



Eric Peters: Knock-on effects of the Coronavirus Crisis April 9th 2020

Erik: Joining me now is [Eric Peters](#), founder of [One River Asset Management](#).

Eric, I guess obviously the question that's on everybody's mind is this coronavirus crisis and how long it's going to last and so forth. Was the coronavirus the cause of this market dislocation? Or is it more the case that the virus was the pin that popped a bubble that was already ready to pop? And, either way, how do you see this crisis unfolding from here?

Eric: Hey, Erik, nice to be back. Thanks for having me again. Always good, particularly in really interesting periods for markets like this.

Clearly this virus is the catalyst for this move. And that's obvious. But in terms of the move itself and the market structure, I would say that we've been building into the market structure a lot of fragility over many years that were, largely speaking, just underappreciated.

I think that people looked at the 2008 crisis and just said that was caused by too much speculation, and lots of securities that were tied to housing, and over-leverage, and the banks were too aggressive in terms of all kinds of their activities. And, as a result, once we fixed that, we got to the heart of that crisis – given that it was really a financial crisis (albeit tied to housing – but once we got to the heart of that, then it would be highly unlikely that we would have another crisis of a material magnitude.

So, just generally speaking, the combination of CEOs believing that we would not have another great crisis again. We could have periods of economic slowdown, but not a great crisis. And investors also agreeing that we would not have a great crisis again.

It got everyone around the table to start engaging in activities that in essence levered corporate balance sheets and used investor capital and portfolios to help corporations do that. And that ultimately created the fragility in the system.

So how I tend to look at it is we had all the major players in the economy gear themselves to one common factor, which was economic stability. So corporations felt like the likelihood of them having any type of real disruption in their cash flows is very low. And, if and as the economy slowed down, the Fed had the appropriate tools.

And because the banking sector was relatively healthy, there wouldn't be a real disruption to their ability to access credit. Nor would there be a real interruption to consumers' ability to

access credit. And consequently the economy should chug along reasonably well.

And in that environment you might as well just lever your balance sheet, which is what corporations did. They borrowed a lot of money and bought their stock back and became highly levered. And investors did the same thing.

Well, they didn't do the same thing. They allowed corporations to do that. Investors, in their hunt for yield, were looking to lend or engage in all kinds of activities to get higher returns than they probably otherwise would have been able to get.

They engaged in riskier activity and got involved in less liquid types of securities and basically funded the corporations leveraging their own balance sheets. And inasmuch we became less robust as a system and more fragile. But that was not apparent, I would say, to most people.

And so this crisis came along. And this is about the worst catalyst that you could hope for that type of structure, because it really robbed everyone of the revenue to pay its debt. And that's exactly what we've accumulated over the last decade or so, is just a ton of debt.

And so something like this is just – there would have been some type of catalyst, inevitably. It just so happens that we got really unlucky and this is the worst possible one, I would say.

Erik: Eric, the response from governments around the world, particularly the US government, has been to respond in many ways with bailout policies that involve creating a whole bunch of new debts. In some cases, those are debts that are forgiven if certain goals are achieved. So I guess those are more grants than debts. But in other cases it's guaranteed loans in order to facilitate bridge capital to keep the economy going and to keep businesses from failing.

Doesn't that just create even more debt and potentially set us up for an even worse fall further down the road?

Erik: That's a good question, Erik. I would say that – I guess let's start and look at what the Fed did. And I think what they did actually was vital.

So if you take what I mentioned just a few minutes ago about what got us here, we basically got ourselves into a position as a society where we were far more leveraged than we realized. And that leverage came through corporate balance sheets. It came through investor portfolios and the types of leverage that they had embedded into those portfolios.

And let's forget about the government balance sheet for a minute. Consumers, obviously, have reasonable amounts of debt. Perhaps not as much as they have at various points in the past.

So you have a very leveraged economy. And all of a sudden, because of this catalyst (meaning the virus), people needed to gross down quickly. And so you had way too many people selling essentially everything, which is why you saw not only stocks fall but you saw bonds fall, you saw

gold fall. Everything fell all at the same time.

And if the Fed had not come in and drawn a line underneath that with the policies that they implemented, we would have seen a crash that was far worse than what we've seen.

I think we had the US equity market fall 35% from the highs or something like – it may sound dramatic, but it was only down 25% on the year. So I think, just unambiguously, we would have been down at least 50% and perhaps 80% had the Fed not done what it did.

