

**Exchanges at Goldman Sachs
Crypto: A New Asset Class?**

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Allison Nathan: This is Exchanges at Goldman Sachs where we discuss developments currently shaping markets, industries, and the global economy. I'm Allison Nathan, senior strategist in Goldman Sachs Research and creator and editor of the firm's "Top of Mind" report which focuses on macroeconomic issues on the minds of our clients.

In this episode, we focus on a topic that seems to be everywhere right now -- crypto. Cryptocurrency prices have remained extremely volatile on news about regulatory crackdowns, environmental concerns, and heightened tax scrutiny. But this latest bout of volatility has occurred even as interest in crypto assets from credible investors has been rising and legacy financial institutions, including ourselves, have been launching new crypto products and services. Amid the recent volatility, we're focusing on whether crypto assets can be considered an institutional asset class.

I first turn to Mike Novogratz, co-founder and CEO of Galaxy Digital Holdings, which is active in crypto investing and trading, asset management, and venture financing, to discuss why the current period of volatility is different from past boom-and-bust cycles for crypto assets.

You've been very invested and interested in crypto for a while now. And it's had its fits and starts. Think about 2017/2018. What made this time different?

Mike Novogratz: 2017-2018 was a classic speculative mania. It was the first global speculative mania we ever had. It was the first surely retail-driven speculative mania. And it was blind excitement. It's not that we don't see excess now or knucklehead Twitter comments now or cheerleading and tribalism now. We do. But back then that's all we saw. And to be fair, crypto market cap cratered 98.5%.

But out of that grew a much smarter investor base. An investor

base willing to differentiate between stores of value and centralized finance and other stable coins or payment systems. All these different use cases for crypto. And so we started building an investment process as a community that had a little more logic behind it.

But more importantly, during that downturn in '18-19, there were not less people coming into this space but more. More people being hired. And the infrastructure for people to feel comfortable, the custody, the security got built to bring institutions in. And so it's different this time because we've hit the critical mass of institutions coming in. The fact that PayPal and Square and -- you name the tech company -- getting more and more engaged broadly stamps loud and clear this is now an asset class.

There's still a lot of volatility. We will watch people in and out, but it's not going away. And so after that crash, there were most people that thought, "Oh, it was tulips. It was a flash in the pan." But the guys that knew the space, knew that the people building it perceived this as a mission from God, you know? To quote the Blues Brothers. This is a purpose-driven mission for most of the core crypto people. It is we want to rebuild the financial market infrastructure in a way that's more transparent, that's more egalitarian, that doesn't rely on governments who continue to make bad decisions with our finances.

And because of that core, bitcoin can't go to zero. It can go lower, but there is a group of people that will never sell, that fundamentally believe in this ecosystem. And the Ethereum encystment has the same thing.

Allison Nathan: But do you think that the crypto ecosystem can be successful if it isn't intertwined with the traditional financial system?

Mike Novogratz: Listen, no, right? There's a huge symbiotic relationship between them. The Galaxy advisor model is a really good model. A lot of people out there don't have time to learn to become investors. They're artists. They're teachers. They're firemen. They're police officers. They run businesses. That's why they hire experts. And so pulling the experts in to understand this space I think is a wonderful thing. It's turning traditional financial advisors, asset managers into crypto preachers, right? They're selling the story, and so they're bringing people into the tent.

Listen, payments is going to be a really, really interesting battleground because we have existing payment systems, right? The money transfer business has huge amounts at high margin. That's business banks don't want to lose, but that business is under threat by these new payment systems. They're faster, they're more transparent, and they're cheaper. And so Facebook's coming out with their dollar-based payment system. The Chinese government's coming out with theirs. And at one point, phones that are going to have crypto wallets are going to replace bank accounts. And so banks are going to have to pivot, but the game is kind of just starting. The competition to see who dominates payments. That's one lane.

Exchanges is another lane. Derivative markets is another lane. The real question is: How fast will banks iterate and compete?

Allison Nathan: I then asked Novogratz if it's this promise of revolutionizing payments that's driving investor interest in bitcoin and other cryptos or if their fundamental value more broadly lies elsewhere.

