Actionable Ideas for the Power to Trade Smarter

Market Structure Fallacies

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MS. BRENNAN: Hello, this is Nancy Brennan, managing director and global head of marketing for Bank of America Merrill Lynch, and welcome to *Challenge That*, the podcast series where we ask our experts to weigh in on trending topics and challenge what they are hearing. Okay. Our first guest is Ana Avramovic, a director with our instinct knowledge team and expert on market structure. Ana has spent more than a decade covering market structure strategy on the sell-side, and worked in volatility arbitrage and credit-derivative structuring at a hedge fund. She holds a Master's degree in Financial Mathematics, and a Bachelor's degree in electrical engineering, both from Stanford University. Well, Ana, welcome, and thanks for being with us.

MS. AVRAMOVIC: Thank you so much. It's my honor to be here.

MS. BRENNAN: Okay, so Ana, let's start with liquidity. With 13 exchanges, 70 dark pools, is it hard to find liquidity? Do we have too many venues, or the right number?

MS. AVRAMOVIC: So, Nancy, you've actually brought up two different questions, right? is it hard to find liquidity? And then the issue of the number of venues, and do we have too many venues? And for the first part of it, is it hard to find liquidity? Resounding yes, and that is something that traders will say in every single meeting, that is their number one challenge, and it's something that they've been saying has been their number one challenge for years. What I think is that liquidity has been getting worse. It's been harder to find liquidity, and absolutely one of the big issues there, why that's the case, is fragmentation.
There are 13 exchanges. As far as the 70 ATSs, it sounds awful. It's not accurate, so when we hear 70 exchanges, or excuse me, 70 ATSs, it's very easy. Either you or I could just go to the website and register an ATS, and so in fact, a lot of people have done that. A lot of these venues have just registered, but they don't actually trade anything. So, then when we start talking about which venues actually trade, we're talking about maybe 40 or so of these alternative trading systems. Those that trade anything meaningful, like 500,000 shares in a week. Then we get down to like 25 venues.
So, we've got 13 exchanges; we've got 25 ATSs. Now, that's still a lot, okay. So now, is that too much? Yes. But the question is, what is the right number? The problem with having too many venues? Fragmentation, which gets back to your question, is liquidity a problem

MS. BRENNAN: How do you know where to trade?

MS. AVRAMOVIC: You have to put a small piece of it on lots of different venues. That's the notion of fragmentation, right? That's why finding liquidity and where it is becomes a challenge. Offsetting that, the benefit of having a lot of venues is, you have redundancy. So for example, the NYSE went down a couple years ago— during the trading day, it didn't cause any problem, because you could trade the same stock on NASDAQ, on BATH, on all these other venues, so traders didn't miss a beat. If we only had one or two venues, that would cause a problem.

MS. BRENNAN: So the increased number of venues actually adds to liquidity while at the same time, it creates fragmentation, which makes it difficult to find in one place. That's what I took away from that.

MS. AVRAMOVIC: I would say it doesn't necessary add liquidity; it creates redundancy.

MS. BRENNAN: Back-up; resiliency.

MS. AVRAMOVIC: Exactly. So, on the extreme, we have examples in Asia where there's only a single venue, and you might have the exchange go down for days when they're trying to figure out what is going on and how to back it up. So yes, in that sense, it does create a back-up. It creates resiliency.

MS. BRENNAN: Could we talk for a minute about the character of the ATSs?

MS. AVRAMOVIC: Yeah.

MS. BRENNAN: Are they all dark?

MS. AVRAMOVIC: Okay, so this is another confusion. We talked about the number of venues.

MS. BRENNAN: Mm-hmm.

MS. AVRAMOVIC: Hearing 70 probably isn't fully accurate. Are they all dark? So, ATSs, alternative trading systems, don't have to be dark. Most of them are. You can have what's called an ECN—Exchange Communication Network—which doesn't have to be dark. Now, what is dark? It means that it does not post quotes. Currently all ATSs are dark, but they don't have to be.

MS. BRENNAN: Is it a problem that they don't post quotes? Is that what I hear a lot of people talk about sometimes, that that's actually part of the issue with?

MS. AVRAMOVIC: Issue with price transparency.

MS. BRENNAN: Yeah.

MS. AVRAMOVIC: so I don't believe so. The issue is, if they don't post quotes, you don't know where things are trading. If we have a lot of volume that's trading in these alternative venues, use them interchangeably—dark pools and ATSs.

MS. BRENNAN: Okay.

MS. AVRAMOVIC: if we don't see quotes posted from exchanges, we don't know where things are trading. That's the argument. I don't necessarily agree, because in my mind, what's the best indication of where something should be trading, or what is the best price? What's the best indication of a company's fair value, where it trades? Post-trade. All venues post their trades after the trade. And they all have to do it within the same amount of time; it's consistent whether it's a dark pool or an exchange.
The difference is pre-trade quote transparency. So, the exchanges do post a bid and an offer; the dark pools do not. They will actually print based on what is trading on an exchange, so it is derived from the exchanges, and that's the argument that they're taking away from some of that finding, discovering what the price should be.

MS. BRENNAN: So, that's another form of price discovery—where it trades?

