



DATA, TECHNOLOGY, AND THE REINVENTION OF CAPITAL MARKETS

Katie Greifeld 00:02

All righty. Hello, everyone. As the voice of God said, I'm Katie Greifeld, I'm with Bloomberg TV, and I am thrilled to be joined here by a rockstar lineup. You can see their names behind me, but just quickly, Saira Malik, she is chief investment officer of Nuveen. Jim Esposito, Citadel Securities. Scott Kauffman, founding partner of Motive Partners. Billy Hult, he is the CEO of Tradeweb, and Sarang Gadkari, co-head, Global Capital Markets and Global Capital Solutions of Bank of America Securities. So, our panel session today is all about the reinvention of capital markets, but I do want to talk a little bit about where we stand at this moment in time in markets, because it's been a really interesting start to the year. It's been a really interesting two months in particular when you think about the "SaaS-pocalypse" that we were all concerned with, and then, a hot war breaking out in the Middle East. So, Saira, given that you're sitting in the middle, I'm going to start with you. What do you make of where we stand in this moment, and especially coming out of that enormous violent snapback that we saw in April?

Saira Malik 01:14

Well, it's been interesting. Markets have been focused on three issues all year, and that's geopolitics, the move in interest rates, and of course, earnings. And earnings have been the key. Earnings have been what has been driving markets higher. First quarter earnings are going on right now. Expectations are for 12 percent earnings growth, and for the full year, 17 percent earnings growth for the S&P 500. And that's a lot of the reason why the market started to snap back. Second is leading with equities. Equities tend to price in an outcome even when they don't know the timing. So, equities have decided that we're going to see an end to the Middle East conflict. The timing of that, of course, is still uncertain, so that's another reason. But looking at the other side of it, the bond market is not as optimistic as equities. We've seen spreads widen, yields rise. Bond market is more concerned about the risk of chronic inflation and the risk of high oil prices causing more of an economic slowdown than equities are expecting. So, we'll see. Time will tell how that will play out. And then of course, add in the final factor, which is a change in the chairmanship of the Fed. And what does that mean? I think there's a lot of mixed opinions on the Fed versus what we've seen in the past. Warsh likely expecting maybe to put in one rate cut by the end of the year, maybe two. We'll see if that is something that goes through. Probably depends on how chronic the

bump in inflation is from the geopolitical issues, and of course, what happens with the economy. Does it stay as strong as it is?

Katie Greifeld 02:39

And what an interesting setup for Warsh, coming into a Fed that just most recently had four dissents, but that's a whole different story. Scott, I do want to turn the question over to you because, you think about your perch at Citadel Securities, what are you seeing in terms of the client flows here?

Scott Kauffman 02:57

Sure. I'd say from our perspective, we're incredibly active both through the retail and institutional channel, and if I were to try to inform you what are we seeing in our client flows that might inform your view on markets, the thing that I'd say, and maybe this is the proverbial what keeps me up at night, I worry a lot about investor complacency. So, what we continue to see, particularly prominent in retail, but also true in institutional, is this buy-the-dip behavior, buy-the-dip mentality. Every drawdown is met with a lot of liquidity and buyers, once the market kind of draws down X percent. And when you unpack that, I think what's going on, we've raised a generation of investor and trader that's never learned the penalty for being wrong. And the reason for that is pretty obvious. We've had extraordinary monetary and fiscal accommodation pretty much since the 2008 financial crisis. Central bankers, government officials did what was needed to prop up and really save financial markets. But now we have an inordinate amount of liquidity sloshing around the financial system. That liquidity has to find a home. I worry there's been a breakdown in discipline, a breakdown in investor behavior. I think every investor is stretched—one, two, three categories out the risk spectrum because again, there's been no penalty from being wrong. Think about it this way. If you graduated college in 2008 in the heart of the financial crisis, if you went to work on Wall Street, if you became a portfolio manager at a global asset manager, you'd now be 40 years old, and so your whole career has been sort of around this artificial ecosystem of an overabundance of liquidity. Katie, I want to be clear, I'm not foreshadowing a market correction imminently.

Katie Greifeld 05:06

It sounds a little scary, I got to say.

Scott Kauffman 05:09

But where I think it does get interesting, and I think the follow-on question would be, well, can this go on for the foreseeable future? Here's where I do get nervous. I think central bankers have far fewer degrees of freedom than they had before. Inflation actually has reared its ugly head. We've seen a lot of changes of behavior around de-globalization, tariffs, and the like. And so, if we have a bigger problem, I don't think central bankers are going to have the same ability to come in and cut interest rates. You look at Europe, you look at the UK, not only has the market taken out interest rate cuts, they're now pricing in multiple interest rate hikes. I think that's where it gets interesting.

Katie Greifeld 05:56

Yeah, and it's going to be interesting to see the US as sort of a case study because we know that we have an incoming Fed chair who would like to cut interest rates and the economic backdrop, question mark, as to whether or not that's the appropriate setup for an interest rate cut. There's a lot to dig into there, but I

do want to talk a little bit about what Saira was saying about, you think about the difference in posture of the equity market versus the fixed income market, and Billy, that's where you come in. Tradeweb, what are you seeing when it comes to trading volumes, especially as it pertains to the last two months?

Billy Hult 06:32

Really interesting environment. I think about it as a little bit almost like a sweet spot for the continued electronification of these marketplaces. But if you just think about it for a second, debt markets obviously continue to rise. Central banks are less active buyers in the market than they had been. Private sector intermediation is back in vogue. You have the traditional legacy banks that have been through the teeth of regulation, I think, doing quite well with a rather large wallet in these businesses. Plus, you have these non-bank liquidity providers that have all of this expertise through technology, the firms like Citadel and firms like Jane Street, kind of careening into the fixed income world, leading with technology, leading with a front-footedness around transparency in the markets. And it's an incredibly interesting time for the further technology orientation of legacy businesses, plus all of the things that are arising around tokenization, Katie, and predictive markets. There's a lot going on.