Mike Novogratz: Bitcoin's not going to be payments. The system really isn't set up for payments. It's not fast enough for thousands and thousands of transactions a second. They like to say, now you're going to start buying your Diet Cokes or your restaurant bills in gold. Like, no. You're going to buy them in dollars if you're an American. And you're going to buy them in euros if you're European. But real soon I'm going to send my sister in Palm a dollar stable point and we'll move money around like this for free.

Allison Nathan: Unrelated to bitcoin, the asset a lot of people are owning right now.

Mike Novogratz: Yes, but Ethereum's going higher because most of this stuff is going to be built on the Ethereum network. And so Ethereum is going to get priced like a network. The more people that use it, the more stuff that gets built on it, the higher the price will go. So you've got payments being built on it, you've got defi being built on it, and you've got NFTs being built on it. So the three biggest moves in the crypto ecosystem are mostly being built on Ethereum. Not only Ethereum but mostly.

Allison Nathan: So what is the value proposition of bitcoin then? Why should anyone buy bitcoin?

Mike Novogratz: Bitcoin is the most distributed asset in the history of the world outside of the dollar. 140 million people own a piece of bitcoin. And so it's widely distributed, and it's a uniform store value. There are very few uniform store values. Gold is uniform store. There are very few others. It's easily stored. It's much easier to store bitcoin than it is to store gold. Go to Ft. Knox and look at how the security they have around Ft. Knox. And so it's a better version of an old thing.

What's unique about stores of value is they're social constructs. It has value because we say it has. There has never been a more successful brand created in 12 years by a community. It was like they floated the baby in the river, and the community raised the baby and it's now worth around \$1 trillion. The world has voted that they believe this is a store value. They just have. And a lot of people will take stubborn arguments, but every single bank we know of is building a wealth channel. There are 14 PTFs in line at the SEC. Every tech company is building it into their wallet and interface.

And so one of the reasons everyone got into bitcoin, same reason they got into gold, is we've got a macro backdrop that is tailor made for it. What the market is telling you and what people are telling you is they are worried that we have an unsustainable balance of monetary and fiscal. That's not going away anytime soon given the political landscape of the inequality that we have, right? Do you think we should pay for college for people that make less than \$100,000? More and more Americans are saying yes. This experiment that Biden just did with half of the 1.9 trillion going directly to people that needed it is being really well received. UBI or some version of UBI is coming. We might not call it UBI, but we're going to tax capital and we're going to give it more to labor. And that in general is not fiscal improving. But there's not a political imperative to say "stop spending money."

The treasury department and the government is financing everything we want to spend, and that's happening in countries all over the world. So we had bad deficits before COVID. Now we have deficits that are insane. So as long as that macro backdrop, that political backdrop is giving us a tailwind and the market is being adopted, you're crazy to get out.

Allison Nathan: Don't you think people are buying bitcoin because it's going up?

Mike Novogratz: People in general are momentum investors. All great fortunes on this planet have been made in trend. I learned that from Paul Jones. This is a mega bull trend. Bitcoin adoption and the macro behind it is in trend.

Allison Nathan: I next turned to Matthew McDermott, Goldman Sachs's global head of digital assets, to understand why and how Goldman Sachs is reengaging in crypto assets and what's driving client interest in the space.

Why now for a new launch into the space? And what's different from the past?

Matthew McDermott: I would say, pure and simple, client demand. When we'd originally explored this space in 2017-2018 where we had aspirations to create our own digital custody offering and have our own trading desk, the price action was exclusively retail led. And what's different this time is the institutional demand interest coupled with very strong demand across the wealth management franchise. Plus an evolution across crypto landscape with the broader product offering, better risk management, better execution, better digital custody. This has just made it all a little bit easier for institutions to digest and ultimately at least understand how they can get access.

Allison Nathan: What is driving that client interest? And does it differ between the types of clients you speak to?