MS. AVRAMOVIC: That's what I believe to be price discovery, but again, the argument is that if there isn't enough that's actually setting—

MS. BRENNAN: Yeah.

MS. AVRAMOVIC: So, if I'm just looking at a screen and saying, "Oh, where can I trade this?" I won't be able to see that if I look at a dark pool.

MS. BRENNAN: Is all volume at an exchange trading lit, as they would say?

MS. AVRAMOVIC: Very—Nancy, you did your research here.

MS. BRENNAN: I did do my research, right.
(Laughter)

MS. AVRAMOVIC: So, just as we talked about all ATSs don't necessarily have to be dark, a lot of exchange volume is dark, and this gets missed a lot. People confuse the concept of dark versus lit with exchange versus off-exchange. And they're two totally different concepts. So, this is important; I'm going to say it again. The difference between dark and lit volume is not the same thing as exchange versus off-exchange. Off-exchange volume currently is dark, but it doesn't have to be. Exchange volume has a lot of dark volume, and that takes the form of hidden, iceberg orders, and what happens there—and these are very common. They might be as much as half of an exchange's volume.
So, for an iceberg order, for example—a trader might have an order that's 5,000 shares, and they'll say only display a portion. Only display two or three-hundred shares. Keep the rest in reserve. If that two or three-hundred shares trades, then you can display another portion. The portion that's in reserve—it's dark. And guess what? When we talked about price discovery, same implications; because it's not included in whatever's being posted. It's very important to separate this concept of what's hurting price discovery. Is it the dark pools? No. If you want to claim that it is an issue, it's because of non-displayed liquidity, which happens on exchanges just the same.

MS. BRENNAN: So, can we talk for a minute fragmentation and the impact that has on order size and what harm or disruption that's actually causing in the trading day. Is it a problem?

MS. AVRAMOVIC: Yeah. So, I mean, going back to the original problem of finding liquidity, if I'm an institution—if I'm a pension fund, or if I'm a big, institutional investor, and I have more than a couple hundred shares, because let's be honest, the average trade size in the U.S. market today is 120 shares.

MS. BRENNAN: Wait a second—120 shares is the average trade size?

MS. AVRAMOVIC: Correct. The average print that you see in the U.S. market is 120 shares. Now, these institutions order is a lot bigger than that, right? So, they're going to take a lot of prints in order to be able to fill their whole order. How do you do that? Let's say you have a million shares to trade, are you going to put it all out on a single venue when the average print size is 100 shares? No, to break it up, and that's what algorithms are useful for.
But then, where do you put it? No single venue has a market share more than 13 or 14%. So, you have to look at all these different venues if you want to get anything done

MS. BRENNAN: We started our time together sort of asking the question, what is the state of the U.S. equity market?

MS. AVRAMOVIC: Yes.

MS. BRENNAN: Is it stable, or is it broken? What does all this add up to for you?

MS. AVRAMOVIC: If I have to give a one-word answer, and if you've found anything about our time together, that's not going to happen.

MS. BRENNAN: I don't believe you're going to give me a one-word answer.

MS. AVRAMOVIC: Right. No, it's not broken. It's not broken. I think we hear a lot about issues with the market. But really, I think a lot of the quote/unquote "issues" that we hear is only because—it's one of two things. Number one, we don't understand them; we talked about high-frequency, we talked about dark pools. You briefly mentioned risk parity funds, leveraged ETFs; a lot of people don't understand how they work, so therefore, I think the natural assumption is that there must be something bad about them. And I don't think that there is. The second thing is that now, we have so many tools; we have the ability to monitor and detect changes that before, we didn't even know about. So, like a lot of—I'll give you just one quick example in closing. After the flash crash, we introduced circuit breakers. And they were meant to protect against another flash crash happening; single-stock circuit breakers, right?
And on Bloomberg, you could put an alert that would tell you every time one of these single-stock circuit breakers went off. And since I was doing research on it at the time, I turned these alerts on. And you got so many of them, so all of a sudden, you see that there's hundreds, thousands of these single-stock circuit breakers going off in a day, and you look like, oh my gosh, the market's broken. Is it crashing? Well, no, it's just that we didn't know; we didn't have the ability to detect these little things before.

MS. BRENNAN: Does that make us smarter, then?

MS. AVRAMOVIC: If you use it the right way. If you understand it, right? So, it's all about understanding what the noise is; should we be concerned about it? We talked about quote flickering. Is that a problem? I would argue there's pros and cons, but it's understanding the market. Again, in a word, is it broken? No. It's functioning better than ever. You can always make tweaks on the margin, but I think our market is, it's resilient, and it's robust. I think it's by far the best market in the world.

MS. BRENNAN: So, we have a rosy future, is what I just heard. Ana, thank you so much for your great insights today. I'd love it if you'd come back another time and talk

MS. AVRAMOVIC: absolutely, yes, definitely.

MS. BRENNAN: I also want to thank our listeners. This Challenge That podcast series is part of our continued commitment to help clients achieve their trading goals through actionable ideas and insights that come from advanced research and custom analytics. That's the power to trade smarter.
Be sure to check out our next *Challenge That* podcast and view our trader insights video tips at bofaml.com/traderinsights. Thank you again.