Adam: **00:54** All right, so welcome, Razvan. Razvan, maybe tell us a little bit about yourself and Aspect Capital and what you do there.

Backgrounder

Razvan: **01:03** Thank you very much. Thanks for having me. Very excited to be on your show. So, I'm based in London, I work for Aspect Capital. I'm a director of investment solutions there. First of all, you know, Aspect is a systematic investment manager. We pretty much trade anything that moves then is sort of a future forward type of derivative strategies, spanning CTA, global macro, short term. And we've been around for a number of, you know, a good amount of time, founded in 1998 from very good pedigree, our founders were founding members of AHL back in the day. So, early pioneers in systematic futures trading. And what I do there as part of the Investment Solutions Group is really be part of the product development research functions at Aspect. I sit on the product design group, and we just provide our clients with quantitative expertise on bringing to our strategies, our products, performance research. And, you know, this is really, where, as a systematic manager, I would say maybe it's more like the voice of the machine, you know, being able to relay what we are thinking in quant land to what it actually means to our clients' portfolios. And so I've been doing that since 2010.

Adam: **02:45** So, what does that mean in practical terms, like day to day? I'm actually really curious about the communications dimension to this because we spend a lot of time trying to think about how to communicate the salient characteristics of our strategies to clients. And so much of it is I mean, clients are bombarded with stuff like we're positioned here or here, here's where our risk budgets are, here's our current expected shortfall daily, weekly, etc. I always wonder, how are the clients using these pieces of information? Right? I mean, it's not as though more information is always more useful, right? So, how do you guys think about that problem and communicating the salient characteristics of what's going on and strategies to clients in a way that is meaningful for them?

Communicating With Clients

Razvan: **03:37** Look, I think you hit the nail on the head there. It's not about volume of information, it's about the right balance, the right nature of information, the right time of it. So, we, we spend a lot of, the majority of our work is pre investment. That's where we set the scene for what clients should expect, what the strategies really are designed to do, what the utilities are, what their challenges are. So, we spend a lot of time explaining what we expect to see from these strategies and also how we try to help our clients place these strategies in their portfolios, because really, gone are the days of, of just allocating to 20 hedge fund strategies. You don't worry too much about what they do and how they work together. So, it's really all about helping our clients achieve that portfolio balance they want.

And so that work is done upfront. And it's it involves anything from bespoke presentations, doing on sites with them, what we used to be able to do, but we still do that

virtually and teasing out what it is that they expect from us, what they understand and then making sure they have their intuition. And then we set up reporting and touchpoints on an ongoing basis that is appropriate to them. And, for some clients, they outsource their data capturing to a third party provider. So, that may mean as simple case as making sure that provider has access to the positions and the risk metrics and whatever is suitable. What we try to do as a team and as a firm is, remain involved in that conversation. So, we have regular update calls with the stakeholders, the people that need to continue to understand the strategy, and then again, there's no magic way to do it, it's about being appropriate.

And so in the teeth of the crisis last year, we were basically in touch with the clients as they wanted it, not just giving presentations, but just drilling into our systems, giving them the information they needed. When things settled down, then we wrote a few pieces, and we had a bit of time to put our thoughts together on paper and make it a more sort of a generic or general explanation as to what's happening to our systems. So, those are the ways we do it. But, I'm sure there are other ways of getting around the problem of making sure people understand what it is that you do.

Adam: **06:38** So, does that involve sometimes real time type information dashboards that you create either custom dashboards for individual clients or more sort of general dashboards that you offer to many clients?

Razvan: **06:52** So it does, we have a whole set of systems that are internal to us. And, you know, it has information right down to how the signals behave, and what data goes into those signals. We utilize parts of that system to show clients that transparency. We don't really allow that information to, so to speak, leave the building. But, in the context of meetings, online calls, access, we can dive into right into the nitty gritty of what's driving a particular effect. And that's very useful.

Rodrigo: **07:34** Razvan, when you when you talk about communicating that particular effect, I think, you know, back in the traditional world, when you're talking about for example, value investing, and you're looking at stocks, you can show a very clear aspect of the particular companies that make them a value investment that's worth putting money into. And the investor can conceptualize it, and you're off to the races. When it comes to quantitative investing, you're showing them something. But, what is it that you are showing them, can show them, and how is it received by your constituent investors?

Razvan: **08:15** We're showing the type of information that hopefully ties up with intuition we've built with them, but it really is the biggest challenge, I would say for systematic investing from a client point of view is this concept that it's a black box, right? They think, well, there's no possible way, you're going to show me 1000 lines, and they're all going to be flashing, some are going some are squiggly, some are zig-zaggy, others come on and off. It could be anything. And the challenge we have is to educate the investor, the client, as to what are the right inputs for strategies? How can you observe that in the real world? So say, simple stuff, momentum, that's the easiest one, because you you're looking at a price chart as a starting point. And you say, is

it going up or is it going down? And then you sort of you tease out the necessary things that say, well, it's not just about the price. There's, other elements to it. And you can drill down to decompose that price action into the necessary constituents. And then you walk them through that process, you build it back up, and you say, right, so that's those are the three main things that matter for this position. And so, it's an educational challenge as much as one of displaying things accurately.