Matthew McDermott: Yeah, I mean, that's a really good question. And I think it does vary from one client type to another. It's that to say at this stage the people who we are talking to -- and believe me, it's an extensive number across the different client types -- it's more a case of how can we get access, how can we learn more as opposed to what is bitcoin, what are cryptocurrencies. So we look at asset managers' macro funds. It's more in the context of does this fit into their portfolios. And if they believe that it does, what percentage in their mind makes sense? And so there's kind of discussions in and around that. Is it less than 1%? 2%? 3%? More? And then the question becomes: How can we get access to either the physical or exposure through some other product?

From a hedge fund perspective, I would say they're more active. One of the key drivers from their perspective is the structural liquidity play inherent in the market. And what I mean by that

is you can go long either the physical or an instrument that gives you access on the spot basis to the underlying, so to bitcoin, and then shorting the future. And there is this liquidity premium that you can pick up this basis because the market is still quite fragmented. It's still quite hard for institutions to get access. The [UNINTEL] basis has fluctuated quite considerably over the last 3 to 6 months. And so that's been a structure of choice, the hedge funds.

And then if you migrate along to corporate treasurers, the question is even slightly different from the other two. The question they're asking is should they be investing on their balance sheet in bitcoin? You know, jurisdiction? Where there's negative interest rates? And there's this continual fear of asset devaluation just given the monetary and fiscal policy right now. People are really seriously thinking about that. And so rather than paying to keep your cash on deposit or paying to hold a government bond, having some portion of your balance sheet in bitcoin may make sense.

And so we have spoken to an awful lot of different corporates on that. I still think that it's still limited in terms of the number who have actually kind of executed, but there's definitely a lot of discussion and debate around that.

The other question that the corporate treasurers ask is: Is bitcoin a payment mechanism? Should we be thinking about it in that context? But PayPal talk about being able to use bitcoin to actually pay for items, but the reality is Paxos is actually behind the scenes converting bitcoin into fiat which is then paid to the merchants. And so just given some of the inherent inefficiencies in the bitcoin blockchain in terms of its ability to process X number of transactions each second, I think the payment mechanism is probably a weaker argument.

For wealth management clients, I think it's fair to say that that cohort, which is your high net worth individuals, your family offices, a certain proportion already are very active in this space, and they tend to lead the way. It's bitcoin obviously, but also they're very actively looking at other cryptocurrencies as they think about the broader value that this space can bring. And in the context of things like Ethereum, we're looking at the whole decentralized finance and looking how that can really transform the financial markets.

Allison Nathan: There does seem to be a lot of debate today about whether or not cryptos are now an asset class. Do you

have that discussion with clients? Do you think they're thinking about it in that way?

Matthew McDermott: More clients now are thinking of it in the context of being a new asset class. It is not that often you get to witness the emergence of a new asset class. It does have its very own idiosyncratic risk. Some of that's down to the fact that it's still relatively new. It's in this adoption phase. And when you look at how it's correlated to other asset classes, it doesn't behave as perhaps one would expect, but more and more people are gravitating towards the fact that it probably is a new asset class.

Allison Nathan: But not everyone sees cryptocurrencies as a new asset class. I also spoke with Nouriel Roubini, professor of economics at NYU's Stern School of Business, who is deeply skeptical about the prospect of crypto assets serving as currencies or as assets at all.

You think that bitcoin, perhaps other crypto assets more broadly are in a bubble. Why?

Nouriel Roubini: First of all, I think that calling them cryptocurrencies is a misnomer. You know, anybody who knows anything about money and monetary theory knows that for something to be a currency it has to be a unit of account. But nothing is pricing bitcoin. There has to be a scalable and widely used means of payment. With bitcoin, you can only do [UNINTEL] transaction per second. It's not the stable store of value for goods and services. If you have to buy goods and services, your currency cannot change its price relative to those goods and services by 10 or 20% overnight. It has to be stable. Even in a crypto conference I attended don't accept bitcoin as a payment because your entire profit margin, say, 15-20%, can be wiped out overnight.