Katie Greifeld 07:40

Yeah. To put it mildly, especially, you think about prediction markets, it feels like they're slowly taking over everything. But Sarang, where you sit when it comes to capital markets, I do wonder what effect, if any, we're seeing some of the geopolitical disruption. How is that making an impact, if it is at all, because you take a look at the IPO pipeline, it feels very healthy. You could say the same thing about the corporate primary market; the list goes on.

Sarang Gadkari 08:13

Yeah, these are great questions, and when I look across the risk spectrum, there still continues to be an important bid from the marketplace, and perhaps it's complacency, as Jim pointed out, but I do think the market is gravitating to two different spectrums. The investment-grade market, yes, credit spreads have risen a bit, but we've found a huge amount of liquidity in the investment-grade market. And clearly, when we talk about AI, we'll talk about in the context of investment-grade, is really fueling a lot of the CapEx spend. But also in the leveraged finance market, the leveraged finance market of today is very different than leveraged finance market of 25 or 30 years ago. When it started out, the high-yield market was relatively small, and the loan market played a larger piece. Over time, that's evolved, and what we've seen is that in the leveraged finance market specifically, the higher quality issuers are coming to the high-yield market. And effectively, the lower quality, the higher risk assets have gravitated towards the loan market with the advent of private capital. And so yes, credit spreads may be widening out a bit, but the participation has been in higher quality. When we used to structure transactions, we would have unsecured bonds or even senior subordinated notes in a capital structure. You don't see senior subordinated notes anymore, and you rarely see senior unsecured notes in a capital structure. We're clearly structuring towards senior secured, top of the capital structure type deals, and then the equity comes in. The equity checks have been getting bigger and bigger. Joe Baratta's on stage a couple of hours ago talking about he doesn't see leveraged buyouts with 20 percent equity anymore. That used to be the case several years ago, but now we're talking about 40 percent, 50 percent equity. So, despite the fact that we've seen a bit of volatility in the underlying market, I still think that the makeup of the market has changed. And in equities, while the hardest piece, the riskiest piece are the IPOs, that's really the greatest

alpha generation. So, we continue to see for the right structured deals, for the right priced deals, for the right clients, they're getting great reception.

Katie Greifeld 10:07

Well, Scott, let's get the investor's perspective here. You think about the opportunity set that you typically look at. When we talk about geopolitical disruption, when we talk about AI disruption and some of the existential questions that are being asked in the software space right now, how has that changed your opportunity set? How has that changed what you consider a risk?

Scott Kauffman 10:31

Yeah. So, we are a private equity firm focused in investing in financial technology and specifically infrastructure around financial technology. So, when we think about either the geopolitical environment, where we have the ability to be a bit more patient with our capital in terms of where we deploy capital, how we think about risk when we go risk on, risk off, we have the ability to play through some of those longer-term events. From an AI perspective, it's something that we spend a significant amount of time thinking about, and it's certainly changed how we are thinking about where we invest, where those defensible business models are, and how to invest in an ever-changing market that's rapidly evolving, right? We've built our own AI scorecards about how we think about investing, and we do think the infrastructure piece of financial technology and financial markets is quite interesting and quite defensible. It has proprietary data. We sit in complex workflows in a regulated environment. And most importantly, on top of a big network effect, right? I think, Bill, you see that with Tradeweb. We see it with some of the investments that we have as well in this space, where that network effect really helps provide a defensible moat against where AI is, and AI ultimately will be tooling that sits on top of these infrastructure business models to really help create additional productivity on top of efficiency. And that's how we think through where do we invest, how are we going to work through a rapidly changing AI environment.

Katie Greifeld 12:10

And just a housekeeping note, I realize there's a reason I have this iPad. It's because you have the ability, as the audience, to scan a QR code and ask questions as well. So, I definitely encourage you to do that. But let's continue the conversation on AI, because I think it's only a slight exaggeration to say that everyone across virtually every industry wants to know how different organizations are actually implementing AI and whether or not they're seeing measurable impacts. So, sort of a broad question, but Saira, to kick it over to you, when you think about the sphere of financial services, what are you seeing there when it comes to how AI is actually being used, and what does that look like at Nuveen?

Saira Malik 12:53

Well, first I'll just talk about broadly what we're hearing on first quarter conference calls. At least 40 percent of companies are saying that AI is having a quantifiable impact on their business. You're hearing that from RBC, a host of financial firms saying that they're going to have hard dollar savings because of AI. AI is at an inflection point for asset management, and yesterday's infrastructure is not going to solve tomorrow's problems. But we also look at AI as it's an enabler, and people are the differentiator if you're using it correctly. So, our philosophy is that we buy and we build AI in-house because you need to use it for proprietary data. Our firm is over 125 years old, and there's an advantage to that because it means that we have tons of data on management meetings, engagement with managements, on trading history, on

portfolio construction, on research notes, and what AI can do is now bring all of that together, increase collaboration to give us a stronger result. So, I'll use an example of one of our oldest businesses, which is what Nuveen was founded on, which is municipal bonds. We were the original writing municipal bonds to build the infrastructure of the United States over 125 years ago. They were one of the earliest adopters of AI with something that we call the Muni Research Buddy, which is a proprietary piece of technology that we use in order to basically make our municipal research analysts much more efficient so that we can spend more time picking the right muni bonds for our clients. And across Nuveen, where we have a host of public to private asset classes, and I think that's the other thing, is there's so many nuances that what the muni bond team uses is much different than what the public equity team is looking at versus what our alternative businesses are looking at. But now we can break down those silos and bring all of it together. Of course, the opposite side of AI is still around cybersecurity risks, regulatory risks, other issues that statistics show that of the large number of AI projects that get started, so many still fail. So, there's still a lot of bottlenecks with getting AI implemented into these businesses. But on the other hand, AI mainly works off a ton of data, and financial services is basically built on data, and if we can use that wisely, then I think we can stay ahead of our competitors.