Adam: **09:48** And as you say, momentum is something that many people find very intuitive and easy to reach out and touch. But, as you move into less familiar features or variables and nonlinear types of relationships, obviously, those intuitions get more ephemeral. So, how do you build intuition for strategies that are less intuitive? So, those that maybe use alternative data sources, and/or nonlinear types of relationships? So this is a very real challenge, I think, generally, for the systematic industry. I'm interested in your perspective on it.

Razvan: **10:48** It's important to break things down into their hypotheses. So, you always start every single model, every single idea that we do is rooted in some observable effect. And you have to be able to translate that into words, so, something like, I want to use flow data. What does that mean? So that's an alternative data set, it's basically allowing you to track the collective actions of investors.

So, I'm able to observe what a group of investors is doing by allocating resources, funds from one type of investment vehicle to another, it's called ETFs, or whatever. That idea is quite simple to explain. So, we try to understand what is an aggregate investor doing over a particular timeframe. How you get that then translated from a simple idea into a real time model? That's what we do. But, I don't think it's meant to be that difficult. If it is too difficult to explain, it's really too complex or too fitted, or, quite likely... Well, I wouldn't go as far as spurious but it shouldn't be that difficult to explain the essence of a model.

Rodrigo: **12:22** Clearly being able to work on this type of communication has made Aspect quite successful. I'm curious to here, what do you think it's a very competitive world and we always say internally that that investing is the most competitive landscape on the planet. So, what do you think has made Aspect successful, or, be able to survive as long as it has?

Razvan: **12:48** I think it's, I mean, communication is one thing, but it's ultimately, we're a performance driven firm. We have to perform for our clients and we have to do so in a, I think I've used this word before, but intuitive manner. So, what we've done well over the years has been create resilient strategies that we have explained well, and it's about being able to manage those expectations. For us, we have multiple investment horizons, our client base is predominantly institutional. And the idea is to make sure that whatever it is that we put together as a product, stays style pure within that line of work for as long as it needs to. Once you start to tinker with the nature of the product, that's where I find is the most difficult thing to explain to clients. They might be disappointed, but they shouldn't be surprised by your performance. It's been a long time, over 20 years of track record at Aspect, some really strong performance and some really challenging times. And also some challenging performance at

other times, but it's always been about being upfront, being clear, and having set the right expectations up front. That really helps.

Adam: **14:26** So, last year, was obviously an especially interesting year for everyone, but I think perhaps even more for systematic strategies. How did you find calendar 2020? And can you articulate any sort of lessons learned over the year?

Lessons from 2020

Razvan: **14:53** Absolutely, I think it's going to be one of these years that we're going to study for many, many years to come. I heard some jokes, somebody said that in decades to come, economists will specialize in the first half of 2020, or the second half of 2020. But, really, in terms of how we fared, I mean, I think we've really delivered very strong performance for our clients, we've had a good mix of useful returns or directional strategies. So, let me give you a sense of the type of things that we span. Actually, we've got probably two to 300 different types of models, across the firm that we apply to most liquid financial futures and commodity markets, I could group them into probably directional strategies to one end. And those are sort of spanning short term effects from one to two days, right up to six to nine months.

So, quite a spectrum of from short term, medium term to some would say long term. And then we have another family of models and themes that are more relative value in nature, cross sectional nature. And, as it happens, those also span quite a range of frequencies. But, a lot of them are quite short term in nature. And we have some slow moving relative value effects. And this is cross asset, could be you know commodity for different structures, it doesn't have to be, just stocks and bonds. The first thing that I would say is that speed was the most important discriminant, the most important factor that describes performance over 2020. The faster models definitely had much better chance, everything was accelerated last year. We condensed almost like a business cycle in eight months, we've all seen, we've read the news, we've lived through it, but at the rate of value spectrum or the sort of the cross sectional models, there you definitely have to be fast.

