ReSolve Riffs on Timeless Investment Wisdom and 2022

Mike: 00:46 Well, that was a great lead in. I think we can - how appropriate, listen, what we'd like to tell you to do is go listen to that, and you can capture everything that we're going to talk about today. Exactly.

I'm just kidding. We would never let you off that easy on a Friday afternoon. You are stuck with us. If you tuned in, I'm sorry, that's your fault, not mine. And with that welcome, I guess that's a welcome. And also we're going to have an investment discussion on stuff, and you should get professional advice, do your own research, all of those things. Think for yourself on all, a number of myriad options and topics. But today we're going to dig in or re-dig into content that we've kind of prepared a couple of times. I think it was probably five years ago. And in a cheeky way, we did The Twelve Days of Christmas and the Twelve Days of Investment Wisdom, and walk that through December, which was a bit of fun.

Richard: 01:47 How good? Mike? You just went silent on us. Un-hit the mute button. All right, can you guys hear me? Yes, sir. Yes. Okay, so the cable jiggled. Jiggle the cable doesn't always work. Sometimes it cuts out your audio.

Mike: 02:04 So the little history on the *Masterclass* was, we did it and then we kind of thought about it, that we could do, make it much I think, make it ten sort of thoughtful mini content pieces on how you would think about long lived assets, like potentially permanent assets and how that changes your mindset when you're thinking about things.

And I remember when we first did this. It's kind of reminiscent of living in a tropical island or paradise that we live in and thinking about where you might buy a house. And if you're here for five years or ten years, you might think about buying something right on the seashore and risking it, buying some insurance and maybe your hurricane hits and maybe it doesn't.

But if you're a founding family that's lived here for 100 years and will continue to live here, you're probably thinking about where's the highest spot, where's it inland a little bit, because I'm going to be here for the long term.

And I think, thinking about your portfolio through that lens, when you're thinking about 50 or multi-decade time frames, alters a little bit of what your preferences might be. And so the Masterclass and the evolution of the Masterclass was to just sit down and think through that.

And it's a great piece of thought, just to kind of inform your own preferences. And with that, I guess I'll turn it over to you guys to chime in. I feel like I've talked for a little bit here. Yeah, I know.

Rodrigo: 03:28

It's all good. And I'll actually quickly share the screen so that people can see how the content is laid out. Ani, if you wouldn't mind pushing that through. So if you go to InvestReSolve.com/Masterclass, what you'll see is it's a ten episode series laid out, starting from the *how to steward long lived wealth* as Mike just alluded to, to *decision making*, *preparation before prediction.*

Balance, *rebalancing premium* and so on. We get into *alpha*, we get into *tail protection* and putting it all together. Each one of these has transcripts to it, but we're going to try to summarize all of that for you today and also talk a little bit about how this has worked out in the last, from the pandemic to the inflationary regime that we saw last year.

But really, all of this that we put together comes from, especially from this group, our own kind of personal experience. We all kind of got to the same place through different ways. And what we talk about in the Masterclass a little bit, is the idea of proper decision making and how difficult it is to predict the future.

But I think, I really like each individual background. Why don't we start with you, Richard, because you're the last one to experience the transition. Where you came from and how you ended up with a shop that doesn't really care much about any single asset class, but cares about the diversity of it all. You started in a pretty concentrated way, did you not?

Origins

Richard: 05:06

Yeah, I was most of my career focused in equities in the Brazilian market. That's where I'm from originally. And when I arrived at ReSolve, you guys were already deep into the research and into the framework that we called *Adaptive Asset Allocation*.

And the alpha stack, that we now call the *Evolution Program* was coming online and it was starting to become what it has become. And then for me, I really was, through the journey, focused on valuations and focusing on multiples and focusing on kind of really understanding the micro of the companies that we invested in.

The two places that I mostly focused my career on the buy side, in Brazil. And then I remember the period between 2014 and 2016 where we had presidential elections, where a fall of a, there was a plane crash where one of the main candidates passed away and huge swings in the market.

And then following that we had blog posts and political gossip generating 5% to 10% swings in the main Brazilian index, BOVESPA, which was kind of in hindsight like bonkers, like you kind of imagine nowadays investing, having to all of us.

I remember in the 2014 period having to go into these blogs and kind of understand where the alpha was in trying to predict the political outcome. And following that, an impeachment process. And then a new president coming in and after all that, I was really ready to receive this kind of wisdom, this new way to think about an investment framework, not only from a diversified approach and a globally diversified and asset class diversification, but also a systematic way to think about allocations.

Right? Not really relying on your gut, or this illusion of control that one has. Like knowing intimately the balance sheet and the income statement of a company and kind of thinking that you know what the outcome is going to be, but rather having this more thoughtful approach where you're trying to triangulate on the outcome of asset classes by drawing from multiple perspectives and multiple sources of information.

Price judgements, some of them historical, seasonality, things like that. It really was a *Come to Jesus* moment, once I started reading our content and I knew that this was what I wanted to do.

Rodrigo: 07:50 Most of us have already talked about our origins. Right. Mine is Peru. Inflationary boom. That led to a lot of money.

Mike: 07:59 We've got millions. We've got millions of new listeners, though. Yeah. Go through.

Rodrigo: 08:02 So the way the way I came through it, yeah.

Mike: 08:06 That we got the millions, I forgot about, give me, give me the, don’t give me this. I want emotion. I want saliency. So look it’s…

Rodrigo: 08:12 I think Richard can attest to how difficult it is to think about predicting anything in the Latin American market.

But my background is, born and raised in Peru. My father was a very sophisticated mathematician. He was a software developer. He actually brought the first computer to Peru after studying in Monterey, California, for the Peruvian Navy in operations research.

Operations research. Something that kind of informs a lot of what we do today, which is interesting. Built a little business, and in 1989, inflation went from 20% to 7200%, and it was just absolute chaos.

Right. A period where anybody who had savings in cash went to zero in terms of purchasing power. And my next door neighbor, who had a mortgage and was about to get evicted, was able to pay off his mortgage with $100 bill.

It was like big losers, big winners. The big winners were the debtors. Emigrated to Canada, buy another concentrated position, which was real estate, right before a 50% housing market crash. And then, once again, we saw it again in 1998 to 2000 during the tech crisis, where you invested in the stock market, mostly tech, and got a massive bear market.

And all that led to concentrated bets from a very intelligent man that just didn't understand how markets work. So it's led me down a path of how do I make sure that that does not happen to me? And it all starts with first understanding that asset allocation is more important than security selection.

And everybody I spoke to at the time was picking stocks, not picking asset classes. And it was about diversity, globally. And then it's about systematic investing rather than emotional investing. Right.

I think I'm pretty bad at the emotional side. So it was a perfect framework for me to go down and use, as I graduated from Rotman and Finance and statistics and then and started my own business, before I met Mike and Adam.

And I think around that same time, Mike, you and Adam went through your own to *Come to Jesus* moment. Mine was led by my family, but you guys had a transition. We talked in the Masterclass about Philip Tetlock.

So I don't know who wants to go first, because I think you both kind of got there at the same time.

Adam: 10:30 Well, I think yeah, that's a good segue, because I was thinking to myself, there were lessons learned by all of us, I think, in our own ways.

