ReSolve ASSET MANAGEMENT

Adam:	**00:00:00**	I like that actually Rodrigo looks like you and I have the same shirt on is that now you've got fancy buttons and stuff.
Richard:	**00:00:07**	Uniform.
Rodrigo:	**00:00:07**	I got fancy buttons there's no chance you got this amount of style, Zero.
Adam:	**00:00:11**	No, it's true. It’s true. Yeah. You are right.
Richard:	**00:00:14**	Should we go through the disclaimer guys before?
Adam:	**00:00:16**	Definitely.
Rodrigo:	**00:00:17**	No let's talk about a drink so disclaimer, drinks first.
Richard:	**00:00:19**	Alright.
Rodrigo:	**00:00:20**	Everybody have today?
Adam:	**00:00:22**	I don't have anything fancy.
Rodrigo:	**00:00:25**	I feel like Mike doesn’t have a drink.
Adam:	**00:00:27**	Oh. You got a fancy...
Rodrigo:	**00:00:27**	What is that?
Mike:	**00:00:31**	Armagnac baby.
Rodrigo:	**00:00:31**	Japanese? Oh, the Armagnac nice.
Mike:	**00:00:34**	Corona
Rodrigo:	**00:00:35**	I got a Peruvian Pisco.
Mike:	**00:00:37**	OH... Very nice.
Rodrigo:	**00:00:40**	Peruvian Pisco sour style.
Mike:	**00:00:42**	I like that lot.
Rodrigo:	**00:00:44**	With some fancy straw.
Mike:	**00:00:46**	That's the thing that I like. I feel like my creativity on the happy hour drinks has gone a little sideways lately. And I've gotta up my game. I gotta get back to the whiskey sour.
Adam:	**00:00:58**	How dare you focus on the content and not the drinks?
Rodrigo:	**00:01:01**	What do you got to run a business or something?
Adam:	**00:01:03**	Exactly.
Mike:	**00:01:03**	I know right? The other thing I got to remember is that for you and I, Richard, I think our shirts when you have like a pattern shirt; it kind of comes across as a bit.
Richard:	**00:01:14**	It is right? I can tell now. It is like a visual effect.
Mike:	**00:01:18**	Yeah, we have to remember not to wear these very high class high ends, pinstripes on the show. So yeah, we've covered the drinks. I'm having a 10 year Armagnac. You having a Pisco Sour Rod?
Rodrigo:	**00:01:33**	That's right. Finally opening a couple of bottles.
Mike:	**00:01:36**	And just a couple of beers over there? You guys there have a couple of beers? Nice...
Adam:	**00:01:39**	Yes, it's a couple of Mexican Beers.
Mike:	**00:01:41**	Excellent. Well, as usual, I guess we can jump into the fact that the discussions here will be wide ranging and go in different directions and that you should not rely on or consider any of this investment advice. If you're going to do anything these wild and crazy markets of today, you definitely should garner some advice from a legal professional or not legal professional, a financial professional in your area.
Adam:	**00:02:07**	Legal professional and a financial professional
Mike:	**00:02:07**	Yeah, probably all the professionals just get advice from all the professionals, if you can, let's go through the professionals, shall we? No let's talk.
Adam:	**00:02:17**	We can even engage in public markets without protection at the moment, you should engage with the psychiatrist.
Mike:	**00:02:23**	Yes exactly. So I think there's quite a bit to talk about today - the post factor world video went live. I also think that there are probably a few tidbits to pull out of the discussion that you had

with Marat too Adam, I found that pretty fascinating. And some things to dig in there that, you know, a little bit related, I thought there was some interesting things about the participants in markets changing the character of markets that Marat pointed out, and how that has implications for other things that we might talk about today. So I think it's a pretty, interesting day. What do you guys want to start?

Rodrigo: **00:03:05** I kind of feel like Adam should.

It's a Post Factor World

Adam: **00:03:08** Well, I think you actually did a good job of setting up the theme. Right? So I think the theme for today is the crystallization of an idea that has been forming for a while, I think, in all of our brains. And I think probably at different times, maybe, Mike, you may have sort of gotten an intuition on this a little bit earlier than some of us but the recognition that as investment concepts are published, which amount to basically new technologies in the domain of investments, they have a similar adoption curve, where there's the real innovators that identify the anomaly in the first place. And then there's a class of early adopters that tend to be a little bit more adventurous and risk taking, at least like in the context of the risk of complexity and novelty. And then, you know, things are published, it gains traction with an academic group, it gets published in a peer reviewed journal, and all of a sudden, it enters the Overton window and it gets broad adoption. And I think there has, this is general belief in the factor or smart beta world, that the fact that people know and recognize and adopt strategies to harvest excess return from a new investment concept does fundamentally change the nature of that new idea, and that we all sort of operate on that basis. We examine the empirical work, the publications, maybe we run some of our own back tests, that to validate the original published research and say, okay, this particular set of characteristics has traditionally led to or produced excess returns. And then we expect that historical profile to carry on in the future and what investment technologies have is a reflexive nature that most other technologies or concepts don't have that fundamentally changes the nature or the state of the market after something is published, right? And so this recognition that publication itself changes the nature of market participants, and therefore should reset how we think about expectations for that concept going forward.

Rodrigo: **00:05:49** Yeah, so I just actually have it up on the screen here the idea of this trajectory of new investment concepts. So basically, the idea is that there may be an anomaly in the beginning that nobody's really talking about. You have this pre-publication premium, and you hover around this space here for a while, then somebody decides to, an academic decides to publish their findings, it gets widely adopted, you get a bunch of money into it, you get a late majority, you get so much money into it, it may lead to an abandonment phase, at which point everybody leaves, but enough players stay because it's painful to still be in it. There's probably going to be an equilibrium, premium invested there. But there will be an abandonment phase, it'll be when enough AUM leaves it, people ignore it. And but not enough so that it goes back up to the pre-publication premium.

Adam: **00:06:46** Exactly right? So there's this, the top line there is, I guess, the threshold T stat that is required for a reputable journal to publish research, right? So you've got many people doing research on risk premia, or anomalies. And in order for that research, typically to be published, that anomaly needs to exceed a certain level of statistical and economic significance. And so, it's got very high economic and statistical significance representing the height of that horizontal line above zero, right? And the idea is that it was very high before the anomaly was brought public and gained recognition from credible academics and was published in credible journals. And before everybody bought into the economic intuition behind the premium, but by virtue of so many people buying into the premium, that premium eventually goes away, or even inverts. And I think it’s worthwhile going back to why some of these premia exist, right? And certainly, back in the days of Fama/French, and largely still today, a wide variety of investors and academics still prefer the explanation that most of these premia that exist, exist because of, they represent a certain type of risk. And because they represent risk, they can't be arbitraged away, because it's just, you know, an investor is taking more risk and therefore getting more return. Right? But I think what a lot of the literature has shown, and there's been some really great papers published over the last five years or so that goes back and evaluates the returns to premia out of sample and post publication, and have sort of validated this understanding of why premium exists. Typically, I think it’s well: I can certainly adopt the view based on the literature that most of these premia exist because of behavioral preferences. So you've got a cohort of investors that for some reason or another doesn't want to own securities with certain characteristics. I mean, an easy example of this is sort of sin stocks, right? So you've got a class of investors that don't want to own sin stocks. Therefore, sin stocks are priced at a discount. And investors that are willing to own sin stocks will go in and earn an excess return from owning securities that another class of investors doesn't want to own. But what isn't often recognized is that by virtue of a large number of investors crowding into securities with those characteristics. I mean, imagine there was originally a billion dollars’ worth of capital that was avoiding securities with these characteristics. As soon as a billion dollars of capital comes into securities with those characteristics to arbitrage that discount or anomaly, now, you've got an equal amount of dollars that don't want to own those securities and an equal amount of dollars that want to overemphasize those securities. So we would expect that anomaly to go away, right? That those two pools of capital have neutralized one another. But what happens when more money flows into securities with those characteristics, than there were originally investors that wanted to avoid firms with those characteristics. Well, at that point, we'd expect that premium to actually invert. So what was previously, securities with certain characteristics were expected to deliver a premium, an excess return, now those securities would be expected to deliver a discount. In other words, to deliver negative excess returns for whatever period exists, until enough people abandon that strategy, move away from it, and that market or that discount can be an new equilibrium, where you've got the most disciplined investors who can tolerate a certain lower level of premium that are just going to stick with it no matter what, they're the diehards, and they will earn some lower premium, than, you know, but substantially lower probably than the original pre- publication premium. And the literature that that I've seen, that has been published for the last four or five years, suggests that that discount is somewhere in the neighborhood of 50% to 60%, relative to the premium that was originally published.