Katie Greifeld 15:14

Yeah, that's really interesting, and it's cool to hear that it was the muni team that was a first mover, because I don't know, you think of munis, you don't necessarily think of being leaders in tech. But Jim, you were actually recently in the Bloomberg building at an event talking sort of about the cost of AI. That there's a lot of benefit, but it's also an expensive undertaking. So, I wonder how you're measuring that investment so far. What does that sort of calculator look like?

Jim Esposito 15:46

Sure. And for context, I'll just remind the group that Citadel Securities—you can really think of us as a next generation, very much a technology-driven market maker. So, when we talk about AI, machine learning, large language models, for us, and I don't want to sound arrogant when I say this, these aren't new things. We've been in business for more than 25 years, a company that was employing many of these techniques for a very long time. When we think about the cost and the returns on our AI investment, I think it's important to point out there are really two verticals to the AI discussion. One, I think most in the financial services industry are primarily focused on, and that's reducing operating expense. For us, that's less of an issue because we've already extracted a technology dividend in our business. We have 1,900 professionals, which isn't a lot, yet we account for 25 percent of daily US equity trading volumes. So, we're already operating at a scale and efficiency. Could I use AI to reduce OpEx a little bit? We could, but it's not a particularly interesting conversation for us. The second vertical that I think many will get to in the future, and this is our focus at the moment, how can I provide a better client experience? For us, that might mean providing more attractive, sharper pricing. How can I grow my top-line revenues by making my employee base more productive? And here we couldn't be any more excited than we are right now, seeing the leverage that we're getting from AI. I would put forward to the group that in any business, but particularly ours, speed matters, and I think speed matters more than it ever has before. Our ability to ingest data, curate that data, rewrite, re-underwrite, tweak all of our risk models, again, that will ultimately provide a better price to client and allow us to capture more revenues, we are just moving at a pace that's faster than it ever was before. Mundane tasks that used to take three months or six months are now getting done in three hours. Our speed to market for new products that we want to get into, new activities, faster than we ever have been before. And so, I see our client franchise getting lifted and getting elevated, and

it's true across equities, it's true across fixed income. A large part of that is leveraging AI to provide a better experience. And so, as we play forward from here, the excitement and the passion that we have, it fits our historical DNA, our skills, and experiences. And I think it's fair now to call the technology truly transformational.

Katie Greifeld 18:54

Hmm. Yeah, and it's interesting. And Billy, I saw you—

Billy Hult 18:58

Well, I hate agreeing with Jim, but he's right. I'm wondering why he was at Bloomberg, but I'll talk to him about that after.

Katie Greifeld 19:04

It's a good place to be, Bloomberg.

Billy Hult 19:07

AI's going to make smart people smarter. It's going to make efficient people more efficient. The data is the key in exactly the way Jim was describing. What I do think is very interesting is my history, my experience has been around market people, business people, solving issues through technology. And I have a sense, and I'm curious what you guys think, just around the concept of it feels like there's so much startup movement around AI that are really being led by almost people with less business, less market experience. And so, I do think we're in this real process of implementation without the normal kind of context of what is the user experience like, how is this actually going to be implemented and used? And so, we're going to go through some versions of fits and starts around implementation, but there's just so much talent and so much focus around the faster search around how to use data to continue to get edges. It's amazing.

Katie Greifeld 20:13

I'm kind of thinking out loud here, but I do wonder, you think about every firm in every industry at some level having to think about AI and, in some cases, build it in-house, but then you think about who you're potentially competing with for that talent. You think about the OpenAIs, the Anthropics of the world with not quite unlimited funding, but kind of unlimited funding. How do you attract that talent to come to your firm? And I don't know if anyone wants to answer that question, but I am interested.

Saira Malik 20:48

I think that'll be a challenge for asset managers, which is why it's a big debate on do you want to build in-house because your data is proprietary. You do need to be concerned about regulations and compliance. But on the other hand, with these large companies spending hundreds of billions of dollars just on AI, how can a financial services firm really keep up with that? So, our opinion at Nuveen is it needs to be a blend. There will be certain things that are built in-house to make sure that we're protecting our data, but also going out there and looking at what are the best products that are outside and bringing those in and being able to make sure that we can build walls around that is going to be important.

Katie Greifeld 21:22

Absolutely. And Sarang, I want to bring you into the conversation because you talk about AI, and it feels like a lot of that conversation naturally goes to productivity gains. And you think about the different businesses that you oversee at Bank of America. Is that broadly true for you, and how does that differ versus which desk you're talking about?

Sarang Gadkari 21:44

Yeah, I think it's a great question, and Jim knocked that he thought it was quite boring to think about the productivity but we're still excited about that as well.

Jim Esposito 21:52

Not boring, just a different place. A different part of the maturity cycle.