Many of us who started out being really keen, interested in finance, started out in stock picking. Because, let's face it, that is really fun. It's really interesting to dig into the details of potential new growth opportunities and new technology and just do a deep dive into the fundamentals. Once, for a data oriented person, the richness of the data ecosystem for equities is just almost irresistible. Right. And I think that's where the vast majority of people sort of start on their journey in investing. And I think one of the big challenges is that most people kind of don't ever move off that, right. Or many people don't ever kind of move away from just that passion for equities. And so they miss out on the rich diversity of other opportunities that often operate in ways that are completely independent of what's going on in equities and therefore offer a huge set of potential profit orientations, if you could just broaden your horizon. Right. So that was one big thing. Just move off stocks, right? Move off zero in other asset classes. But the other piece of this is the systematic decision making, right? And I think some people may perceive the way you kind of set it up as a bit of a straw man, right?

Like systematic versus emotional. I think a lot of people who apply discretionary methods of investment allocation think that the they are doing things rationally. They're not being driven by emotion, that they're running analyses. Maybe it's stock screens or deep dives in terms of projecting future cash flows out many years, weighted average cost of capital, et cetera. And they're leaning on their models in order to make these kinds of decisions, right?

The reality is, or the difference between even people who are putting in that level of analysis versus systematic investing, is that a systematic investor puts all of the analysis into the process. So what is the process that I'm going to use to invest? If my investment process is going to be largely passive, then that is up front. Well, what is the strategic asset allocation, the mix of stock/bonds and potentially other asset classes and risk premia that are most likely to deliver on my investment objectives. And for more active investors it is, what is the process that I'm going to use every time to select the group of assets and the weights of those assets and how often I'm going to rebalance them in a price portfolio. And then one of the great benefits of systematic investing is that if you do it right, you can go back and see how that process would have played out in terms of investment performance over hopefully many decades and many different economic cycles and economic regimes, right? Different inflation environments, growth environments, liquidity environments, et cetera. Right? So that's one of the big advantages of systematic, and it's nuanced.

But I think there's a very clear difference between people who are highly analytical, but still apply a discretionary process, no matter how rational they are on an ongoing basis, and people that apply a systematic process where all of the effort goes into the design of the process, and then over time, you largely let that process run on its own, obviously monitoring the economy and the universe of assets that you're allocating to, to make sure that there's nothing really strange going on, that the information that you're using to inform your models aren't aware of.

So I didn't come to this automatically. I spent probably the first third of my investment career in the more analytical but discretionary orientation. And I didn't really learn the hard lessons that motivated a shift to a pure sort of systematic mindset until the latter half of 2008, because I had largely navigated the macro environment using a discretionary process through the sort of ‘00s, emphasizing commodities and emerging markets, et cetera. I had been following and recognizing a lot of the risks that were piling up in the housing market and in the credit sector and in the banking sector going into the 2008 crisis. But what really woke me up to the complexity of this investment ecosystem or activity that we're all involved in, is the reflexivity that we observed when governments began to get involved very heavily later in 2008 and especially early in 2009, by just changing the rules of the game on the fly. And so that was a really big frying fan to the face. Yeah. Okay. You can have the macro environment dead to rights. You can know exactly where the nexus of risk is. You can have the right trades on to capitalize on that. But there are other entities in the market that have very large incentives and very large balance sheets. In other words, they've got really big guns that they can bring to bear to change the outcome very dramatically and shift the directions of risk.

Adam: 16:21 And so coming out of that, that's what sort of led me, if I'm going to continue in this business, then I need to take on this systematic mindset. Now I've rambled on for quite a while. So if someone else wants to take on the Tetlock story, then I'm happy to yield the mic.

Mike: 16:38 Yeah. I think one of the things that was, probably actually runs along the same sides as what happened to Philip Tetlock as he, through his academic career, achieved tenure-ship and had the ability to direct research, and prior to that, sort of seeing decision making happen. And this is detailed in his book *Expert Political Judgment*. Just looking at these experts in certain fields, and I think it's like 28,000 observations over ten years. It's either 28 or 82. I'm dyslexic, so forgive me for that. What he found was, experts featured on media are particularly bad. Experts in their field aren't really great either. What works is sort of simple models, which is an interesting tweet that Rodrigo re-tweeted with the Inverse, - what's his name on CNBC model Jim Cramer, is a new Inverse Cramer Model, *Cramer Bets*. Yeah, it's an interesting and funny thing because I think you're harnessing the risk premia, which is a behavioral risk premium of those in the media, having poor track records at predicting in the future.

And this is an interesting thing. Once you declare behaviorally a position, you now have to defend that position. And I'll often say when I'm in a conversation, wait, how did I get in the corner, painted, defending this position? Well, because you said it. Oh, damn it, I did say that. So now I have to defend it. So this is, as Adam alludes, it's nuanced. So the journey for me was I was a little bit more always kind of looking for rules to help me sort of navigate my decision making. And I think the crucible to get us across, to make the commitment both financially and across the firm in a research perspective, to move to a more systematic decision making process, was that desire all along and just seeing that the Fat Tony and Me reference from Taleb, just always kind of look sideways.

Mike: 18:53 There's a lot of experts there's a lot of experts saying a lot of things, and they're constantly sort of random at best. So when you think about those types of concepts, then you start to think about, well, wait a second, maybe preparation is better than prediction.

Or let's think about having a fully prepared portfolio. That's the first part. And then we've, can now measure our tilts or the things that we think are going to add value. And I say we as the investment community. The things that might add value to that, the tilts, active allocations, home country bias, we can actually measure them against some sort of base portfolio.

So first let's have a fully prepared portfolio. And this is where we sort of all circled around the idea of some sort of risk parity concept, where you're thinking about the amount of risk you're taking rather than the amount of capital that you're allocating. Let's not let the maniacs run the asylum. Stocks have a volatility of 20, bonds have a volatility of 6. There's a … there between, between those two that is quite large and so capital allocating doesn't quite hit the target. So I think we said, let's be prepared. What's the best prepared portfolio? And that's sort of something in the area of risk parity. Now there's many, many ways to construct that and think about that. And there's a great paper that Adam penned which is sort of the decision making tree, that goes through, *what do you believe*? And then this is how you should construct your portfolio.

Rodrigo: 20:32 What do you think you can measure? Can you measure volatility? Can you measure correlation? Do you have the ability to predict the future returns of something? Whatever you believe you can accomplish, you'll be able to do. Right.

Mike: 20:44 And that's highly informative to how you might think down the road in constructing the portfolio. We sort of circled around the idea, well, let's wrap our arms around all of the assets in the world. Let's let everybody fight over today, gold is hot, tomorrow bonds are hot, et cetera. But we're balancing the risk between these different areas. And Rod, you always do a great job summarizing this. Why don't you…

Rod: 21:10 Just quickly. Why bonds, why stocks? Why can't, well going back to my personal experience, right, it is what your group of investors are used to. In Latin America, what your group of investors were used to is leaving everything in a safe checking account or savings account in the safest Peruvian bank right. That is considered safe. But cash is only safe if inflation doesn't go through the roof, right? So in North America, when I graduated and started interviewing advisors, what is considered safe has been the 60% equity, 40% bond portfolio, right? 60/40. From, if you put your risk parity goggles on and you x-ray that portfolio, you may think you're getting 60% of equity risk and 40% of bond risk, but in reality, you're getting over 90% of risk in equities and less than 10% of risk from bonds. So it's wildly inappropriate. That means that nine out of ten days, if we trade that portfolio over the next ten days and equities are down all ten days and bonds are up all ten days, your 60/40 portfolio will be down nine out of those ten days.