So, I think in a directional sense, you could get away with being a bit slower in fixed income. You have to be quick in risk assets, because that's where the risk shock happened. Whereas in if you're doing things in a relative value way, where you hoping for correlations to hold, or you're hoping for this perceived diversification to hold, that's where speed was of the essence. And so we found things like forward-looking data sets, alternative data sets, anything that was capturing sentiment or flows, things like that were much, much more useful than more slower moving economic fundamental type models. Across the spectrum, I would say, our

directional trend falling models handled Q1 very well. And they got affected by the big, big, big reversal in risk assets. And then we saw, I think the best family of models that I would say is would be flows and then followed by sentiment. And with sentiment, again, we have a mix of quite a lot of old data sets. So, what is sentiment? To us, it's any type of information that signals investor intent. So, it could be outright NLP models that are looking at what people are writing on blogs, and about their views on G10 currencies, it could be looking for long term structure or futures curves, we can actually see what what's coming down the line based on real money being put down on further and further expiries, we might be looking at option surface data to see the disruptions there. Because, when you're looking at where the real money is actually being placed, that's a much more solid source of information than surveys. And surveys are one thing that we've seen what polls do with elections, right, it's it really matters when you put your money down. And so we're trying to harvest these, these bits of information. And if you do that quickly, it helps, you do it slowly, you miss sharp edged effects like we saw.

Rodrigo: **20:08** So, just I want to understand what you're talking about sentiment, you talked about flows, how much of those indicators go into directionality calls and how much is risk management of the portfolio exposure?

Razvan: **20:27** So, almost all of it goes into generating signals. It's more volatility based measures. If we're trying to assess the short term risk of a particular, and risk again, has many different definitions. But, when you're looking at very liquid assets in the short term involves a pretty good measure of telling you what's the chance of getting that price that you want. And for us, we treat that metric as more the risk sizing, the risk scaling, the risk awareness comes through those metrics. Of course, we look at CDS's, we look at other measures of implied risk. When it comes to utilizing sentiment and flow data or any other themes, that's to generate signals on assets that we trade. In some cases, those signals are directional. In other cases, they might be cross sectional, you might care about, you have no directionality view on a particular asset class or, or family of models, but you do care about the relative effect.

Rodrigo: **21:44** We see a lot of models have very particular characteristics that make them thrive in certain environments. Now, you mentioned flows and sentiment as being very good for 2020. What type of periods make them do really poorly in contrast to some of the other strategies? Or is there a theme to it?

Razvan: **22:09** I think it's more that the more established long term, persistent themes are more disrupted. So, these things tend to have more of an edge when you have a lot of conflicting views. So, I wouldn't necessarily say that I expect flow information to always have very strong traction. I wouldn't expect this to be completely wrong, because I think it we're trying to build models that capture aggregate investor behavior, we do believe that there's a lot of inbuilt biases in the way we all collectively behave. And I think that's one of the keys of systematic investing. We're trying to find some of these biases, and try to design something that at least is not biased in a particular respect, because I'm sure we all have our biases, as long as humans build algos, there will be bias. But, there are certain effects that we believe are persistent, but have very long timeframes. And even though I say to you well, 2020 is just one year, it's actually

been all the exciting stuff happened the space of a handful of weeks, in patches last year. So, that's not really enough to discount the validity of other types of models, that's why you need to have lots of them, lots of different types of models to be able to navigate a lot of these unseen environments.

Adam: **23:51** How important is it to be able to have conditional models? So models that identify that you're in a certain type of environment, and therefore that that signal strength is likely to be more salient in this environment than under different conditions, is that something that you spend some time on?

Conditional Models

Razvan: **24:20** Absolutely, it's a very rich vein of research, and it has traction on many investment styles. I don't think it's universally, that everything needs to be conditioned, it depends on the nature of the effect. So, it all boils back down to having a hypothesis about what you're trying to capture. And if the hypothesis says well, I expect certain macro conditions to be favorable to this hypothesis playing out, and others not so much. Then a conditional model is the way to go. So, a simple example here would be carry strategies. Carry's had a fantastically wide usage across the industry. It's a big driving force of a lot of price action. But, Carry is an incredibly left-tailed strategy. It's you make $1, you make $1, you make another dollar, and then you lose 10. So, that Carry's a risk seeking strategy. It's something that people care about, Carry, when they have positive risk appetite. No one cares about interest rate differentials when the world's on fire. So, whilst it's very hard to time when to be short Carry, there's a lot more traction one can get from just knowing when to just not play Carry. So, we know we spend time looking for indicators that give us, can we try to forecast risk aversion? And we can do that many asset classes, can do by country, can do it by asset class, again, with a greater degree of uncertainty. But, if you don't have too many false positives, and you're not constantly switching on and off, and you just incurring transaction costs for no reason, better safe than sorry, and you end up catching one or two of those big events that you avoid. And it pays for itself.

So, that that sort of approach is useful, especially when doing faster strategies. Because with faster strategies, that if you're wrong, you can be wrong frequently, so you can bleed quite quickly. Whereas in the slowest strategies, I think there are other challenges, the challenges are that you, let's go back to trend, we think, well, the worst thing can happen to a slow moving trend model is that the world changes and stays changed for a number of months, and you just positioned the wrong way. But, you can mitigate against that differently. You can just size your position quite quickly, and still be the wrong side of that trade. And then sort of gives you that stability, you might you might find it's a correction, it might be a retracement and the trend resumes, so that you start from a better place, but you don't have to condition out entirely.