Sarang Gadkari 21:59

We're really excited about the entire spectrum, and I view it as three different verticals. There's the origination aspect of AI, there's the process aspect, and then there's the execution aspect, and ultimately that execution aspect I think is going to be fantastic because the client experience is going to be great. We're going to be able to deliver great capital and provide it to the clients that really want that type of product, and we think we will be much more streamlined going forward in terms of how we think about originating business and distributing it to the clients that need it as quickly as possible. But right away, we're seeing the impact of AI in the context of origination and process. And I do think that over time, what you're going to have is better bankers. You're going to have more experienced bankers that are spending time on the more important type of deals. Unfortunately, right now, we've become very process-oriented because the amount of flow, the amount of capital that we raise each day, we're benefiting from that because we get all of the data, and we too have a great proprietary database that we can pull from. But I think over the last 5, 10, 15 years, you've had a series of analysts, a series of associates, a series of VPs that have become very process-oriented as opposed to deal-oriented. And I think this is going to allow them to lift them up and really spend time on the quality work, and that's going to be benefiting everyone, our clients especially. So, I'm very excited about the opportunities on the front end. But quite frankly, I think there's going to be better and better opportunities for our clients going forward.

Katie Greifeld 23:21

And before we move on, Scott, you were talking about when you think about your investment process, one of the items on your checklist is thinking about AI-defensible businesses, and I just wonder how fluid that sort of definition is because we're talking about a technology that the way it develops is so quick. So how often internally are you refreshing how you're defining that?

Scott Kauffman 23:48

Yeah. It's something we refresh pretty much on a daily basis as we talk about it across our investment strategies consistently every day. We have an interesting early lens into where AI is being developed. So, we have a venture strategy, a growth strategy, and a buyout investment strategy. And for the past 18-plus months to years, every one of our venture investments has been a native AI business model. So, we have

an early lens into where AI is going, how it's changing, and quite frankly, how rapidly it's changed over the past 18 months. That gives us the ability to then go into some of our more scaled businesses and actually deploy that AI. And we've shifted the narrative within our businesses today away from the cost efficiency, and we're doing that hygiene with AI, but much more to the productivity side and to the revenue generation side. And it's given our established businesses new products and new revenue streams that we're able to capitalize on because of the deep domain expertise that they have. And quite frankly, one of the things we haven't yet talked about, the trust that these infrastructure businesses have built across the networks that they own, with the buy side and the sell side, and I think that trust component's critically important to how AI is going to get used across financial infrastructure.

Katie Greifeld 25:09

So I do want to—I mean, we could keep going on AI. It's really easy to, but I do want to talk a little bit about the title of our panel, and that is the "Reinvention of Capital Markets." And one of the proposals, the ideas that's floating out there is that maybe we're moving to a 23/5 market. Maybe we're going to see a 24/7 market develop. And, as a financial news anchor, the thought makes me shudder. But I have to imagine that for Citadel Securities, that would be a huge benefit. How are you thinking through it, Jim?

Jim Esposito 25:44

Well, I'm certainly not debating whether it's going to happen. It's just really the timeline to get there. For us, if you ever want an early indicator, if you ever want a tip as to what we might do next, we follow our clients. Our clients primarily pull us into new activities and new businesses. As the group's aware, we are the largest provider of liquidity to retail investors. We account for about 35 to 40 percent of US retail volumes. Those are the volumes we take off the retail platforms, the aggregators, names like Robinhood, Charles Schwab, and Fidelity. But think about the psyche of the retail investor away from the investments they're making in single share equities or options. Many of them have gotten very active in trading digital assets, specifically Bitcoin. For the Bitcoin investor, they trade all night long and on weekends, and so that investor that grew up trading Bitcoin has the expectation the equity side of their portfolio should work the exact same way. If we want to be as relevant to that investor base, of course, we're going to be led into, I think, ultimately, 24/7 trading. The other phenomenon that's going on, and we're seeing this in a big way in our own client flows, international investors want to trade more and more US equity underliers. We are blessed with some of the best technology companies in the world, and they don't all exist in the same way in Asia or in Europe. If you're an Asia retail investor, you want to trade these technology names, and you don't want to do it in the middle of the night. Another reason why I think you'll see the need to have non-stop trading hours. And then look, the last thing I'll say about the institutional investor, I think this will be more episodic in nature, but things do go bump in the night. And when things go bump in the night, you don't want to wait five, six hours for the market to open. We live in a very fragile geopolitical world right now. Institutional investors periodically need deep liquidity in the middle of the night. In a world where we are all so connected with digital mobility connections, it almost strikes me as odd that we're not there already. So, to me, this just seems obvious, and it's just a question of how quickly we get there.

Katie Greifeld 28:26

It is funny—

Saira Malik 28:27

Can I add to that though?

Katie Greifeld 28:28

Yeah, go on.

Saira Malik 28:49

Because as we bring new products and services to markets, we need to make sure that institutional and retail clients are prepared for it. And we're speaking of liquidity, and I'll bring up private credit, where there's been so many headlines about the offering of private credit to retail investors, and then perhaps a lack of education around the redemption ability for them when they'd like to redeem their money. And I think that an ideal investor portfolio will continue to evolve. When I started in the industry over 30 years ago as a public equities investor, the typical portfolio was 60/40, 60 percent equity, 40 percent fixed income. Our research shows that a well-adjusted risk-return portfolio is 50/30/20. 50 percent equities, 30 public fixed, 20 percent alternatives. But as retail and institutional investors add to those alternative buckets, we need to make sure that we're educating our clients and make sure that they understand what the gates are with those, what the liquidity risks are with those.

Katie Greifeld 29:29

Absolutely. And there is the cynical take out there that if we did move to a world of 24/7 trading, that there's a lot more hours where the little guy can lose money. But Jim, you do raise an interesting point, and it's something I think about all the time, is when it comes to the idea of around-the-clock trading, would we be even having this conversation to the degree that we are, had crypto markets not really taken off to the extent that they have? There was this idea out there that we were going to see crypto grow up and that market structure become more like traditional market structure and equities. But you could also argue the opposite way, that you've seen traditional markets sort of take a leaf from—or take a page, whatever sort of mimic crypto markets.