And it essentially just looked at the overall structure and pretty quickly came to, I think, the appropriate conclusion, which is that if everyone is overleveraged and they all need to gross their books down in one way or another at the same time, there literally is not a buyer. There is just no buyer. There is no strong hand out there. There is only one hand and that was the Fed.

So that's what they did.

And we could argue about whether or not that's fair or right. I think they prevented a complete market collapse, and that would have accentuated the economic collapse that we're in.

So we're in a depression right now. The only question is how quickly we get out of it. And in a depression that has such a high economic and human toll, taking debt up to try to mitigate the impact of that seems to be reasonable policy. The question is what does that lead to, ultimately?

And I think there are a lot of open questions about that. And a lot of those are dependent on what some of the next policies are. A lot of them are depending on how CEOs act and consumers.

And there are a lot of questions. We could talk about a few different scenarios that come out of that. But there are certainly a lot of open questions about that right now.

Erik: Eric, let's talk about managing portfolios and preparing them for events like this. Obviously, we hope that this pandemic will be a once-in-a-hundred-years event. But I don't think financial dislocations on this scale are anything close to a one-in-a-hundred-years event. I think they're going to get more and more frequent.

One of the most popular guests we've had on this year is Chris Cole from Artemis Capital, who has talked about the benefits of using long volatility and commodity trend following as components of a modernized portfolio, replacing the 60/40 portfolio, adding those components in order to create much more resiliency in a crisis.

Eric, your firm, One River Asset Management, runs both long-volatility funds as well as trend-following funds. I know for regulatory reasons you're not at liberty to tell us about the performance of those funds.

But, frankly, you guys are famous now. It's in the news. You're up huge in your long-vol fund.

So talk to us a little bit strategically – because one of the things Chris Cole told us is there's lots of different ways to skin a cat when it comes to long-vol strategies.

How do you approach providing a risk hedge with your long-vol funds? Obviously, it's worked extremely well for your investors to hedge losses in their other assets.

How did that work out? How do the correlations work? And what's your approach to that strategy?

Eric: We have five strategies as a firm. We have a discretionary long-volatility fund, which trades volatility across asset classes on a global basis. And we look for what we think are the most attractively priced markets in which we can buy vol. And hopefully profit from a rise in those levels.

We run a systematic long-equity vol strategy – it's called dynamic convexity – that focuses exclusively on equity vol with an emphasis on US markets.

And then we run a volatility relative value strategy, which is really a market-neutral high-alpha type strategy. That's generated very high Sharpe over its life. And it's truly market-neutral. We're just looking for dislocations globally and have done well doing that.

Our trend strategies, we have one that's a classic trend that looks at 60 of the most liquid global market cross assets and follows those trends.

And then we have one that's focused on more esoteric markets. So 104 different global esoteric markets, which are pretty interesting to try to capture trends on.

All of those strategies are built with an eye toward mitigating risk.

And I think that, having been in this industry for 30+ years at this point, I've learned through seeing so many dislocations and different strategies really struggle or blow up at times that if you don't embed really good risk mitigation into what you do, either on the strategy level like our five strategies or at the broader portfolio level like a lot of investors, sooner or later something happens and you can suffer really substantial losses.

So we've had a particular focus on what we felt was going to be a pretty material market turn as this cycle ended.

And, remember, this is the longest bull market in US history and the longest economic expansion in US history. And a lot of the behaviors that naturally come out of that – certainly and now we've seen it really play out – imply that the turn will be pretty dramatic.

In terms of how our strategies have been used – and we look at everything that we do as not really hedging but making money – we just think that we’re at that stage in the cycle where we could make a lot of money being long vol. It did so happen that our investors used that for hedges in their portfolios.

The really interesting thing over the last few years – and I think that this is going to be amplified now – but the really interesting thing is it’s become increasingly difficult to build robust portfolios because interest rates are very low and the classic 60/40 portfolio or even the leveraged version of that, it just, when interest rates get really low, it makes it extremely difficult to build a robust portfolio. Because it’s just harder and harder for your bond portfolio to offset the losses embedded within your equity portfolio or whatever risks you have in your portfolio.

And so we felt like, well, number one, trend following historically has done a good job of helping offset some of those risks in big bear markets. But it’s also a strategy that’s going to make money in big bull markets as well. It’s following large trends.

