ended up joining them in November, so it's been a very quick six months.

Rodrigo: **[00:13:21]** Six months and a day makes you a veteran in Crypto.

ReSolve ASSET MANAGEMENT

The New Market Neutral

Adam: **[00:13:24]** I want to know when you say market neutral, because I don't think when you say market neutral that it means what many of the people who will listen to this podcast think it means. So, what did it mean back when you were doing it in late 2017? What does it mean today? How does it differ from arbitrage and some of the other strategies that you guys are running?

David: **[00:13:46]** Yeah, you can define market neutral more or less strictly and I think like the answer, is it does and it doesn't. Like there are pure market neutral strategies that you can run in crypto today. The general perception is that these markets are far less sophisticated and deep than I think they actually are. People are always surprised by the amount of instruments and the amount of trading venues. What we do in the *Factors Fund* which I run is more properly called beta neutral. So, we have no directional bias in the portfolio, but at a given point in time we will be taking directional market risk with certain strategies that we run. But like the core of what we're doing is arbitrage, HFT, market making. You'll have some inventory risk there, but on the pure kind of arby side, your most simple trade in the space in the market neutral is, in a bull market you can long spot/short the perpetual and you get to collect a funding rate.

The perpetuals in crypto are like a CFD or a swap from the traditional space. So, every eight hours you have this kind of settlement. And you're basically getting paid for providing dollars into the market. Like taking the other side to someone who wants to be leave it alone in crypto. But that's a as long as you're kind of hedging your payouts, that's really kind of a very pure simple kind of market neutral trade that you can put on and hold. Basis trading is pretty much the same, so all that usual kind of cash and carry type stuff. Market making for me is still I still consider market neutral, because they're like oscillating between you know +- 2 to 5% net exposure depending on the day. So, that's you know you're taking very little market risk there.

Then you sort of branch out into these more sort of stochastic strategies predicting where a particular coin is going to go and then they're taking directional risk long or short on some time horizon. Your traditional strategies is like long/short CTA, which for us is much less interesting than the shorter time horizon, much higher kind of short duration, kind of long/short trading, momentum, statistical arbitrage things like this. What you have in those strategies is yeah, at a given point in time they might be long or short the market 10, 20, 50, 80%. But they're going long in one hour, short the next and they're typically doing it across a bunch of different assets. At a portfolio level, their exposures are sort of hedging themselves out because when they're long some Bitcoin they'll be short some Eth. Typically, and that's not always the case. You need to be very careful.

We kind of think of these as like Ferraris around the racetrack, they can do wonderfully well when the sun is shining. And then when it starts raining, it starts to skid and you want to be careful and kind of take your foot off the gas. But they can do very well, but you're taking certainly more kind of market risk there. But over a period of two weeks or more in the kinds of things that we're allocating to, they're not correlating to a crypto market cap for example.

Rodrigo: **[00:16:29]** You talk about making these trades across the many crypto coins, but when we really think about the liquidity in the landscape we spoke about this offline. You're really concentrating most of those positions in a handful of them right, or are they going all the way down the ladder in size. How do you see that space?

Crypto and Liquidity

David: **[00:16:48]** Our universe today is within the top 20 coins by liquidity, and that's across market making and directional. And on the directional side, there's some interesting stuff happening on kind of relative value side of things and purse trading. There are different ways of constructing your portfolios to make sure that you know you don't get blown out the water when, you know the big risk is like a Dogecoin that just rockets, getting seriously hurt on that. But there are ways of constructing things that's not going to be, you're going to be relatively insulated to that. But most of what we're trading is Bitcoin and Eth. Because they're the most liquid, but there are other strategies which are diversifying across a lot of coins and that have much lower capacities in total.

We'll be happy putting in a small allocation and we will monitor that very closely in terms of their fill rates and just checking in with them and looking at how much aum they've got allocated in aggregate to that strategy. Market makers, an exchange like *Binance* for example are heavily incentivized to provide liquidity on certain assets. And there are ways of sort of comparing and contrasting, which assets are being supported by *Binance* in terms of the advantages that they'll give you. So, they will weight your trading volume based on which asset you're providing liquidity on. And in doing so, they are incentivizing you to provide liquidity on certain assets versus others. There's like a week's notice on what these rankings do, and so you can always kind of be checking that and seeing well you know if my weighting on this particular asset is dropping from a 5X multiple down to a 1X. We should really be watching what the liquidity on that asset does in a week's time going forwards, and maybe we should actually just stop trading here.

As with everything and I think this will probably be kind of a recurring theme in this conversation. Like conceptually everything is very similar to the traditional space. We're applying the same concepts into crypto. But the way in which you implement them, the types of things you need to look at the risks, are very different.

Adam: **[00:18:47]** One of the things that I noticed, as we roll out stuff into the crypto space and on the various exchanges, and as we sort of read about and observe in real time how the exchanges are themselves adapting to new coins to new strategies to new products. There's a perception I think as you say that the crypto space is very nascent. It's not secure, the tech is feeble and my experience has been anything but. The tech is state of the art. Yeah, there is still some learning. You got to double and triple check and triangulate fills and stuff and make sure that the APIs are almost being sort of built in real time. At least the new features at the margin, but in reality, these markets trade 24 hours a day.

They've got unbelievably deep and transparent order books. The amount of data, both price data and on-chain data vastly exceed the data that you get from traditional markets. Which provides so many different strategies and sources of information to triangulate on forecasting. I was tickled to see this article on how FTX decided that they wanted to see what they could do with lumber futures. And then there was sort of a 12-hour lead time, as they conceived of this and then they built the tech in two hours and launched it. It's been stable and liquid and seamless. This is remarkable, the number of strategies and approaches in tech and stuff that this all enables and that the vast majority of people in traditional finance are completely oblivious to. And in fact, are so skeptical about that they refuse to even dip a toe into the space. What's been your experience in trying to talk about this opportunity at Nickel with either managers in the traditional space or allocators in the traditional space? What is the level of receptivity and what are some of the concerns that they're articulating?

Crypto and the "Traditional Space"

David: **[00:20:42]** It's moved on a lot. The initial conversations I had in Europe in 2017 and 18. You really had the feeling that you were walking through the door as a charlatan and you've really had like that hour to prove that you honestly, that you weren't a crook. There were some very sometimes aggressive conversations. Some very kind of strongly held opinions about what the crypto space was and how it worked, which have changed a lot. I think the type of conversation we have today is much more and a lot of people in the crypto space spent an enormous amount of time on just trying to educate people that in certain ways this was not as crazy as they thought, and actually you know real things were happening etc. The conversations have moved a lot, but they have moved from an extremely low base to I would say one of curiosity typically. Where you know someone's familiar with this kind of trading in the traditional space. What does crypto look like and how does this work and talk to me about the risks.

So, we end up sometimes having you know these wonderful long conversations just on risk with a prospective RP. It's really fun, I mean it's what we're spending our time thinking about. And it's nice to be kind of asked those questions rather than *prove to me that Bitcoin isn't you know tulip bubbles.* To which as a historian I would say a lot of the historiography around the kind of tulip bubble mania has been disproven. But it's a very good story, it's just not very accurate. But also like in what we do, we have no view on what Bitcoin will do. If Bitcoin is doomed to fail, short term we'll make money long term will close and move on to something else. But there's sort of no harm done from the RP's perspective.

Rodrigo:	**[00:22:17]**	You're trying to convince these people in main street to get into this crypto space and what makes them reticent to get in there.
David:	**[00:22:25]**	We should talk about kind of the robustness of the exchanges. I think a lot of the reticence is not necessarily well-founded in your average RP conversation. But we should talk about kind of the robustness of crypto markets. The most positive thing and then we'll dig into the bad sides, but the positive thing that you can point to is that in March 2020, crypto markets held up. No exchange went bankrupt no contract blew up, a lot of traders got carried out on their backs but the system as a whole functioned. Like our markets cleared with no bailouts, trading 24/7 on an asset that has a vol of 100.
Rodrigo:	**[00:23:00]**	You just identified some of the points, the pain points. Like what happened to Bitcoin and Ethereum in that 24-hour period in mid-March?
David:	**[00:23:08]**	Bitcoin dropped from about 10 or $12,000 to 3.5 on the perpetuals, in a matter of 12 hours. And over the 12 hours, it was really kind of two, we get these huge kind of liquidation cascades. The way things work is we don't have clearinghouses in crypto. Like the exchange basically balances out the longs and the shorts, and they have an insurance fund for each contract. Which you know if someone blows up and they're unable to unwind the position in time, money comes out of the insurance fund to make the other side of the trade whole, and the losing side loses everything. You kind of have these risks around insurance funds and the size of the insurance fund versus the open interest that you need to be following. But broadly what happened is, a bunch of traders got blown out of their positions. The exchanges, some of the matching engines were overloaded, unresponsive because there was just so much trading. The APIs were going down, certain exchanges were freezing withdrawals or deposit or not recognizing deposits. So, moving your assets across exchanges was fraught with risk. Because you send the collateral, and you don't know when it's going to be recognized by the receiving exchange. Not many people were sleeping during that time, but ultimately, it's this kind of very aggressive treatment of the trader by the exchange in terms of when they're going to liquidate you. Which forces everyone in the space to, even though we have access to 100X leverage. If you're really aggressive, you'll use 3X and you're well margined at all times and you're generally operating conservatively, because you know that it's just ruthless. Like you will just get taken out. And so, people that were a little bit more aggressive or positioned the wrong way got taken out on their backs. People who were very cautious, either were stepping out of the market as this was unfolding and just moving effectively to cash and just sitting it out. All were margining and you know really reducing the leverage way down and just margining like hell and traded through it absolutely fine. So, from an individual trader's perspective, this was an incredibly incredibly stressed time. Think of the stress that we had in equities and bonds and the relative kind of vols of those asset classes. And crypto is like five times the vol and there was five times the insanity, it was just nuts.

