LaSalle Street: Financial Markets Insights

The Podcast of the Financial Markets Group

at the Federal Reserve Bank of Chicago

Podcast 2 Transcript

[MUSIC UP AND UNDER]

ALESSANDRO COCCO: Welcome! This is the second episode of LaSalle Street: Financial Markets Insights, the podcast of the Financial Markets Group at the Federal Reserve Bank of Chicago. I'm Alessandro Cocco, and I lead the group. We specialize in research on central clearing, trade execution, financial technology, and systemic stability.

This is the second episode of our fall series. Today you will hear from my colleague Ketan Patel, Ketan is Policy Advisor and Head of Financial Markets Risk Analysis in the Financial Markets Group. Ketan will discuss lessons learned from the Covid-19 crisis. He will be speaking to the Chief Risk Officer of the Options Clearing Corporation and the Chief Risk Officer of Nasdaq. You will hear about operational risk management, initial margining, pro-cyclicality, stress-testing, and risks on the horizon.

If you missed it, make sure to catch our first podcast, where my colleague Maggie Sklar, Senior Policy Advisor and Director of International Engagement at the Financial Markets Group, speaks with J. Christopher Giancarlo, Chairman Emeritus of the Commodity Futures Trading Commission.

Also, keep an eye out for our third podcast in the fall series, where Darrell Duffie will discuss Treasury market structure with leading experts in this area. We expect to release our third podcast in about a month. And now I'll hand it over to Ketan.

KETAN PATEL:
Hello, I'm Ketan Patel. I'm a Policy Advisor and Head of Financial Markets Risk Analysis at the Federal Reserve of Chicago.

Today, on the LaSalle Street podcast, we'll be discussing risk management and lessons learned during the Covid crisis.

To discuss the topic today, I am joined by two esteemed risk leaders in the industry. In the studio, with proper social distancing is John Fennell – he is Chief Risk Officer at the Options Clearing Corp. here in Chicago. And also joining us by telephone is Roland Chai from Sweden. He is the Group CRO of Nasdaq Inc.

Thank you both for joining me today. We're very lucky to have you.

JOHN FENNELL:
Hey Ketan, great to be here and speaking about these very relevant topics today.

ROLAND CHAI:
Thanks Ketan. It's great to be here as well. I'm pleased to be part of this discussion.

KETAN PATEL:
Thanks again, guys. Let's stick with the discussion on general risk management. Roland, I'll start with you. We saw increase in the volumes as well as volatility. Can you give us some of the insights into your experiences at Nasdaq.

ROLAND CHAI:
Yeah, absolutely. I think for everyone it was quite an extraordinary time in terms of what happened in the first quarter of this year – especially around March.

Just for background – aside from running equity and options markets in the U.S., we have equity and option and also commodity derivatives markets in Europe as well. In addition to that, we also provide technology for about 130 market operators around the world.

So we saw it both from on our exchanges, CCP, and infrastructure, and we saw it from running our clients' infrastructure as well. So I think in those times we saw record volumes in U.S. equity markets. For example, we saw massive amounts of orders -- about 2 times last year's average -- starting in early March and actually continuing throughout the year so far.

So March was the spike, consistently running week after week. Since then, we've seen much more volume than last year.

Similarly on the derivative markets, including the U.S. options market, we saw high peaks and we don't see them abating.

We see this trend coming through from different participation as well. In the U.S., retail participation has jumped during lockdown; the so-called phenomenon of Robin Hood traders – those traders trading through U.S. discount brokerages have flocked to the market, betting on a recovery. And also in Europe the activity was highest in small and mid-sized companies.

Copenhagen was our best performing equity market – it had the most volume. And it's largely due to the high concentration of healthcare and medical technology companies.

So I think broadly speaking, the markets were remarkable in the fact that they were kept open and running during those stressed times.

KETAN PATEL:
That's a great point on the record volumes – particularly around the options and derivatives markets.

John, what was it like for you at OCC in light of these record volumes? Did you have any new challenges or risks that you guys were managing in light of this?

JOHN FENNELL:
Yeah, I'd say from following up from Roland then, the first part of the year was extraordinary with unprecedented volumes, market volatility. And a lot of the volatility has subsided a bit for now, the volumes continue to persist. Seeing the same order of magnitudes 2-3 times what our, you know, higher volumes were prior to going into the Spring.