That is not balanced at all. Right. So you need to go the other way if you want to create that balance, right. You want to have significantly more equities, more, sorry, more bonds, 70% to 80% and less equities. But the problem there with that portfolio, the way I saw it as a Latin American, is, well, what happens when inflation goes up, right? That's when rates are going to go up and equities and bonds are going to go down. There's something missing there. And that missing piece is something that does really well as inflation goes up. That tends to be TIPS, that tends to be commodities, and that's been missing in portfolios for as long as I can remember. Right? We've only just started talking about inflation hedges after the fact, as it always happens, right? And so my dad was working with a single piston every single time in a motor, right? He had a single piston, kind of chugging him along in his growth trajectory. I got to North America and people had two pistons in their motor. One was really thick and the other one was really small, so it was like a clunky engine that kind of moved differently, but didn't actually give them a smooth ride.

And then what we talk about, about risk parity, is first and foremost diversity, having things that can do well in different regimes. Equities for growth, bonds for bear markets that are non-inflationary and commodities for inflationary regimes, or TIPS, and then weight them in such a way where your motor is actually three separate pistons that are equal width, so that the ride is a lot smoother. Right. Now we're gonna talk about this.

Rod: 23:43 This is the first part of the Masterclass. We talk about getting a smoother ride, if your only option is to be long only. But it is at the very least, that is a motor that we can put together where we don't have to predict which piston is going to be firing off at any given time. But we're going to move forward most of the time and we're going to kind of survive the storms.

Richard: 24:0 Right. The other aspect portion of risk period. To this, that I think is always important and we can talk about all the technical aspects and the basis that underpins this framework. But from a behavioral standpoint it really is an explicit recognition of ignorance. Right. It's accepting that there's so much uncertainty out there and that we want to sort of, as we like to say, *first do no harm*. And everybody likes to have that illusion of control, especially in no- industry, because confidence/hubris sells, and you're able to say I know. And this also kind of applies to ensemble methods which we'll get to in a moment. Right? Triangulating around an answer to multiple questions but explicitly on risk parity. Right? This understanding that first you want to do no harm.

And so if you have a blank canvas and you want to start an asset allocation, a portfolio construction methodology, how would you start that? Well, you want to participate in capitalism and growth and human ingenuity and all those aspects.

And how do you want to do that? Well, you want to do it in a balanced way so the maniacs don't take over the asylum, that no single asset class can dominate the portfolio from a risk perspective. And so you create this portfolio that is well rounded geographically, from a regime standpoint. And then has that risk balance to it. But for a lot of people, they want to gravitate towards people that have it's like, that meme, that I always like, *simple but wrong answers, and hard but correct, but difficult explanations.*
And there's only a couple of people on the latter line and everybody gravitates to the former line. No one really wants to embrace that uncertainty to the degree. So they just want someone that tells them, I have an answer and come with me, I'll take you along for the ride.

Rodrigo: 26:04 Look, it may seem hypocritical for us to be, we talk so much about *the do no harm portfolio* or having a level of humility about the market, given that we run a pure alpha, that's trying to predict the future over the next five days. But I think the point that we're trying to make on this first part of the portfolio construction is the recognition that you as an investor have to take your Hippocratic oath of the do no harm. First you have to assume you don't know.

And if you don't know, a good way of making sure you don't blow yourself up is through this concept of risk parity, in our opinion, right, starting with presenting that is that you're faced on Twitter, on LinkedIn with a barrage of, *what are you doing*? This is back in 2012, by the way. What do you think you're doing? What are you doing buying so much bonds? Don't you know that inflation is going to hit, and rates are going to go up, and risk parity is going to be destroyed, and correlation between bonds and equities are going to go to one and you're going to lose all your money?

So there's two things to address there. Number one, ah, risk parity is often thought of as equities and bonds levered, but in reality it's got that commodity component. And number two, it's the well, I don't know when that's going to happen, do you? Do you know when rates are going to go up? And it took a decade for that to happen, right? You had rates go negative. And that bond position in Germany, if you were a German risk parity investor, go up and up and up, all the way down to when yields were down negative 75 basis points.

Right? So it's, it's, it was so hard for a decade, people predicting and clamoring for the fact that it makes no sense to own bonds and yet bonds continue to appreciate in capital, and capital appreciation. Right. So it's just such a difficult game to try to predict the next twelve months, two years, three years. So you want to start with that and then you can start exploring what you can do in terms of tilting your asset allocation weightings.

Adam 27:57 Right. But the elephant is so difficult, the elephant in the room here right, is well, great. So we wanted risk parity for all these different regimes. So let's review, how did risk parity weather the ‘22 environment and what were some of the factors that went into that performance?

Right? And ‘22 was a really interesting year because we had two pistons of the three that were both hit at the same time. Right? For the first time ever we had, well, not first time ever, but in an unlikely circumstance, we had or unusual, we had stocks and bonds highly correlated and experiencing negative returns over a calendar year, together.
Obviously that was extremely painful for traditional portfolios. Did a risk parity portfolio navigate it any better? And the answer is kind of, sort of right. There certainly were some risk parity funds or strategies that managed through that inflationary environment much better than a traditional 60/40 portfolio. And then there were obviously other risk parity products that either had really emphasized bond duration, in order to avoid taking on excess leverage, or were themselves just highly levered, right? Levered to a higher volatility target in pursuit of higher long term returns that experienced a worse year in 2022 than or, you know, call it sort of on par with, what, a 60/40 portfolio experienced, right?

And one big challenge for all portfolios, including risk parity portfolios, is that risk parity portfolios can handle growth environments, can handle negative growth environments. They can handle inflationary environments. What they can't handle and what no long only portfolio can handle, is a massive increase in expected cash rates. Right? So what do we have In 2022? We had governments around the world stepping in and raising interest rates, raising the level of the yields on cash from effectively 0% to the high threes into the low fours. Now, all of a sudden, when cash is yielding 4%, then all of the other risky assets in the portfolio, whether they're longer duration bonds or credit assets or equities or commodities, all of these now look less attractive on a risk adjusted basis relative to cash.

If you can get 4% on cash with no risk, then you've really got to look long and hard at the premium you're expecting on risky assets. And so risky assets need to all price lower to be competitive with the cash.

Richard: 31:21 There's a nuance point to not just the magnitude of that dislocation in short term interest rates, right cash rates, but also the speed. So it is the sudden or the swift dislocation ahead of market expectations, because you can have an orderly rise that is sort of telegraphed with forward guidance and all those interesting tools that policymakers have, that can allow for risk assets to accommodate those changes and for the changes in asset allocation not to be as disruptive as we saw in ‘22 too. But it really is the surprise numbers that you get, particularly on the inflation front, that then all of a sudden shock market participants into realizing that oh God, the Fed and other major central banks are way behind the curve.

Mike: 32:14 Richard, you're highlighting, it's not what actually happens, it's the change in expectation of what is going to happen. That's where markets are priced. They're not priced on the information today, they're actually priced on the expectations of the information in the future. Thus they do have an error rate in those anticipations. The Pandemic was one of those, very fast. The response of central banks was another one. And it's interesting because we got a couple of questions that I think are worthwhile pausing.

Mike: 32:49 As we talked about risk parity and we were actually very effusive in talking about this, there's a particular RPAR, is mentioned. So risk parity, it was the first sort of risk parity ETF and you had to make a few compromises in constructing that ETF because of the structure it went into. And these are things that investors are always faced with. You have the strategy that you would like to run and then you have the various delivery mechanisms that you can access that strategy with, and then your clients preferences around how they would like to invest in that strategy.

And so Mike Harris talks about RPAR, down 23%. So various constructions even in risk parity, and I'm going to throw this over to you, Adam, to chat a little bit about our risk parity, RPAR and other risk parities, just as a broad landscape across risk parities, just to emphasize that there is a significant difference in how you might think about the construction, how allocators and managers sort of drove to maybe a little bit less commodity exposure in many cases, because they couldn't quite handle the tracking error and the drag.