But long volatility, in particular, we think is a super-interesting place because, number one, vol, the levels of vol just got so low that they presented good value in terms of helping offset risk in your portfolio.

But, because so many people were short, it also is a place where you could say in a market-stress environment, vol levels are probably going to go very, very high. Maybe higher than they ever have in history.

And so we really focused on that opportunity and, thankfully, had investors that invested alongside of us in that.

Erik: When we’ve covered the long-vol strategy in other interviews on MacroVoices, we’ve talked about breaking it into separate concepts. One of generally trading volatility – so you’re looking at things like straddles, buying them when they’re cheap and selling them when they’re expensive – versus something like an express tail-hedging strategy where you’re really specifically buying tail hedges in order to hedge against those unlikely outlier events.

It sounds like primarily what you guys are doing – and I just want to verify this – is the former. You’re trading volatility. Not to plan for a specific outlier event, but just because it’s not that hard to have a strategy that systematically trades volatility and is profitable and can be profitable in a way that’s not only independent of other asset classes but inversely correlated with them.

Eric: Yes, that’s right. We focus on the former. So we’re not specifically in the business of tail hedging. And it’s not that there is anything specifically wrong with that. I think, for some investors in their portfolio constructions, that can make sense. But we felt that vol is at levels

where you could make a lot of money on the up side without having to bet on a tail event.

And also in times when you bet on a tail event, you can endure a market dislocation, but you don't really make money unless you get some kind of really wild tail.

So we're more interested in looking at opportunities and various straddles globally in all kinds of markets. But having some direct risk as well. So that's been our approach on the discretionary side.

And so we really are doing this just for hunting for the most convex ways that we can find in the global markets to make money in certain types of dislocations.

And when you look at a crisis like this, I think that, in my experience and studying history, they tend to come in waves. So it tends to be the case that one area will be the epicenter of the first stage in the crisis. In this case, it was equities, which is where we had our risk focused.

And then they tend to spread out.

And so we think that there is likely to be very high foreign exchange volatility on a forward-looking basis. Because that's one of the few areas where countries can have some type of ballast to help their economy if they can't actually go out and borrow money and print money as aggressively as the US and the Europeans and the Japanese have done.

Some of the countries that don't have the same level of flexibility in their domestic policies, I think the shock of what's happening in economies will be reflected in changing foreign exchange rates.

So we think that that scenario represents a lot of opportunity. And so a week and a half ago we actually rotated out of most of our equity vol, thankfully, because those vols have come down a long way. But rotated into foreign exchange.

And I think after this wave there will be additional waves to this crisis. And I think a big one will come when we start seeing some of the political ramifications of what's happening right now. We haven't really seen that yet, but that's on its way.

You don't get a dislocation of this size in financial markets and then the real economy without having very material political repercussions within countries and then between countries. And so those are some of the things that we're thinking about how to reposition for right now.

Erik: Eric, let's move on now to the subject of trend following. For any of our listeners who are not already familiar with the concept, I did a full hour-long interview with Niels Kaastrup-Larsen introducing this strategy and what it's about. You'll find the link to that episode in your Research Roundup email. Look for Niels' picture down near the bottom of the page. And I highly recommend that as an introduction to the strategy.

But one of the things Niels taught us in that interview is there's lots and lots of different strategies that are all kind of being lumped into one by the industry. They call it commodity trend. Well, a lot of these trend-following funds really are not at all focused on commodities. They're following trends using commodities futures contracts, in many cases. But very frequently it's interest rates or it's currencies or stock index futures.

So how do you guys think about trend following? Is it a commodity-specific strategy? Is it broader than that? Is it entirely computerized algorithms? Do you use any discretionary decisions at all? How do you bake the whole concept of trend following in your firm?

Eric: Our approach to trend, in fact our approach to anything that we ever do in markets, is to first ask the question why do you get paid to do something? Why is the market paying you? Who is on the other side of your trade?

And I think that's super-important to think about, no matter what type of investment activity you engage in. Because in essence you are trading against people who are not dummies.

In the case of trend following, our approach is to trade medium- to longer-term trends. There may be people who have figured out how to make money in very short-term trends. I just don't understand why someone would get paid a significant amount of money to try to follow short-term trends.