You know, we as a CCP always maintain access in an emergency capacity, so one of the steps we took in the second half of 2019, was to preemptively increase our overall processing capacity following some of our regular high volume testing cycles.

You know, as a policy the firm – we test to ensure we have sufficient capacities to cover 2½ times of our peak transaction volumes from the past, so we always know we have lots of capacity.

Well, that high volume test in the latter half of '19 led to the firm expanding its processing capacity and this proved to be a really important step for us in enhancing our overall operation resiliency as we led into this volatile period.

So that really kind of reinforced our ability to kind of absorb this kind of a change with no disruption to the markets.

KETAN PATEL:
That's a very important point on market volatility. If we can stick to this point – given the volatility in the first half, we saw the VIX eclipse levels of the 2008 global financial crisis. We also saw oil prices hit negative territory due to concern around supply. Given this elevated market volatility, I'm curious how this impacted initial margining.

John, I'll start with you – I'm particularly curious on how you also managed procyclicality in light of the increased volatility with respect to margins.

JOHN FENNELL:
Okay, sure. It's a, you know, procyclicality is really the major concern, right? A key to managing procyclicality is really to ensure that the margin levels are sufficient to cover the exposures, and what we try to do is increase our margin levels incrementally by leveraging more of that default or pay resources and becoming less dependent on the mutual resources of the CCP.

At the same time, we need to manage kind of the velocity that the margin levels are increasing, in order to avoid trading a liquidity event by the CCP if margins are increased too much too quickly.

CCPs – you know, we manage these trade-offs by following anti-procyclical floors that are established by the regulators. So, for example, we make sure that at a minimum our margin levels cover a 10-year look-back period ..

We also ensure that our margin levels increase in a thoughtful manner. We really are attempting to avoid severe spikes up or down with our margin levels. And in the end, our primary objective is targeting margin performance levels so that we surpass 99 percent coverage on the accounts.

It's – you need to be able to make sure you're managing the market risk as the volatility increases. And, you know, as we saw in the Spring, right, we went from a volatility regime of, you know, 2 to 3 percent around -- we tracked against the S&P 500, and then it-, and you know, there was a period where we were more in the 5 to 6 to 7 percent kind of volatility periods -- and peaking in periods where we saw volatility in the range of 10 to 12 percent for a day.

And so it's really how does the CCP kind of manage both sides of the trade-off so that, you know, it's protecting the capital of its clearing members and its default resources, but at the same time not miss leading in a kind of liquidity event by overly rapidly raising its margin levels.

KETAN PATEL:
Keeping with this theme, Roland, I'd be curious to hear your thoughts. Given Nasdaq's global footprint looking into Europe and U.S., I'd be particularly keen to hear your thoughts on this and if you saw any differences or any concerns from the two different jurisdictions?

ROLAND CHAI:
Absolutely Ketan. And it's really interesting what John said because I pretty much broadly agree.

We saw elevated levels of volatility as well and in our CCP in Europe we added buffers due to the volatility, and those elevated buffers get switched on in times of volatility to ensure that the margin floors are sufficient and also to moderate the frequency of the margin changes.

And one of the additional key things is not so much how you put the floor to manage the volatility, but it's also how you bring it down and come off it.

So, going to John's point, as you increase the margin or have a stable margin floor, when do you decide to take that floor back down, right? At what point do you decide volatility is back to normal, and you can remove the extra measures that you've put in? Because, for example, if you look at the VIX right now, it's still in the 20s, going back to John's point.

And in any normal time, VIX in the 20s would still be a indicator of quite volatile circumstances. Given where the VIX went up to and where it's come back down to, relatively it may quite a stable move down.

But I believe for our European clearing members with margining, we want to create stability. We want to create predictability for the market, so therefore we don't want to move the floor down too quickly. And we're more inclined to move the floor up gradually as well, going to John's point. But it is a tricky balance.

KETAN PATEL:
That's a particularly interesting point on volatility. And whenever the topic of margining comes up, inevitably people start talking about collateral.

John, I'd like to hear your take, if you've made any changes or have had any increased requests from your members or clients on more collateral flexibility for the Options Clearing Corp.

JOHN FENNELL:
Yeah, I'd say during these peak periods as you stated, right? Generally two topics come up: initial margin levels and variation margin calls.