So I'm going to lob that over to you to just talk about the whole world of risk parity and how there's actually quite a bit of dispersion and outcome and maybe you can talk about why that occurs. And by the way, our risk parity programs had a banner year.

Risk Parity

Adam 34:15

They're awesome. Yeah. So, yeah, I mean, there's so much variety in how different managers construct risk parity portfolios. Some of the major levers that can have an impact in the short term, are you volatility sizing the portfolio on an active basis? Are you responding to changes in volatility in the near term? So if volatility seems to be spiking, you're dramatically reducing total portfolio exposure, or if volatility is declining, you're increasing total portfolio leverage.

Different managers approach that in different ways. Some managers do respond to changes in volatility, but they respond very slowly. Other managers respond very quickly and depending on the market environment, the slow responders may outperform the quick responders, or vice versa.

Other managers don't really respond to changes in volatility, but rather just sort of set a long term strategic allocation based on the long term volatility of the constituent asset classes. And typically for those managers, when volatility spikes, then typically when volatility spikes, the underlying asset declines in value. And so at least that's true for equities, especially. And so you can imagine that if you're just trying to maintain a strategic asset allocation and there's a spike in equity volatility, typically that means the equity allocation has dropped, which now means you need to rebalance your portfolio.
You got to add capital back to equities to bring it back to your strategic asset allocation. So where the volatility responders are selling equities, as an example, they're selling the whole portfolio. But as part of that, they're selling the equities, as volatility rises. The strategic risk parity allocators are buying equities as volatility rises, right? So there's an offsetting dynamic. And in fact, one of the biggest strategic risk parity allocators is Bridgewater.

And so they've got well over $100 billion allocated to their global risk parity product. And so while some of the other, maybe smaller risk parity funds who are more active in their volatility management are selling, Bridgewater is absorbing that liquidity, which I think probably is strongly suggestive that the myth that maybe these risk parity funds or these volatility manage funds exacerbate liquidity events, may be overstated.

Richard: 36:57 There's a sandbox variable. Right? I think we need to sort of, maybe the starting point is to recognize the universe that we're trading. So if you think about a risk parity strategy that is deployed in a futures universe that is able to access individual commodities and not just a basket of commodities, which is what you're able to do in an ETFs space, that changes. Are you just trading US treasuries, or can you access global sovereign complexes? All these different constituents will affect the…

Mike: 37:20 And how you're doing it, Richard? I'm going to pile on here because there's the one comment, is asking about RPAR, which harnessed a bit of the commodities from the commodity equity complex, which was a bit of a challenge. That's not good or bad. It allowed a structure that allowed people to have access to that portfolio and they were very clear about how they were going to access that, due to the structural limitations. And we highlighted that while you've got equity beta mixed in there, and it's a bit of a challenging scenario at times, these things can confound the results that you might like, versus what you receive.

As Adam said, and you're pointing at Richard, there's a lot there, and that's why you have more than one risk parity manager if you…

Adam: 38:10 And it's all good intentions. Everyone's trying to make the best model that they can to express the views that their investors are looking for, with the constraints of the structure that they're offering it with.

Rodrigo: 38:30 Right, so just quickly, I do want to land on the risk parity. We can't share our own data because regulatory restrictions and all that, but I would say that AQR does something as close as to what we implement internally, like what we believe is a good, well crafted risk parity portfolio where you have your commodity exposure, you have diversity across equities, bonds and so on. The big thing has always been, *you guys just wait*, wait till that, till the rates go up and bonds and equities correlate to see how you're just gonna absolutely blow up. But a well formulated risk parity strategy…

And Ani, if you could just push that screen for me, in 2022, you know, you know, actually wasn't that bad. Right? That's the yellow. The orange line at the bottom there is the All Country World Index, and then the purple line is the AQR risk parity strategy.

And what's interesting here is in the first half, remember that commodity sleeve actually did a good job of offsetting the losses of equities and bonds in the first half, right? So by June 6, that risk parity portfolio was only down 3%. And then, commodities started to roll over and it became like a tougher period for the risk parity component. But ultimately in one of the worst years, where two out of the three pistons were down in the first half and three out of the three pistons started kind of going down momentarily, you had a year where risk parity landed down ten and a half percent.

So again, it's not perfect. There are some blind spots, and the blind spots end up being when those three pistons are down. Right? So by the way, this is not news to us. If you look at the history, you can recognize that when there's quantitative tightening and when there is liquidity issues and people start to withdraw from the markets, generally, you're going to need to overlay something on top of your risk parity to fill in the gaps.

And what are those gaps that risk parity tends to have? We've talked about different types of risk. We talked about that risk parity can do well for inflation risk, for growth risk, but does it do well when liquidity dries up? Especially, does it do well when there's sentiment shocks, when everything just goes down and there are margin calls everywhere, like in the COVID crisis, and you need to plug that hole when commodities, equities, gold, bonds are all going down together, right?

Richard: 40:54 And even before, even before we do overlay, we we can just kind of briefly talk about rebalancing and using volatility in your favor. So the idea that you you know, you can use the entropy of markets, and particularly the entropy that we saw, you know, much higher in 2022, to your favor, and rebalance the portfolio appropriately.

So I was paying attention to the the equity line that you were showing there. And there were periods where the AQR strategy was up, the risk parity strategy was up when equities were down, and there was an opportunity for investors that are periodically rebalancing their portfolios to switch from one to the other, or the excess return. One has, had captured the rebalancing premium. So just on the call it, more passive, more beta oriented portion of a portfolio, if you do use rebalancing in your favor, you can harness an additional return stream.

Mike: 42:00 I think this is a good jumping off point, too, to think about a couple of the next steps in… part of the thing was, at rebalancing premium, which you're covering, you make a *vig* for just rebalancing between volatile assets and adding more bets. But in adding more bets, we've got to expand our canvas.

Adam: 42:22 Hold on. I can't help myself.

Mike: 42:31 Okay. What did I do?

Adam: 42:35 No, it's good. This is good. Before we there, first of all, for Corey, we won't call it a rebalancing premium. We'll call it a *diversification premium*. There you go. You're welcome. And you're right to force that. I want to talk about another form of risk parity or what goes into risk parity and how we might be able to improve on it. Right. So what are we trying to do with this? Well, we've got a set of risk premia, right, where we perceive that risk is going to be rewarded. What are those risks?

Mike: 43:00 I like where you're going Adam, and I actually didn't know if you wanted to talk about this.

Adam: 43:10 Oh, no. Yeah. Okay.

Mike: 43:12 So this is great, but if you don't mind, I think we need to, what we haven't addressed is the fact that all of this risk parity conversation requires the use of leverage, which requires the expanding of a canvas of what is the appropriate level of exposure you might think that you need to get from your dollar.

Adam: 43:36 Okay.

Mike: 43:37 I wonder if we might just touch on that first, because I know where you are. I think it's absolutely awesome. But while we're here in risk parity land, what we haven't covered, really, is this whole idea is if we create a risk parity portfolio and we just have 100 cents on the dollar, we end up with a very large part-bond portfolio and with a very small equity tilt. And we kind of end up sort of on the efficient frontier at the kind of lowest vol. It's got a good Sharpe, but the vol is low, and the returns are low, and nobody gets excited. So we need to expand our canvas to make sure that we can have these equal allocations of these diversifying risks, which don't increase the actual total standard deviation and all that great effect vis-a-vis the returns that we can achieve. So who is it that talks about the size of the canvas? Because that was a brilliant way to think about it.