Jim Esposito 30:17

Katie, I was at a Big East finals. It was I guess the second week of March, kind of height of volatility. Obviously, commodities prices spiking. And it was not surprising it was a work event, so I was there with a bunch of traders, macro traders. They were just the entire game glued to their phone, obviously watching what was happening in the crypto markets around gas. These guys grew up on BlackBerrys, right? They didn't grow up with easy access and implementation to where we're going on the frontier marketplace. This next generation of traders are going to be accessing markets in much, much different ways. Or more importantly, with the expectation that they will be accessing markets in a much different way. And that's going to be back to the point of just listen to the clients. That's going to be sort of the thing that winds up kind of pushing, I think, more legacy marketplaces into versions of how we think about 24/7 or liquidity that's available, not just between 7:55 in the morning and 5:10.

Katie Greifeld 31:27

Absolutely. Well—

Sarang Gadkari 31:28

I think the other interesting question that that also begets is what's the corporate response? With 24/7 trading, if you're the CEO or CFO of a corporation and you're watching this amount of liquidity every day, does that alter your decision-making for long-term investment? And I think that'll be the next chapter of this as well as we go out. Because already you feel a little bit of, is there a push to go private again because of the volatility or the participation in the marketplace? And so, does that continue on in a different degree, and we see more take-private transactions in light of what's going on? That'll be an interesting development.

Jim Esposito 32:02

I also think it's important—the US capital markets are the envy of the world. And this point I made, not just retail, but institutional investors' interest in our markets, I think it's important to accommodate those international flows. They've increased in nature. Certainly, retail participation in US equity markets, both from abroad but including here from US retail, is up materially. And so, I just think this is the direction of travel.

Saira Malik 32:32

Yeah. Well, I think it's also been interesting, too. You just mentioned the shift for quite a few years of going private, staying private. But this year is unfolding in a much different way with these massive IPOs coming. Looks like the IPO market is opening up. We have SpaceX coming at potentially up to 2 trillion. That could be followed by OpenAI, Anthropic. And one thing we've been thinking about is all of these flows that have been going to the public Mag Seven companies, what does that do for liquidity when you only have so much in your portfolio that you can use to invest in? What does it mean for the traditional Mag Seven and technology stocks, and even the S&P 493, if so much of our assets are going towards these massive space companies and AI companies? I think that'll be interesting to watch play out.

Katie Greifeld 33:15

Absolutely, and that \$2 trillion number that you mentioned for SpaceX, it just seems to march higher week by week. But Scott, I know you wanted to say something.

Scott Kauffman 33:23

Yeah, I was just going to add, this is a piece of the market where we see a lot of investment opportunity, right? So, when you talk about 24/7 across all the different asset classes, there's a lot of market infrastructure that's not ready to handle that yet. And needs real investment to get there. And we find a lot of opportunity from an investment perspective to back some of the current providers in the market. We have a self-clearing technology business that's actually moving and building to T+0 today. And as well as some of the new entrants that are actually driving new market infrastructure to get there. So we actually see it as a pretty significant investment opportunity, and I think to Jim's point, it's just really a question of time. And with all the new technology and the opportunity to layer AI through that, that's just going to speed up. So, we think we're going to get there in relatively short order with the right investment behind it.

Katie Greifeld 34:12

Absolutely. I have to imagine that's sort of a ripe field of when it comes to the opportunity set. But to go along with the IPO conversation, Sarang, if I was understanding you correctly, it sounds like you're saying maybe if you're a CEO or you're in the C-suite of a publicly listed company, and now you run the risk of waking up and maybe your stock was, I don't know what happened to it overnight, something crazy, that maybe you'd be a little bit less willing to be public.

Sarang Gadkari 34:42

I think that's the question is do companies either stay private longer, or do they go private because they're already public in the context of 24/7 trading? Is that necessarily the right answer for everyone? It creates great transparency. There'll be greater participation. There'll be greater international participation in our transactions. But at the same time, it's much harder in that type of environment to make long-term decisions for your company. So, I think you have to weigh the pros and cons of each.

Katie Greifeld 35:08

Billy, you are the CEO of a public company—

Billy Hult 35:09

Well, I'm kind of like living through this conversation a little bit. I can't remember, Katie, what Ken Lewis' famous line was, like, "I've had all the fun in investment banking I'm going to have." I'm not saying I've had all the fun being the CEO of a public company. But I was part of the panel this morning, if you could pick being a public company CEO versus a private company CEO, I think a lot of people would pick private. What we're talking about is making bets around the future. That's hard to do as a public company sometimes. And the one thing we know is that behavior changes in different ways than we expect. History has shown us that, and it will continue to show us that. And from a public company perspective, you really have to have the right fortitude to stick with the bets and understand that the timing may be different than you expect, but directionally, you feel really good about it, and you don't want to be on the wrong side of change. But public companies have their hands full navigating a bunch of these complexities, to your point, and therein lies, I think, a lot of opportunity.

Katie Greifeld 36:13

Absolutely. Well, let's talk a little bit more about the concept of mega IPOs, since as we get closer to the summer, it looks like that's going to be one of the defining themes of the second half should some of these companies finally leave the pipeline. And Saira, you bring up an interesting conversation that I'm increasingly having is whether or not we have the market depth to sort of absorb these IPOs. Because you think about a name such as SpaceX, just so big, especially if it's fast-tracked into some of these indexes, that becomes a must-own name. And it almost sounds like you're saying it could crowd out some of the others.