We discussed the procyclicality as it relates to initial margin, but variation margin calls are another tool that's been utilized by CCPs to mitigate risk, but can often translate into liquidity risk when we started looking at these very large moves because they were cash calls.

You know, as a foundation for secure markets at OCC, we've taken a modified approach to mitigate risk associated with changing values of clearing members' portfolios through collateral calls versus cash variation margin calls.

A great example of this would be back in 2016, during the presidential elections, when there was that spike in market volatility. OCC managed the process by providing information to its clearing members early on of the potential for margin calls. Many members took this opportunity to pre-fund their accounts with excess collateral, thus avoiding cash margin calls later in the day.

And this ultimately preserved their, what I call gunpowder – keeping it dry – and allowing their liquidity to be preserved to meet variation margin calls that were inevitable and gonna come later in the day.

So I think that's one area that I'd say we're unique from the perspective of leveraging more of a collateral call process versus a cash variation margin call perspective.

But at the same time, right? We need to make sure that our collateral types are diverse and highly liquid assets so that there is more capacity for the clearing members to absorb these kind of market disruptions, have the ability to secure their credit exposure to the CCP, and continue to operate. 'Cause they're a key stakeholder in this ecosystem that we need to prop up as well.

KETAN PATEL:
Let's stick with the point on ecosystem; switch gears a little bit. I want to discuss a bit about concentration and inter-connectivity. We've seen research papers and news articles discussing concentration and the scarcity of clearing firms in some markets. Given the stress we've just encountered, do you think the markets are more vulnerable to a shock from either the CCP perspective or one or more large FCMs?

Roland, I'll start with you to get your take, and then I'll ask John for his thoughts as well.

ROLAND CHAI:
Sure. Absolutely. And I think that's a very important consideration. So I think a lot of the markets are interconnected. You can't look at the U.S. equity options market in isolation

to the cash equities market. I think there are some trends that are increasing that we need to consider.

So first of all, since 2008 there's been reduction of large FCMs. I think in some numbers you've gone from over 50 FCMs in 2008 down to probably about 30 or so worldwide.

I think you have a large concentration of FCMs that serve the market. And the stability of those FCMs is critical, as they clear multiple markets.

Equally, you have the trading clients on multiple markets. And the ability of those clients, HFTs or liquidity providers to provide liquidity on the market – whether it's derivative or underlying – is absolutely crucial to the functioning of the market.

Understanding many markets those liquidity providers play on, and where they're doing their hedges and have their exposures, versus the ability of the FCMs to service these clients is crucial. As the interconnectedness increases, it's important to understand these risks.

And there's been quite a lot of work in the industry in the last 4 or 5 years to focus on these kind of risks and to look at the interconnectivity as well as the ability of market infrastructures, like CCPs, such as John's and our own, to manage and insulate our members from the failure of one or more of these liquidity providers or their FCMs.

It is definitely more a space we're spending more and more time and resources on.

KETAN PATEL:
John, what's your view on the ecosystem and the issues around interconnectivity?

JOHN FENNELL:
Yeah, I think the ecosystem, I'll say, from protecting against a default or a failure of a clearing member ..

Following 2008, I see the big level banks who serve as our clearing members significantly better capitalized. Much stronger and able to avoid a, say -- absorb market volatility and a default situation.

So I think we're in a much better position from a default management perspective in clearing members being able to absorb disruptions.

That said, from an ecosystem perspective, when we think through the supply chain as Roland was talking about, right? We've got liquidity providers are a key stakeholder in being able to quote our markets.

And in <u>our</u> space there's services by a very few number of clearing members so the .. what we're starting to really see play out is that the margins of a clearing member to service these liquidity providers from a strategic perspective is getting much tighter. And so we're seeing a very small, very concentrated community of clearing members able to service liquidity providers.

And so from an overall supply chain health, <u>that's</u> the place where we see some weakness. That if, for return on equity purposes or strategic initiatives that some of these clearing firms decide that they don't want to over-invest in servicing, clearing of liquidity providers, and they allocate their capital different places – they start to retract, and so then we have fewer places for our liquidity providers to then source clearing.

And I think – so we're seeing contractions in clearers supporting liquidity providers; we're also seeing kind of contraction and concentrations in the liquidity providers themselves. We're seeing big liquidity providers getting bigger, medium ones trying to hold their footprint, and smalls starting to leave the space.