Adam: **27:35** Speaking of conditionality, as you say, 2020 provides such a rich tapestry of conditions. And I think it highlights the fact that really major events can sometimes completely dominate a data set and corrupt the way that you interpret conclusions and relationships in the data. How do you guys think about that and maneuver around it?

Conditionality

Razvan: **28:14** That's a very important observation - I think the nature of doing systematic. It's not to say that discretionary managers aren't data driven, of course they are. But, if I was running a discretionary strategy, and I was looking at 2020, those three weeks in March we know what happened. Before looking let's sort of adapt our models. Let's look at what's happening right now, what matters, I wouldn't necessarily keep in my data set, or necessarily be as sensitive to the size of those observations you had in March. What's important to realize is that you have to detangle the risk side of a big price move versus the information it carries to forecast subsequent states of the world and we found this this effect is something that we've already noticed and traded around, when we look at financial assets versus commodity assets, that seems to be an initially, a counter intuitive effect is observed. Namely that when you have very large single day moves in price, generally what happens is if it's a commodity asset, more often than not that initial move in price is actually quite correct.

So, the commodity players seem to get that bit of exogenous information right, whereas the financial guys tend to overdo it. And the true sort of impact of that bit of information only comes out a bit later. And so initially, if you think, that doesn't quite make sense. It's not, it can't be that the financial guys just can't really understand an exogenous move or exogenous shock. I think what it comes down to is the financial system is a lot more complex, a lot more interlinked. So, when a central banker or a policymaker stands up and says they might be doing some change to policy, maybe a significant change to policy at some time in the future, unknown amount, but maybe quite significant. That has big, big, big bearing on many, many assets, which don't quite know how much, when, whereas when a flood or a refinery outage or you have a pest that attacks a crop, it's fairly clear what happens to the supply and demand for that commodity. And so the informational content is cleaner in commodity assets. So, we already sort of treat those big single day moves differently in our data sets, depending on where it comes from. And I think an observation about 2020 is to do the same for observations, there's peak risk moves that we saw in March, April. And the question is, how informative are those globally heightened risk states for future, for sizing your portfolios, sizing your views? So yeah, it's a very, very important thing to address. And it's not something that has an easy answer. We're still looking into it, put it that way.

Adam: **32:20** Well, what's interesting about it are one of the things that's interesting about it is that well, for example, March, all the excitement played out over a horizon that is measured in at most weeks. So, as a fraction of the total data set, it's actually a very small number of observations as a percentage of the total number of observations in the data. So, it wouldn't have such an outsized impact on statistical conclusions using certain types of metrics, but using other types of metrics, it would exhibit a profoundly outsized impact on the target functions. And so I guess, some of this challenge can be ameliorated by shifting or having a wider variety of different objective functions as you're identifying the nature of relationships. Because I mean, I guess as data scientists, you try to avoid introducing degrees of freedom. And if you're, if you are making an explicit decision to de-emphasize or emphasize certain periods, then that

introduces a very important degree of freedom that then needs to be managed and tested for sensitivity, etc. So, to the extent that you can navigate around this challenge systematically, without having to make a large number of other decisions. And I think that's, that's preferable. How do you guys think through that?

Razvan: **34:12** I think that's the crux of the matter. That's what research is about. I think, you know, there is knee jerk reaction and there is research driven evolution to your models, and in almost all cases, having a range of approaches, having a range of ideas that you combine, tends to, as long as they're unfitted. So, I think for us, our biggest focus is on creating strategies and models that might sound crazy at first, but they're not your best shot, best information ratio in sample, right. You're not going to choose things that just look the best, because, what they need to do is they need to be very robust on their parameter choices. They just need to have a decent amount of Sharpe and really just what we focus on is having uncorrelated data sources, uncorrelated approaches, whether it's by timeframes or by directionality, by asset class, because that's really your only way that you can have hope that you will have a handful of these models perform in unseen environments, whilst others naturally falter. I think we're very aware that you know, certain things change.

So, the way the market dynamics play out, access points the way certain venues trade, where liquidity appears. But, certain things are highly, highly static in terms of, and that's our behavior. So, what are we trying to do, we're trying to balance, we're looking for long term effects. Even in the short term space, we're looking for something that's there, and I want to jump a bit to sort of I remembered a link to odd data sets, that's one of the biggest challenges is odd data sets, they're quite new. So, takes a bit of time to be able to get the confidence that there is something there. So, there's no shortage of odd data set providers and salesmen, and there's no shortage of that. But, there's a shortage of falsifiable or having the ability to understand, is there traction in this data set?