But long-term trends – because I think, when I observe pretty much everything in the world, there are medium- to longer-term cycles, whether they're political cycles or economic cycles or monetary cycles or innovation cycles or weather cycles or just general market cycles.

And so we try to focus on medium- to longer-term trends because I observe them throughout society and nature. And I think it's difficult for most people to hold on to trends and hold on to positions for a very long period of time.

The biggest trends that I've observed in my career essentially are reflecting some type of fundamental shift that's taking place in the world that people don't yet fully appreciate.

That's why you have a long-term trend. And so in periods of a lot of change, it would make sense that you have longer-term trends that persist for quite some time.

So those are the ones that we focus on. Trends tends to work when you have a really diversified mix of asset classes and instruments and expression globally, just across markets.

So one of our trend strategies is focused on the 60 most liquid markets across the four major asset classes – currencies, equities, commodities, and interest rates.

And then our alternative markets trend is focused on 104 more esoteric markets globally that

are expressed in those same asset classes but then also in credit indices.

So in our core trend, for instance, you might see a commodity like copper. And in our alternative markets trend you might see something more esoteric like iron ore, for instance.

And so, at any rate, they are two different sets of markets that we focus on. But that's our approach.

And I think one of the most interesting things, to me, about trend is that we've built some very good strategies that have done very well and beaten peers largely across the board in an environment where trend has not been a great performer over the past decade, in fact. If you look statistically, the last decade has been about the worst decade that you've seen in the last 120 years.

And the question is why is that the case? And I think that it's probably the case that it maps to this period of a lot of central bank intervention and extremely low levels of volatility, where you know that we had a lot of economic stability, we had policy stability. And, as a consequence, not as many things really moving a whole lot.

We have been waiting for this inflection point in markets. And I think now that we have this inflection and we start seeing some of the changes that I think will roll out over the coming decade, it wouldn't surprise me if trend goes from having had one of its worst decades of the past 120 years to one of its best.

And so we figure it's a nice addition to a portfolio. Particularly in a world where – when you think about constructing a portfolio, there is very little that a big investor can do to create balance in their portfolio and have some type of offsetting exposure to a bear market or a real dislocation.

Interest rates won't do it anymore. Bond yields are so low right now that they can't help offset risk.

And, historically, trend strategies have done a very good job of helping mitigate risk in the broader portfolio in times of disruption. And then just make a lot of money in times of really big trends. The 1970s was the best decade of the past 120 years for trends.

So hopefully that's what we have to look forward to.

Erik: Well, I wanted to give you a chance to talk about those strategies because I know they have been the performers in this environment. You're up huge on the year in your long-vol fund and you're making money on the year on your trend fund, which is a lot better than most of the industry can say.

But I want to talk now about where we're headed with the fallout from this crisis, because it

seems to me that – obviously, it's a really big deal, it's affected the whole world.

But the monetary and fiscal policy bazooka shot that we've seen in reaction, I mean it was first unlimited monetary intervention. The \$2 trillion intervention was, I think, the biggest fiscal stimulus ever contemplated in the history of the United States. And that only lasted a day until they came up with another one of the same size and doubled it. And who knows when they're going to double it again?

So, Eric, it seems to me that, regardless of what your opinion is on whether it was prudent to have this type of policy intervention, we've got it. And it seems to me like probably the long-term impact is not going to be the coronavirus crisis but it's going to be the results of this just totally unprecedented intervention.

So what are those consequences and knock-on effects going to be of suddenly having bigger monetary and bigger fiscal stimulus than we've ever seen before?

Eric: There are a whole range of knock-on effects that I think lie in our future. And a number of them are really dependent on some of the political choices that are made. And they're dependent on whether or not we can avoid material conflicts over the coming years.

And when I say that, I just mean that there are some really big open questions that I have. And I think that they are the right questions to be asking.

One of them is, okay, so we have just done one of the most breathtaking monetary interventions in history and, at the same time, the largest fiscal intervention.

And, to your point, it's not over. We're now talking about a trillion dollar infrastructure spend as well. And my guess is that before this is over we will have spent many, many more trillions of dollars than we've currently announced. That would be my guess.

So the question is how do corporations and how do consumers respond? How do markets respond to that?

The truth is we don't really know.