So, you know, these are all trends that we're looking at from a supply chain perspective that are probably trending in the wrong direction – and something we need to try to prop up so that these markets maintain their robustness, resiliency, quality for the next decade or two at least.

<u>KETAN PATEL</u>:

Absolutely resilience is critical. We just touched upon market disruptions and this brings to mind one of my favorite topics – stress testing.

Stress testing definitely comes in two flavors, especially nowadays -- financial and operational.
If we could just focus on financial stress testing resilience first.

John, I'll start with you -- I'm curious if you're making any changes, revisions or enhancements to your stress testing or on historic or hypothetical scenarios which typically target tail events.

<u>JOHN FENNELL</u>:
Yeah, I'd say from a financial resiliency perspective, this environment that we've just gone through provides some kind of really new challenges. In the past what we would see from a financial disruption perspective would be very severe, very short bursts of market volatility.

So a lot of our stress testing is really centered around very extreme moves, and so I think the extremity of the moves is something that our stress testing covers very well.

Now what's different about this environment is the duration. So what we've seen is that this period of volatility wasn't a, you know, flash crash, it wasn't an extreme move that lasted less than a week, it was one that perpetuated over multiple weeks – 6 weeks -- and then is starting to subside slowly. But I think everybody has it on their radar that this is something that's gonna re-emerge as we get later in the year.

So from a stress testing perspective, one of the things we're really looking at is trying to model and simulate the duration, and how does that, you know, having a longer period of volatility impact us from a financial resiliency perspective, also playing into our operational resilience in being prepared in this kind of Covid environment to be able to manage those risks over a long period of time, often operating remotely.

I think the other component from a financial perspective is the impact it's had on different asset classes and a lot of the correlations that maybe we relied on in the past aren't there. So we're seeing some different kind of dislocations in the market, the way assets moved together in the past maybe isn't holding, so those are new things that we're starting to challenge our past assumptions and we've added new stress tests to kind of contemplate those and to make sure that we're seeing any gaps within our financial resiliency framework.

KETAN PATEL:
Roland, if I could now turn to you. And one area I'm particularly keen to hear your thoughts on, is around commodities – particularly given that the energy markets have gone sub-zero. What are your thoughts on other markets – particularly other commodities – potentially going sub-zero?

ROLAND CHAI:
Yeah, look – that's a great question. And following up from John, I absolutely agree. I think when you're looking at the stress scenarios, and at Nasdaq we're looking at commodities, including energy -- it's not just de-correlation but anti-correlation, so that means going in different directions at the same time for a persistent duration.

For example, in the electricity contracts that we've seen here in the Nordic countries at the moment, we've seen periods of unusually warm weather causing unusually low prices in certain regions. And that plays into other factors as well, such as transmission capacity, climate trends, and industrial capacity as well.

So you're seeing different types of behavior which you may not have seen at the same frequency or ever before. So definitely coping with those types of things – and also with sub-zero negative prices – that's very much a part of it in energy, commodities, and also interest rates as well.

So we've seen negative interest rates, especially in the euro zone, for a while, and that needs to be dealt with. In equities, I don't think this adds much to the downside, I think it's more surprise to the upside. Take for example Tesla – how Tesla stock has grown up quickly and the volatility has gone up.

I think the other area potentially vulnerable to extreme scenarios is exchange traded products, and the structures that they are set up with. Obviously with the rise of passive investing, the popularity of exchange traded products has gone up. Sometimes the structures and liquidity within those exchange traded products are designed to cope with extreme scenarios. So we're doing a lot of work in terms of looking at how those exchange traded products are set up and traded, mainly for the safety of our investors as well.

So across the piece, we do have to fundamentally revisit a lot of our assumptions along those products.

KETAN PATEL:
Let's now dovetail to operational stress testing and planning. I want to hear your thoughts on changes your firms are planning or undertaking – particularly in light that BCP has now been going on for a long time. And you could argue BCP is now BAU. So what are the second order of BCP plans you're thinking of?

Roland, if I could start with you, I'd like to hear your thoughts on maybe the plans that you're undertaking now.

ROLAND CHAI:
Sure, market resilience is at the core of what we do at Nasdaq, given as also as I previously mentioned, we provide software for a lot of market infrastructures and clients. We're laser focused on capacity, performance, and reliability. And it's about repeatable resiliency. We've got a multi-year operational excellence program throughout all of our entities.