So we use alt data, but it's not a huge amount of what we do. It happens to perform well, but we have to keep researching it. And we have to always tie it back to two things. We want relationships, we understand the starting point is, I wonder if we could find a way to, to sort of to get data on this effect. The hypothesis could be the same. So, we've tried to forecast inflation, and we're trying to forecast the relationship between bonds and inflation. That's a very simple, straightforward one, inflation, rising inflation, bad for bonds, right? There's no denying that. But, the question is, where do you look for this inflation? How do you forecast things that could eventually turn out into inflation expectations? And that's the game, but you have to always be grounded. You have to have some view of the world and, and then try to build something that captures that view. And risk manage the failure case, and then you repeat.

Adam: **38:19** So, backing away from the alt data, which you've acknowledged as, by virtue of it being new, we just know less about it. How do you interpret the special challenges that were experienced by traditional sort of alt style premia type funds over the last two or three years? Do you guys have an internal thesis on that? And, if you have one, what does that thesis imply about expectations for these types of strategies going forward, do you think?

Razvan: **38:59** So we've got some thoughts on the on the topic and we run some alt premia strategies ourselves. Incidentally, we've got two versions, one that trades with cash equities in it. So, basically, futures forwards, derivatives and cash equities. And one without, one is just the CTA markets, the one doing the CTA markets, which has a little momentum in it, but still just the futures and forwards, so performed really, really well last year. The one with cash equities in it was a little bit down, but again, significantly ahead of industry benchmarks. And so, we had to look into it, you have to look into it a lot when you underperform and when you outperform because clearly, a benchmark is there as a guidance, either you're not part of the peer group or you've done something really, really well or really lucky or unlucky.

And, I'll tell you what we've done well, and then sort of try and back up where I think the challenges are and what it means. We've done well by not taking the lazy equity beta in that in that program. So, we think it's an observation we made and it stems back to our client base, people have got equity and bond beta for free. It's what they're sitting on, that's what they're trying to diversify away. And so, if you build a program, alt risk premia is maybe 10 years ago, is quantum multi-strat is just basically, the space has evolved so that is a well understood repeatable liquid factors. And one way to make those strategies perform really well over the last 10 years, is to just throw in a bit of equity beta, maybe throw in a bit of a short vol, because that, again, just harvests that premium, it's good negative carry there. For us, that felt like it wasn't diversifying enough. So we were very aware of the types of risks we're taking.

So, that program that we have is not entirely market neutral, nor is it entirely directional. So, it's actually a blend of the two and it is an optimizer that picks at any point in time the balance of whatever the signals are strong, in which asset class. And you know, we do trade volatility effects. But, we go short and long as well. So, we started 2020 being short vol. But, the beautiful thing about doing this multi asset style is that equity markets were the last ones to crash, to realize that something was sinister, was going around. I mean, the way the Chinese clamped down on the economy, oil was in a bear market by the end of January already. So, there are a lot of signals out there that risk was picking up. Being able to identify that and at best, go long vol, at worst, just at least get out of the way, helps. So, we've seen a couple of videos and commentaries from some firms bemoaning the fact that short vol just really expanded eight fold in the space of a month, which never happened before. And so that that to us was a big, big differentiator. Another one was how much you load up on traditional equity value factors. So, I'm not going to spend any airtime on equity value anymore. I think there's better places, and it's a topic that's been well discussed. But, how much of that you put in your portfolio is a big differentiator. And then speed, I mentioned speed at the beginning of this discussion. The slower you go, especially in the most traditional factors, the less likely you are to pick up the fact that there was change twice. A big shock and then actually biggest stimulus known to man. And we're looking through that. So, you could be wrong twice.

And so those things means that the alt risk premia space is going to go through a period of being revisited by all those that have allocated and they're going to reassess what it is that we expected from this group of strategies. We're starting to see this effect with the people we talk to that there is a big drive for allocators to build their own combination of alt risk premias. They will now decide which risk premia they believe in rather than just give me like 200 plus effects that I can't detangle, we're going to decide if we want value one carry one momentum, do we want vol, whatever it is that we want, and then we're going to go source it. So, some of the biggest allocators are still thinking along these lines. But, it being a lot more tailored with how they're going to allocate.

Rodrigo: **45:08** So, Razvan, you--

Adam: **45:08** So, does that mean that they are coming to firms like yours and saying we'd like you to build us a bespoke product that includes exposures to these, or they come to you to consult on, if you were to build a bespoke model that has these characteristics, what would you include? What would it look like? Are you having more of those types of conversations so that there's less, I'm just allocating to a handful of big global alt style premia products and more I'd like to consult with top names in the business on how to create the exact right bespoke alt premia exposures for us.