But at the end of the day, the exchanges were fine, the contracts were fine, market structures held up. So, I think that's really like an endorsement for crypto market structure, which was absolutely not true in 2018. Like there was a huge amount of improvements to robustness, latency on the security side to hacking, that has really happened since 2017-18 and today. We don't really get exchange hacks anymore. And these exchanges are so big that they print vast amounts of free cash every quarter, vast amounts. Like they're big enough that they can bail out a screw-up. That counterparty risk is something which has changed a lot over time and especially over the past year or two. The holy grail is off exchange settlement.

So, the idea that we have one of these relationships right now and we're trying to expand them out to other exchanges. But we deposit collateral with our custodian and that collateral sits with the custodian and behaves as margin for us to trade on the exchange. We get to trade on the exchange as we normally would, but the exchange is not holding any of our coin. So, if they get hacked, this does not affect us. That's kind of the holy grail when it comes to hacking risk. We're very happy holding collateral with our custodian. These are sort of problems that are getting solved bit by bit, incrementally. At this point, there are other risks that you should be kind of thinking about that are front and center.

Adam: **[00:26:46]** Okay, well don't leave us hanging.

David: **[00:26:48]** It's all of the kind of like microstructure issues. It's getting into the weeds. So, Dogecoin, the perpetuals on Dogecoin have like disconnected from spot violently over the last couple months. If you could just like long Dogecoin short the perpetual, you're making extraordinary amounts of money and you're market neutral. It's wonderful, you know and you can run it un-levered. So, on paper this looks like a great trade. You're not going to make 50,000% or whatever but you can do extremely well. So, like why aren't we doing that? Well, what's your margin? Are you margining this in dollars or in coin? Like so an inverse contract. If you're margin in dollars and you've got a short position on, when Dogecoin goes to the moon it's going to start sucking up a lot of dollars of collateral.

So, you've got this Doge to the moon risk better than that trade, which you don't want to take. So, you can do a inverse perpetual which is where the margin instead of being dollars is, the margin is the coin. So, what happens is you put down one Dogecoin of collateral, you short one Dogecoin's worth of perpetual. And as Dogecoin goes to the moon, your collateral is worth more and more and more and so your position's always collateralized. So, like that's wonderful. So, why don't you do that? Well, you know Dogecoin can move really really really fast and it can move fast up and it can move fast down. The problem when it moves down, is that when we're stepping into this market, it's to sort of provide that liquidity on the long side for the longs, so on the short side.

And if we're doing that that means there's a lot of people that are probably overextended, leave it long on Dogecoin which is already just worrying. But if Dogecoin like on SNL, if Elon had said something else and it had tanked you know% 50 instead of 20% in a couple minutes, which is plausible, these guys get taken out, and the way the insurance contracts work on a coin margin contract. So, insurance contract depending on the exchange will be structured in different ways. But if we look at *Binance* for example, which is probably the deepest market for Dogecoin perpetuals. There's an insurance contract which backs that particular coin's, contract and its non-recourse to any other insurance contract, and non-recourse to *Binance's* balance sheet.

So, if you get a 50% drop all of a sudden, and your longs are just getting liquidated, you can blow through this insurance fund really quickly. If that happens us, we're long the spot we're short the contract, we've now made a bunch of money. But all of that money is unrealized P&L in the perpetual. If the contract blows up our P&L is gone and we're left with a bunch of worthless Doge. So, the more that trade works out for us the more sensitive we are to basically that counterparty risk or to you know being able to work our way out of that trade. But you're going to make the money when it drops, when it drops is when the insurance fund loses money. Which it's exactly the time at which you need to be worrying about your counterparty risk. So, suddenly now when you start weighing all of this up, you need to look really at the specifics of the contract, the insurance fund, how it works, how much liquidity there is there, what the beta is of that asset. Whether there are any kind of risks that would cause, idiosyncratic risks that would cause Dogecoin to go up or down a lot.

So, you need to be looking at the market, it's very event-driven. You start kind of layering in a lot of things that you need to worry about on this what started out as a very simple trade, that you could set and forget. Like buy Doge, sell perpetual go to sleep. So, as we kind of work our way kind of deeper and deeper and deeper into all of these trades, it's really kind of a multiplicative effect of lots of small risk nuances that you need to think about that you don't need to think about in the traditional space.

Rodrigo: **[00:30:25]** You're doing it in *Binance*, that was just *Binance.*

David: **[00:30:28]** So, that's just *Binance,* … OKEx, ...

Rodrigo: **[00:30:31]** And then you have to deal with all the other exchanges and their rules.

David: **[00:30:34]** Their rules, the way they structure these things, how they calculate like the point at which they're going to auto deliver you or liquidate your position. How have they done that historically? Have they done it the way that they've spec'd it or actually have they just liquidated people in surprising ways? Which for example BitMax has done. Do their APIs go down? When you try and re-margin your position does the API for doing so, just not work at the wrong time? And do they kind of lose your collateral transfer? There're all sorts of stuff that you really have to look at on an exchange by exchange basis and think about like instrument level risk, exchange level risk and instrument type risk.

So, there's big variations in dollar margin and inverse contracts. It's like a big kind of matrix and for any trade you really need to work your way through all of these kinds of things and think about them.

Rodrigo: **[00:31:25]** It's like the Dunning-Kruger effect. Novices look at a trade like that and it's the zero IQ trade. Oh, this is fairly straightforward, I'm just gonna do this and forget about it. But the more you learn about that trade, the more you realize that it's all about risk management. As we go to every exchange and we get the rules and we understand the API, it becomes deeper and deeper and much more complex. Which is why long-term alpha here, requires a level of expertise that probably comes from main street. Although you know it'd be interesting to know how many of these guys didn't come from main street. They were just these tech guys that started trading it early and now are crushing it.

David: **[00:32:01]** Our mutual friend Corey has gone really, it's very impressive. Like for a guy that's not in crypto, he's gone as deep down that rabbit hole as I've seen. Like specifically on these basis trades, and that's been fun to watch. But the kinds of risks I'm talking about really mostly apply to market neutral. Because if you're running a long/short strategy like you can do that on spot, you can borrow a spot-on margin. Are you going to take a hit on the markets are less tight, there's more spread there's more cost to trading? But you can do it if you want. So, your kind of like simple long/short momentum strategies on Bitcoin and Eth operationally like really simple to do. And so, for those kinds of strategies, demands from a manager are very different to a market maker, or an HFT.

I don't know any great market making slash HFT slash op shops in crypto that don't have traditional backgrounds. I do know some long/short guys who are just great like statisticians, mathematicians. People coming out with really, multiple PhDs and various forms of deep learning etcetera, etcetera. And these guys just take a data set, they look for signal, the actual trade execution is really simple. So, operationally these are very simple strategies to build, execute, understand and risk manage. So, we're much more comfortable and therefore you tend to get more of the kind of engineering type or academic type in the stochastic type strategies, that are a much lower frequency. We're much more comfortable backing managers with that profile versus your average ex-Facebook employee, doesn't usually go and trade the Quantos in the space. Because it's just really hard and we wouldn't probably feel comfortable giving them money.

Adam: **[00:33:44]** So, there's a couple of different edges right. One of them is operational. The edges there are in having a deep understanding of the liquidation cascades for each of the exchanges. The nature, size and trigger events for insurance, the segregation of the insurance by coin, by account etc. And then having the expertise to have robust API integration with multiple exchanges. Eventually hopefully, we'll be able to cross-collateralize and there are some companies that are making that easier and making really big inroads into that. And maybe we could probably talk a little bit about for example *Copper* and what they're doing and how you guys are making use of that platform. So, there's that whole operation, which is kind of like engineering right, it's like PI integration. It's deep technical work on infrastructure and then legal right, understanding the legal framework for the exchanges and the contracts. And what are all the exchange risks?.

I think you called it microstructure but it's really just everything that's not the trade. It's everything that's exogenous to the trade that could make the trade blow up. Even though the trade works out, you don't get paid out. Which is very well suited to those who came from prop desks and those who came from the trading floor and in operations and etc. So, absolutely 100% agree. And then there's this other set of strategies which are more plain vanilla from an operations standpoint, but require deeper academic, or work really well for people in theoretical physics or data mining or data engineering type approaches. What you're trying to do at Nickel is you've got some of the basket, which is leaning into the operation side, right. So, I guess that's sort of the arbitrage fund and then you've got the factor strategy. I guess does that lean more heavily into the, I don't want to say plain vanilla but like active directional risk.

David: **[00:35:34]** The arbitrage fund runs like arbitrage trades and it's run internally. And that's all it does and its really just pure market neutral. And it's targeting like a very conservative return.