The other characteristic of a money is that you have to have a single numerator in order to be able to compare the relative price of different goods. But in the crypto world, you have thousands of tokens and of currencies. And in principle, each one of them is to be used to buy different goods and service. It's a little like going back to barter. I mean, even *The Flintstones* cartoon had a more efficient monetary system because they were using shells. By using shells, you can compare the relative price of a Coca-Cola and a Pepsi cola. So calling them currencies is a misnomer.

Now, people say maybe they're not currencies, but they are going to be assets. But let's think about what's an asset. Normally we think of an asset as something that has a fundamental value. So say a stock gives you a dividend. And the discounted value of those dividends gives you some fundamental value. If you provide a loan, you get interest on that loan. If you have a bond, you get a coupon. If you have real estate, you get the rent. If you have commodities, you have all the services of that commodity.

Now, take something like gold that doesn't have an income. Historically, it has been used in industry. It has been used as jewelry. It has been historically a stable store of value against a variety of tail risk -- inflation, debasement of currency, financial crises, political risk, geopolitical risk, you name it. Now take bitcoin, let alone thousands of these other cryptocurrencies, bitcoin doesn't have income, doesn't have any use. As I said, it's not a means of payment that is in any formal way scalable. It doesn't have utility. When something has a fundamental value and that price is well above the fundamental value, we call it a bubble. But in this case, we don't even know what's the fundamental value. So in that sense to me, it looks like a bubble.

Allison Nathan: But given the macro backdrop of expansionary policy from both the government and the Fed that's raised concerns about higher inflation, I asked Roubini why crypto assets which don't have exposure to currency debasement can't at least provide an inflation hedge for investors. Here's his answer.

Nouriel Roubini: So people say that bitcoin has gone up because there is a fear of debasement of fiat currency. Then actually inflation is going higher. The dollar has started to weaken. Break evens are now above 2. And vol prices went up. The bitcoin has gone up by ten fold, but I don't think that the explanation for bitcoin rising by ten fold can be explained by the fear of debasement of fiat currency. There must be something else.

Bitcoin cannot be debased because there is a cryptographic rule that determines how much its supply is going to go up, and there is a limit of 21 million. But I could create something else that also has a limited supply, speaking about the debasement of fiat currency. It took 100 years for a dollar to reduce its value in real terms by 90%. In 2018, it took 12 months for thousands literally of the cryptocurrency losing 97% of their

value in one year, not in 100 years. So, you know, am I worried about inflation? Yes. But there is a wide range of assets I think that historically have been much more reliable hedges against inflation. You know, oil, energy, commodities in general, mining stocks, gold, tapes, inflation adjusted with other forms of inflationary index bonds. Under some conditions even public equities and real estate.

And by the way, whenever there is a risk of episodes people say bitcoin is a hedge against risk off. That's not true. It's actually highly [UNINTEL]. For example, during the February-March shock of the [UNINTEL] of COVID, US equity went down about 35%. Bitcoin went down by about 60%. And other top ten cryptocurrencies went down even more. So when times are bad, crypto assets don't go up, they go down. So they're not even a hedge against the risk off episode.

Allison Nathan: And Roubini even argues that the broader hype around blockchain technology is overblown.

All technologies at nascent stages seem to go through boom-and-bust cycles. So why don't you think this moment is comparable to the early days of the Internet that ended up being very transformative for the world?

Nouriel Roubini: For several reasons. People say bitcoin and cryptocurrencies are like the early stage of the Internet. You know, the Internet, if you think about when the Worldwide Web was launched, a decade later you had about a billion users. I don't know what are the actual users for crypto, but maximum 100 million. And if you look at transaction costs, markets that are efficient like, say, in financial markets, stocks and [UNINTEL] spreads have been falling sharply. For things like bitcoin, the cost of transactions are still very high. And a decade into the Internet, you had email. Millions of websites were useful. You had the technology like the CIP, HTML, thousands of apps that were incredibly useful and successful.

In the case of cryptocurrencies, there are dApps, distributed apps. But 75% of them are these crypto kitties or literally pyramids or Ponzi schemes of one sort or another. And the other 25% are these [UNINTEL], the centralized exchanges that for now they have no transaction and liquidity. So that comparison with the Internet ten years later is not true. Ten years into the Internet, everybody under the sun was using, was an amazing transformative technology.