Rodrigo: **00:11:36** And I suppose like, if we assume that those multiple premiums are a real thing, then the benefit of holding on to it even though it has a lower risk premium than pre-publication is that the supposedly they're non correlated to each other. So there's value there. And I think what we've posited is, we would assume that the go forward, post equilibrium premium will be more similar to the...

Richard: **00:12:06** Equity risk premium or new credit risk premium. Yeah.

Adam: **00:12:09** Yeah.

Rodrigo: **00:12:10** Because in the back test, a lot of these end up being high, very, very high Sharpe’s. Right? And we're looking at now, .3s to .4s if that.

Adam: **00:12:21** Yeah.

Richard: **00:12:21** I think, that's the idea of reflexivity. Right? Which is what we're talking about. I think, this has been around for some time. And it counters the efficient market hypothesis, I think, quite eloquently. And people have different levels of intuition as to why, as to which one of those is actually true. But I think it might be helpful to us, for us to go down a couple of concrete examples. And maybe I guess the most pointed one would be value, because of how long the winter has been for the value factor.

The Demise of Value

Adam:	**00:12:54**	Yeah, I mean, it has been just a terrifically terrible winter for value. And I wish I had a chart up that I posted earlier, I could probably grab it out of Slack. But I mean, if you examine, for example, the returns to the S&P, I think it's the S&P Core Small Value Index, which actually has a bit of a quality tilt to it.
Rodrigo:	**00:13:21**	Is this?
Adam:	**00:13:23**	Yeah, you can probably pull it out.
Rodrigo:	**00:13:24**	Equity on the indices, is this the one? The figure six?
Adam:	**00:13:28**	No, no, it’s a stock chart’s chart that I dropped in one of the channels.
Rodrigo:	**00:13:33**	Oh yeah, I'll find it.
Adam:	**00:13:34**	But anyways yeah. If you look at just the performance, the cumulative performance of owning this Small Cap Value Index Fund, relative to the market, just an S&P 500 index fund, since 2018, I mean, it's been almost a straight line down, you know, we're talking like an over negative one Sharpe ratio. So this unbelievably persistent and painful, negative trend, right? And yeah, for some reason, it's not showing very well, but sort of flashing, but yeah, there it is, right? So the S&P Small Cap 600 Value versus the S&P 500 ETF, right? You’ve got a cumulative discount of 35% over the last almost three years. And so it's I mean, the owners of value obviously, would look at this and say, well, you know, this happens every now and then it did, it happened in 2000. More, you know, sort of 1997, 1998, 2000 during the final run up of the tech bubble, obviously, if any effort to prioritize cheap stocks was just excruciatingly punished during those three years, and we're seeing a similar sort of dynamic play out here. And I will say after the 2000 crash, there was a short period when value really had a great run. And, but the fact is, I mean, if you look at value as a factor using many of the common value metrics, over even the last sort of 30 years, you really haven't observed any meaningful premium, especially if you compare to it's sort of anti-cousin growth. If you compare value against growth, they both basically delivered the same returns. And according to the economic explanation for the value premium, there's no reason why that should be, right? So, you know, if, keep in mind, the value, original value work was published by Fama and French, I'm sure there's other value stuff that was published prior to that was seminal to Fama and French, but the most cited work was published in the very early 1990s. And if you look at the returns to value versus growth, since that publication, they've been basically the same, but prior to that publication, the returns to value were massively larger than growth, right?
Rodrigo:	**00:16:13**	Right.
Adam:	**00:16:13**	So just an example of how publication changes the state of the environment in which we all operate, right?, we all operate in this substrate, which is markets and we're all trading against each other and the price of every stock and every commodity is priced at the margin. So the marginal demand by buyers and sellers, and what we observe is that post-publication, there are smart, motivated arbitragers that are identifying this opportunity, and there are flows, driving into the opportunity to arbitrage it. And in many cases, once those flows go above a certain threshold, then it completely arbitrages it away.
Rodrigo:	**00:16:53**	Which I think, you know, this is one of the when people talk about applying the scientific method to finance, there's one key factor that they're missing is that when you're trying to identify, you know, like pressure in an oil field, and you understand the geological dynamics, and you will probably grab that data, and then you apply it in order to, you know, exploit it or be able to pull

something out of the ground. By watching it, you're not changing the dynamics, right, like geology hasn't changed, physics don't change. But the pure observation of markets by being a participant in it, this reflexivity that Richard is talked about, makes it such that if enough people are applying those new things, you are going to get a degradation of returns, if not an inversion of those returns, right?

Richard: **00:17:41** You might call that the hard problem of investing, right? The idea of acting upon it and changing the very dynamic of the system that you're trying to engage with.

Rodrigo: **00:17:51** Why everybody tries to keep their alpha quiet, right? The moment you say anything, it's gone in a heartbeat.

Mike: **00:17:57** But yeah, you have to think about where you are in the adoption cycle. And think about, as a manager, potentially, you need to think about where you are in the adoption cycle and AUM fees versus performance fees and the sustainability of AUM in the face of performance. And so if you're very early in the adoption cycle, and you can just do, not simple rules, not the rules of tic tac toe, but sort of complicated, I'll call them, it's a complicated problem, you know, meaning it's, you know, it's a bake a cake. Here's the recipe to bake a cake. Here's the recipe for the value factor, we're going to screen by these three things, we're going to do that quarterly, we're going to rebalance, and that should harvest the value factor. What that does not encompass is the fact that there's reflexivity in the marketplace, and that the marketplace changes. And the nature of the problem is complex. It's the nature of raising a child. That's a complicated, that's a complex problem. Each child is different. Each parent is different, each time in their life is different. Its complex, it has feedback loops. It's not just a complicated problem. And so if you're early and you have market dominance, you can profit quite handsomely by marketing, some easily understood cake recipes for these types of factors. But at some point, that's going to have some difficulty, I mean, DFA price to book, we've seen various specificity in the value factor failed first, then it became more pervasive across any value factor that you tried to manifest. And, you know, potentially the better job you were doing the worse it got. And so that's a really, you know, these, the markets are not a complicated issue. They're a complex issue. And that's, I think it's a nuanced point, but it's a very important point as people think about this over a very long period of time, and how are they going to adjust? How are you going to adjust your behavior in order to reconcile that new piece of information? Is it just that you're going to do market cap? Well, that has its problems. I mean, you know, the S&P took a long time to recover to the year 2000 highs.

Adam: **00:20:20** Eleven Years.

Mike: **00:20:21** Yeah, and those small cap stocks that were suffering mightily during the 2000 bull market, they were having their bear market, much like today, we're having a full blown bear market in the midst of a full blown bull market, in another sector of stocks. It just goes on. Rod, I can't hear you, I'm sorry.

Rodrigo: **00:20:42** So this is where it gets really tough to disaggregate one of these two concepts, right? The one concept that I think every value investor has really come to terms with is that is the idea of no pain, no gain no premium, right? You have to be willing to take a massive amount of pain to be able to extract this value premium. And so when you present an individual that has looked at all the evidence using scientific methods, and high P value back tests, and so on, they'll look at that and say, well, there's been other periods that have been this painful, and therefore that's okay, that's where I'm gonna get my premium. But where does that end? And where does overgrazing begin? When is it that you've actually impacted the market so much that your belief that this is just suppressed returns because that's the way the factor works? Or is it, there's just