Adam: **[00:35:45]** How many exchanges are you guys plugged into? I'd love to dig a little bit into it.

David: **[00:35:48]** About 15, trade most actively on like seven or eight.

Adam: **[00:35:53]** Your API is plugged into all of those and you're constantly for, I guess ideally, you're plugged into the order book. So, you're no longer looking at the order book from the perspective of the bid and ask of the futures versus the spot. But rather what is the size of the spread that I could put on, given the level of liquidity that's available on the different exchanges?

<u>Utilizing Multiple Exchanges</u>

David: **[00:36:22]** You start off by streaming level one or level two order books from the exchange. At a minimum, like what was the last trade, and ideally what's my kind of bid and offer, what's the depth of that book look like. Certain exchanges will give you more than others. Level three is possible but fairly rare. So, the first thing you're doing is just streaming all of these order books in, and then you start kind of transforming and sorting through that data and cleaning it. That kind of this kind of second thing that you do once you've actually got the data is, then you're starting to calculate the spreads. And if you're doing a triangular arbitrage, you're streaming data from a Brazilian exchange and from a European exchange. And you know you're looking at what's the Real to Euro and the price of Bitcoin in Dollars in Real, and then you're just calculating across that triangle. Like is there a spread here after discounting for the fees that I'm going to have to pay and my anticipated slippage.

So, your typical kind of triad strategy is going to be doing that. Your basis trading strategy can be simpler to implement. It can be a bit more of a qualitative/modeling kind of discussion. Do I think the basis is rich right now or not? Like is it going to get richer? And ideally when the basis is at its most rich you want to be putting a basis trade on and waiting for that to compress. You can be doing calendar spreads, so arbitrage across time. Then you know you can be mixing. You then kind of, the next kind of level of complexity is you're building a portfolio that kind of combines different bits of this. So, if you're doing triangular arbitrage you need to hold inventory across different exchanges.

So, on each exchange for example you need to hold some fiat and some Bitcoin. Now you've got kind of Bitcoin dotted around a bunch of different spot exchanges. But you're market neutral, so you need to hedge that. So, you can actually pair this triad position with a basis position. You use that Bitcoin inventory as your spot long, and then you're doing some basis trading around that, where your basis trading but that's just shorting the future. And so, now you have these two different trades inside your book that are kind of complementing each other. The proper arb funds that I've met with, building kind of these fairly sophisticated sort of interconnected books, where each side of the trade is actually a side of another trade. If that makes sense.

What we do in fact is, is quite different. We sort of think of it as a millennium for crypto but with better culture. We have capital, we have connectivity to all the exchanges you would want to trade on. You tell us where you'd like to trade. We will review your strategy. We'll look at your returns. We'll talk to you, we'll understand it, we'll underwrite what it is that you do. If we think that you're one of the top 30 traders in the world at whatever particular niche it is that you're trading, we would love to basically give you money to trade that on a managed account basis. And so, we do a profit share with the underlying manager every quarter. So, the *Factors Fund* which is the one that I run is a portfolio of external managers, who are running different alpha oriented strategies across the crypto space.

Rodrigo: **[00:39:08]** But they're not running it on funds, you're actually getting access to their trades.

David: **[00:39:13]** They are plugging into our accounts where we have deposited our capital.

Rodrigo: **[00:39:18]** You're an SMA platform, basically.

David: **[00:39:21]** Exactly. So, we've run a set of SMA accounts and each trader trades those. They can trade the capital but they don't control it, they can't withdraw it. It's our account, so we have perfect transparency on what's going on in the account. And then we have risk systems in the background that are monitoring you know on a pod by pod basis. What's P&L, what's exposure position limits etc.

Adam: **[00:39:43]** And for the most part the *Factor Fund* doesn't run arbitrage strategies, they're more sort of directional.

David:	**[00:39:49]**	As we kind of think about portfolio construction most of what we do is market neutral in nature. We do some arbitrage, like various forms. We do higher frequency strategies; we do market making. Then we also do some of the directional stuff, but I think what we're trying to build here is a really diversified, durable stable of alpha strategies across the crypto space. Because what we see is that quarter on quarter and crypto, market structure is changing and opportunities kind of pop up and then degrade very quickly. And so, you don't want to be doing just one thing, you want to really be kind of spreading your bets out. So, we look for under-competed areas of the crypto markets, where there's kind of a lot of fat left on the bone. There's a lot of opportunity and then we try and see if we can find what we consider to be world-class traders, exploiting that specific thing. Then we build a portfolio of these guys and what should come out the other side of that is something that's kind of fairly all-weather diversified etc. Most of what we do is market neutral.
Rodrigo:	**[00:40:51]**	That's a topic on its own, that is very difficult.
David:	**[00:40:52]**	The portfolio construction pieces, that and risk are I think the two like really kind of interesting meaty discussions to have.
Rodrigo:	**[00:41:01]**	When you think about how difficult it is to be an active manager in the traditional space. And then how much more difficult it is to be a fund of funds manager to identify true talent. When you say you're picking the top 30 managers in the space, what are the qualities you're actually looking for? I mean, are you just looking at P&L and persistence in the last two and a half years of trading?
David:	**[00:41:25]**	Yeah, exactly I mean everyone's an emerging manager. The markets have changed so much in two and a half years that looking at someone's P&L two and a half years ago. It's not really relevant. I don't think it has much kind of predictive power. What I will say is to any traders listening if you're doing something interesting and awful oriented in the crypto space, we would love to talk to you. Please reach out, we can find a way to work together.
Rodrigo:	**[00:41:44]**	There go your, the next two weeks.
David:	**[00:41:46]**	That's my pitch. But please do. The manager selection piece is really interesting, because my background is fund of funds. And when you're running an SMA platform, it is different. As you think about the distribution of returns that are possible when you give money to a manager it's very distinct, putting money in a fund to putting money in an SMA. There was a huge crypto fund scandal in December. One of the best performing arbitrage funds, we could never figure out how they made their money. It just didn't make sense to us. These guys printed money through thick and thin for three years. I was a kid out of college. The operations they described to us it just did not fit, but you know they raised 100 million bucks and the whole thing was a Ponzi scheme.

A guy pled guilty, like case closed. There was never any trading, the entire thing was fake. If you're allocating to funds, like there's a real risk. This happens in the traditional space, in hedge funds, this stuff happens. That extreme kind of case of like, is this guy just going to liquidate the accounts and disappear, exists as a risk in a fund investment. And it does not exist in an SMA investment. So, as we kind of think about these kinds of distributions of probabilities on the left and the right side, you start to be able to truncate some of these things. I think fraud risk in an SMA's structure is, I've not been able to think of a way, why the manager could front run you, he could like force the portfolio to trade in one way and he could trade against it.

There are things that can be done but like the guy doesn't run away with the money, and you can look at the trading on tiny amounts of capital, which we do for every manager to start with. Where if they blow up, they blow up, it's like a couple bits, we really don't mind, we live to see another day. But you can verify trading style before actually giving these guys money. And if we think especially of a market maker, a lot of these guys just have a long bias in the portfolio. Their inventory is just always positive and they're basically long Bitcoin and Eth and they're posting like 5% every month and 2% of that's trading P&L and 3% of it is holding Bitcoin. You can see that, like we can see style drift. We can see if a manager who's been struggling for three months and is being paid only for performance and has got bills to pay and we know they have bills to pay, is the exposure creeping up on our account.

And if it is, like should we get the guy on the phone because, why is it creeping up, is that the model getting more confident in its predictions, and we should see that in the hit rate which we can look at, or is it the manager doing a last Hail Mary. When I used to make fund investments I spoke to the manager once a month, once a week whatever it is. And we took him at his word on what happened in the portfolio. 'Did you hit a risk limit? No. How do I know that? It's not going to come up in the order.' So, there's a lot of monitoring real time, line by line tick by tick, which you can do in an SMA which you can't do. And this really starts to impact how you think about allocations. So, to cycle back to manager selection, there's a wonderful guy called Peter Kaufman, all credit to him. But somebody asked him this question once I think he just like reeled it off. He's on the board of the Daily Journal with Charlie Munger and he wrote a book about him and they're great friends.

Fund Managers and the Five Aces

Someone was like what do you look for in a manager, and he sort of gave this answer that he called *the five aces*. We hew very closely to that, because I think it just perfectly encapsulates what you should look for generally in a manager across any strategy, any asset class. But really applies for fund managers and like the first one is total integrity, total unimpeachable integrity. And if you're going to invest in someone's fund and this is an exercise that all of our LPs I think, need to do on us for example, is the manager at the end of the day pretty much going to put your interests above his. That's the kind of benchmark I think you need to have conceptually, and it's vanishingly rare to find. In conversations I've had and things that I've observed and other funds of funds and professional LPs I've spoken to.

So, total integrity is really like the most important thing, but bringing it back to SMA's, it's not that we don't look for that. But the cost of us being wrong on the level of integrity that a manager displays or will display, like the cost is truncated. They're not going to run away with the money, they're not going to defraud us. If we get uncomfortable with them, we can just reduce their capital from one day to the next and we can monitor everything that they're doing. And so, integrity is important, but the cost of being wrong. You can structure things in such a way that the cost of being wrong is much lower. And conversely to that, you can take a bet on a manager much more easily. So, you can have a good feel for someone and not need a 20-year track record to back you up before actually allocating to them. Because you can do it with tiny amounts of money and then you can monitor in real detail what it is that they're doing, and establish quantitatively whether there is or is not an edge.