Rodrigo: 44:32 It's Sam from *Picture Perfect Portfolio*. And so I give full credit to Sam for talking about out the idea of giving your portfolio room to breathe by expanding your canvas. Right? For decades, investors have only had a canvas size that's 100% of their portfolio. You put in $100, you have to get $100 of exposure. So we talked about this awesome way of balancing risk between equities, commodities and bonds. And then people get super excited about the concept. They put it together and they they go from a portfolio, a 60/40 portfolio that runs at a volatility of 12%, that gives a return over long term of six to 8%, to a portfolio that because of the diversification, runs at a volatility of four and a half percent and gives you a return profile of three. In that canvas size, it's only 100%.

But if you're able to expand your canvas beyond 100%, then you can increase your return profile and get to a point, and increase it to the level of risk that you want.
Because the more you increase your exposures to all of them commensurately, you're going

to increase returns and risk at the same time. We're not saying go to 20% volatility. If you are happy with 12% annualized volatility like your 60/40, you're better off getting to 12% volatility with a more balanced portfolio.

Now, how do we expand that canvas? Before, you had to go to an institution, you had to be an institution. You had to get institutional leverage. Today, as many people here know, there are many public mutual funds and ETFs out there.

And Corey Hoffstein from Newfound, myself and Adam wrote a paper in 2021 called *Return Stacking Strategies for Overcoming a Low Return Environment.* The goal there was that we could use publicly available exchange traded funds and mutual funds that have more than one dollar's exposure for every dollar you give them, to be able to create thoughtful portfolios, right?

So if you want a risk parity portfolio, now you can actually buy an ETF that has 90% equity, 60% bonds, that has, if you want to start including alphas, you can stack a beta and an alpha and so on. So you can go and look at that up at Returnstacking.com and read on it.

But the point here is like, what Mike was alluding to is, risk parity is not exciting. One like, don't go and test it and be like, what are these guys talking about? Risk parity gets more exciting if you have an expanded canvas.

You can do that now. You can learn about that with *return stacking*, but I think Adam, I'll pass it over to you about the idea that risk parity, the basic risk parity is this three risk premia, but maybe we can expand that a little bit more. So, I'll give it…

Adam: 47:08 Well, now I feel like the moment's passed. We're already on to *return stacking*.

Mike: 47:15 No, it's not passed. I should have covered it earlier when we started talking about the whole concept of risk parity, the fact that it requires expansion of canvas. Now that it requires expansion of canvas, one can go through the different easy ways to do it, but what are the blind spots of risk parity? What doesn't risk parity see that you can add to inform it, to actually help it produce more informed, better portfolios of betas. I mean, that's really, I think, what you're going to get into. I'm not sure.

Adam: 48:45 Yeah, okay, well, since you've set up that teaser, I'll just go for it. So risk parity, why does it work? Well, because you're expected to be paid a premium for taking on duration risk, right? You're going to lock up your money for ten years or 20 years. Then you want to expect that you're going to earn a little bit over inflation, over that time frame versus cash, which you can take out at any time and it has no risk, and your consumption, you can immediately consume.

Same with equities, right? Your equities fluctuate, if you're going to take your money out of cash and put them into equities, where you want to take it out two years from now, five years from now, who knows? It could be lower than they are today, right? So you need to expect that equities are going to produce a higher return than cash to entice you out of cash. Same for commodities. You need to expect that they are going to do what you expect them to do in the periods when commodities are the only thing you expect to deliver returns better than cash.

The problem is that sometimes the expectations of there being a duration premium or that equity, the equity premium is higher than what you can earn on cash, or that commodities are going and deliver a positive return probably should be questioned. And 2022 was a really good example. So what happened when the Fed raised interest rates so aggressively? The yield curve inverted. So for most of 2022, the yield or the expected return on long term bonds actually was lower than the expected return on cash. So you have cash yielding, whatever, three and a half percent, the ten year yielding 2.8, the 30 year yielding three. Right. So where is that duration premium? If the yield in cash is 4% and the dividend yield on US equities, even the shareholder yield on US equities is less than that, then do you have a positive expected premium there, or is it as positive as it was when rates were zero? If commodities are in backwardation versus contango, that impacts what you expect.

Part of the return you get from commodities is from roll yield. Right. So if you've got a commodity where the back months are trading lower than the front month, well, then the expectation is that as the back months begin to roll up to the front month, that they're going to increase in price, to converge on the price of the front month contract. That's called roll yield. Right. That's a big part of the total return you get investing in commodity futures. If that roll yield currently is negative because your basket of commodities is in contango, then the expected return on that commodity portfolio is negative. Right? So what is a portfolio that seeks risk premia in which, from the major asset classes, in whatever direction that premium is currently pointing?

Well, that is called a *global carry strategy*. Right? So a carry strategy in 2022, most of the year would have been short bonds. Much of the year would have been short some equity markets where the expected yield on that equity market was lower than what you could expect to earn on cash. Also currencies with different inflation adjusted expected yields. Sometimes the US dollar had a higher expected yield, in which case money was flowing from non US dollar assets to US dollar assets and vice versa.

Commodities spent much of the back half of the year in contango, which implied a low or negative return on certain commodities. Right. So what's interesting is, if we look at 2022, that a global carry strategy actually delivered nice robust performance. And if you go back as far as we can go with a large global futures universe, that a global carry strategy dominates a global risk parity strategy because you're investing in all the same assets, but you're only really long those assets when you're expected to earn the premium that you initially set out to harvest.

And actually, because those premia, the duration premium, the equity premium, the commodity premium, they typically are in a positive direction, it's nice to combine a risk parity portfolio with a global carry portfolio. That combination ends up being really magical.

Rodrigo: 52:20 The *Carry Tilted Risk Parity Strategy* is what Adam's alluding to. And that kind of makes it a bit more o,f that's a step forward in the right direction. And in spite of that, when you put *that carry tilted risk parity portfolio*, you still have a few blind spots that need to be filled in. And Mike Harris is talking about, well, you can short commodities and all this stuff, so we'll get into what you can do.

Rodrigo: 52:47 Right. So you have, what blind spots still exist with this type we put together so far? Well, if you have a prolonged period of assets all going down together, you need something that can short, right. And be reliable in that short. When you think about what overlay strategies you can do, when you think about liquid alternatives, when people talk about this space outside of traditional asset classes, still today, you hear about, oh, I have a long/short equity manager. And that sadly, is just a lower volatility S&P 500, as you're net long and you're still highly correlated to wherever the S&P goes or currently being, or maybe not as popular now as it used to be, but private equity, private credit, private real estate, all these nice merger arb, I guess what, right.

So you're looking at those and you feel like you have protection. But as Cliff Asness calls it, that's just a lot of volatility laundering. It's just a way to feel good about the volatility that you can't see, while you own the asset and hopefully you get a return. Right? But they're not susceptible to a negative growth shock. So when we looked at the landscape of what you can add to go from an *All Weather Strategy* to what we're calling an *All Terrain Strategy*, we need to have reliable structural strategies that can be net short things, or net long everything, or net neutral if we need to. Right?

And that category ends up being in the futures space. Righ?. It can be, the most popular category is trend following, that has been around for decades and has shown time and time again. All you need to do is go SOCGEN Trend Index and see how truly non- correlated, structurally, it is to equities and bonds. And it's not that, it's you don't need to rocket, to be a rocket scientist to understand that the structural diversification is likely to continue to be there, because it's when things are trending downward, it takes the opposite side and shorts it and makes money, while things are doing poorly, and vice versa.