		too much money in this right now? I mean, out of all the factors, and of all the factors, we've lived through this, right?
Adam:	**00:21:40**	Yep.
Rodrigo:	**00:21:41**	The most intuitive is value. And we actually talked about this in our podcast with Wes and Toby, right? People like the idea of like, why do they like value? They like value because it's buying companies...
Richard:	**00:21:52**	Buy cheap, it's cheap.
Rodrigo:	**00:21:53**	You are buying companies, it's a good business, you know buy it cheap. So is it any surprise that the premium that's one of the premiums that has gotten hardest hit? How much of it was an actually premium? How much of it was overgrazing? And it's probably a little bit of both, right? But it's tough to extract yourself from that reality. But the truth is that everybody wants to be Warren Buffett in one way or another. And that's the first thing they're gonna sign up for.
Richard:	**00:22:19**	Yeah, I think you're raising a really good point, which is the fact that value has suffered perhaps the most out of all of the well-established factors makes sense, given how it is the most intuitive one for most people to get behind, the idea of buying something that's cheap, and has intrinsic value to it. So it was probably the first one to become overgrazed. And it's still being sort of inverted and abandoned as it has gone through abandonment for the longest of times, because it was so mass adopted early on. So that's a really good point.
Adam:	**00:22:54**	Yeah, you know, what, actually, can I share my screen because Claude …I published a paper a few years ago that has since been taken down from SSRN. I remember he, had threw a little bit of a temper tantrum about something and pulled it off, pulled it off, I think, but how do I share it? Here we go. Where is it? Here it is. Yeah, so this is a key slide from that presentation. So he just pulled from the Fama/French database. And he looked at the rolling annualized 10 year return to the traditional long short factor strategies value, the equity risk premium trend, sorry, big up being large momentum, size and large value and what he showed was that momentum started very strong with it, annualized return in the very beginning about 12.5%, a year and has subsequently had at least by 2011, declined to over the previous 10 years to 2011, an annualized premium of about 7.5%. All of these are pre trading costs and pre borrowing costs and all the other problems that we're not going to dwell on today with traditional back testing methods. But let's just call it sort of a 12.5 to 7.5. So the premium sort of declined by about 5%. Over time, the blue line is the equity risk premium, which has also declined over time, and which we can talk about some reasons why that might be the case. And then large value is the yellow line, where started off with about a 6% annualized premium. And by the end of this, so this is 2011. So we're nine years later, we haven't really seen value wake up much at all. And by 2011, it had already sort of demonstrated an almost zero premium. And there's been lots of published research in the last little while about the fact that the size premium, as originally published, actually, there were some flaws in the publication or the methodology actually in the data. So it was pretty overstated in the original publication. And then subsequent studies have sort of shown that there actually wasn't never really a size premium. And then if you control for a bunch of other factors, then you might be able to surface the size premium etc. But you know, just a really good example of just markets becoming more efficient in general and investors catching on to a variety of these premia. And the effects that that had on the size of those premia over time.
Mike:	**00:25:24**	Oh, yeah, think about the discussion that you had with Marat to about institutional players coming into commodity markets. And allocators changing the structure of commodity markets, the different structures of the market in China A shares versus H shares, right? So the more institutionalized a market gets, it actually changes the structure, it changes the types of risk

premia that might be afforded. And maybe you can dig into that I'm going by memory, I think you probably had a deeper discussion I think.

Adam: **00:26:01** No, it's .. yeah; it's a really good example. And so in the early 2000s, there was a trend towards institutions allocating to commodity indices, and the biggest one was a GSCI, the Goldman Sachs Commodity Index, and Marat and his co-author, by the last name He, I believe. They studied what impact this financialization of commodities had from the early 2000s until the peak of financialization and the peak of the commodity markets in '07 or '08. I haven't read the paper. So I'm just going by what summarizing what Marat said. So I may be making some assumptions about the dates and stuff, but generally, I'm directionally correct, I think, but what happened was because the commodity indices systematically invested at the very front of curves, they bought the front contract. And then they consistently sort of rolled those contracts forward as you need to do with futures markets. Then they pushed the front month up relative to the back month, and it created this backwardation, which then created a term premium in commodity markets. So you could, it here you have a situation where in the beginning, at least the very active people investing in commodities, change the structure of commodities to make it profitable for a while, where previously it had not been profitable. And it's a, that was a really cool example.

Reflexivity

Mike: **00:27:24** So that was a really great example of reflexivity in that, so you had commodity producers and users engaging in hedging their business needs, then you had a new entrant to the market, which is a financial investor, who then started buying those types of things in front of the producer-consumer relationship. They weren't particularly focused on being one month out or just kind of adjusting, maybe I'll take three months if it saves me, I don't really, my production is going to be solid in that realm. So we start to move out the curve, which then changes the structure of the curve and then allows for a slightly different risk premia or a risk premia at all to manifest and then a different one. And then I mean, obviously, we've seen all kinds of chaos in negative oil and delivery issues and some anomalies to be true, but it's a very interesting, sort of anecdotal. If it's anecdotal. But an example of how.

Adam: **00:28:25** And then look at a second level on that, of course, was that then Deutsche Bank came about five or six years later, recognizing this phenomenon, then they deployed a smart carry version of a commodity index, right? Which allocated to various months to optimize the positive carry on the index arbing the GSCI investors.

Mike: **00:28:48** Right, which is this example of the market coming up with complicated solutions to address each issue. But each one of those complicated answers where there's a recipe to solve that last issue, has a very short shelf life.

Adam: **00:29:05** Exactly.

Mike: **00:29:06** Rather than thinking about this from the standpoint of, the idea is that you have to change as the market structures change. Go ahead, Rodrigo.

Rodrigo: **00:29:15** Yeah, no, I just I agree with that. I think the tough part here is that it's become, the whole investment process has gone from discretionary cowboys that have you know, their wetware their not want to give out. creates the signals that invest in buying then you have the institutional managers saying, well, this guy's got a good five year track record, and he seems really smart. So I'm gonna invest with them, to this like, well, that wetware didn't work out. I didn't never actually understood this process. I want more clarity, I want more transparency. You start looking at the academic work, and you see, well I can get behind that because I'm an intelligent academic myself. And it's transparent. I know exactly what you're doing and the more I know the more comfort I can give my board and then you start getting this, this buy-in this belief that this is like true hard science, right? And because it's so academically vigorous, and you're getting these results, and then there's this economic intuition behind it, that there's a court that how can you argue against that there's this massive buy-in, that it is a hard thing. You cannot arb away behavioral flaws; you cannot arb away these risk metrics. And yet, that's exactly what's happened because of the necessary buy-in at the highest levels of assets under management. Right? So all of a sudden, this axiom is not real. It doesn't work. Right?

Adam 0:30:41 The very virtues, the very qualities of these strategies that make them so compelling. Great story. Great economic intuition. High status author's...

Mike: **00:30:56** Solid recent performance.

Adam: **00:30:57** Solid recent performance, high status authors, peer adoption, well within the Overton window. Other institutions of similar objectives, adopting similar strategies. These are all the qualities that allocators look for, because they think that there's safety in that. In reality, those are the very qualities of strategies that should be ringing all of the alarm bells, because if it makes it compelling to invest in and if makes it easy for all of these big institutions to invest in, then they probably are deploying massive amounts of capital toward those anomalies, and they're arbing away and eventually inverting the sign of the expected premium.

Richard: **00:31:49** And there's another layer to this that I would just add is that even those who might be somewhat the wiser to this phenomenon, and understand that perhaps there's overgrazing because of the intuition, the career risk that is involved in shying away from what's established in academia and kind of grazing with the herd is just too large for any one of these larger players, especially in the institutional space to say, you know what, I'm not going to play in this pool, I'm going to go over here in this obscure sort of arena.

Rodrigo: **00:32:24** Well, it also fast forwards the amount of AUM one can get right? So I've seen institutional, if you don't have at least a five year track record, as a discretionary manager, you're not getting any assets, right? But what you find now is, there are large institutions to be unnamed, that have published tons of white papers that can just say, based on this white paper, I'm gonna have a zero track record fund that we're gonna launch today, and immediately get billions of dollars, right? So this is we've seen a bunch of papers that show not only pre and post-publication, but rather pre launching of a product of those of what they showed, and then post, what happens. And again, it's tough to disaggregate, this is another topic that may be useful for this conversation. But how much of that was true factors that they found? And how much of that was just nonsense. But you know, that's one that, just to cover your point, Richard, the point that I also wanted to make is that when you're looking at these factors, we go back to value, right? What was the first one that really - the one that got pummeled was price to book or book to price. Now what happened there, Mike alluded to the fact that there's not just that one parameter within value, there's many different ways of looking at value, right? So in our firm, we've always tried to think of ways to stay ahead of the crowd, right? Where most acceptance hasn't gotten there yet. On the quantitative side, for example, the idea of ensembles that we've spoken about over and over again in the past, is one way of minimizing the chances that you're going to be specifically wrong about an overgraze parameter set in a factor, in this case price to book. And you're gonna be broadly correct about other ways of extracting that factor price to sales, enterprise value to EBITDA and so on right, so when you compare those other metrics, a couple years ago, you were like, Oh, my god, there's better ways we can still be value, guys, but it's just these are better. Well, the moment you start talking about those, everybody jumps on the new better thing that then has that reflexive nature to it. But the key is to be ahead of the curve. The key is to try to be there before anybody else has. And if these factors are actually real, right? if there's this value factor, indeed, then a way of that, I think still hasn't been overgrazed. Because we've had these conversations with institutional managers where we say, well, we should have as many different value parameters or to try to hug that signal. Because we're going to be invested in factor signals that may not be overused just yet or momentum, look across a full term structure of momentum full term structure of trend, and in that way, you're getting exposures to the factor in parameter sets that are just not used generally by the public currently. And when you try to talk about it that way, people are like, No, no, no, the only true factor for value is price to book, what are you talking about? I can use any one of them, and they're just going to be good enough going forward…

Richard: **00:35:18** I think we should just...