The second thing he looks for is like world-class fluency, and this is something that we absolutely are looking for as well. Whatever strategy it is that you're running are you the best in the world at doing it. What's always important to me and this is why I really do mean, like please reach out if you're trading in the crypto space. My goal is basically to talk to everyone and I'm 600, 700 manager meetings in. So, that's most but certainly not all of the managers in the space. And so, we're always looking to talk to new people and you start to be able to kind of triangulate between what somebody's saying, and the depth with which somebody has thought about a particular trade or a particular risk. It's kind of an interesting exercise to take a week out and just have back-to-back manager meetings and just triangulate kind of where everyone is, how they're all thinking at a particular kind of point in time.

A fair fee structure I think is Peter's kind of third point, which again for us, it's incredibly important and it should be aligned. But for us we sort of come in with our returns, so a manager will show us their gross returns and we'll tell them what that's worth to us, and sort of offer them a fee structure and an incentive mechanism. And if they're happy with it that's wonderful, and I think usually they are because we're very happy to pay for top quality. But if they're not, then we have a strong idea of how we want to compensate our managers. Uncrowded investment space, this is important. I keep seeing managers, you set up a fund and you do a strategy, basis trading, perfect example. Then the returns go down and so you add more leverage, because this is what you do, and you have investors demanding a certain return. And you're probably charging a hefty performance fee, a big chunk of your P&L's coming from the performance in crypto funds.

Suddenly you've got bills to pay and you can't pay them. And so, you have this incentive to get stupid. People will start doing stupid things under duress. And so, being in this kind of uncrowded investment space where they don't need to do stupid things to generate good returns, is I think incredibly important in crypto. Then I think his last one's kind of a long runway, which again like if you're an LP you want to just give someone money for 10 years and not have to worry about it. Because we're kind of trading these markets every day and we're doing this full-time. We have allocated to strategies, where we don't know if that is still going to be making money in six month’s time. We're still happy to do it, hopefully we'll be proven wrong and it will. But if those returns go away, we can reallocate the capital.

It took us an hour to spin the accounts up. We learnt a lot talking to the manager, and if it doesn't work out, they're either going to pivot or we're going to reallocate the capital as well.

Rodrigo: **[00:48:41]** That's very comprehensive. So, that's your framework following. Who was it, again?

David: **[00:48:44]** Peter Kaufman. He calls up *the five aces* that's his kind of view on selecting managers. And there's a few things I think you need to add to that in crypto specifically around like risk philosophy which is so important. Like how wide is the distribution of outcomes that this manager considers possible. Nine times out of ten, when a manager gets into trouble it's because their distribution was insufficiently wide. Because anything can happen, it's incredible how applicable Murphy's Law is to crypto. All sorts of things happen. So, really thinking these through is very important and we have this kind of trader stereotype. We have a couple of these, but one of them is I call the Paranoid Cowboy. There's this wonderful line in *Margin Call* which is a super underrated movie. But like the CEO comes in, it's basically the scene where like the head of the first investment bank during the GFC starts to unwind the trades. Like unload the dogshit on the clients. And he says, there's three ways of making a living. You can be first, you can be smart or you can cheat. I don't cheat and while we've got lots of smart people, it's just easier to be first. And that's always really stuck with me.

The easiest alpha is just being first and I think being in the under competed corners of the market. And I think crypto is that for finance, but then within crypto there are niches which are just not looked at, and like these rocks have just not been turned over. There are wonderful opportunities there. And so, one of the types of traders that we're looking for is these Paranoid Cowboys. They're cowboys in the sense that a new product will launch, and they'll like jump in and on day one they'll be 20% of the trading volume. And they'll be trading the hell out of this thing because they've seen that the way in which the contract is spec'd, means that XYZ, there's actually a huge like arbitrable difference here. They'll go like all guns blazing, like really fast into this contract. It'll be like semi-manual, semi-automated, kind of like cowboys. And what prevents them from blowing themselves up is that that also paranoid. And that the paranoia is like the critical element to being a cowboy, in that these guys are just terrified about what can go wrong. And they spend their days and their lunches and their night times dreaming about all the different ways in which this can blow up in their face.

They are constantly like building redundancy and redundancy and redundancy against that. And if you can mix these two kinds of character traits, I think it's really is character traits. We've seen people produce exceptional returns by doing that.

Rodrigo: **[00:51:03]** And those corners of the space have low liquidity I imagine. So, you're putting a portfolio together of managers. So, going back to Adam's question, where do you see currently the way the markets are right now? Where the liquidity caps are in even a fund of fund strategy, or a multi-manager strategy?

Liquidity Caps Today

David: **[00:51:19]** They're really high. People don't realize but we might do a trillion dollars of notional trading this year in crypto and that's insane, that's really nuts. Bitcoin and Eth is where the liquidity is mostly at. In a bull market, the liquidity will start spreading out to other assets and will become not necessarily more balanced, but much more widely distributed. In a bear market historically, the liquidity contracts back into like just Bitcoin and Eth. And every Altcoin like the volumes pretty much go to zero, like you can't run a trading strategy on them. Remains to be seen whether this will happen in this cycle. I think it will, but where we're at today is exceptionally deep liquidity on Bitcoin and Eth. And pretty decent liquidity across kind of top 10 assets than the next 10, and that's where it sorts of stops, if you're trading on kind of fund size money.

In terms of capacity, like we meet with managers and are delighted to give managers like money on something that can produce an exceptionally high Sharpe and has five bucks of capacity. We're very happy to do that. If that works for them and they're happy doing it, great. Typically, capacities are more in the 40 to 80 range. Sometimes as low as 20. Typically, it's 50 plus. There's a real correlation between like the capacity in the shop, just like in the traditional space. I spent a fair bit of time in Chicago and I think like the kind of cottage industry Chicago prop shop trading scene, is one that I like very much. Like they're very thoughtful, experienced, humble and opportunistic. And they're happy to allocate to really like 20 buck strategies that have a Sharpe of 5 in the traditional markets. Like this doesn't, normally doesn't exist. You can't access that in a fund and a fund would never do it, because the cost, kind of structures embedded within that don't allow you to do it.

But with an SMA structure and we typically are working with prop shops, we think it's a kind of a wonderful strength of us to be able to allocate to someone and hopefully take them on exclusive, who has five or ten bucks of capacity. Something very very very small. More generally I've been asked the capacity question for the past three years. This space didn't exist three years ago. What you'll see is that the capacities will scale kind of super linearly to volumes, and to product innovation. There are more and more and more exchanges cropping up and we're in the midst of kind of an exchange's war. Where they're all fighting for volumes, they're all launching new products. Trying to like pull volumes away from the other exchange. I don't see any sign of that letting up. They're extremely well-funded. They're making enormous amounts of money and they're sort of hashing this out and we for the moment sort of get to sit in the middle. That's a lot of capacity right now. I think the capacity will drop down in kind of the depth of the bear market.

Rodrigo: **[00:54:02]** And you'll probably see a lot of consolidation from the many exchanges that exist in the bear market when everybody's needing some cash and wanting to survive.

David: **[00:54:10]** We haven't historically, because these guys are making like 100, 200 million in free cash per quarter for a year.

Rodrigo: **[00:54:17]** Even in the bear market. So, trading doesn't go down enough.

David: **[00:54:21]** In the bull markets, but that's so much money that they can just wait out the bear market.

Rodrigo: **[00:54:26]** It can cruise through the bear markets, I see.

David: **[00:54:28]** A lot of the comp is performance related. So, they just print, I mean they gush cash during that sort of year and a half of bull market. And then you know the six months after the end of the bull market, there's still a lot of volumes, they'll be doing well. And then you seem to have these kinds of periods of a year where it's just sort of dead. Maybe they break even maybe they lose a bit of money. We've historically not seen a lot of consolidation. Maybe we will, I don't know. It seems that they're big enough and profitable enough and kind of have the operating leverage. They're big enough to have that operating leverage. My sense is that we won't see that which is, I'm also hopeful of that. Because the more kind of fragmentation there is the better it is for us.

Rodrigo: **[00:55:08]** The more fragmentation the more opportunities the differentiated rules, the more diligent you are at finding them, you can actually find some arb opportunities. But in a bear market as liquidity dries up and spreads get wider and things get costlier, I would imagine that you're either delivering, would expect to deliver a lower return to investors or give money back, so you can trade.

David: **[00:55:30]** It's both. I mean we'll have to see how big we grow in this bull market, but I don't think we'll need to return money. Yeah, we will make less, we'll certainly make less. Everyone in one way or another is sort of tied to the hip to the price of Bitcoin. Even if you're pure market neutral and arb, like when the Bitcoin price is going up these markets are objectively become less efficient. Less efficiency is more spread, more spread is more profit. So, you'll see the arb funds doing really well during a period of Bitcoin bull market and your correlation to Bitcoin will be quite high. And you can be kind of sitting on the other side of the table being like no I swear, we don't have any kind of like long positions on the balance sheet. This is not how we work. They're like yeah but statistically but so you sort of have to explain the trade. It's harder in a bear market.