Saira Malik 36:55

Yeah, I think that's going to be an issue that portfolio managers are going to have to think about. The repercussions also will be greater than just portfolios. And when I live in the Bay Area, so I feel like I'm

living it every day. We're already seeing it with real estate, where houses are listed and then sold for 2X the price within 10 days. And so, there's going to be a lot of repercussions from those IPOs. And I've been a public equity investor for over 30 years. I don't think we've seen anything like it. I was a small cap growth investor in the late '90s. I lived through the dot-com bubble. But that was a totally different subset of companies. So, to see these single large companies, if we're worried about the concentration in the US of the Mag Seven, then what does it mean when these even mega cap companies go public? But the key, though, within the US, I always say, if you believe in the US, you believe in technology. We talked about strong earnings growth at the beginning of this session and how that's driving markets higher. But if you look at the S&P 500, 12 percent earnings growth or more for the first quarter, really tech is 20 percent plus of that. So again, tech is going to be what leads the way. And so, if you want to have the bull market thesis, it's that these tech companies and all of these new options for investors, if they continue to grow the way they are, that's a nice support for the bull market cycle going forward.

Katie Greifeld 38:11

Yeah, US exceptionalism, we love to sort of question it. But you think about the US tech industry, and I feel like that is really a key pillar of that definition. But Sarang, give us the sort of perspective of the capital markets. When you think about just these ginormous companies potentially finally coming public, how does that look from where you're sitting?

Sarang Gadkari 38:34

We're exceptionally excited, as you can imagine, about all these different companies that are thinking about going public at this point, or close to going public. But I think also it's not just these tech companies, but it's also the adjacencies that come with it, and that's what we're excited about as well. There are opportunities in energy, there's opportunities in real estate, and we just think that we need to make sure that the entire ecosystem has the right capital construction. But we do think that there's enough liquidity, going back to your question, in the marketplace, and it comes from retail, it'll come from institutional, it'll come in the form of "long onlys", it'll come in the form of hedge funds. But everyone is looking to figure out not just the beta, but how do they create incremental alpha. And some of these transactions, to your point, you end up having to own in order to be part of the upside. So, I think that there's a place for all of it, but I do think it's going to need to find the appropriate structure and understanding where in the ecosystem it fits with these catalysts around AI.

Katie Greifeld 39:28

Absolutely. Well, I do want to talk a little bit about sort of situating fixed income versus equities, and this is something that we talked about on the prep call as well, because you think about the public equity market. It's become very algorithmic over the past 15 years or so, increasingly electronic. And the perception out there is that you see the debt markets sort of follow that, and maybe with a couple years lag. And I wonder if we ever see a convergence there and whether or not, we talk about AI, whether or not that could act as an accelerant. And Billy, I'm looking at you.

Billy Hult 40:11

Yeah. Nice to see you. Yeah, equity is like this beautiful market structure, and the history of fixed income is that it's well behind, right? It's the liar's poker kind of relationship-based kind of world. I think, truthfully, not that we're all here to compliment Jim, but firms like Citadel and those kinds of firms leading with

technology are doing a lot to kind of drive that marketplace into a much more transparent world. Complexity and risk in 2026 still tend to get done and transacted on the phone in fixed income, and that's quite a statement if you think about all the different topics that we're talking about today. Large trades and anything, quote unquote, "complicated," there's a salesman picking up a phone, and then there's relays, and there's all these things that kind of occur as a consequence of that. And that is, I think, what's at stake around ultimately a much more transparent fixed income market. I would say that the way that the market structure inside of fixed income has responded over the last year and a half around heavily volatile markets, whether or not that's the regional crisis or the disruption that occurred in March, I think shows you that the function of the market, as it's become more transparent, has handled velocity in a much different way, and those are good signs for kind of where we're headed going forward.

Katie Greifeld 41:51

Well, Jim, I'll go to you.

Billy Hult 41:54

Look, I think for market structure, and I'll get at your fixed income point in a second, I think we're almost already in our final resting place, and I'm not sure people always realize this. I want to be clear, the traditional bank liquidity providers are doing incredibly well at the moment. You look at Q1 bank earnings, for most banks, they had a record quarter in their markets business. Amazing. If you look at the non-banks, and maybe we're the poster child for a non-bank liquidity provider, but there's certainly others. You're seeing us have record-breaking performance past couple of years. That's continued into this year. So, at the current point in time, the market is big enough to accommodate both models, but the models are bifurcating, and I actually think they're very different. Banks are acting more and more like banks. They're making more and more of their money in their markets business financing their clients. You look at the global equity wallet, close to 50 percent of it comes from prime brokerage activities. That is the financing of the hedge fund industry for all they have to do with their equity inventory. Increasingly in fixed income, banks are financing the private equity industry. That's a big growth business for them. So, banks lending money to their clients is becoming the dominant activity. That's where most of the growth has come from, from the banks markets business. Then you have a smaller set of nimble technology-driven market makers that really know how to lever technology to ultimately provide the best price to the client. We don't, at this time, have the other bundle of services. I didn't get an IPO question on the panel because we're not in the underwriting business. And so, when you think about the bundle of services that the banks provide to their clients, underwriting across equity and fixed income, financing that I just mentioned, and then many things that are bespoke OTC derivatives that aren't listed and cleared, which is typically the products that we love to trade and dominate. And so, I think you just have to understand these markets have already divided, and each player is playing to their strengths and their core competency. Now, coming onto your point around fixed income, yes, I think as we play forward, more and more of the fixed income markets will be electronified. They will replicate the behavior of what we've seen already in the equity markets, and we're well on that journey already in liquid products like global rates, global credit, and I think that trend will only continue as we play forward.