Rodrigo: **00:35:19** Because they're not actually seeing the effect of the overcrowding.

Richard: **00:35:22** Yeah, I think we should just make it clear that we might sound like we're harping on value.

Rodrigo: **00:35:28** No, not everybody understands.

Richard: **00:35:30** Yeah, for sure. Because value may be the most intuitive of all these well-known factors. But the fact of the matter is, we've seen this across the factor landscape, and we've seen products that have been launched. And that have turned what was before perhaps called alpha has become beta or smart beta and have become commoditized. So I don't want to seem like, we're beating up value. And there's actually this...

Adam: **00:35:56** No the funny thing is that like commoditization itself, in a non-reflexive world, or in a world where the premium exists because of a risk explanation is not in itself a concern, right? Like, everyone wants all of these premia to be commoditized, and bring all the fees way down. And that way they get, have their cake and eat it too. Right? And they don't have to pay anybody for economics on it. But the fact is, the second that it's made accessible, and it's made cheap, so that you know, more and more people can get on board. It just, you sacrifice in premium and diversification, what you get in lower fees. And it's this vicious circle, there's one other dimension to this too, which I always find particularly fascinating, and that is that the anomalies that are most likely to be published, are the ones that are the most economically significant. Right, value when it was published, had small value, notwithstanding the insane construction methodology of the original Fama/French value factor, but it had a reasonably high premium, is very attractive, and it got published. And then you know, along came momentum, a few other factors, whatever. But the ones that get published and get attention are the ones that the highest T stats. But sadly, having a really high T stat means that it is more attractive to everybody. Right? It’s more likely to get ticked to have other papers published on it, it's more likely for the big credentialed names in academia to want to put their weight behind this particular strategy, because it backs up their resume. So it attracts more attention and attention is the enemy of sustainable alpha. So to the extent that you are trying to harvest the most powerful premia, that actually may be exactly wrong. In fact, what you instead might want to do is look for ones that are too small to attract much attention, you know...

Thresholds

Rodrigo: **00:38:09** Just under the threshold.

Adam: **00:38:13** Just under the threshold. Absolutely. And Lopez de Prado published a paper on this as well. Now, he sort of framed it as a type one versus type two error, and everyone focused on type one. And, you know, we should all be solely focused on type two. So instead of using a 5%, cut threshold, he’s used a 15% cut threshold to identify or accept that something is worth trading. But part of that is that you're also then going to get strategies that are below the typical threshold that haven't caught the attention of the big academics that haven't published in the major journals, and therefore are unlikely to have a tidal wave of arbitrage capital flowing towards it. And so you're minimizing the chance of inversion. Right?

Rodrigo:	**00:39:01**	Right.
Adam:	**00:39:02**	So you how do you find anomalies that are not quite statistically significant? They're not published in the journals, like, the fact is, you kind of got to do your own work and then of course, you get into, well, you know, there's all sorts of problems in P hacking and how you frame the experimental design and stuff that I'm sure we'll touch on another time.
Rodrigo:	**00:39:21**	Well, no, I mean, we don't. Can we touch upon it briefly? I think one of the key things that gives us a sense of comfort in the original Fama/French work is that there weren't a lot of people doing that stuff back then. Because access to that data set was really tough to get, when there weren't a lot of people looking at it from that perspective. They were really breaking some barriers there. And they did come at it from an honest economic theory perspective, that then they use this data to try and validate it
Adam:	**00:39:53**	Presumably.
Rodrigo:	**00:39:54**	And when they use the data presumed well, more than today. Right? Like I mean...
Adam:	**00:40:02**	Let's assume I'm not gonna argue.
Rodrigo:	**00:40:02**	Just by pure computational power, the ability to have as many back tests…
Adam:	**00:40:06**	That is true, yep.
Rodrigo:	**00:40:06**	As you can do, the type of data set he had, and the fact that they were academics and trying to get some sort of credibility, rather than use that in order to make themselves rich, necessarily, you would have more credence to the economic phenomenon, and that they use this process of scientific method purely to say, Hey, is my theory valid? Let me use this data and test it once and see, oh yeah, look at that, that's a high P value. This is, my thesis has been validated by the data, right? Whereas I'm not sure practitioners today with the amount of assets that we have the ability to use as many back testing processes as we do. And everybody or a lot, a large portion of the population wanted to get published by having that high T stat, high P value. Whether that today, when somebody comes up with an economic theory of what their back-test showed, which one came first? Or if they did come at it, from an honest perspective, how many people like him? Work had...
Adam:	**00:41:10**	It's just very challenging. I mean, even if we assume a very high level of intellectual honesty, among academics and practitioners who are publishing research, it's still very hard to disentangle the independent thinking from what came before. I mean, the whole nature of science is that there's a canon, and there's a canon of, research of publications and, a paradigm that you're supposedly sort of building on. Right?. So if you're publishing research, typically, you're already reading a lot of the papers, the seminal papers, the follow on papers. So, you know, often times a lot of the academics have already been playing with the data from, not playing with but like using the data for analysis for a large number of years...
Mike:	**00:41:59**	Exposed too.
Adam:	**00:41:59**	Yeah, they've been exposed to the data exactly for many years. And so you build an intuition there, there's very hard to be independent of that intuition. When you're forming hypotheses like you be do your best as an academic, to or a practitioner, to try to form a genuine economic hypothesis that's not informed by that any sort of back-testing or any sort of data that you've seen before. But if you've already been exposed to the data for a long time, it's just really hard to separate yourself from your experience and, generate a genuinely independent hypothesis to test. Would you agree?
Rodrigo:	**00:42:41**	Yeah, yeah, I think you become, it's also it's all human nature as well, right? It's tough to be the lone wolf that comes up with a theory that nobody's ever talked about, and nobody's ever, and you don't have when you expound on it. Nobody's like nodding and saying, Yeah, I totally agree. In fact, I also think this way, and here's the many white papers as to why. It's a lot easier to be

		slightly influenced to the point where you come to the conclusion, then you do your back… I'm like, Look, what I have here. Isn't it amazing? And there's thousands of academics and practitioners saying, yeah, I'm also there with you. Everybody else is crazy. This is a way to go. Right?
Adam:	**00:43:17**	It's a really good point... Rodrigo.
Rodrigo:	**00:43:20**	So it is really just a top behavioral.
Adam:	**00:43:20**	Because I think, totally. And we've experienced this firsthand. And we've obviously are friends with many other investors, who have a lot of faith in their own take or approach on investing. And I think everybody tries to be intellectually honest, and or the people that we know most of them are trying to be intellectually honest. But the reality is, if you're not sufficiently close to the Overton window, and so you don't have enough sort of other people that you respect, also embracing that way of thinking then it's almost impossible to raise any money...
Richard:	**00:43:57**	Compromises your credibility.
Adam:	**00:43:58**	It does. But it also just like, people don't like to be lone wolves. So if it's weird, the asset management business is this weird animal? Some people do. But it's this weird animal, where if you're comfortable investing in it, because the other people that you respect are also comfortable investing in it, and you've got access at a reasonable price, and it's been made available to you. You probably don't want to own it, you know, if it's something that, by virtue of being new and different and not having other people adopt it is not sufficient to say you should own it. Right?
Richard:	**00:44:35**	Yeah.
Adam:	**00:44:36**	But it is, I think, ironically, a factor to consider, right? If it's something that you strongly believe in, you've gone down a rabbit hole, you've got good research and good backing, and you've got strong intuition on it. And you're not seeing anywhere else. That's probably a really good place to look. And I'll give you anecdote, you know that the plural of anecdote is not data and I hesitate to even talk about this, but as an example, our funds historically have taken advantage of and still do make use of the features of skewness and seasonality right? Now skewness and seasonality. There's a couple of papers on skewness in academia, but you never see skewness talked about in any sort of our premia strategies or CTA strategies. No one ever talks about it. It's very under the radar. Seasonality is almost like Voodoo. It's like what, like astrology or you know, what are you doing and what are you talking about, right, but its phases of the moon or some nonsense, but the reality is that, seasonality and
Rodrigo:	**00:45:37**	Donny Coxe.
Adam:	**00:45:37**	Skewness and seasonality have the same economic and statistical premia as the much more broadly known trend and carry strategies, and or at least historically, but over the last three to five years, skewness and seasonality have been terrific performers, and trend and carry have been dogs. So, you know, again, just anecdotes, but there's lots of money flowing into trend strategies for crisis alpha or this or that. And trend has been, you know,
Mike:	**00:46:09**	Why are you telling everybody that?
Rodrigo:	**00:46:12**	Can we cut out that live?
Mike:	**00:46:13**	Please strike that out from the record, edit that out. I think Buck is raising another point to...
Rodrigo:	**00:46:19**	Mike**,** now you just made it real for people.
Adam:	**00:46:21**	Now we gotta talk about your analysis now. I don't know … at the conversation.
Mike:	**00:46:26**	Yeah, no, no, that's not the question. But why is one thinking of this from the standpoint of, okay, so something goes through the process of publication, or this is what I'm going to interpret his question to be selfishly, for whatever reason, I don't care why. So if we think about the list, the premia we might be able to harvest, right? And who's paying and what the size of that is,