You know if you're doing a triad strategy across spot markets and there's no volumes and the price isn't moving that's just that. It's typically harder to do. But I think you can produce a decent return in a bear market and attractive risk adjusted return in a bull market. And that evens out to something which is I think quite acceptable.

Adam: **[00:56:35]** I'm curious about the plumbing of the management of the SMA within the fund. So, you've got a bunch of different managers here. You said you can move the collateral around relatively nimbly. Just walk us through how that works?

The Plumbing of Fund Management

David: **[00:56:52]** From top to bottom, investor invests in the fund, technically their money goes to a client funds account. The administrator will deal those client funds into the fund at the start of the month when they are kind of dealt in and officially invested. At that point, like we've basically got cash in our bank within the fund and we're going to either leave the cash there as cash because we want to hold cash. Or if we want to actually start trading it, we will convert that into crypto or Stablecoins. So, you know typically it's going to be a mix of Bitcoin, Eth and Stables. And then we'll distribute that either into, on through an exchange like say *Kraken* or *Coinbase,* whatever you want, *LMAX*. And then that goes to the custodian, and from the custodian it can go and either be used as collateral off exchange, or go on to the exchanges as collateral where it'll get traded.

So, we use a company called *Copper*, which we've used for years. To my knowledge the only two kind of real custodians in this space if you're a trader. There's *Copper* and another one called *Fireblocks*. And they're roughly equivalent in terms of proposition and features, but they're both kind of allowing you to create a walled garden of exchange accounts across all the different exchanges. We as the asset manager can move assets between those exchanges at will, but we can't take money out of the world garden. We get to move money between the exchange accounts, which are closed off by the custodian, and the custodian and our bank. So, the money sort of has to be somewhere within that ecosystem. So, we like that very much, because if someone comes into the office with a baseball bat there's no crypto for us to give them. And you can show our investors that even if we wanted to join you guys in the Caymans and retire early, there's just no way for us to do it. And there are too many kinds of checks and balances there.

So, once the money is in the custodian, it's converted typically into crypto. From crypto, it goes to the exchange accounts and each manager has their own set of sub-accounts. So, if you guys were running a strategy for us like maybe you have one sub-account on *Binance,* for example and that's where you want to trade. We'll fund the account. We'll give you the trading API keys and you'll get to trade that account. And you trade it, you can pull the balances etc. What you can't do is move the collateral. If you're running a multi-exchange strategy, the way it works is that we'll expose an API to you which you can call. And it'll say hey, '*Nickel* could I please move collateral from point A to point B?' And we will then review that request, that's a *Nickel API*.

We'll review the request against trading or risk limits for that particular trader. Are they going to breach an exchange limit? Either at the portfolio level or at their own, except checklist style. And if we sort of accept, then we authorize the transfer. And we're then sending an API request to *Copper* and *Copper* is then checking against their own white lists. Are these assets allowed to be moved from A to B? And if so, they then affect the transfer for us. There's a lot of kind of checks and balances on the way but ultimately being programmatic, you know you're adding a couple of seconds of latency.

Adam: **[00:59:45]** Does *Copper* also consolidate for reporting and administrative purposes or how does fund admin work?

David: **[00:59:50]** The administrator will pull their own balances. So, administrators generally if they're doing their job correctly, will be plugged into each of the exchanges and will go and look at what those balances are and price them. Or they'll use the third party to do that, and then our custodian also provides trade files and asset inventories as well per account, and then the administrator reconciles all of that. From the trader's perspective, you tell us where you want to trade. We give you an API key and you trade this like it was your own account. On our side, between kind of margin management, risk monitoring, you suddenly need to have like extremely robust connectivity to all of the exchanges that any trader might want to trade on. Our universe is so small that if you're lucky enough to find a good trader, you can't say no for some arbitrary reason. There aren't 10 other traders behind him that you could just pick from, because they fulfilled some arbitrary criteria.

I always want us to be in a position that if we're lucky enough to find a great manager, we can just give them money.

Adam: **[01:00:47]** You can maximize their potential with your infrastructure.

David: **[01:00:49]** Exactly. If they want to trade on X exchange versus Y exchange, we should be able to support that, if it sits within our risk limits and our tolerance for counterparty risk etc. etc. But we should never give kind of a dumb reason for a manager not to work with us.

Adam: **[01:01:05]** So, with your fund suite, are there any new funds on the horizon? Is the *Factor Fund* currently the main focus to scale, or what's the vision there?

The Structure of *Nickel*

David: **[01:01:14]** *Nickel* has four funds. The first is the arb kind of flagship, which is still the largest. The second is a Bitcoin tracker all of this is public on our website. The third is the *Factors Fund.* We recently launched like an *Altcoin Fund*, which sort of tracks everything that's not Bitcoin. And as for the future, I think the general kind of direction that we're headed in is we've got a good track, we've got a good team, we've got good infrastructure. There's lots of different products that would be possible that we could leverage, or build off of that infrastructure. I think the idea is really to be able to go to more and more institutional allocators, which are really kind of interested now. We built this on family offices and that'll always be kind of a core part of the business. But as the bigger institutions come in, to be able to provide them with a menu of kind of risk/reward. What fits for you guys?

Here's like you know the *Factors* and *Arb* really kind of the alpha side of things and then the *Bitcoin* and the *Alts Fund* is your beta exposure. You can pick and choose between these.

Rodrigo: **[01:02:08]** Dave, I was going to ask you about the potential audience for what you guys are doing. You just said institutional's where you want to go, you got family offices. You're offering this through a traditional fund structure. Have you thought about making a *coin* to be able to offer it in the crypto space?

David: **[01:02:24]** God, no.

Rodrigo: **[01:02:26]** I mean there must be vast amounts of money of people that are massive long Bitcoin quote-unquote maximalists, that are trying to get some of that risk off.

David: **[01:02:35]** Are you saying in terms of us like launching a coin or accepting Bitcoin as subscriptions?

Rodrigo: **[01:02:40]** Yeah, you launch a coin for your *Factors Fund* and charge 2 and 20 and only offer it in Bitcoin.

David: **[01:02:45]** It's just a terrible idea.

Rodrigo: **[01:02:49]** Tell me why?

David: **[01:02:50]** There's just no point. It doesn't add anything. What is possible is opening like a Bitcoin share class. And same way you can subscribe in with your Bitcoin, but you're subscribing into the same strategy and we don't need to mess around with creating an ERC-20 token that has really no value whatsoever. You could raise a lot of money in a bull market for something like that, but it's just not intellectually honest.

Rodrigo: **[01:03:10]** All right fine. So, here's a second question. I imagine that in this Bitcoin space, there's a lot of emotions involved in what you do in the space. I'm curious whether people look at what you're doing and think you're an idiot, you're only making 20 - 30%. Like you could be making 5,000%.

<u>Approaching the Crypto Space</u>

David: **[01:03:29]** We don't disagree. As a firm, like we have two alpha products and two beta products and personally I don't actually really know for the rest of the team. Personally, I've been investing in on the beta side of the space mostly in kind of venture stuff, for nine years now. I don't do that professionally. Everything I do is basically market neutral and personally I do a lot of more directional, like buy and hold and venture investments. I think that there are really three ways you can approach this space and the three are very distinctive. And I think it behooves everyone to at least explore the three and then make up their mind but not dismiss it out of hand. The first is I think there's a reasonable case around Bitcoin being digital gold. Everyone's very familiar with this argument now. Hard money, blah blah blah.

There's a reasonable case for that and you can choose to ascribe to it or not, and it may or may not have a part in your portfolio. If so, like buy a little bit of Bitcoin. I don't think that's an unreasonable thesis to have. The second is to say I don't know about the Bitcoin, but I like the tech and this kind of technology is interesting. I think that's also very reasonable, like happens to kind of be my view of the world. Which is that a lot of these cryptocurrencies are not currencies whatsoever, that we're building is kind of new piping for the internet. That 10 years from now this will kind of just be like core internet protocols. It's just going to layer in, you're going to use it you won't know that you use it in the same way that you don't know whether the backend to Uber is on AWS or Google Cloud, and you really don't care.

I think that's the direction that we're headed in and I think that the architectures around crypto networks are extremely interesting for like delivering public services over the internet. The level of complexity, of technical complexity and risk that you're taking now is huge, it's PhD level. And like I talked to these LPs who would never dream of investing in early stage biotech on their own. They don't just like write Angel investments in biotech, but God someone comes to them with a pitch deck whose ex Goldman or Deutsche, and it says like distributed ledger technology and blockchain on it. And they're all over it and there's, 'Ah you know this guy's you know changing the world he's got a cryptocurrency, blah blah.'

I think that if you ascribe to this kind of second idea, which is that there's an interesting technology here. It's like a multi-decade kind of investment theme, you should go and find a good crypto adventure manager and you should give them money. And you should let them do their work over a 10-year time horizon. And then the third way of approaching this space is to say, I don't know anything about any of this and I don't really care. I don't want to have a directional view here, but I can observe like factually and objectively, that we have a market which is liquid and inefficient. And there's market neutral kind of money to be made there. And I think that's kind of the third way that you can approach the space. For myself and my family, we do a little bit of the three. Beyond that I think to each his own to explore them and see whether any of them are fit into their kind of portfolio for them.