There are a number of different directions that we could go in. I think one of the optimistic scenarios is that all of this intervention really does fill the hole that was left by this massive decline in people's incomes and corporations' revenues. And that somehow, some way, we push through this psychological disruption and this stay-at-home crisis that we have right now and the economy can restore balance reasonably quickly. And we just kind of carry on.

That's probably the most optimistic scenario that we can have here. I think somewhere in there needs to be a pre-scalable treatment for COVID-19 followed by a vaccine.

And I think, in a lot of respects the markets are kind of pricing that to a degree. If you look at where equities are right now, they're not down very far from the highs. They're certainly not down a whole lot from the start of the year.

It might feel like it's been a big disruption. But the equity market is, I think, really trying to look through this crisis.

Some of the other possibilities, though, are that we get ourselves into a spot where we just trudge through this and consumers and corporate CEOs are so reluctant to spend money or make capital investments that we just get stuck in a bit of a depressionary-type bunker mentality by all the major economic actors, here.

And that this existing depression that we're in right now turns into something that's just more chronic. And, while the policy makers feel that their tools are sufficient to get us out, it's just much harder than expected to reverse that type of bunker mentality that people grind themselves into.

That's a much more dangerous scenario. I think that's the type of scenario that could lead society to start looking for all kinds of scapegoats and could lead to just darker scenarios. And we've seen what some of those are historically that happen when you have big economic disruptions. Sometimes you have very large political disruptions. And you have geopolitical disruptions.

Within that, I would say inflation becomes a consideration that we all need to think about. So in an environment where the government throws a lot of money at the economy and people just save it, that's not a particularly inflationary-type setup. And I think it's probably where we are right now, roughly speaking.

But in an environment where you throw a lot of money at the economy and things really start picking up quickly, there are inflationary risks there, for sure.

But the big inflations of the world – stripping out the 1970s – the big inflations in the world are really caused by a major decline in supply combined with some type of monetary mischief by countries.

And that's something that could be pretty interesting. The question is what is the big disruption? It's supply. And I would say that, historically, wars destroy supply, the ability to produce things. And so you combine that with monetary mischief or printing, and you get a lot of inflation.

But, in our case, one of the possibilities is that this de-globalization destroys a lot of capacity, just in that if we make a decision as a society that we want to just essentially trash our international supply chains, that's just a huge productive capacity that we've built up over the last 20 years.

If we make the decision on the back side of this crisis that we need to build a lot more redundancy here in the US, then by definition we have destroyed a lot of capital and productive capacity and we need to rebuild it here.

And so the economy that starts to get its legs back with the decision to have to rebuild productive capacity domestically, that would be a very strong case for a really material inflation. And I think that would catch the market by surprise, because people have just grown so accustomed to thinking there just will be no inflation.

Erik: I couldn't agree with you more. And this is something that I have been musing on for 10 years now is I have no idea what the event was going to be that would eventually overcome this massive wave of deflationary backdrop and get us to inflation.

But I've always said that's where the game changes. Because once you've got secular inflation, all of a sudden the printing press is not the solution to everything, because the consequence of more quantitative easing is exacerbating the inflation that we didn't have in 2008.

Eric, would you agree with me that the toolbox central bankers have to work with in terms of intervention gets taken away or a lot of the tools get taken away if we move to a secular inflation environment?

Erik: They don't get taken away, per se. But they become much more difficult to use. And that scenario becomes a very dangerous and vicious scenario economically. I absolutely agree with that.

And, look, it might even be less complex if those tools actually got taken away. The difficulty will be that the central banks have the tools that they have. They want to maintain economic growth, low unemployment, etc., etc.

And if they discover that we start to see higher levels of inflation and they are trying to support economic growth and lower unemployment, and yet the tools that they're using seem to be increasing inflation, but the removal of their policies or the reversal of their policies would at a minimum create much more unemployment and amplify the problems that they're trying to address, that's where you really get into trouble. Because it's just a terrible choice for these guys to have to make. And that would come against this political backdrop that I think is going to be a really challenging one.

I think, domestically and internationally, we have a number of years ahead where we are going to be having to contemplate really stressed political backdrops like we just have not, none of us have seen in our lifetimes – at least in the developed world and maybe even in some of the emerging markets – the types of disruptions that we're about to have to face.

Anyway, probably moving off of your question too far, but I think that policy makers and central

banks, it's pretty likely over the next few years that they are going to have some of these very difficult choices to make. And they will have the tools to continue to stimulate. But that may amplify inflation. And that's where they get into a really difficult spot.