		and what the barriers to arbitraging that might be. So I know when we started very early, we trade lots of you know, 80 markets and lots of currencies and whatnot. But when you think about the barriers to arbitrage, what are the barriers for other participants to come in and share that lunch, that free lunch for you? So the rebalancing premium I think, is what Buck's referring to, is when you publish your paper eventually when you publish it, if ever, because it'll obviously be, eviscerate any premia that would be there from the rebalancing.
Adam:	**00:47:27**	That's exactly I'm holding it back down. There's no way I'm up.
Mike:	**00:47:30**	Because we're just not going to publish it. It's out there, it works, you'll just have to take our word for it.
Adam:	**00:47:35**	Exactly.
Mike:	**00:47:36**	But again, this kind of comes back to Corey's question too long ago, like who pays for that? So what's the barrier? And if we think about all these things, well, how easy is this thing that you're going to deploy? How easy is it for it to be replicated? And then for subsequent assets to flow to it in order to take that free lunch and split it amongst the commons if you will? And take it away from, you, so if we think about that, what would they be? I mean, obviously, in any kind of single stock type thing, you've got ETFs, the proliferation of ETFs and easy rules, and so tons of capital tend to flow to that area. I think rebalancing is harder in large pools of assets are not particularly well equipped to transport the liquidity they might have in their portfolio across asset classes in order to arb that…
Adam:	**00:48:28**	Yeah they have got active constraints and board constraints and actuarial constraints and all kinds of constraints that…
Mike:	**00:48:35**	So that helps, but what are there anything, is there any other ideas about that, anything else triggers in your minds? I'm just kind of thinking this...
Adam:	**00:48:42**	Well, I mean, what's triggering for me is I'd be a lot more worried about somebody arbitraging the rebalancing premium in risk parity if we could get anybody to write a goddamn ticket for risk parity. Like,
Mike:	**00:48:52**	Precisely.
Adam:	**00:48:55**	I don't have any concern about the opportunity in global risk parity across 65 or 80 futures markets going away anytime soon.
Mike:	**00:49:06**	Agreed, not popular, received with vitriol at every corner, it's perfect.
Rodrigo:	**00:49:11**	But this is an example of where things well, this is why you want to cover the whole term structure thing, right? Let's say you do a risk parity strategy, you publish, and you publish that you're going to be rebalancing on the last business day of every month, right? You're telling me that somebody is not going to arb that, if everybody gets on that side, that problem is going to kind of go away and then it's gonna get so bad that there's gonna be other people trying to eat their lunch in reverse where there's flows going in, you know that it's happening, and you're going to take advantage of that
Mike:	**00:49:40**	F squared.
Rodrigo:	**00:49:41**	So how do you?
Adam:	**00:49:42**	I thought everybody had just embrace Corey's traunching concept? Is that, am I wrong about that?
Rodrigo:	**00:49:47**	Again no he's still banging his head against the wall. There's only like five of us that actually,
Mike:	**00:49:53**	And if someone knows, he knows,
Rodrigo:	**00:49:55**	But the point here is right...
Mike:	**00:49:57**	That guy knows.
Rodrigo:	**00:49:59**	If you're going to be rebalancing, right? If there is a rebalancing premium, and you don't want to necessarily publish your schedule, you don't want to do on a consistent basis, you might want

to randomize it, you might want to caterpillar so your flow isn't that strong. Like there's a wide variety of reasons why you want to be obscure, even about the rebalancing approach. Because if you do make it popular, and you do show a back-test that rebalancing on the 27th of every month is the time to do it. It will go away, right? It will go away. So yes...

Richard: **00:50:29** But I think that the rebalancing side of it is well outside of what we might call the ivory tower bias, right, this idea that it's so well established that everybody's going to, but what is one to do, then Adam, with the, to shy away from this ivory tower bias, this idea that people are just going to stay within the middle of the herd?

Bespoke Factors

Adam: **00:50:51** Like I kind of hinted at it earlier. And no, this is the journey we've been on for the last 18 months or a couple of years. But the idea is to identify that to create tools and have a sufficiently coherent experimental design to allow you to identify the types of anomalies that most other investors are just not well suited to identify, right. We've taken to calling them bespoke factors. But I mean, they've got certain qualities that distinguish them from traditional pack factors, right?. So, if you think about a traditional factor paper, typically, it's, you know, grounded in some economic theory, it's got some great economic rationale. And the types of factors or anomalies that we might search for, are not grounded in any kind of theory, we can't really look at them and say, this is why A leads to B reliably, but they emerge from the data and they're sufficiently strong and persistent through time that they are compelling, right? But no individual factor is, is compelling enough, you still want to take, you know, many dozens or hundreds, or in fact, thousands of these smaller, bespoke factors and use them all together, right?. And another thing that factor type investing has in common is that it looks for common relationships across all the securities in the market. So think about traditional cross sectional sorts, right? You're trying to apply the same sorting mechanism on all the stocks in the market, you need to take, be long the top quintile or top, so and short the bottom quintile or decile, and so you're sorting them all on the same characteristics. Whereas the way that we would think about it is well, each of these markets has a unique group of agents that are trading them for different reasons. And those agents manifest in different types of explanatory variables for each market, right? And you need the right tools to be able to identify those and validate them. But they're unlikely, they're much, much less likely to be found. None of them on their own are particularly strong; they're very unlikely to ever be published in a journal. But when you put them all together, they're extremely powerful. Another thing that factor investing tends to have, and there are some exceptions to this, but tends to have is a simple relationship structure. So for example, we're going to give us a sort on price to book, it's going to be ordinal rank, and we're gonna take hold, we're only going to hold those that are in the top decile. We're only going to short those that are in the bottom decile. And that is the relationship. We've got, in other words, all of the stocks in the top decile have an expected return of one, all of the stocks in the bottom decile have an expected return of negative one, every other stock has an expected return of zero, right? So that's a very simple relationship structure, it could be like a linear relationship structure. So like, for trend following might be, stronger trends imply that we should have a higher exposure, Right?

Rodrigo: **00:54:06** Higher expected return from that stronger trend.

Adam: **00:54:08** Higher expected return implying higher exposure exactly. But you see, these are simple relationships. And many relationships are not simple. They've got complex structures, like maybe they're are U or some other type of structure, right? So you need the right tools to identify that. And also, most factors are sort of long-term average, right? You're not trying to time the factors, we're not saying that stocks with these characteristics tend to outperform under these conditions and underperform in these other conditions, is long term average is going to stick with it. And bespoke factors have the quality of being conditioned on different conditions, right?. Marat and I talked about a really simple one in our conversation, where for example, you're conditioning the trend signal on the direction of carry. So if carry is positive and trend is positive, you want to be long. If carries negative, and trend is negative, you want to be short. And if you if you use those two conditions, you get substantially better performance than you get from just using trend or carry on their own. Right? So you can imagine that type of thing can be applied to these complex factors as well. Right?