I think these are three very different ways of approaching crypto generally. And I think it makes all the sense in the world to do a little bit of the three.

Rodrigo: **[01:06:27]** I think *Nickel* launched the long position funds just so they don't want to get any vitriol from the Twitteratti. Just to make sure that, no no we have that too, don't hate me. It's over there.

Adam: **[01:06:39]** In your conversations with institutions and family offices etc., do you think we've reached? I remember starting it at a tech company in late 90s and there was a time period like 18 months where you didn't do any selling, because companies were walking up to your door with bags of gold saying build me a website. Is that the stage we're at right now in crypto fund management, or are you not seeing that yet, are you seeing that still ahead on the horizon? How would you characterize the phase we're in?

David: **[01:07:07]** My personal view is were like mid-cycle, ebullient but not stupid. And I think in this market unfortunately things get stupid to the upside and to the downside, very few level heads in our space. Yeah, it starts to come through in the LP conversations and this is not so much us and *Nickel,* because I spend very little of my time talking to top of funnel prospects now. I'm just, one of the wonderful things about going to *Nickel* is like we have a great team that kind of handles the fundraising and money falls out the sky. And I get to spend my kind of days talking to managers which is what I love. The conversations I generally have in the space and venture managers especially, people are like throwing money at them like aggressively. They're bruised and battered, I have a feeling that the 20, 2021 vintage of crypto funds might be the first one to kind of suck. Every crypto venture fund has done incredibly well pretty much, but the amount of money, every friend of mine who's a venture fund manager is 2, 3 5X oversubscribed.

It's just insane. The amount of money being thrown at the space for a finite amount of I think talent. But the space is growing a lot, breakneck speed, nothing I've ever seen before and has been for years. But the amount of money coming in is just wild, I think too much. And it will fuel a productive bubble just like 2017, just like late stage '99. What happened in the first decade of the 2000s, would not have been possible if we hadn't gone and laid a ton of fiber optic cable down, and then had 40 dollar broadband for the world. It just wouldn't have happened. So, there's this kind of Carlotta Perez idea of kind of productive and unproductive bubbles. I think the bubbles in crypto are generally very productive. So, a lot of good stuff will come out of it but there's I think too much money.

Rodrigo: **[01:08:54]** Well along with that money you're seeing a lot of talent get into the space, right. Similar to the early 2000s, where the amount of money that came into the space allowed talent to go into space, build some real things build a lot of frauds, build a lot of mediocre businesses that over the decade got fleshed out. And what we were left with was that fiber optic cable they talked about, and really good operators that eventually showed their value like Amazon. Whoever else that you can think of in the top, similarly you're going to see this.

David: **[01:09:24]** Don't get me wrong. There is a lot of that. It's incredible, but there is even more amounts of money.

Rodrigo: **[01:09:29]** There's more money chasing few people that have been in the business for enough years. So, you're getting fresh talent that is still up the learning curve, you're just pushing it up.

David: **[01:09:38]** The cumulative IQ points, cumulative IQ points in the space has been compounding at say 60%. And I think will do so for a long time which is an insane rate of growth. But right now, the money floating into the space is going you know 200, 300%. And so, its things are moving I'm incredibly bullish on the space, but I think that if you're going to do this kind of second like venture investing side of things, there are real returns to being counter-cyclical like aggressively counter-cyclical. Which is why I think like lock your money up, and this is not investment advice. But I think there's a lot of sense to the idea of saying I'm gonna lock my money up on a four-year investment horizon. Where the manager if they want to, can sit on their hands for three and a half years and do nothing and just wait for things to normalize.

I know managers that did that, like they sat out all of 2017 and most of 2018. And then they came in and there's another thing with managers. A sense of market timing and knowing when to be a pig and when to step out of the market is really important, I think long term.

Rodrigo: **[01:10:42]** The tough part in our business is being able to find the LP that are willing to give you cash to sit on.

David: **[01:10:49]** Very much with a hedge fund you're at a disadvantage though.

Rodrigo: **[01:10:52]** I mean this is antithetical in the whole crypto space because nobody talks about this, right. What is the actual valuations of these companies? I remember they were the same valuations, we're originally from Toronto. It was the same valuations as mining exploration companies in 2007. there was nothing. There was a plot of land where they haven't proved anything out, that was next to other things that may have some gold or silver or zinc or copper, but were trading at ridiculous levels, and obviously ended up having nothing. There was no cash flow, there was just a dream. And I feel like the space is full of that right now and so possibly being patient. I mean long-term patient 10, 15 years waiting for that drug. Because God knows if you're thinking we're mid-cycle there's probably something to the next 18 months in terms of being invested before you step out even with these crazy evaluations.

David: **[01:11:44]** I think we're in a trader's market, not in investors. If you've got positions, there are things you could point to say you know I'm gonna hold another month two month, five months, ten months, whatever the number is. But for me, you know the late stage bull and the early stage bear is a wonderful time to be on the market neutral side of things. That's really when you get the juiciest returns. And then when crypto is left for dead and everyone thinks it was you know a big joke and a Ponzi scheme, at that point, I think going to the developer conferences and seeing like that there's still a lot of energy and money and funding in the space. Really smart people working on extremely difficult high value problems, still at breakneck speed. It's very useful during the bull market because it tampers down your wild expectations. Because everyone is behaving as though like a lot of these protocols have already kind of changed the world. Actually, there's there are pockets of world usage you could point to, but overall, it's very very early.

Then in the bear market when the whole thing's kind of left for dead, you see that actually you know things are actually better than last year, but the valuations are down 90%. You can sort of think of this relatively steady trend line, that I think is accelerating in speed in terms of how mature this tech is getting globally. And then around that you have this huge very large amplitude kind of oscillator of investor interest and valuations.

Rodrigo: **[01:13:04]** Not investment advice, man is that insightful. I love that.

David: **[01:13:07]** Well then, my only investment advice would be to be careful.

Adam: **[01:13:10]** Things will fluctuate.

David: **[01:13:11]** Things will fluctuate violently, and I think there are real returns to being full-time in the space. Just like biotech or mining, it's not a good spot for tourists.

Adam: **[01:13:23]** That's a good place to put a bow on it, I think.

David: **[01:13:26]** Thanks so much for the great question’s guys. It's really interesting.

Adam: **[01:13:29]** One of the things I've noticed and this may be a generational thing, right. It just may be that crypto is at the moment, mostly populated with sort of Gen Z millennial just young people. But the generosity and sharing of ideas and strategies and approaches and how to access this ecosystem and this opportunity is really special.

David: **[01:13:52]** I think it's a tech thing. I don't think it's an age thing, I think it's a tech thing. The culture in crypto is tech and when finance culture comes in, it tends to just get spat out. It's a really interesting dynamic.

Adam: **[01:14:05]** Well yeah, finance culture is a scarcity culture. Corey and I chat about this because we've been sort of climbing the same learning curve and he's been sharing it all and I’ve not been. I want to put this to work for my investors by sharing it. The rate at which you share it will factor into how quickly the opportunity goes away. That's a scarcity mindset, right. That's a zero-sum mindset because that is the opportunity you said in traditional markets.

David: **[01:14:29]** The truth of it is like we haven't said anything in this whole call that a good trader wouldn't pick up on in the first month. We haven't really gotten into the details. And if you're not a good trader, you're never going to make any money anyway. There's not much alpha leakage here.

Adam: **[01:14:42]** I agree, right. But there's a lot of juice. Like it's worth the squeeze, even for dead simple strategies in the most liquid markets on the biggest exchanges to get that going.

David: **[01:14:57]** Yeah, but there's a lot of nuance to the really simple trades. Like you were saying before with Dunning - Kruger. I don't think there's such a thing as just like a dead simple trade in crypto when you've really worked through it. To be done with very small amounts of money, I think if you disagree with that.

Adam: **[01:15:10]** Anyway, it's been neat to share in this community because it is far closer to my programming at tech roots than it is to the finance roots, right. It's like a stack overflow type mentality rather than a bulletin board type mentality. It's cool.

After the Crypto Crash of May

Rodrigo: **[01:15:23]** And yeah, I think Dave you personify that I think we've been chatting quite a bit in the last couple months. And I think what makes you special is your willingness to share and help out in any way you can. It's exactly what you need in order to keep on growing. So, good for sharing all your knowledge and let's continue.

All right we haven't even published our first episode Dave and here we are on May 19th, the day of what are we going to call it does it have a name yet. The big crypto crash of 2021, and we wanted to pick your brain mainly on the market structure, how these exchanges have held up. You know anything that you find that's interesting. The insurance policies that we discussed in the previous podcast. So, we wanted to have you back on to splice us into our original interview. So, yeah let's open it up. What are you seeing? It's been a crazy morning.

David: **[01:16:18]** Great, yeah, it's been an interesting morning. I mean it's interesting in that it's been kind of during daylight hours, UK. Which is usually these moves tend to happen like on the weekend while you're asleep. And so, it's been interesting that it's been during some more kind of liquid trading hours. But I mean like let's put things back into perspective. Like Bitcoins back where it was at the start of the year, Ether's up 200 %. You know we saw less liquidations on these exchanges in aggregate. You know we're at about four billion dollars so far across three kind of distinct liquidation periods, today. That's less than what happened overnight, kind of 17th 18th of April, so last month. So, you know I would call it the big crypto crash of May.