Bespoke Portfolios

Razvan: **45:59** The answer to that is, it depends on the size of the, and sophistication of the allocator. Many might desire to do that. But, not everyone has got the in house capability to handle that portfolio construction stage or the complexity of it. The biggest allocators, the ones that have the resources and the investment teams in house that are skilled and able to do this are absolutely doing it. The biggest amount of work that I spend my time on, is on bespoke investment solutions, right? That's what this is really, you talk about tailoring what we have with what they need, and deciding what makes most sense. And, you know, we try to stay true to the integrity of the product. So, there's certain things that you can't break up. Some strategies need to be alongside each other that we wouldn't have one without the other.

But, generally speaking, the majority of our large clients allocate to more than one of our strategies, and it's not ranges, across the liquid alt space. The other end of the spectrum where we do have investors that completely understand the inefficiency of one size fits all. But, their challenges are, well, if I've only got a limited amount of capital, and I can't be tailored, I can't talk to the top names, I can't talk, I can't get bespoke solutions of exactly what I want. Then we are looking for things that are very, very complimentary to a lot of traditional asset classes and factors. So, things that you could maybe buy in an ETF form, or you might have things that you already have a legacy holdings in and you like them, you had a good deal, you got in early, you're probably going to stay in that particular manager.

So, that's what you want the broadest alt risk premia program you can have. But, that's what I think is the most challenging market, because that's where people are allocated there

begrudgingly, potentially, that wasn't their first choice. But, it was a compromise choice. And that has been under performance for a number of years. So, for us, it's about focusing on institutional clients that understand what they need, and working with them to create the solutions.

Rodrigo: **48:43** So, Razvan, how much of that--

Adam: **48:43** So, what trends are you seeing? Oh, sorry, Rodrigo, go ahead.

Rodrigo: **48:49** Yeah. So, let me just ask questions about size here, because how much of that underperformance that we see in the alt premia space, not just in 2020 but 2019, 2018, do you think has come from overexposure to value, improper construction of the portfolio? And how much is it because there's too much money chasing those particular strategies? I mean, the space has grown quite significantly over the last three years.

Razvan: **49:18** I don't think it's the size issue, not on these strategies. Maybe there are a couple of fringe, so called inverted commas factors that maybe shouldn't be there. But, the bulk of these factors should be able to handle trillions of dollars, right. If you tell me there's momentum, value, carry, the concept that buying something cheap, holding it for a decent amount of time and then letting it go later, or that behavioral driven momentum doesn't hold in size. So, those are things that should not be really affected by size. But, then it depends. If you start going to single name equities, and you start being too big a pot of particular cash equity, then maybe you could start to see capacity problems there. We like to stick to generally to the most liquid futures to capture the macro effect.

But, I think it's just got to do with speed and I mean, value's got an existential question mark over it. But, it's also it's a low Sharpe strategy. We're not a value house, we have hardly any value, but I still don't feel value is broken. Right. It's, it's resting, it's very tired. But it's not broken. It's evidence of a low Sharpe strategy that has a long holding period. And we'll see, I mean, there's this current level of disconnect in equity markets have been the ones that have behaved the most oddly in this crisis, our of all asset classes, they've got the biggest strangeness about them. And so it's unsurprising that value, which requires some sensibility to prevail…

Rodrigo: **51:20** Fundamental anchor.

Razvan: **51:23** And then that's been removed for some time, and will be gone forever, it's quite hard to make that call.

Rodrigo: **51:31** So, just sticking to that, the capacity part of things you talk about speed being an important component here. Of course, the faster you go, the more money you have to turnover. And I imagine that there are some capacity issues with faster moving strategies. How do you guys deal with that given that you're, you're facing institutions, for the most part? I imagine large ones at that.

Speed and Capacity

Razvan: **51:56** Yeah, you're right. I mean, you can't do very quick momentum or very quick value in size. I think that that's what needs to be understood by many that there are lots of examples of strategies that have incredible Sharpe ratios. But, you can only run like $20 million in it and it's done. So, we need to be very, very careful. So, capacity utilization is very, very important. We've got experience in that space, we've been a large CTA for a long period of time. And you can see it, you can pick it up, when you're starting to be too big for that particular venue. A lot of our strategies are designed to really strict constraints on how much open interest, how much volume they can consume when they have peak positions.

So, you're trying to make sure that you can do your worst, your fastest, most important trade without being too big a part of the market. And that sort of sets the capacity and therefore, that limits a little bit the size of solution or the type of solution one can offer to a huge investor versus a medium sized investor. And that's why I think, for the largest allocators, the prospect of what's coming next, the next 5-10 years, where you might have low growth, maybe a bit of inflation, dare I say stagflation, is a nonzero probability. When you've got that pool of assets, and you're not getting any return from your bonds, or from your equities that you need, how do you diversify? So, I think that is, for us as a firm, is one of the things that we are focusing on coming up with ideas, solutions for that eventuality. However, knowing that, it might not happen, so we need to come up with things that can survive, then inflation not coming back. As much as everybody thinks, well, not everybody thinks but there's a big body of, of economists of commentators that say, look short term deflationary medium to long term inflation has got to come back somehow. And if it does, it could be quite damaging to the bigger players. Because if you're a small allocator, if you're a small investor, you can be nimble, you can turn your book around, you can capture those things, but not for the big allocators. And that's something that we sort of, we're staying quite hot on.