Allison Nathan: But there are a lot of developers trying to innovate based on the blockchain technology and that ledger premise. Is there anything at all that you think is worthwhile and does have value in that space?

Nouriel Roubini: The way I put it is as follows. I'm all in favor of financial innovation, and I think there'll be radical financial innovation in many dimensions. But to me the revolution in financial services is the fintech revolution. But if you think about the fintech revolution, 99% of fintech firms and tons of them are profitable, they have revenue, they have real business model, they've been successful, they have zero to do with crypto. They have actually zero to do even with blockchain. Most of fintech has to do with some combination of AI machine learning, using big data, using IoT to collect the big data, using 5G or other technology. And they are revolutionizing payment systems, borrowing and lending, creditor location, insurance, even asset management, some capital market activities.

For example, in payment system, billions of transactions are done by billions of people every day using digital payment system. You have AliPay, Wicha Pay in China. You have M-Pesa in Kenya and most of sub-Saharan Africa. You have Venmo, PayPal, Square in the United States. These are all great innovations that are totally scalable and secure and disrupting financial services that have nothing to do with blockchain. I have looked at these a lot because now people say, okay, maybe these are not currencies, but the underlying technology of blockchain is revolutionizing financial services or even business activity. So there's a lot of buzz words about enterprise, DLT, or corporate blockchain.

I've looked at many of these proof of concepts. I call them BINO, blockchain in name only, because if something is truly blockchain it should be: 1) public, 2) decentralized, 3) permissionless, and 4) trustless, with trustless authentication done by thousands of miners and so on. But if you look at all these experiments about enterprise DLT and corporate blockchain, almost all of them are private blockchains. They're not public. They're not decentralized. They are permissions because you have only a small group of people that have the authority of validating transactions.

I looked at whether any of these DLT proof of concepts, even the ones that are private permissions, have worked. And I looked and studied 43 experiments of using blockchain for nonprofits.

In banking [UNINTEL], giving ID to refugees. Out of 43 crazes, zero have worked. And I think the fundamental problem is the idea that technologies are resolving the problem of trust is mission impossible. Trust cannot be created by technology.

Allison Nathan: And even for those who are more optimistic on the space, some constraints to institutional adoption remain. Here's Novogratz again.

What do you see as the last couple of things that really need to really push this into an institutional asset?

Mike Novogratz: I think a little more regulatory clarity. So Chairman Clayton just did not want to deal with crypto. He didn't want it to be his legacy, and so he punted. And Gary Gensler won't. I am guessing within his first nine months he is really clear at some regulatory framework. And as we get that clarity, it's going to make it easier for institutions to say, "I get it." Defi is really interesting right now, but we have a hard time using a lot of the products because "know your customer." So with a little more innovation and regulator understanding, you might see some of these defi protocols and projects really start to explode.

Uniswap could be a bigger exchange than the CME in the New York Stock Exchange.

Allison Nathan: And here's McDermott.

Matthew McDermott: I would say the key constraints -- there's probably two or three. One is definitely mandate. Obviously manifests itself in different ways depending on the nature of the entity. So corporates, it's more the discussion with the boards and the nature of the company. You know, is this something that they want to do? And then within investment funds and asset managers it's more do they have the authority to have some portion of their portfolio invested in the underlying cryptocurrencies? So mandate is a key one.

The second one is the access point and the ease with which they can get exposure. And they're looking more to the fundamentals of the market and the liquidity associated with that.

And then perhaps more philosophically, just understanding really how does it sit within their broader mandate, portfolios, balance sheet? You know, is this the right thing for them to be doing? And so I think it needs to manifest itself across many

different organizations. But as we've seen in terms of continued inflow into this space, more and more people are getting comfortable.

Allison Nathan: And with continued volatility in crypto markets, we'll be closely watching the implications for crypto's status as an student class, investors, and financial markets more broadly. I'll leave it there for now.

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