To illustrate, I'll give you some numbers -- We spend about 40 out of 52 weeks testing systems for disaster recovery a year. Given the volumes that we've seen since the turn of the year, we've got a team which includes 1,500 dedicated technology staff to run these systems. And we provide 24 by 7 support and 365 days testing for our clients. But it's not just about the tech, it's about the people and the processes that support the tech.

John raises a good point. It's the kind of scenarios that we're looking at right now -- how do we manage and run these systems, run our services, our market from a work-from-home environment. And this is an environment in some cities where there may be disruption, there may be protests, riots, and there may be disease or pandemic.

So these kind of scenarios are what we're constantly looking at and also asking ourselves can we improve the technology through which we operate?

So there's a human capital element and also the safety of everyone to think about, and also how can we increasingly use technology to do that?

And I think across the industry, one thing that you can see is the use of Zoom and video conferencing working from home has proven extraordinarily successful given everyone's concerns prior to that.

But now it's a matter of doing that for a long duration, working for 3 to 6 months – maybe a longer-term normal – and how do we manage in that kind of distributive networking environment running markets and keeping those markets open and resilient.

KETAN PATEL:
Roland, if I can stick with you for a moment and talk about technology – you're a large service provider to exchanges and clearinghouses. Have you seen any increased requests or demands for additional services?

ROLAND CHAI:
Yeah, we provide advanced DR solutions which our clients can take up. But have we seen an increased up-tick recently in demand for those services due to the increased volatility? Not necessarily, but I think it's a challenging environment at the moment for all of our clients. And everyone has been focused on keeping things running, and that demands may come later, but we definitely do provide full support for our customers.

KETAN PATEL:
John, if I can get your take on this in terms of operational resilience planning or changes – how is the OCC looking at this?

JOHN FENNELL:

Yeah, I'll say, you know, to be honest, I've been quite surprised – pleasantly surprised – how not only our firm, but the industry as a whole has migrated to its business continuity plans, is operating remotely in a seamless, really, way.

I mean, we didn't see any kind of, you know, learning curves to really get up, and we haven't had any disruption with our members. So really pleased to see how, you know, a lot of the investment I think, in the front end on business continuity plans industry-wide is really manifesting in little disruption in this type of event.

But, what's interesting is, you know, even when we're planning those, I think our time horizon on how long we'd be operating in this continuity environment would be – a week to 10 days would be a long time. And now we're finding ourselves deep into 6 months, and wouldn't surprised if we're all still remote in this business continuity environment for another 12.

So the things we started to pivot around is okay, moving from what are the critical infrastructure dependencies that you had when you were an on-prem – and now you're really relying on your employees and what are their infrastructure dependencies.

So thinking about our employees' internet and telecom providers and the resiliency there – do we see any concentrations there? So if we see an Xfinity outage, is that going to disrupt a large proportion of our resources working remotely from being able connect into our systems.

The electrical infrastructure, you know, concentrations on power grids -- we're regionally diverse, but then taking a step back and saying how were we looking from an overall power grid and what would be the continuity plan around that?

So we've been spending a lot of time thinking about that and, you know, when you have, you know, working remotely, contemplating for example, hurricanes going up the east coast, taking large chunks of regions out for multiple days – Ketan in Chicago here, right? We just had that massive storm come through a couple of days ago that I personally was running on generator power for 2 days.

So how resilient in the depth that we've always thought about insulating our on-prem environment is and what are the exposures and risks we have with our employees working remotely on their own infrastructure on top?

So we actually take in those scenarios and develop the variety of new stress tests. So we, for example, have started thinking about, you know, from a human capital perspective – what if a third of our employees were eliminated from working for 2 weeks or a month? What would that do to some of our key processes that underlie our critical services?

We also looked at, let's say, an example where a particular important function – two-thirds of the employees were out – for example, an outbreak of Covid. And what would be our contingency plan, resiliency plan, to be able to either source resources from other functions, to bridge that gap for a period of time?

And then we have also looked at, you know, if we lost a power grid, do we have all of the key resources already mirrored in our other location down in Texas?

And so we were constantly sort of challenging our environment and doing that in this space, working remotely, you know, thinking about and running full default management drills with external stakeholder engagement while everybody's working remotely and trying to do lessons learned and other opportunities doing hands-on resiliency.