Long Term Drift

Adam: **54:59** So, I'd love to stay with that thread actually, the idea of what to do with equity and bond markets, and perhaps bonds are the place to focus because it's just such an obvious challenge. Where all of the higher frequency, high granularity data that we have for bond markets has manifested during one essentially one single major long term bond regime, this disinflationary growth environment that we've had since the early 80s. So, how do you engineer strategies on assets that have such persistent long term drift? And where the where the underlying assets on their own, have such an astonishingly large Sharpe ratio just as a buy and hold. You can't say the same thing about most equity markets, but certainly in bonds that I think is the one of the most interesting challenges for systematic managers who are looking ahead to the potential for inflation to shift the underlying mechanics and dynamics of those markets. How are you guys thinking about that?

Razvan: **56:27** It's a fantastic challenge. It's something that we've been grappling with for a good number of years. Actually, this brings it back to the idea of bias, right, there is bias in this data. We have, since futures have been around, like I said, since the 80s. It's been generally a persistent lowering of yields. And when you're doing systematic futures investing, trend following, global macro type things, the term structure affects that the shape of the yield curve is such a persistent force.

So, even if spot rates don't move, which they haven't moved for by and large, very much since the GFC. They've been low and stable, generally rates, yet a huge amount of carry. That presents a bit of an, it can fake out your models, right? Because if you're using only that data, then you end up believing that, well, actually bonds are your natural crisis hedge. Right? … bonds will be there to help you and they have done that recently. But, it's correlation between stocks and bonds that's been negative and so useful. It's not a fundamental law of the universe that has to be held. In fact, with a little bit of inflation coming back, you're probably looking at positive correlation in stocks and bonds. And so what we're trying to do is after the GFC, we had that first collapse in yields that are really aggressive, and it was across the board. The market participants were wondering, what happens when yields get to zero? What's going to happen? Is it a boundary, sort of boundary? Can they go through zero? And we laugh at that now, but you know, 2011 2012, it was just really a handful of excursions below zero. And if we think of futures prices, they sort of price inverse to yield. So, you sort of you... The question is, once yields get close to zero, what's the upside left in that future?

So it doesn't make sense to hold a long position in a future's market that's approaching zero. We did some studies then and, you know, how do you systematically handle these things? Right, you've not seen this before? What's the way around? One of the results that came out is that the level of the yield has absolutely no bearing on how trendy a market is. What really matters is how volatile that yield is. In other words, are participants expressing an opinion? Are they using it to trade? Are they using it? And that that creates that volatility. If that volatility dies away, that means that the market has walked away, and it's just sitting on whatever the bound is set by the Central Bank, and in some countries that bound is 2% in other countries now we've seen is significantly negative. So, we've already adapted our systems to be able to look at measures that show us that that market is still being actively traded, and worrying less about the yields. Now, on a forward looking basis the other thing that we need to worry about is your first point, Adam, about don't bake into your systems the fact that bonds will be there to rescue you. So, we don't rely on those correlations to hold. So, our models are not predicated on a certain level of correlation between stocks and bonds, or commodities and bonds, allows us to be quite free moving and therefore reactive. And then secondly, I mentioned that term structure and spot information can be quite different for fixed income instruments, you can have long periods of the spot markets doing nothing and yet the futures contract is actually trending because the carry effect is so big. So, we actually separate those effects out in our systems. And we treat them differently. So, therefore, we're able to react to changes in term structure and carry in the shape of the yield curve, as well as in the general drift of that entire yield curve. So, that allows us to actually go significantly short, fixed income, as in when that event occurs.

And, of course, in a back test, the more you strip out these biases, the worse your sim looks. And so what you have to do is you have to decide, what is the simulation for? Is it for me to show you how great I could have been in the bond massacre of 1994 if I knew everything I know now, or how do I handle a future change in fixed income? And that's what we are building things for, to work in the future. And so we are trying to strip out as much of these effects as possible, while still being aware that you know, these markets are being traded by others, so there is a this flow of information or cross asset information is useful. So, you can actually infer sentiment from other investors. But, your more directional models should be pretty unbiased.

Aspect, and the Future

Adam: **01:02:56** So, what's on the radar for Aspect over the next year or two? What do you see as the core areas of focus where the real potential opportunity lies, do you think?