Erik: Sounds like you're going to need an inflation fund in addition to your long-vol and trend-following funds in order to round up the toolbox for the coming environment.

What else is on the horizon? We've talked about inflation as a major theme of what might change as a result of this crisis. What are the other major implications of either the coronavirus crisis or just the general economic environment that we're looking at right now?

Eric: I think something that people perhaps don't appreciate enough is that the overall environment for the dominance of equity investing has just been incredibly supportive for almost as long as most of us have been in trading and investing.

And it appears to me that that is really drawing to a close, meaning that the tax structure that we have, the capital markets structure, the investment cult mentality behind investing in equities – all of these things have led people to lean heavily on persistent and strong equity returns to meet their investment needs.

And you need to look no further than US state and, in many cases, corporate pension plans that need 7 to 7-1/2% returns forever to avoid becoming insolvent.

Now, these types of firms and funds are going to be looking at an environment where the government bond yield is close to zero. Certainly, the Fed is going to muscle almost the entire curve as close to zero as possible. And then kind of shrink mortgage spreads so that people can re-fi.

But the consequence is they're not going to be able to earn material returns on the bond portfolio. And the question is are equities going to be able to make up for it?

And what I've described over the course of this discussion is, in an environment where everyone was at peak leverage going into this – and the question is are the policies coming out of it going to either (1) just allow for resumption of that same level of leverage or even increase it? Or will they decrease it?

And I think that you can make a very strong argument that the policies that are going to be implemented in the aftermath, on the back side of this crisis, they are going to have the effect of decreasing leverage on the real economy.

So corporate CEOs who have leveraged their balance sheet and levered their economy to very low levels of economic volatility and done everything possible to increase the value of their equities through buybacks, etc., worked their way into very high margins, very high leverage – I think you could make the case that that's not going to be the case going forward. That they are

going to have to build more redundancy into their business models, into their capital structure.

And so they will, by definition, become more resilient but less profitable. I think that that will happen.

I also think that investors simply can't – even if they wanted to take the same levels of risk, they can't do it because their risk models will show a lot more risk. With the government bond yield down close to zero, they don't have anything that they can scale. Trend they can scale to a degree, but not as big as buying tons of bonds. They don't have anything to scale that's going to allow them to take the same level of leverage.

So, in an environment where the corporate sector is running at less leverage and the investor community is operating their portfolios at less leverage, there are going to be big issues that arise with just levels of returns that people need. And it seems highly unlikely that we're going to be able to achieve the types of returns that are required to make the pension system in the US work. And that's going to create a lot of problems.

But I think what it will also do is it will just cap the value of equities. I think we will move to a much lower equity valuation plateau.

And that's not to say that equities can never go up. They'll go up and they'll go down.

But these years of equities just going up all the time, I really think, are over.

And when you look around the world, the US has really been the outlier. I mean, Japan, the NIKKEI is still where it was in the late '80s, if you just look back. And Euro Stoxx are where they were 20 years ago. They haven't moved. They've gone up and down but they haven't moved.

The US has really been the only market that's really moved. There have been a couple of other markets, but in terms of the really big major markets, the US has been a huge outlier. And I strongly suggest that that period is in the process of ending.

Policies will be much more friendly toward labor, much less friendly toward capital. And that will impact the financial markets in a really profound way.

Erik: Well, Eric, I can't thank you enough for a terrific interview this week. Before I let you go, please give us an overview of what you do at One River Asset Management.

Eric: We run five funds. We run a discretionary long-volatility fund. We run dynamic convexity, which is a systematic long-equity volatility strategy. We run a market-neutral volatility RV strategy. And the opportunity set for that is just going to be wonderful going forward. And then we run two systematic trend strategies, one focused on the most liquid 60 global markets across asset classes and one on more esoteric markets. And we work with very large institutional investors all over the world.

And I think our strategies are really well built for the environment that I think is beginning to unfold on the back side of this crisis.

Erik: And of course for regulatory compliance reasons I'm not allowed to ask you about the performance of your funds. But the trade press is doing it for you. So congratulations. You guys are up huge this year and there are very few people who can say that.

We're going to leave it there folks. Patrick Ceresna and I will be back as MacroVoices continues, right here at macrovoices.com.