Katie Greifeld 44:48

If you want an IPO question, I can find one for you. Scott?

Scott Kauffman 44:53

I do think on this fixed income piece, this is where AI will help start to cut through some of the complexity that we're seeing. So, we're invested in an electronic bond trading platform called Trumid, competes with Billy's business to some extent. And what we're seeing and what we're building there will help drive further electronification of that market, right? So, they just put out a small feature the other week around taking broker chat and turning it into pre-populated trade tickets. And that's, over the course of a couple of weeks, seen viral adoption, right? They've introduced a product that allows a trader to look at their portfolio and dynamically assess how much of that should be traded in a portfolio trade versus one-off in an RFQ protocol for best pricing. And when you get through that sort of complexity, you can put AI on top of that to really drive through that, you're going to see further electronification and adoption. And we're seeing that kind of across our platform.

Billy Hult 45:54

100 percent. One of the more interesting things from my perspective was to see how some of our kind of the AI tools that we have at Tradeweb hold up during the sort of most volatile kind of moments of the first week, second week of March when there was a lot of disruption. And to see how kind of mainstream the behavior forming around how we think about AI in terms of how machine learning is applied to the marketplaces kind of did in that time. Those are kind of interesting stats to check, like is it working when the market is at its most stressed? And to see it work in those moments I think is really important.

Katie Greifeld 46:39

And, by the way, it looks like we have 13 minutes left. A lot of you have submitted questions already, but if you have a burning question, now is probably the time to put it in there. I do want to talk a little bit about exchange-traded funds because I cover them quite closely at Bloomberg. I anchor ETF IQ Mondays at noon, in addition to the close. But you think about what we're talking about, the reinvention of capital markets. You could make the argument that ETFs have not only really encouraged retail investors to come in, given them a really easy way to trade, but have also interacted with the underlying securities that they track. You think about ETFs, the narrative is out there that they've made fixed income, for example, more liquid than it has been in the past. And I wonder, wrapping it into our panel title, how you're thinking through that, ETFs as a force, just in the motion of markets. I don't know who wants to take that but—

Saira Malik 47:42

I'm happy to just kick it off. For asset management, it's one of, if not the fastest-growing area of the industry. It provides what clients are looking for. It gives you more liquidity, more ability to be flexible in terms of how you're tax planning and transparency, and I could see that it's across all public asset classes and eventually even being a tool for alternatives also. So, I don't see anything slowing down in terms of ETFs or even SMAs. When you look at clients, basically, they want to do more with less partners. We have a fee compression trend that we're also facing in the asset management industry. ETFs also can offer more attractive fees. So, I think that tailwind for ETFs will continue across publics too, and eventually to privates.

Billy Hult 48:32

I'll try to unite those comments with what we were talking about earlier on IPOs, because I said I didn't get an IPO question, so I'm going to invent one for myself. But some of the things that I think about, and it's not a fully formed or perfectly shaped thought, is as follows. So, why has the equity market not been particularly robust given we're at literally all-time highs in global indices? I mentioned liquidity in market, that still strikes me as abnormal, yet we haven't seen quite the IPO calendar that one might expect. I sometimes wonder if over the last 20 years, the large amount of money that used to get managed actively and is now getting managed passively from ETFs has really put a damper in people doing single name, fundamental equity research, particularly for medium and smaller-sized companies. When I was listening to you talk about SpaceX and some of the large tech companies that will come public, I have no concerns. There is a bid for those companies. I think they will absolutely get absorbed. That is the go-go part of the market right now, and so I don't worry about what will ultimately be very large cap technology names. Against that backdrop, I can't remember the statistic, but I think I read there's something like 29,000 companies sitting in private equity portfolios. That's a global statistic, and many of them are between 3 billion and 10 billion, the proverbial widget maker, manufacturing companies that got bought five or 10 years ago. How do those companies ultimately find an exit from private equity? How do they get liquified? I think that's a much tougher challenge than finding a way to get SpaceX public, and so again, this flow of funds out of active, into passive, into ETFs, I do think we're going to have to find a way to harness that liquidity inherent in the ETF market and get it more active to help liquify some of these companies. Some of them can stay private forever, I suppose. Many of them won't or can't or will need to exit private equity, and the other alternatives available right now aren't nearly as plentiful as it was years ago. And so, I think something's going to have to give in that space.

Katie Greifeld 51:08

Absolutely. Well, I know I didn't ask you an IPO question, but I have another ETF question. I don't know if you wanted that necessarily, but I spend a lot of time talking to market makers within the ETF community, folks who service the ETF industry, which has absolutely exploded in terms of assets, but in terms of the number of funds as well. And there's just some funds out there that barely trade, and I think we're at 5,000 ETFs when it comes to the US market, and there's predictions out there that we could see thousands more in the coming years, especially with the introduction of mutual fund share classes, or mutual funds being able to launch share classes of ETFs. And I wonder, Jim, from your perspective, whether or not we're basically at peak ETF, whether or not we are seeing too many funds launch.

Jim Esposito 52:01

Yeah. I don't know if I have a strong opinion one way or the other, but I think that's subject to something that over time the market will instill discipline and self-correct. Liquidity finds a place where they see value. Liquidity finds a home where there's an interesting investment thesis. If we have too small ETFs that are very off the run, I think over time those orphans will clear out for the future. And so, I think the market's good at instilling discipline when it comes to liquidity provision, and I would put forward ultimately that will happen. The pace of time that it'll take to do that is less clear, but I think in the future, yeah, you're going to end up needing bigger, more liquid products. We've seen this in private credit with what has happened to the retail investor. I think this has been a very good reminder for investors generally, the price of liquidity when you want to exit an investment, how you can get out, what the cost is to exit, what the timetable to exit. Liquidity right now is very much on investors' minds, again, across both retail and the institutional channel.