Razvan: **01:03:17** So, if you've got a big pool of assets you've seen on equities and bonds, we've had a golden period for these asset classes. We've had, you know, a push for alternatives and evidence is that the liquid alternatives have somewhat underwhelmed over the last 10 years. Actually, a lot of the industry has been aware of not baking in betas, and trying to diversify away from this one ridiculous trend. And then there's been the private equity markets that the private markets, so these big allocators are sitting on as much illiquidity as they can, whatever their mandate allows them. They've got that and they continue to say okay, what do we do? Because we can't turn the ship around quickly. We can't. If this inflation does come back, a lot of these institutions are heavily underfunded.

So, they're chasing quite high required rates of return. They need liquid diversifying solutions and we are working with them. We're working, coming up with strategies that we can deploy that are resilient, so in other words, they will stay liquid. They will be able to protect your capital. And they will deliver certain properties for that investor. So, we are building out capability with the firm, we are increasing our technology platform to be able to handle more and more customization and to make things bespoke. It's work on all data sets, risk management, trading, it's the same thing we've been doing for the last, you know, 20 years. You keep doing the same thing, but we are trying to stay in the conversation with the big allocators. Because what we've noted is a big change between how many line items are currently held in an institutional portfolio. So, gone are the days of having as many hedge funds you possibly can, what we are seeing is there's a big drive to consolidate, and to do more with a handful of managers.

And so that's when you have to sort of really be relevant to them and do a lot of work that's not necessarily going to lead to allocation. You need to be out there doing thought leadership papers and just help them make sense of what's possible. Because you know, there's this thing about, we would like the following strategy. And then you have to then take it back to reality and say, right, well, what is actually possible with these constraints? That's what we will continue to do.

Rodrigo: **01:06:39** So, Razvan, you're pushing the envelope on all these things. I know that you talked about alternative data. We're in the quant world, the big word is machine learning. I know we've always, certainly we have always used tools that are just statistical tools that are called machine learning, there are the tools that are legitimate, you know, machine learning tools, as one would see them in the public eye. How are you guys managing that word in those possible future discoveries that that arm of science can give you?

Razvan: **01:07:20** So, again, that's an area that has been, it's become fashionable to talk about of late. As you rightly said, machine learning is a set of statistical techniques that you put together to explain a lot of generally, nonlinear effects are things that we use, utilize these techniques at the firm. But, the one big thing that we want to be able to maintain is interpretability of those results. You can learn things through machine learning techniques, you can learn about how certain assets predict other assets, but we need to start with, again, ideas that we have sort of data sets that you know, you've really extracted information from those data sets that you know, they have value, it's more than just the fit.

And then you can utilize machine learning to quite quickly give you insights that are maybe some hidden relationships, nonlinear relationships, and then we can decide, okay, well, how can you actually safely harvest that information? So, we do have sort of active machine learning models that are, that we trade them, in some of our strategies. We utilize them to, to set sort of like risk budgets or things like that, to study features about markets. And it will be an area that's here to stay, right. It's a technique to us. To us it's not, you either do machine learning, and nothing else. It is one of the many, many tools that we have at our disposal to capture repeatable effects, you know, for us, the scientific method is what we try to do is a test, the empirical evidence needs to bear fruit, needs to be falsifiable. And then if things fail, to be able to be removed from our systems, and you only know when things fail, if you understand what drives them. So, that to us is a, it's an exciting area, because there's a lot of interest in it. So, there's a lot of talent out there who - some new techniques. We've got more computational power than we've ever had before. So, you can do a lot of experiments. But, the thing that actually hits client portfolios needs to be very, very robust. And so we are making progress there, but I wouldn't say that we, you know, even 50% or even 30% machine learning driven.

Rodrigo: **01:10:12** You haven't done the big plunge. Got it, that's interesting.

Razvan: **01:10**:15 No, not yet.

Adam: **01:10:18** Great, well, I think this has been incredibly informative. Did we miss any themes that you wanted to cover, Razvan? Or do you think we hit on most of the important notes?

Razvan: **01:10:30** We've covered a lot of ground. And I think lessons from last year, a little bit of what's on the horizon from our point of view, it's as much as I'm comfortable to forecast I really, really shudder when I have to make predictions about what we think is going to happen next. So, I think I've done enough fortune telling to not to be held to account.

Rodrigo: **01:11:01** Excellent.

Adam: **01:11:03** I agree.

Rodrigo: **01:11:05** Razvan, thanks for joining us.

Adam: **01:11:06** Well, thanks so much for your time and sharing.

Rodrigo: **01:11:08** And your insights, we met a couple months ago and I found we were part of a panel, I found you the most insightful and I'm glad that we were able to get you on the podcast because you have not disappointed. Hopefully we can have you on again sometime soon.

Razvan: **01:11:23** Definitely. Absolutely. Well, thank you very much. It's been a pleasure and I look forward to speaking again soon.