KETAN PATEL:
John, you brought up hurricanes, which leads to the interesting topic of climate risk. I'm curious to hear you guys' take on how you guys are viewing climate risk and if it impacts any of your operational or financial risk planning or modeling.

Roland, I'll start with you.

ROLAND CHAI:
Yeah. So in terms of climate change -- it definitely affects a lot of what we do, where we put our operations, data centers, our critical service providers, and also the modeling, as

John mentioned We look at crisis management scenarios -- where we have data that is knocked out and what we would do in that situation.

I think the broader issue is, how do you model the effects of climate because of the predictability or unpredictability of climate change. For example, trying to work out – going back to the energy example – what melting glaciers will do to hydroelectricity generation in summer versus winter, and also the demand on the industrial side that we know s unpredictable. But we know the effects are happening. So it's about coming up with models in stress testing and also operational planning that will manage all of that -- and be able to take that into account. So climate change is definitely a strong priority, in terms of all the things that we're managing and being able to be resilient in the face of that and maintain all of our operations and our services.

It's a question also of how do you manage such an approach across a large geography. We've got offices in the Philippines, we've got offices in Hong Kong, Australia, and northern Europe, as well as right across the United States as well.

So there's quite a big geographical footprint, and the climate change impacts vary in each region.

KETAN PATEL:
Thanks for your thoughts, Roland.

John, I'd like to hear from you. Is there anything you'd like to add in terms of how OCC is looking at the climate risk topic?

JOHN FENNELL:
Yeah, I think from our perspective, right? The climate risk is really going to increase the frequency and the severity of weather type events. Right? So I think we're going to see these more often; we're gonna see the severity of those more pronounced..

So those are the kind of things we try to introduce into our stress testing and then how do we plan? Are we challenging ourselves in planning ready for, you know, a hurricane hitting multi ..

Here's a great example. Back about 10 years ago, we had a blizzard hit Chicago and an ice storm hit our Dallas office. So both offices closed simultaneously – 2 separate weather related events, and were we able -- did we have sufficient capacity and resiliency with our employees to continue our operations -- and we did.

But it's -- those are the types of scenarios that I think you're gonna have to go further out to really start thinking about how you want to stress your operational resilience.

I think the other piece it starts to move into, you know, what are the second and third order derivatives of climate change and so how is that gonna change the behavior of certain industries?

Are certain industries gonna get pulled back on, other industries there's gonna be more investment, and how's that gonna change on one, the volatility of some of the products we clear, but also kind of shaping the winners and losers in that space and where do we see kind of the other key stakeholders that are material in our environment.

How's that gonna change their exposure, how's that gonna change their behavior so we can stay out in front of that, I'd say, partially from a strategic perspective, but also you know, being able to look around the corner from a risk perspective.

KETAN PATEL:
Thanks for that, I'd like to close off with hearing your guys' thoughts on risks you have in view for the second half of 2020. What's keeping you up at night, what are the main things you guys are focusing on from a risk perspective?

If Roland, if I could start with you?

ROLAND CHAI:
Sure. I think my top 3 are – and in no particular order – number one U.S. / China. I think you've got the world's 2 largest economies having political issues with each other. And every week there seems to be changes and developments, whether it's about sanctions, or listings or trade. That has been going on and rising for the last couple of years. I don't see that changing in the medium term. And it poses a lot of event risk, also given the sizes of both economies.

Second, or equally, is probably Covid – how will the second wave impact countries and also the development for a vaccine. There's a lot of optimism and pessimism in the markets equally – has everything been priced in? – again event risk around all of that. And also depending on how the pandemic evolves – it's also about economic recovery in the euro zone and the U.S. and globally.

Thirdly it would be the U.S. election. I think coming into the next 2 or 3 months there's a lot of risk in the U.S. around the election and how it will run – so it's about what will happen and how it gets drawn out. Will it be a relatively quick and easy election or will there be disputes about it? So we certainly expect and anticipate volatility coming back to the market whether it's on the upside or the downside.

KETAN PATEL:
John if I could turn to you on what's keeping you up at night, or the risks you focus on for the latter half of 2020?

JOHN FENNELL:
Yeah, I'll say I could not be more aligned with Roland in as far as what are the 3 type of major risks that we see happening in the second half of the year. I think presidential election, U.S./China relationships and the impact on the economy from the pandemic are the 3 and the things we're really prepping for.