Rodrigo: **[01:17:00]** Still less than May's crypto crash. How much less do you know?

David: **[01:17:04]** Well, it's a bigger move in kind of like spot percentage times, but there have been less liquidations. I think we had more like six, seven billion of liquidations. And that's if you're thinking about kind of market structure and exchanges imploding and these kind of real left tail scenarios, that's what you really care about is the exchange gonna be left holding a bag of like insolvent you know, sides of one particular trade. Well, like you know the longs are basically negative equity and the exchange has to bail them out.

Adam: **[01:17:35]** Now are we confident that we've got all the final numbers on liquidations or is it possible that this trickles in over the next sort of 24 hours, and we'll learn a little bit more about it. It's been a larger event than we now think.

David: **[01:17:48]** So, you can track the liquidations themselves in real time and they've been high for the month, but they were higher in April, they were higher in February. This is nothing like kind of you know March the 12th 2020. We've had a big move in spot that happened during a period where leverage levels were not that crazy in the crypto markets. I think we could really have seen kind of fireworks if we had the levels of leverage that we had back in kind of January, February and this had happened. But just looking purely at spot markets, like you look back at 2017 like we had 40% retracements inside of a bull market.

I didn't think that you know this is sort of another day at the office, in terms of you know Bitcoin's moved down. We went you know what from like 40K. You know we started off the day at 40K we dropped to 30 basically and then we're back at 38 and a half. Now you know, market rebounded to 40 and has sort of been trading sideways since then. It's really kind of not I think the end of the world. There was a time not that long ago where you know this would have been a huge strain on the crypto exchanges. Like what tends to happen during these periods and like we saw you know *Binance* sort of like didn't go down. But like it wasn't letting people withdraw from the exchange immediately. Like there was a few minutes of delay and that's typically you know when the exchanges, you know they want to just double check. They want to have a human double check that you're not in negative equity before you're withdrawing capital.

I don't think there's some big kind of conspiracy to screw people here. I think it's really just the exchange making sure that they're never kind of under collateralized. You know Coinbase went down it's not a pullback unless Coinbase goes down. Coinbase always goes down, incredibly I don't know why. So, yeah like Coinbase went down everyone else was basically up. You know we didn't have like matching engines shutting down. Markets were kind of clearing continuously. What does happen is, the blockchains get congested. So, if you're trying to move some Ethereum for example from exchange A to exchange B to collateralize a position. It can cost more or less to process an Ethereum transaction and that's like known as gas costs. And gas costs are, you know historically have been sort of like 20 to 50 range in the past six months. Because everything's been going crazy.

You know it's been going to like 200, 300. It's spiked today at 1,500 which is just insane, like we're talking about. I don't even know like sending Ethereum from one address to another which is like the cheapest transaction you can do, might have cost in the hundreds of dollars just to make a transaction. So, it's just insane, but it's because you know suddenly people with big positions on need to move collateral from A to B, and they're willing to pay any price for it to just be in that block. And so, they're completely price insensitive at this point. So, you know the same sort of playbook played out. Like API requests to these exchanges will have gone up like a hundred-fold in a matter of minutes. The amounts of trades getting matched like the volume would have gone up insanely in a couple minutes.

You get these sorts of bursts of enormous load on the system, and historically that is like taking the matching engines out in the most extreme case. But otherwise it's just like APIs either what's known as load shutting you. So, there's a point at which like if you send too many requests in, they're just going to reject some of your requests and they'll prioritize things like taking a position off. So, like reducing the API calls, pulling your orders off the order book. But if you're trying to like market buy, you'll just kind of get load shattered and you'll have to resubmit. So, yeah like you have some load shattering. It's to be expected. This is what happens, any good kind of systematic trader has kind of built their systems to kind of be resilient to that, by you know you'll have an API called budget. So, that you always want to stay within your budget, so that you're not getting load shattered. You'll be careful about like which order types you're sending etc.

Like this is all part of kind of microstructure that everybody has to deal with, and it's you know again like another day in the office this happens. But yeah, Coinbase went down. It goes down because there is just incredible load on the system. All over Twitter, it's like you know Coinbase are trying to screw the little guy, and you know they're doing it on purpose. I think they just need to get a better understanding of how these exchanges work and kind of the tech involved which is non-trivial.

Rodrigo: **[01:22:05]** Do you think Coinbase gets hit worse because it really is full of retail and the way people are handling the API?

David: **[01:22:14]** I don't have a good answer as to why. I mean they're incredibly well funded. They have very good engineers and product teams over there. It's not at this point excusable and I don't know how it happens, but it does. Coinbase tends to just always go down, but in the long run like this is going to get fixed at some point.

Rodrigo: **[01:22:31]** Do you see a difference between, like Coinbase, you can API and you can also go to the web interface and trade? Do you find that there is a lag on the web interface versus API?

David: **[01:22:44]** So, yeah web interfaces will go down much more kind of easily than APIs will. And yeah, that's something that definitely happens and it is kind of problematic if you think about like the individual trader. You know just kind of logging on and buying or selling and wanting to put an order in versus someone who's actually like plugged into the APIs and has done a lot of work around being resilient. And you know maybe has seven different venues that they could execute on. So, you know if one is down, they have other places. They can lay risk off or put positions on. So yeah, in that sense it's certainly less than ideal. It just is how it is, and I think it's why if you're going to trade on margin in crypto like, you need to realize that it's kind of like this infrastructure is getting built on the go. It comes under incredible kind of strain and it's a big boys' game.

Adam:	**[01:23:34]**	So, I think there's been a huge, even a huge wave like surge in adoption among people that I know personally just in the last sort of three to six weeks. So, I think it's going to be quite a number of people that are coming on here who have just dipped their toe in the water in this ecosystem very recently, they haven't really weathered one of these liquidation events. Just quickly if you don't mind, walk us through the underlying mechanics. What happens under the surface during these liquidation events? Like what catalyzes it and then what happens to facilitate this kind of cascade?
David:	**[01:24:07]**	Yeah, it's sort of like a butterfly flutters its wings, and that turns into a tornado halfway across the world. Like there are people who for various reasons have leveraged positions on and the exchanges during periods of stress, especially if you look at the options market today like liquidity absolutely evaporated in the options market. I was looking at some strikes, like out to September and there was just like no one was quoting on either side of the book it was incredible. So, like liquidity does evaporate like any market maker is going to be pulling their quotes in a period of uncertainty like that. So, you have a lot less liquidity, the exchanges react to that by being extremely kind of aggressive and where they mark your positions, and basically at what point in your collateralization, like in your margining, at what point are they actually going to liquidate the position. So, they can get very aggressive, and you know one person will get liquidated. There are no clearing houses, right. So, the exchange basically sits there as an arbiter. Like it provides a matching engine and it ensures that both sides of the trade. So, if I buy a perpetual then you're selling the perpetual, so if I'm long and you're short that perpetual. Like the exchange's core job is just to make sure that we are both margined appropriately, such that the position can be unwound, with like positive, plus zero equity if it needs to be. So, they'll get really aggressive when they do that and it's very easy for a trader who's you know sailing close to the wind to just get like taken out of a position. And when they do, obviously like it pushes the price down because a long is getting closed out. So, you're selling it to the market. And so incrementally if that goes down, it sort of pushes the price down, the next guy is also going to get liquidated and then that'll sort of trigger this cascade of liquidations as we call them. That's exacerbated in part by kind of an interesting feature of our market. Which is that it used to be all of the delta one contracts, or actually all derivatives and now it's probably half of them are what's known as inverse contracts. So, typically in a normal kind of linear contract you would post margin in dollars and you would buy a contract that gives you like Bitcoin dollar exposure with that margin, okay. An inverse contract is where you post say Bitcoin as collateral to a Bitcoin USD exposure. Which sounds like a technicality. But in a situation where you're long, leave it long, so you've posted Bitcoin as collateral on a coin margin contract. In inverse, you post the Bitcoin as collateral and then you go long on that. If the price goes down, your long position is in negative P&L and that like that P&L is going down linearly. But also, the value of the collateral that you've posted for that position, the

value of the collateral itself is also going down. So, you have this multiplicative effect. The speed at which your collateral gets eaten up is super linear to the speed at which the price declines. And so, you get these situations where like that basically acts as kind of an accelerant in the market. Where you know one guy gets liquidated, which moves the price down which means that the next guy's collateral you know basically gets tipped from being just about enough to not enough. And so, they get liquidated and so you get these kinds of very violent cascades that are in part driven by this kind of interesting quirk which basically exists for historical reasons.

So, yeah, we get these kind of very brutal liquidity cascades where you know everyone gets sold out. The leverage basically gets wiped out of the system. And then statistically like basically every time you then get a huge wick back up, so you get a, like people buying the dip effectively.

Adam: **[01:27:48]** And we certainly saw that today.

David: **[01:27:51]** Yeah.

Adam: **[01:27:52]** We saw definitely some 50 to 65% declines and as this liquidation cascade works itself through. And once all of the forced selling is done, then it just V recovers to, yeah, by a third to two-thirds of the size of the drop. And yeah, it was really neat to watch.

David: **[01:28:15]** The difficulty is like figuring out where the last liquidation happens, and then it's never guaranteed to bounce. It statistically has, but it could not, and so yeah be careful.