Rodrigo:	**00:55:10**	But what, sorry, let me know if you're not done.
Adam:	**00:55:22**	I'm not done, but its okay, the last one is...
Rodrigo:	**00:55:23**	No, no go ahead.
Adam:	**00:55:24**	Well, the last one is just the idea that, and we're, I think we're probably going to try and have another conversation about this topic, lots of things to discuss on this. But the idea that traditional empirical finance, where most people find factors and evaluate which factors they want to allocate funds to, are all validated using an experimental design that only uses in sample analysis, to show you the strength of the relationships. And there are some really interesting fundamental challenges with that, I think we've taken some strong leaps to, to cross the chasm there. But in any case, you should only be making decisions about which of these types of factors you want to trade, using robust out of sample methods, analogous to those that are used as sort of best practice in data science. So that's it.
Rodrigo:	**00:56:21**	This is where you can see how this academic poll has really blinded a lot of practitioners, right? Because when I think about this idea of the theory of factors, is you have this blanket statement, because you have to have a theory that generalizes otherwise, it's not a theory, you can't have a theory for an asset class, you have to have a nice eloquent single formula that explains it all right? So momentum exists because people herd, or whatever behavioral factor that you want to pull from. And so I'm going to have a thesis that if I rank securities over the last 12 months, top decile bottom decile that that should have an excess return and low and behold, you do find that right? You find it in US equities, right? You find it in European equities, so it generalizes to Europe. But then you find it in Japan? Oh, all of a sudden, that doesn't work. But let's not worry about that one, because it generalizes enough that we can call this academic work, and validate all of it. And just let's just not talk about the ugly stepchild over here, right?. And then when we take it to a granular level, does it work in every single security, does it work in every single asset class on this on the security trend? Does this trend work in every single futures contract? And does it work all the time, right? All these questions, all of a sudden, when you start nitpicking at them and asking the right questions, it all falls apart, like this blanket academic theory, ends up being who gave it, right?
Adam:	**00:57:54**	Even listen to the language, right? And I'm not picking on you. But this is what everybody uses. But listen to the tense. It works. No, it worked.
Rodrigo:	**00:58:07**	Sure.
Adam:	**00:58:08**	Like the data that you examined, where you fit the model on the data that you examined, and then you showed the in sample fit of the model. And low and behold, there was a fit, right? But you don't have, you can't say anything about how those characteristics or how those sorts or how those models are going to perform out of sample because you haven't, your experiment design does not provide information to give you guidance on that. Right?. So and I hear this all

the time, everybody says it works, instead of it worked and how we talk about it informs how we think about it. And I think that that is a misguided way to think about it.

Richard: **00:58:52** I think these dovetails well with, to shift gears maybe just slightly, the momentum that we see in markets. I mean, we've seen the market's dynamic change in meaningful ways. We're dealing with negative interest rates, we're seeing some of these market micro structures changes how market participants behave, and how that reflects back. So I think this framework to think about investing and finding sustainable edges going forward. Tie that back into some of these changes that we've seen so far. And I think a lot of the changes are kind of well summarized in the paper that Corey wrote that you had a chat with him about, so the liquidity cascades, the aspects of dealer gamma and the rise of passive and all those aspects instead have changed or seem to changed fundamentally that the structure of markets.

The Efficiency of Stock, and Flows

Adam: **00:59:43** Yeah, so this is actually a really interesting dimension. And I think and Corey and I have talked about this ad nauseum but, both on camera and off, but the whole cap-on theory of markets, like all the whole entire canon of efficient markets is predicated on efficiency of stock. In other words, all securities everywhere are priced appropriate to deliver the appropriate amount of risk per unit of diversification adjusted return. Okay? That is what all of the academic theory is, is built upon all the stuff right back for the 1950s till today, is predicated on that. And I think what a lot of the more recent research and obviously Mike Green's been all over this, you've got a lot of the guys in the option space, who have been very familiar with this for a long time. But we're starting to see a shift in thinking to the fact that in fact, the price of every security is set at the margin, by flows. Right? So markets are efficient on flows. And when you think about it, that's kind of what we should expect, right? The markets are a price setting mechanism where the price of anything you want to sell is going to be set by the price that somebody else is willing to buy it at. And vice versa.

Mike: **01:01:02** Did the trade clear.

Adam: **01:01:04** Exactly. Markets are efficient in so far as trades clear. Well, how do they clear? They clear because we found some price, or there is some amount of flows on the buy side to match the flows on the offer side,

Richard: **01:01:19** We've got the fills.

Adam: **01:01:20** We got the fills exactly. Right? So and I, you know, I had this whole thesis that I didn't bother to explore. But the trend following really is an expression of efficiency on flows, rather than efficiency on the stock of money, right? Or on equilibrium prices. But it all sort of amounts to the same thing. You've got, if you can find features or pieces of information variables that help you to triangulate or set expectations about the direction and quantity of flows. These are the features that are likely to be most explanatory, especially in the relatively short term, right? It's possible that Benjamin Graham is right, and in the long term, markets are indeed a weighing machine. Right? But the reality is that most people's time horizon isn't the long term. It's the next three years, five years, ten years. And that's not the long term, where the markets are a weighing machine over horizons like that. It is all about flows. And...

Richard: **01:02:26** It's a voting machine.

Adam: **01:02:27** It's a voting machine. Exactly. And so if you don't account for features, one of which is probably trend, and mean reversionary type dynamics, and other higher moments, but if you're not account, and lots of other stuff, like information from the options surface, and you know, there's lots of attention right now from … metrics, and a few of his metrics. And I know two or three people that have replicated and built their own indices on that. And I think all of that is great, right?. And I think we need to constantly be building our toolset and adapting to the primary forces that are at work in market. Like I would even argue, and I'm not I'm stealing this, I think, from Mark Boozman, who posted on this on Twitter earlier. But early value investors were also counting on floats, right? You're buying a stock…

Mike: **01:03:14** That's the whole point.

Adam: **01:03:15** Then you expect others to come in and buy and reset the price higher

Mike: **01:03:19** Yes.

Adam: **01:03:20** Exactly. It's not that this is a new phenomenon. It's probably that the sources of intermediate term flows have shifted from traditional active value investors to other dynamics, such as dealer gamma, and other stuff. But it was always about flows. And it's only about stock at horizons that nobody really cares about.

Rodrigo: **01:03:44** Right. And I think when we say individuals care about the short term; I just want to clear up that this means everybody cares about the short term, right? There is no pension plan that…

Mike: **01:03:53** Oh yeah, No the individual who have a job supervising the pension plan, care about the next three years of return, under their advisement.

Rodrigo **01:04:04** The amount of plans that have gone out the window as of this year, are unbelievable. Just the amount of conversations I've had were like, well, what about your long-term plan? Well, the board thought it was best now that we know that the markets have changed.

Mike: **01:04:17** Well, what about the management shift that we've seen, right?

Rodrigo: **01:04:19** A 100%.

Mike: **01:04:20** There's a constant management, whether all the way up, there's a top dog, he or she has a certain view on how things should be run, build a team like that, then you have the turnover in the team itself. I mean, we've experienced this for quite some time. And so the consistency with which…

Rodrigo: **01:04:36** There is no continuity.

Mike: **01:04:37** Right and when you see continuity, it is truly organizational alpha. Like I would argue that is probably where it starts. It starts with somebody like Galen Swenson, and maybe he maybe he was like maybe he wasn't.

Rodrigo: **01:04:54** An Alpha Dog that never retires or an organizational structure that doesn't care about the individual It's one of those two right?

Mike: **01:05:00** Right.

Richard: **01:05:01** Right. Yeah. But basically we're seeing a principal agent problem at mass scale, is what you're trying to say.

Mike: **01:05:08** That's pervasive, that's pervasive.

Rodrigo: **01:05:09** Well yeah, the whole point is that markets are clearing, is the only thing that have you guys listened to Benn Eifert with Corey, I just listened to it this weekend, right? But if you want to get a story about how flows influenced the premium that you see on the volatility surface, it's a great podcast, where he, you know, he goes through, like, at this point, yes, if you're seeing these characteristics, you're gonna get a premium, you know, nobody really cares about it, nobody was talking about it, you can actually capture that. And then it became popular CBO, he comes out with an index moment that published that index, you can see that a flat line, hasn't added any return. And you just all these stories, you can just add them up, right? That seems more like prop trading, right? It's not; we're not talking about value. We're talking about the volatility. So like those that's prop trading stuff, it's not gonna, we're not gonna be able to arb out these other factors. You can talk about anything, right? You can have enough dollars chasing absolutely anything to make it obsolete for a while but then they come back...