You know, on that, let me extend it out further. I think the other piece that probably isn't as top of mind, is really thinking about the impact of changing of companies' operating models. And I'll look at it from a resiliency perspective. I think what moving remotely for this long period of time has really provided you know companies globally the opportunity to is really understand and experiment with how productive can we be with our resources working completely remote.

And it's bringing into account this kind of an asymmetry theory around, when you have 90 percent of your resources working on-prem, there's symmetry and communication and people being on the same page and able to operate.

When we find now that when 90 percent of your resources are working remotely, you still maintain that symmetry. I mean, your productivity is maintained, so communication levels are the same, people are communicating in the same ways, and so you don't lose much productivity from that perspective.

When you have, say, 50, 40, 60 percent of your resources -- some working remotely, some working on-prem, then you start to run into an asymmetry issue. And so I think what firms need to start to – are starting to <u>think</u> about is, given this environment, what's the better operating model for them?

Do they <u>want</u> to be working 90 percent remotely – maintain kind of a productivity capability, start investing in technology that helps them to do that in a better way? It provides opportunities for firms to recruit employees across the globe, without having to worry about relocation, and other, you know, logistical issues like that. And you know, your workforce satisfaction.

Do you find that, you know, you're gonna be able to lower your on-prem footprint and lower <u>those</u> costs, and probably change those on-prem footprints to be more collaborative versus offices and cubicles, and you get a higher evaluation of a workforce satisfaction, are the things people are thinking.

I think the other piece is, from a resiliency perspective, the diversification. So we've seen a period of significant social unrest, weather-related events, typically concentrated in very city-oriented locations and you're seeing that, in a remote environment, that social and unrest isn't really having an impact on how we-, our operations.

It impacts kind of how, you know, the company wants to operate and relationships to those social issues, but not from an operational resiliency perspective.

So you have the diversification opportunity by working remotely. Now thinking across, you know, kind of some of the stress tests and events that we talked about earlier, is still really critical in ensuring your resiliency, but it provides different opportunities.

So I think that there's going to be a trend of firms really reconsidering their operating model in this context and what downstream implications will that have – good or bad.

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KETAN PATEL:
Thank you for sharing your views on risks that you have in focus for the latter half of 2020. I'd like to thank both of you again for making precious time to join us on the LaSalle Street podcast today.

The discussion's been very engaging and I'm confident our listeners will find it equally engaging. Thank you again.

JOHN FENNELL:
Great, great to be here. Thanks for inviting us.

ROLAND CHAI:
Thank you. I really appreciate you having me and really enjoyed that session. So thank you for inviting me.

KETAN PATEL:
Hello again, I thought, we had good insights for both the US and European markets on the podcast.

There were some similar themes in the discussion for the risks in view for the latter half of 2020 as well operational resilience.

One thing I do want to expand upon is on the topic market volatility during Covid.

When market volatility increases it is typically coupled with increases in trading volumes.

The drivers of the trading activity vary – it could be profit taking, risk reductions as VaR and risk limits kick-in, it could be also be seen as opportunities as spreads widen and correlated asset classes dislocate.

These are just a few drivers, but still we heard from both speakers that volumes were up over 200% across the board and higher in some cases.

And similar to other major market events, the CCPs which clear securities and derivatives for the exchanges called for more collateral in the form of Initial Margin.

One unique aspect of the Covid crisis is that CCPs now have regulatory requirements to ensure the changes in Initial Margins are less reactive to changes in market volatility. These requirements were not in place during the Global Financial Crisis of 2008.

The term procyclicality is used by regulators and industry participants, which is basically the concern that funding pressures could arise concurrently with major market events which could further exacerbate risk in the financial markets.

We heard both speakers discuss the mitigation tools each deployed to guard against procyclicality with buffers and incrementally increasing of Initial Margin. The topic of procyclicality is likely to be an ongoing discussion given some of the industry analysis and reports being issued on this topic -- as well as the fact that velocity of the change in volatility was very sharp in this crisis, particularly in credit, equity, and energy markets.

One final thing I would like to mention is that the discussion was recorded prior to the major market events in September where we saw equity markets in the U.S. coming off high-points for the year. So the points on potential market volatility and the elevated levels of the VIX index noted by the speakers were very relevant.

In general, this discussion was exceedingly insightful and I hope our listeners join us in future discussions on the La Salle Street Podcasts.

Thank for listening today.

[MUSIC UP FULL TO CONCLUSION]