Adam: **[01:28:28]** Yeah, for sure.

Rodrigo: **[01:28:30]** It's also very difficult to get filled, like you know if a handful of us tried to put in some stink bids on, just to see if you can catch them. And none of us caught it even though it went through those prices, right. So, it really is tough. FTX and Kraken.

David: **[01:28:46]** Yeah, interesting.

Rodrigo: **[01:28:47]** So, it's been an interesting scenario today of people. I'm in a bunch of crypto chats and a handful of people were also not getting filled, or their orders were being taken off as you said, right. So, it kind of goes crazy, but once the leverage is out of the way, you kind of now have a much healthier market, right. At least historically as we said.

David: **[01:29:09]** Actually, you Tweeted about this, but philosophically I think this is a more honest and more healthy way of doing things. I think it makes for a much more resilient market. Like what happens is like anyone who's trading on leverage, can get absolutely slaughtered. And they know that, and if they don't know that they get taken out by the market and carried out on their backs. So, the people kind of remaining in the market know to be extremely cautious and they know that you know it's really their ass on the line, and that there's no concept of basically of too big to fail, or losses getting socialized or anything. Like you will just individual trader, you will just get taken out and that's it.

Rodrigo: **[01:29:46]** Unless we see Michael Saylor as a new JPMorgan getting in there and saving everybody's ass.

David: **[01:29:54]** No comment.

Adam: **[01:29:56]** I have a question. I wanted to know whether any of the managers that you speak to regularly have any stories today or whether they heard any stories that they passed along to you or any interesting tidbits of drama from today's activity?

David: **[01:30:14]** I don't have any interesting juice for you. I mean it's not been that insane a move. I know the spot move was big, but from a kind of derivatives perspective, there wasn't really any insanity. Like exchanges didn't go down, like there were no huge liquidity cascades. You know it's going to be the worst day of the month not the worst day of the year, I think. But already in four months, five months, it's not the worst day of the year.

Rodrigo: **[01:30:39]** The stories will come out in the days and weeks.

David: **[01:30:43]** Yeah, I don't think anyone got blown up by this.

Rodrigo: **[01:30:46]** Well, that's what I wanted to ask, because I think the way the traditional in the futures markets where we deal with the FCMs. You know if you have a margin call you kind of get an email you're ask, 'hey listen you know there's a margin call here, would you mind giving us some collateral'. And that may take a day, generally takes a couple hours as you're doing fiat wires. And then if you don't get it that day, they'll give you some leeway, you know you'll, you can negotiate. In the crypto markets, a lot of that is out the window, though we have spoken with a few managers that do deal with some custodians and exchanges that will give them a little bit of leeway to provide that collateral. So, what percentage is that? Like what do you see when, with your managers that are aware and are actually being levered down automatically, versus them being able to manage that collateralization?

David: **[01:31:36]** So, getting auto deleveraged by the exchange is a bad thing. So, kind of worst-case scenario and managers will do whatever they can to avoid that. Independently of this kind of auto delivering like of your collateral, you can go to a lending desk, an OTC, the exchanges themselves, the custodian, the prime broker. Like you can go to other people, kind of an inverted commas, and you can borrow from them. They will give you, you know that's typically structured as a timeline. So, you'll borrow X amount of dollars or Bitcoin or whatever it is for a month at a particular rate, and you can go and then use that on an exchange. You know typically, you'll get a margin call on that and there's collateral you need to post, and the dynamics there are very much like what you described from the traditional market.

You get a call and you get an hour, 12 hours whatever it is to post the margin. Usually it's I think 24. So, like we have relationships with lending desks. Many of the managers we work with also do. Yeah, I mean what we do is market neutral, beta neutral. So, from a kind of collateral and equity perspective, these moves, unless we get blown out of a position aren't typically going to affect traders like us very much. So, you tend to be fine, I think.

Rodrigo: **[01:32:51]** Yeah, we saw Corey Hoffstein tweet out on a minute to minute basis what his cash and carry position was on a daily basis and it was a flat line, right.

David: **[01:33:01]** I forget. I think, did he get some futures basis positions?

Adam: **[01:33:04]** Yeah.

Rodrigo: **[01:33:05]** He did, yeah.

David: **[01:33:05]** And did he get out of them? No, it went into backwardation.

Rodrigo: **[01:33:10]** He did accumulate.

David: **[01:33:11]** Oh, that's a shame. No, but like I think he had some like short futures positions on. So, like carry goes from like +7 to -7 in an instant like, you might as well get out at minus seven and then reload if the markets come back.

Rodrigo: **[01:33:25]** Sure, interesting. Yeah.

Adam: **[01:33:26]** I think he's just sort of buying and holding a term future, like a quarterly or something. But I may be speaking out of turn. He did post a line which was interesting which is basically like, yeah lots of drama in my cash and carry position today and it was like a flat line. So, yeah not too much drama. I have been saying that Bitcoin is kind of like treasuries in the crypto space, and then it's like the repo instrument of choice, right. Like the vast majority of leveraged positions are collateralized with Bitcoin. Obviously, there's other coins that serve as collateral as well. I was collateralizing some positions with Ether as an example, as a bit of a test. But is that fair to say or do you have any sense of just to what extent Bitcoin serves this role in in the crypto ecosystem, and whether that's sort of broadening out or been fairly consistent through time?

David: **[01:34:23]** Yeah, there is this concept of like Bitcoin is the reserve asset. That like, the true believers will kind of work their way back into. I don't know, I think the markets become a lot more homogeneous over time. I think that's especially true in a bull market, because you have so many different people and kind of participants entering. I'd say like this cycle is probably the first one where certainly the kind of like old-school true believer you know Bitcoin you know huddle till you die crowd, people denominating their wealth in Bitcoin, and where that crowd is certainly a minority. So, yeah there is some movement back into Bitcoin when these things happen and using Bitcoin as the collateral. But you know we also have you know a lot of Stablecoins right now that are liquid and that you can move into as well and that you can equally use for collateral.

I think for every guy or girl like collateralizing in Bitcoin, there's someone else doing it in dollars, and just kind of moving between dollars and trading around. Like certainly the arb trading market making crowd is typically trading kind of with a dollar denomination. So, they're not just kind of hodling some Bitcoin.

Rodrigo: **[01:35:38]** All right, so in your market neutral world it has been business as usual, I'm sure with a bit more attachment to the market.

David: **[01:35:45]** Yeah, it's been exciting. Lots of attention like you know eyes glued to the screen but ultimately, it's you know there's been nothing crazy that's gone on.

Adam: **[01:35:55]** Well, it's a great test case. It's another great test of the resiliency of the tech underlying the exchanges and the matching engines and collateral management. It's a test of the chains, you know we're still able to facilitate transactions. You know there were no major spillover effects into the so-called kind of fiat economy, right. It was all told as dramatic and exciting as it was for a few hours, there it stabilized relatively quickly and here we are with Bitcoin within sort of spinning distance of it of a 10% decline. Which on a 100 vol asset, you would certainly expect to see like you've said kind of once a month or so. So, all systems normal at this point.

David: **[01:36:40]** Yeah, as crazy as that is given what's happened today, but it's just the nature of the asset class. That's just how it trades.

Rodrigo: **[01:36:49]** Excellent, all right. Is there anything else you had in mind to talk about Adam? Any other questions?

Adam: **[01:36:56]** No, I'm just gonna, I was wondering how transactions or capital movements through *Fireblocks, Copper*, some of these sorts of hybrid custody you know, exchange management platforms went today.

David: **[01:37:13]** So, like I don't think there's been any issues on like off exchange settlement type activities. So, where you're moving collateral from your custodian account into the exchanges account with the custodian. And that's just like an internal ledger movement with the custodian *Copper, Fireblocks* or another. I think that's certainly kind of easier and more robust to do than an on-chain transfer, where you're sending, if you're in from one effectively like one address to another, and that's a blockchain level transfer. That's where we saw a lot of the kind of congestion.

Adam: **[01:37:47]** Yeah, so a nice validation of that, that layer of the of the ecosystem. That's kind of nice as well.

David: **[01:37:53]** I think off exchange settlement is you know custodian-ing assets is a cost center for the exchanges. I think there's a rational reason for them to want to do it. It makes them a huge honey pot like why is that a good thing. It's good for the exchanges. It's good for the traders and the kind of customers of the exchange. Because we certainly would rather custody our assets with the custodian than with the exchange and the custodian gets extra business. So, it's sort of a win-win-win. I'm pretty convinced that that's where this is kind of where the industry is going to. And it's better for all sorts of reasons including like having more certainty around being able to move transactions, being able to move collateral from one account to another across exchanges.

Adam: **[01:38:34]** Yeah, you really see the value of that during times like this, right. So, another good validation case. Okay, well yeah, I don't have any other follow-up questions. I do think it was worthwhile to reconnect given the drama that unfolded and since we haven't released the episode yet. So, thanks again David.

David: **[01:38:53]** Thanks for having me.

Adam: **[01:38:57]** This has been a lot of fun and we would look forward to circling up again maybe less dramatic timing.

Rodrigo: **[01:39:01]** Or more dramatic. We'll hit you up whenever,

David: **[01:39:04]** Next week.

Adam: **[01:39:06]** Exactly.