Billy Hult 53:20

Think about it for one second, Katie. If you think about technology as both the ability to disrupt and also the ability sometimes to level the playing field. If you're a large asset manager out there and you're stepping back and you're just seeing this enormous footprint, obviously, that BlackRock has in the ETF world, it's a matter of time before you're just thinking about where does tokenization go around ETFs, and is there ability for me to pick up market share through running a strong technology strategy around tokenization of ETFs. You can just feel that kind of momentum ultimately occurring.

Katie Greifeld 54:00

Yeah, and tokenization is one of those things that's on my to-do list of things to get serious about when it comes to understanding it, because I don't know, it feels like it's popping up in more and more of my conversations. We have five minutes left, and I do want to ask at least one audience question. And there was a really interesting one when it came to 24/7 trading, and now I can't find it because I'm bad at this. But basically, getting to the comments we were talking about when it comes to this sort of mimicking what we're seeing in crypto trading and asking whether or not that's necessarily a good thing. It seems that we pretty much agree that it's inevitable, it's the direction of travel. But if you wanted to introduce a moral element, is this a good, useful thing for society? And I feel like I want to put you in the hot seat, Sarang.

Sarang Gadkari 54:56

Well, it's a tough question, and I think it goes in a lot of different directions. I think you see this a little bit in the context of polymarkets. Can you make the argument that that's a good thing or a bad thing? I think over time, you worry a little bit about critical thinking. If you're just making quick decisions 24/7, are you really having, to Jim's point earlier, are we having people that are thinking about value versus liquidity? And I think over time, there has to be a balance because right now we're going very quickly into this idea of, I want to make a quick decision as to whether or not this presentation's going to go over 60 minutes, and I can bet on that in the polymarkets, I imagine right now. I don't know if that's a good thing or not, because we're not necessarily paying attention to what are the factors that's got us here? What are the questions? What are the answers? As opposed to what is the outcome? And I think we have to make sure that the journey's there—but I think we're going to swing to the right for a bit because we're all excited about these new tools and these new technologies. I think it's going to swing back the other way, though, as people get adjusted to the fact that they need to have the appreciation and the understanding of the foundation of the thought process before we get there. Which is why, again, going back to the point of 24/7 markets, I do think that there are some risk factors there we have to be mindful of because again, I think it hampers long-term thinking.

Katie Greifeld 56:09

Hmm. I'm glad you brought up prediction markets because I talked to folks at prediction markets, and there's the idea out there that they want to push more in sort of the institutional side of things, that there are use cases for prediction markets when it comes to hedging tools, and you can sort of see it, right? But I wonder how much that is a thought exercise. So, Saira, Scott, I wonder, when you're approaching investments, could you see, or if there's not one that already exists, could you see a world where prediction markets are a useful way to sort of glean information about some of the risks that you're taking? Scott, I'll start with you.

Scott Kauffman 56:53

Yeah. I think as they continue to evolve, it's something that you can certainly look at from a risk perspective and understand where at least broadly the market's seeing that risk, and are we missing something that perhaps somebody else is seeing. From an investment perspective, it's not a core area of where we're going to actually invest behind the infrastructure, but it's a tool that can be used from our perspective in terms of thinking through where is the market pricing risk, where does the market think risk is going, and how should we think about that in the context of where we're investing?

Katie Greifeld 57:29

And Saira, you might have the last word here because we have two minutes left, but how are you viewing prediction markets? Are you viewing it as a tool? Could you ever see using them to hedge, or are things just not mature enough yet?

Saira Malik 57:43

It's definitely a source of information, and it could have a systematic impact on markets. It's going to be a large part of the markets. We're not using it beyond just a source of information in our research process at this time, though.

Katie Greifeld 57:58

We actually have 90 seconds left, so Billy and Jim, I'll throw it to you.

Billy Hult 58:02

I'll say this quick. How did the predictive market guys become such incredible marketers? Their names are everywhere. The headlines are just everywhere around there. And from my perspective, we think at Tradeweb, the data around it is important. The financial predictive markets are important. But sometimes the static around what these guys do becomes a little bit of a headache once in a while. The world is overtaken by Kalshi.

Katie Greifeld 58:37

Yeah. And Kalshi, I think right now, I think 70 percent of their volume is sports still, so not necessarily economically important information there. But Jim, in 40 seconds, how is Citadel Securities thinking about prediction markets? Is it an opportunity for you? I have to imagine those spreads are a mile wide.

Jim Esposito 59:00

So, we're keeping an eye on the prediction markets, particularly event contracts. We're not spending any time whatsoever on sports betting. Look, I'm optimistic. We absolutely need a rule set to govern these contracts, and we still have a long way to go. But similar to other new products, like digital assets, it's going to take time to have a proper rule set. Look, I'll just give you a very simple example. We're roughly two and a half years out from an incredibly important election in this country. Elections have consequences. If you're an investor, some of the biggest consequences. Why would you want to put on a second or third order hedge when you could actually directly hedge the risk you're most concerned about? I see a real

industrial use case for event contracts. We are not there yet because we don't have a defined rule set, but I could see it becoming a part of our toolkit in the future. We're in no hurry. There's not enough underlying liquidity to make it that interesting of a market at this point in time for Citadel Securities, but I'm optimistic. I think it's an asset class that will continue to mature and to develop, and I think we'll learn a lot as we go. But there's some early growing pains, as we've been seeing.

Katie Greifeld 1:00:20

Well, if you made a market to say that this panel would end under 60 minutes, you were wrong because we are slightly over. Guys, really appreciate your time. Great conversation.

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