Adam: **01:06:08** But these are very …

Mike:	**01:06:19**	There's steps like things, some things are easier to arb than others. Right? That's the point what how much capital does, is required to arb it away? How easily can that capital be established, from the standpoint, can I gather other investors? Is it easy? Just, are the prop firms going to do it?
Richard:	**01:06:29**	Structural barriers.
Mike:	**01:06:30**	Right, like how can I assemble enough capital to do it and have people excited about it, etc. So there's definitely a continuum there.
Adam:	**01:06:42**	It's also inconvenient from a political standpoint. I mean, what is the purpose of markets, right? It's to move capital from savers to smart allocators of capital.
Mike:	**01:06:54**	Is it?
Adam:	**01:06:55**	No, no, that is the stated purpose of markets. It is what allows this Fed, what allows Powell and what allows the Treasury to step in at every opportunity, and preserve the stability of markets, because markets are supposed to serve this sanctimonious place in modern economies, right? They're for the efficient deployment of capital. And if we pull away the mask and expose markets as just, you know, a commons where mis-incentivized agents are allocating to meet their own ends, and where the equilibrium prices don't actually provide any signaling value for what's going on in the economy, etc. The markets lose their utility, and those that own the markets, which is like, you know, 400 people in the world, obviously, do not have the public support for supporting markets that they would otherwise have, if markets are continued to be perceived as a public utility. So there's a, this goes all the way up to the top, keep in mind, the President is has a principal agent problem, too. They have a four year term, and they're supposed to be setting policy that is, that lives on far after they're out of office,
Mike:	**01:08:17**	What we're hoping that the conflicts offset and...
Rodrigo:	**01:08:19**	But stock market is doing so well right now.
Mike:	**01:08:20**	It's hopeful that the conflicts offset and you get some signal from the society as a whole.

What's a Pension Plan to Do?

Rodrigo:	**01:08:26**	Yeah, the hundred year weighing machine is what we're hoping for. So what is a large pension plan to do, right? Okay, so we've addressed how chasing, chasing an anomaly with too much money can invert it. And here you are, you're large public pension plan with the billions of dollars and you're faced with the reality of the academic work and some of these premiums that have existed in situ, and then you're faced with a massive amount of money that you need to deploy. How do you attack that problem? I have an answer. But what is the best and only way to…
Adam:	**01:09:06**	Well no, I think it comes down to whether you can get comfortable with the experimental design of the firm that you are engaged with as a prospective investor, right? And I mean, part of this is institutions, in some ways are the authors of their own frictions here because we know many firms like some in Canada, for example, that openly tell you in advance whatever you tell me at this meeting, we're going to turn around and use internally, we're going to steal all your IP. And so, you know, buyer beware, seller beware, I guess in this case, right? And I guess I think one of the things that Swenson did really, really well and this may actually be the, the primary source of Yale's edge was that Swenson partnered with funds as an equity investor for, essentially forever.
Rodrigo:	**01:10:07**	With the mind with the head guy, yeah I remember this...
Adam:	**01:10:09**	Exactly
Rodrigo:	**01:10:10**	That's right with that brilliant mind that would be able to find unique edges for the rest of his life. And I want to partner up with you until the day...

Adam:	**01:10:18**	And the only big reason why that was there's obviously like alignment of incentives. But the real reason why alignment of incentives is so important is because it allows the manager to open his kimono, because what really matters is the process. The returns are bullshit that like, over time horizons that anybody cares about the returns don't tell you anything. Sadly, that is the truth. What matters is the process and the experimental design, that gives you the confidence, sufficient confidence, enough data over enough market environments, that where this particular approach sustained its edge out of sample, that allows you to get comfortable that there might be something there. And if I'm an institution, you know, I might really buy into this guy's process and this guy's experimental design, this guy's methodology and this guy's edge. But I still want to spread my bets around, right?; I still want to have a dozen or two dozen managers in different fields with different points of view, who are attacking the problem in slightly different ways. Some of them are going to be just off base, others are going to be you know are going to get it right. And on average, if you've got conviction and invested in partnerships with your managers and you to stick through it through thick and thin, then you've got a shot.
Rodrigo:	**01:11:38**	Well, this idea that you can buy factors now out of the can, from a swap at a big bank, you're buying some brilliant mind's old idea. It's obsolete, the moment you buy a canned, right? What you should be looking for is the manager or the management team that proves to have a process to continue to discover those edges, wherever they may come. That's, and we've moved away from that because like I don't need these obscure brilliant managers that I need to do a lot of work for. The academics have done the work for me; I can just buy that from Credit Suisse as a swap.
Adam:	**01:12:17**	Yeah, and that show's over, right? It's demonstrably over; you just got to look at any composite factor indices, that's over. If it ever existed, it doesn't notice now…
Mike:	**01:12:26**	That's something that actually we're having a chat and hit like you, the function of the board managing whatever the endowment is not necessarily a profit maximization function. It is in some cases in the endowments in some very thoughtful Yale - like endowments. Bowden's endowment has very aggressive, Notre Dame's probably another one very, very thoughtful input. But in many cases, that's not, that's simply not the case. So it's OPM, and the function of the board seems to be more one of cover your ass and best practices. Well, by definition, best practices means the most common practices used or most pervasive thought processes used across all endowments, which then leads to, well, I need some factors, because everybody has some factors, how do I do that inexpensively? And so the system itself is a bit flawed in that, in the way in which it sort of fosters the management of this money. What's the objective, right? Just give me the objective function, and then we can go from there. And so that's a really tough problem to solve. And there's, a lot of thoughtful, you know, if we think about university endowments Anyway, there's a lot of thoughtful university endowments who have done a great job. And then there's ones who are...
Adam:	**01:13:47**	But I think … like, and I think you said, like several of them who solved it. And they solved it, by making clear that their allocations are permanent capital. Right? I'm committed to you, we're in this together, and therefore you could open your kimono, I can get familiar with the fundamental principles of your thinking. And, therefore, and I know, that's the only way that I can ever have a good sense of whether you've got something or not. And even then, I'm still going to get it wrong a lot of times, right? But literally, the only way you can do it is a commitment from permanent capital. Otherwise, you know, maybe you've got good relationships, and you trust people and what have you, that requires a different level of faith. Which, you know, I think is meaningful, right? But still, if you're an institution, and you have the

ability to make a commitment to a team, or to an individual, that you believe in, that I think is the only way to really have a sustainable edge.

Rodrigo:	**01:14:46**	Mike what was it? Was it Fairfax Financial is it Fairfax Financial? The one that's this individual, it's that similar like completely orthogonal thing.
Mike:	**01:14:56**	Oh, Chiu. So Frances Chiu works for Fairfax, and he has some Chiu funds in Canada...
Rodrigo:	**01:14:59**	Was that?
Mike:	**01:15:05**	May be I'm not sure.
Rodrigo:	**01:15:05**	Anyway. I think it's one of these funds that returns were phenomenal. But when you ask, like, how does a committee make decisions? No, the committee made a decision that whatever he says goes, right? It was like, you have all the power.
Mike:	**01:15:19**	Yeah. Prem Watsa.
Rodrigo:	**01:15:20**	Prem Watsa...
Mike:	**01:15:21**	So if you have a patron, who owns that, so there are lots of endowments for universities that have some pretty significant wealth tied to them. And then they will have some involvement from those folks. And sometimes those folks run pretty significant private equity or hedge fund type environments, and they make pretty substantial donations. And they, don't take that lightly as in, they have a way in which they think about the problem. And they sort of dictate to the endowment that there will be some unique thought put in place in order to fly their influence, if you will. And so in those cases, you tend to see probably some more unique performances, right? Some unique.
Rodrigo:	**01:16:11**	And you take, the crazy thing about this in the way our society is structured, is that you take an immense amount of personal risk. I know we've talked about this before, but I want to talk it in the sense of other like legal risk, right? When I started in the industry, I started smiling and dialing because I only you know, I was an immigrant didn't know anybody. I had these ideas, these quantitative models that I wanted to deploy. So I started talking to people, I was in the wealth side of things. And as I got to learn more about the legalities behind what are my risks, as the CIO of my wealth book, what it was, if something went wrong, right? With my quantitative models, and a completely different, you know, long short, it was all alternative based, there was no basic beta. It was wild portfolio construction that nobody was doing at the time. I remember losing sleep at night, when somebody told me that the way you're going to be treated in court is they would put other financial professionals in the stand and ask, would a reasonable professional in your shoes have done what you did? And I knew the answer was going to be categorically no. And I was going to be sued. And my career was going to be over. It didn't stop me from being a misfit and doing what I wanted to do and the right thing for clients, and it paid off thank God, but it was a constant fear. Why I decided to take that risk, I don't know. Why I continue to decide to take that, we all as a group, and found my people here. We don't know, we're just built differently, right? But you require that level of...
Mike:	**01:17:54**	Irreverence.
Rodrigo:	**01:17:55**	Irreverence, to be able to succeed in this world. It is right? And at the level and right now, you know, you're not dealing with like, there isn't a public board that's beneath us. When you're at that level, when you're like, I can imagine Swenson, all the pain that he's had to go through and the personal risks that he went through to do what he did. I just, that's unfathomable.
Mike:	**01:18:17**	Swenson has documented in his books about his success being handpicking, the investment board in order that they'd be able to make decisions that are in congruence with his vision board's.
Rodrigo:	**01:18:29**	Then the board's out of their mind. Right?