And so there is an embedded reason that we can trust that this will be a fourth piston in that motor now to help smooth that ride out, right? And so in the futures side, we're not just from our perspective, we don't just think about trend, but trend is a very good addition, but we're also looking at things like seasonality and mean reversion and carry and relative value and so on. So that is a crucial component to inching yourself toward this *All Terrain Portfolio*. Right? And 2022 was a perfect example of that. So we just showed you, what's the ticker for… I'm just going to sell other people's funds today.
What's the managed futures, a well known managed futures fund just to overlay on top of the risk parity, the AQR Risk?

Adam: 55:47 PQTIX.

Rodrigo: 55:49 PQTIX, right. So that's PIMCO, well known name, right? This is a trend manager and again it's about filling in the gaps, right.

So I'm going to show my screen and what we see here in 2022 is you have again the orange line. It's global equities. The purple line did a much better job. This is AQR's Risk Parity. And then you have PIMCO's Trend Strategy or CTA Strategy up 11%. So you have the blind spots that exist in that risk parity component ,are filled in by that ability to short, you know?

Richard: 56:25 And what about that quasi mirror image between the AQR fund and the PQTIX fund?

Adam: 56:34 I mean, talk about that's kind of the, that's kind of the goal. That's what you're looking for, right?

Rodrigo: 56:40 And the goal here is to understand this. You can't necessarily depend on this. If you were to take a wide swath of long/short equity managers, you can't really depend on a lot of the same type of characteristics.

But in the managed futures space, I think there's a reliability to the structural nature of it where you can actually count on long term conditional, non correlation. And you saw it last year. And this is why it's a step forward in building an *All Terrain Portfolio.* Right. So you had this, you're kind of flat for the year for that strategy, which is better than nothing, right?

Adam: 57:19 Yeah. I mean, the great thing is, too, we leaned on a paper from Man Group to illustrate this, but commodities are structurally designed to do well during inflationary shocks. And if you go back through history, we do observe that over the eight or nine major inflationary episodes of the last century, that the commodities, on average, they delivered total returns, in excess of inflation. Right? So they overcame the inflationary drag that otherwise would have dragged down your consumption power. What's interesting is that you can run a trend following strategy on the same basket of futures, of commodities, and the trend following strategy has a much higher long term historical return than just holding commodities as a long-term strategic holding, long only. But even during inflationary episodes, a diversified trend following also delivered a much higher positive boost to portfolios than holding just long-only commodities. So it's one of these *have your cake and eat it too* type situations.

Which is why a diversified trend following strategy is a key component to an *All Terrain Portfolio.* Yeah.

Richard: 58:40 And there's another behavioral aspect to consider here as to why this, not so much recently, but over the last several years has been such a hard sell. Right? Because people haven't really had to contend with inflation in any meaningful degree. It's been so far outside of the Overton window where the conversation has been so detached from any consideration of inflation that people are just like, why would I waste any time having to hedge that risk? And I think now the conversation has shifted quite a bit. But you still do get, because of conditioning, right, a decade plus long period of people not having to think about this now. People are still on the *yeah, you know what, I'm just going to buy the dip.* But I'm just thinking about that dip as an opportunity.

Rodrigo: 59:29 We'll see how that ends up if we have another three year period like 2000 and 2003. Right. That period was really rough if you were a buying the dip type of investor. Eight dips before you finally bought the final dip.

Richard: 59:46 That was the way it was '07 through '09.

Rodrigo: 59:48 Yeah. And it's not to say that the behavioral silver bullet was buying CTAs, because from 2000 to 2003, those CTAs were up when equities were down and they gave it all back when equities were up. And you wanted to give up on that one. The whole game is difficult. Right. Even if you're putting these things together, it's not super easy to necessarily get through. And then there's when you speak about these broad terms, it's non-correlated. Well, it's conditionally non-correlated. Sometimes it gets caught. Right. And so what's the blind spot, even with this Carry Tilted Risk Parity? We got the managed futures. It feels like it's complete. But we all know that sometimes if the trends have been up and in favor of equities and bonds for a prolonged period of time, we're going to see that beta risk parity component be long all the risk assets and we're going to see the CTA and managed futures and systematic macro be long equities and bonds, possibly at the wrong time. Right? And so there's another blind spot where all of a sudden you're conditionally, positively correlated to your beta portfolio and COVID hits. How do you mitigate against a complete drying up of liquidity in a very short period of time? And this is kind of the final…

Mike: 01:01:10 The interesting thing there, too, Rodrigo, is the COVID hit. Well, when did COVID hit? December of 2019. There was lots of news about, this is the classic *gray rhino* as opposed to the *black swan.* It was kind of out there, but until it was reflected in price. It wasn't reflected in price.

Rodrigo: 01:01:32 I remember Adam's, but which is yours, Adam? It was a tweet on their January 29's or something where Adam's like, X amount of cases in China and the S&P just shrugs it off. It was like a 9%.

Richard: 01:01:42 That's exactly my point. So copper and some of the other base metals which track economic activity, and particularly, I guess, the marginal activity coming out from China was more consequential for the global economy than any other place. And so those metals of the other commodities already starting to kill over and reflect. And I think bond markets were ahead of the game. But it really was the equity market, the darling and what everybody focuses on, was the last one to get the memo.

Mike: 01:02:20 Well, I think it's quite typical because if you think about the participants in each of the markets and this is not all the time, this is just at times, the participants in copper markets are explicitly hedging their copper exposure. They're very connected and integrated into the physical economy. And so you will tend at times to see signals, not always, and this is what makes this business so great. Nothing works all the time, but you're closer to the actual integration into the economy and sometimes, or at times, that provides a bit of a lead signal, but not all the time.

And so this is a really interesting, and then you get the other side of that where all of a sudden the global economy is not so strong, but some central bank or some participant is stockpiling some metal and you're not quite aware of what that commercial interest is. And it's a really sort of interesting, nuanced affair. People talk about Dr. Copper. Yeah. I mean, it's had some long lead time and interesting signals in the past, but not every time. But there's a structural reason. I mean, it's very connected to commercial enterprise.

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Richard: 01:03:44 Look, that's a great point, Mike. There are some markets that are much more tethered to economic mentals, right, outside of the speculative mania bubble that is the financial markets.

Mike: 01:03:54 If you over financialize the economy, then I don't know what you know, what.

Richard: 01:04:00 The reflexive nature of that?

Rodrigo: 01:04:04 Yeah, well, what you get is you get these massive shocks and rebounds, right? These V type periods that we saw for a long time, if you have the financial bazooka available to you without any repercussions from inflation. So we saw that for a decade. And look, the truth is that both risk parity and systematic macro and managed futures strategies get hurt in periods of massive volatility pickup and whipsaw markets, right?

Rodrigo: 01:04:31 And so look, again, if we think about the layers here as preparation rather than prediction, understanding the structural reasons to exist and now we've created a portfolio of preparation between equities bonds, commodities, systematic macro. We have one more piece missing and that's the 2020 event, or 2008, that October 2008 week when everything went down together. A tail protection strategy might be a way to go right now. Luckily, we don't have to hedge 100% S&P 500 portfolio that can and will go down in our future, 50% to 85% if history is any indication, right?

You already have diversity. You have thin tails from the risk parity side. You have even thinner tails by stacking on top of that the systematic macro and the managed futures, right? So you're already like preparation, you're already altering, you're already *semi-All Terrain.* We're going to try to soup up that truck. So you're already minimizing that Black Swan event, even the Gray Rhino event, right? But there is the ability to kind of have something that pops, and when everything goes down and you're long, even in your managed futures side, then the only thing that goes up in that environment is volatility.
And so there's a wide variety of strategies that you can use in the vol space in order to hedge that. And so here I'm going to show what the character, what that looks like, right? So. Presentation, share screen.

So if you see this is now kind of three indices that are it's just for everybody here to kind of visualize and feel their way through the risk parity component, the systematic macro component at the top there, and then on the bottom right is the Eureka Hedge Long Volatility Hedge Fund index. Right? And these are just a bunch of hedge fund managers trying to find the right time to go long volatility and capitalize on that. And the character of these strategies are, it's not fun to stick around most of the time, but when events like October of ‘08 happen, they have the ability to pop and fill in that gap that you see there in ‘08. And risk parity had the ability to pop in March 2020 to fill in that gap that you see in 2020 on risk parity. Right? So it's just, it's a *nice to have* little tweak in the *All Terrain* vehicle in order to help minimize even those abrupt events. And as Richard alluded to, grab money from the winner, get that rebalance opportunity and buy things cheap, right?

Mike: 01:07:25 That Rodrigo, can't be understated. People say, now's the time to buy. And you're, like, buy with what? Was I fully invested? What was I doing? I was keeping some cash. You were assuming I was keeping some cash, or I came into a windfall. Well, no, I was fully invested because I wanted to capture the risk premiums out there. And that's what you kind of do. And so not only do you get this really arduous, difficult equity line to deal with in the bottom right corner, so that's not an easy equity line, let's be clear. But when things go significantly wrong, it's had a tendency to provide the portfolio as a whole with a cash injection, where there's been an adjustment in the expected future returns. The future returns had to become higher, so today's price had to go lower, and now we have cash to invest at today's price with higher expected future returns, in a portfolio construct.

And at least that's the theory, right? This piece of the portfolio liquidity, when liquidity is at a premium. And so it's not just the return itself. It's actually what the return does for the combined portfolio of strategies in order to move from *All Weather to All Terrain*.

Rodrigo: 01:08:49 Yeah. And I'll say, you talk about the equity line on the bottom right as being difficult. Again, they're all difficult. They're all difficult. But the top right in the last.

Mike: 01:09:00 Can I tell you guys the truth?

Rodrigo: 01:09:04 Yeah. But let's focus a little bit on that one because I think … on.

Mike: 01:09:10 That because I want to shoot my face.

Rodrigo: 01:09:14 This is one of the reasons that return stacking is such a crucial concept here, right? Because you go through, when does systematic macro and managed futures tend to do well? When there's chaos. Chaos leads to dispersion, dispersion leads to opportunities. And if you x ray it from a number of bets available, you have significantly more bets available to you in an environment of chaos than you do when everything's calm.

Right? So there's a lot of chaos from 1998, from the Russian debt crisis, through the tech crisis with the inflationary regime of the 2000’s, to the credit crisis, all the way to February 2011, during the peak of the commodity bull cycle. And then from there, central banks cooperate, volatility goes to as low as 6%. There's one winner in town. There's not a lot of opportunity sets and all of a sudden this alpha component. You know, this absolute return component continues to provide somewhat absolute returns, like positive returns most years, but it's mid single digits for almost a decade, right? Now that, if you have to make room in your portfolio to stick that in there, you're not going to be able to stick to that.

But the idea of being able to *return stack* to get your, like, risk parity component, all your beta, or your equity, or your 60/40, whatever you want, and then stack that alpha on top. Now, even if you have a year where you're only making 1%, it's an extra 1% that you're stacking on top. Right? And so this is why it's so important to now expand that canvas. And that expanding of that canvas allows you to more likely stick to the equity line that's on top there. Right. So that's an important component.

The last component is you put these things together, but you stack them on top of each other in a larger canvas so that you don't feel like you're missing out. You get a decent rate of return that's competitive with what people are used to in the equity markets over a long period of time, hopefully. And it just becomes an easier thing to do, while minimizing the big drawdowns and being as balanced as you possibly can. Right, so I think that all this, we, Adam recently wrote a paper, not a paper, it's a really quick blog post that's three pages long for the CFA, right? The CFA. And then I have it up. So, From All Terrain to All Weather. I think Ani dropped that ... Yeah, yeah, I'll bring it up in a second. But this is and if you go to return, sorry, investors, all forward slash blog.

That the latest blog post is this one. *From All Weather to All Terrain Investing*. So if you want to read up a bit on it, the concept, it’s a quick read. And it kind of puts it all together for people to get an idea as to why we think this is a prudent way to do the 100 year portfolio. Right. And that kind of ties together everything that we talked about in the Masterclass, everything we talked about today, what our core beliefs are, how we invest for ourselves, our families, and our clients.

And hopefully, hopefully, we get you a bit more comfortable with the whole concept and bringing all these things together. Anybody else have any thoughts?

Adam: 01:12:35 Well, yeah, Mike Harris is asking us to plot HFRI along with RP and MSCI. Yeah, we can't easily do that. The HFRI index, I don't think is in that. No, you have to download the data and plot it up.

Mike: 01:12:48 Kevin is in here as well, and I'm not sure I know Kevin, but, I mean, the name Kevin is quite ubiquitous.

Richard: 01:13:00 Which Kevin is it?

Mike: 01:13:04 Let's go through the Kevin's. It's "the" Kevin. That's the only Kevin we know on right now. A couple of things that I like. Kevin said, *nothing works all the time. That's every quant's motto.* I agree, but it works over time. The other thing in the quant lexicon here at ReSolve is that the future reveals what the past has yet to. Right? So as much as you torture data, we always are very cognizant of the future revealing what the past has yet to. And I think that is if there's a motto for quants to have in their mind as they torture data, that is probably the one to keep first and foremost, to manage some of behavioral bias. The other thing is, he asks opportunistically, going long vol as tail protection almost seems too good to be true. So maybe you can, I mean, there's some theoretical…

Adam: 01:13:54 Well here's, '22 was a great example of how it's not too good to be true right? I mean here we had a situation where stocks went down over 20% globally and long vol went down at the same time, right? Because we did have those, no volume, we don't have those vol expansions. So again, reinforcing this concept that there is no panacea, there is no silver bullet. The answer to how do you build a resilient portfolio that will stand the test of time, is diversify. Don't just diversify across stocks but diversify across asset classes. Include stocks, bonds and commodities and other potential inflation hedge assets. Balance them so that you're, even though you've got all these assets in the portfolio, if you've got them in equal capital weight but two of the assets are five times more volatile than the other asset, that other asset is not giving you any diversification benefit whatsoever. So you need to create balance in the portfolio and expand your canvas. Expand it to include other risk premia, like carry for example, and potentially other alpha strategies or alternative premia or alternative betas, like trend and seasonality.

And there's a corneocopia potential diversifying strategies out there if you care to go and look for them. And it's really hard to decide or be able to evaluate and make a decision in advance about which of those strategies you should emphasize, because the historical data really doesn't give you any clue about what's likely to work in the future. So the idea is to find a sufficiently diversified basket of assets and strategies, that you have a reasonable amount of conviction in, allocate to all of them in equal risk and stick with them over time.

Trying to time them is the devil's workshop. It absolutely is wealth destroying and I cannot emphasize enough that, figure out your diversified basket of assets and strategies, allocate through them in an appropriate balance and stick with it for the long term.

Rodrigo: 01:16:17 I'll add. I think what Kevin is also trying to get at is *opportunistically* doing long volatility, I think is the key word that he wants to get at, which is instead of just buying a put option that has a bleed and you're paying for that over time, and then to get that payoff when you need it.