Mike:	**01:18:31**	Well, again. Yeah, I think everything, I think that it's, you know, to some degree, we're treading in some waters that we have not lived in for a decade or two. So I do want to sort of say also that I do feel for all of those who are employed in managing assets and endowments and fiduciaries and things like that. I really feel for you and I feel for the conflict that's there. And so, you know,
Richard:	**01:19:02**	Actually in the current paradigm right? Mike because...
Mike:	**01:19:04**	Yeah.
Richard:	**01:19:05**	We've seen and this may be, again, anecdotal, but we, some of the evidence would point to this as well that a lot of the factor desks in these big endowments have been dismantled. Now, investors in general that had relied to varying degrees on these factors for performance have cried uncle, right? They've thrown in the towel, it's too much pain, they can't do. So you guys are proposing that they partner up with these asset managers for permanent capital. But the fact of the matter is, in this current paradigm, we're witnessing a sort of break in the credibility of all these, several of these strategies...
Adam:	**01:19:46**	Well, are we or are we just are we observing a revelation of the fallacy of construction that was there to begin with, you know, like, I think we're all, some of us are waking from a long dream, you know that there was this dream that was, you could publish a white paper and gain confidence from purely in sample data and launch a product and not have to worry about other people discovering it and crowding and overgrazing and inverting the premium. Right? There was a dream that was an...
Richard:	**01:20:23**	That's an important distinction. Yeah, I'll grant you that. But what is one to do? If most of the actively managed capital out there is still be managed to some degree under this guise?
Adam:	**01:20:36**	Well, actually, I think it's harder than that even because, I mean, the reality is, any effort to diversify away from US 60-40, over the last 10 years, has been just an excruciating, grinding pit of despair, right? I mean, we just recently ran an analysis prompted as usual by a thoughtful prospect. Wondering why most of these multi asset funds have done so poorly relative to 60-40 over the last decade. And so we just ran some random portfolios. So we've got 17 equity futures markets, and 10 bond futures markets. And we're going to hold the weight of equities at 60% and bonds at 40%. But we're going to vary the allocation in the equity sleeve across all these markets randomly. We're going to vary the allocations in the bond sleeve across the route randomly. And what we observe is that the performance of the ES and TY so the S&P 500 in the 10 year Treasury futures over the last 10 years, were above the 92nd percentile across all of these random potential portfolios, which is to say that you had to be really, really smart.
Richard:	**01:21:55**	How about the NASDAQ? How about the change?
Adam:	**01:21:57**	The NASDAQ was literally the choice of NASDAQ 60-40, with the treasuries was a 1 in 10,000 outcome. So, you know, you had to be just unbelievably like, so skilled.
Rodrigo:	**01:22:13**	God like.
Adam:	**01:22:13**	It's really not even possible to have been, had at your disposal an opportunity to invest across all of these different markets 10 years ago, and chosen US 60-40 as your go to and stuck with it over that full 10 year period. And so that's a really general explanation for why most multi asset funds who prioritize diversification first and foremost and have the opportunity to go invest in Europe and Asia and Japan, and commodities, and other bond markets and in other currencies have suffered so badly versus US 60-40. And…
Rodrigo:	**01:22:53**	But what we are seeing.
Adam:	**01:22:54**	Further out the diversification spectrum, the worst it gets.

Rodrigo:	**01:22:58**	What we're seeing, actually, Richard, I think you've seen it with me is a retrenchment away from the quantitative like, well researched active management, and saying, well, I don't know anymore. So I'm gonna go back to basics...
Richard:	**01:23:14**	Passive.
Rodrigo:	**01:23:14**	I'm gonna going to passive.
Richard:	**01:23:15**	Yes, that's exactly. That's right.
Rodrigo:	**01:23:17**	And because they're retrenching to beta. They're like, well, how should we think about beta and I'm telling you, risk parity is gonna be the thing over the next decade, right? You're, that may be where everybody's like, okay, I believe in the equity risk premium. And we're just going to do it in balance, and we're going to start there. And then when they realize that bonds are expensive and equities are expensive, may not be enough, they're going to start to wade back into, this is wild speculation, by the way, there's…
Richard:	**01:23:47**	A … prediction.
Rodrigo:	**01:23:52**	And then you're going to have to what, because it's always an ebb and flow, right? So we float too much towards one end, forget about all the discretionary managers, we're gonna go through this process, oh, I can replicate that from a white paper, I'm gonna fire everybody, I'm gonna do my active management, oh, that didn't work. Let's go back retrench to beta, possibly a better beta, but they're gonna go back into the active space with a whole new mindset, like they're gonna have to, because there will be exploration into why that didn't work. And there might be some discretionary managers that are really thoughtful thinkers and have this fantastic way of understanding flows in the market and connections in with trade desk around the world. And they can do that. And there might be these other quants like us, where we're looking at the experimental design completely different, so that we don't fall into the same pitfalls that the traditional factor based management does. I think, you know, it's just from understanding ebb and flow of this market.
Adam:	**01:24:42**	Well, here's what we know, fundamentally to be true, that the stock market will peak, when the very last person abandons their efforts at diversification and invests in US equities. That is the very moment when the stock market will peak and we're already seeing, we're getting lots of inquiries and seeing lots of comments about, you know, why bother with diversification and, you know, nothing works but US equities, or why would you bother? These are people who are capitulating to, it's too painful to be different from the crowd. And I forget who was it that said, you know, there's nothing more painful than watching your neighbor make money or something like that. I'm butchering that quote. But this is the phenomenon that...
Mike :	**01:25:28**	I think it's not enough to make money. But, you have to see your neighbor fail.
Adam:	**01:25:33**	Yeah, Right that's another fact.
Rodrigo:	**01:25:36**	It's a Mike Philbrick quote.
Mike:	**01:25:38**	Schadenfreude, no? I don't know.
Rodrigo:	**01:25:40**	Yeah... Fair enough.
Adam:	**01:25:42**	Well, definitely, you know, it's very hard right now for investors to, it's been hard all along. It's harder than ever, right now at this moment for investors to look beyond US equities. And what that probably means is that it's rarely been more useful to look beyond US equities. And this is not a market timing call at all. You know, I can certainly sympathize with Mike Green's arguments and others about just relentless flow of savings into the S&P. So I can buy that to some certain extent, and Corey's paper, etc. But I do think you still got to spread your bets, you know, like…

Rodrigo:	**01:26:25**	Yeah, look, I think a good quote to end with is a favorite of mine from supposedly Mark Twain, we'll see, which is whenever you find yourself on the side of the majority, it's time to pause and reflect. That really is some words to live by. Alright?
Adam:	**01:26:41**	Hash tag wisdom.
Rodrigo:	**01:26:43**	All right.
Adam:	**01:26:45**	All right. Yeah.
Rodrigo:	**01:26:46**	Well, that was an hour and a half gentleman. Any other final thoughts?
Richard:	**01:26:46**	No. I think it was great.
Mike:	**01:26:52**	Well, all of this is counterintuitive. What I want to know is when do you make the leap of counter intuitive being intuition. Anyway.
Rodrigo:	**01:27:02**	Totals...OK.
Richard:	**01:27:02**	I like it, like it, that is we should cut it right there.
Rodrigo:	**01:27:10**	Alright gents.
Adam:	**01:27:11**	There you go. You've seeded the conversation for poker now.
Rodrigo:	**01:27:14**	That's right.
Adam:	**01:27:14**	Alright thanks all.
Rodrigo:	**01:27:15**	All right thanks.
Richard:	**01:27:15**	Thanks for response. It was fun.
	END	