The Eureka Hedge Long Volatility Index are managers trying to go long vol at certain moments. Right? So look, that's a very good question and from our perspective, the truth is that that long volatility component is, should be a very small part because again, as Adam alluded to, we're already well diversified, we're already well prepared. We think we don't really need it, but if we can pull it off, it's a *nice to have*, right? If you're trying to time going long volatility and you don't have that persistent put option, you're going to have less of a negative carry, but you're also going to have a moment where a nuclear bomb goes off randomly. Nobody's going to have time to put in a long volatility trade there. What you're going to depend on is your diversity. If that happens, you're probably going to see a lot of money go to Treasuries or hopefully, you're going to be hopefully short a bunch of stuff with your systematic macro, right? You already have a strong base there and if it doesn't happen, it doesn't happen. Diversity first, and then opportunity second. So there's an argument to be made to have a constant put option there. You should definitely think about that.

I think if you have, if you're overweight growth assets from our perspective, I think we feel that this concept is balanced enough, where being opportunistic, minimizing the carry and taking a shot, is a better option.

Richard: 01:18:03 And recognize that any single component to this well diversified portfolio, and sometimes more than one component, can go through a prolonged long period of either underperformance or flat performance. Corey was asking earlier, any speculation whether PQTIX or DVMF's volatility has collapsed. And I think that plays into something that we've discussed internally recently, which is this idea that alpha opportunities or opportunities to make money whether it's through trend following or systematic global macro, have been a bit scarcer recently. And when that occurs, oftentimes exposures, overall exposures in some of these strategies will be reduced. And because of that, though, the volatility will collapse. I think this reflects the higher uncertainty that we see in markets today. Right? I think the marginal dollar doesn't really know where to go.

Mike: 01:19:00 Yeah, I think that's a gray point, Richard. The tails probably have never been fatter at the moment, just in the potentialities for markets to kind of process all of the information that's coming at them, whether the bond market is right, or the stock market’s right and how they're anticipating the future. It's going to be really interesting to see. I think the tails are fatter and sort of general asset classes on their own. But combining those fat tails often leads to, as Rodrigo pointed out, much thinner tails across in the short term and the long term.

Adam: 01:19:38 Exactly. Yeah. Before we close, I want to than,k well, everybody who chimed in, in the chat, but also, especially Mike Harris for the very kind words about what we do here at ReSolve.

Mike: 01:19:49 All the stuff that we're not allowed to talk about for…

Adam: 01:19:51 Yeah, that's right. And being patient with what we can't talk about. Anyone else want to wrap it up?

Rodrigo: 01:20:00 No, I just think there's a bunch of stuff that's coming up. A lot of people here know that we have a joint venture with Corey Hoffstein. If you want to learn more about that, just follow us on LinkedIn. It's the website Return Stacking. Website? Yeah, returnstacketf.com. Go visit that. We are going to try and do a podcast with Corey to get into the nitty gritty of all components of that ETF by the end of the month. Sadly, Corey is being very selfish and having a baby and apparently he's going to be doing his father thing for a bit before he joins us.

Mike: 01:20:42 Come on, we practice this, right? Can we sing it together? *Having My Baby*.

Rodrigo: 01:20:45 I'm Peruvian man. Is that a boomer song from Canada? Because I don't know it.

Mike: 01:20:50 Oh, I am an X-er. If you want to hurt an X-er, call them a boomer.

Adam: 01:20:55 That is extra violent right there. That's super deep.

Mike: 01:21:01 That's definitely violent.

Rodrigo: 01:21:06 There's one more question here. Is there any value using trend and momentum filters with risk parity? That was our initial, if you go back to yes, of course. No, there's not. Right, you know what, we'll finish it off with this, because we did talk about this in the Masterclass.

The importance of evolution of research, right? Yeah. As whenever people start as junior quants in this industry, you start with the simple stuff and you start putting ingredients in that make sense and you tweak and you try to improve your edge and your alpha, how you construct things. And when we first started in the concept of risk parity and wanted to improve it, we indeed decide, decided to do a momentum filter on risk parity. And, yeah, that works well. The paper that we wrote back in 2012, *Adaptive Asset Allocation, A Primer*, you can look that up and and it walks through what happens to risk parity when you add some momentum tilts to it. We have since graduated from that to keeping risk parity as is and just doing long/short multifactor as an overlay to disaggregate the alpha and the beta. But, yeah, certainly that is an interesting way to look at it.

Mike: 01:22:20 It's the event horizon discussion, which we could maybe save for another day. I mean, literally, we could go on for another 15 or 20 minutes about the idea of multiple antennas and why you would want multiple features and factors that you would be triangulating future price with. And you just opened a huge can of worms there, Kev, yeah.

Richard: 01:22:40 And measuring multiple ways of measuring any single one of those. I guess we stay for another hour.

Rodrigo: 01:22:48 Look, you know what, though? We didn't get to it. So episode nine of the Masterclass talks about the difference between factor beta and then creating alpha, and linear versus nonlinear. I just relistened to it before coming on this podcast. I think it's a very good episode if you want to learn a bit more about alpha and trying to continue…

Mike: 01:23:14 Richard, episode eight? He's counting in Spanish, so he doesn't know he can't make much.

Rodrigo: 01:23:20 Definitely listen to that. I think the key takeaway from that episode is that as you find new alpha, it's already decaying. So the research process has to be ongoing if you're adding new sleeves of alpha to your portfolio. So a lot of people in this industry, especially in retail, want a, want a cookie cutter, you know, recipe that you can look at, make sure they're doing the exact same thing. You can do that for risk parity. You can do it for a lot of things. When it comes to actually trying to be different than linear based factor investing, then you're going to constantly be changing, upgrading, and improving. And that's a key, key component.

Adam: 01:24:01 You know, there's an entire hedge fund industry that's relying on those people demanding those simple rules based strategies that never change.

Mike: 01:24:12 Yeah, we don't want to battle against the, what's it called - orthodoxy. I mean, that really is where you sit, right. There's sort of a common way to think about things, which everyone sits in the bell curve. And then there's things that are different that potentially can provide excess return. They're not going to be easy, and your friends aren't going to be doing them. So you have to think long and hard as to whether if you have the internal fortitude in order to successfully harness them, because they will be difficult.

Adam: 01:24:46 I love what you say, Mike. *Alpha lives where you don't want to look*, right?

Mike: 01:24:51 Exactly. It lives where you don't want to go. All right. Anyway, great, guys. It was awesome to get ...

Rodrigo: 01:24:59 Next time, can we do anything aside from blues? Are we that boring at ReSolve? We got our logo's blue. All our shirts are blue. A little pink, a little yellow.

Mike: 01:25:10 Wear blue. I would have definitely not worn blue.

Adam: 01:25:12 I've got a very colorful shirt I'll bring for next time.

Richard: 01:25:16 And a hat. Don’t forget the hat.

Mike: 01:25:21 I'm worried. In line with the boomers, boomers. Love when you guys just fall in line.

Richard: 01:25:26 Shouldn't have gone there, Rod. I told you not to go there.

Rodrigo: 01:25:27 All right. All right, gentlemen. And thank you, everybody, for joining us today. Don't forget to Like and Subscribe. Like and Subscribe.

Mike: 01:25:36 If you need to find us, just look us up. You can just Google our names, it'll pretty much get you there.

Rodrigo 1 01:25:42 Click on *About* in YouTube and it's investresolve.com. Thanks all.