Adam: **00:01:55** Here we are.

Rodrigo: **00:01:56** All right, and we're live. Welcome everybody. Happy Friday.

Richard: **00:01:58** Happy Friday, boys.

Mike: **00:02:00** Yeah, welcome everybody. How am I -- Are you guys picking me up right now?

Adam: **00:02:04** Yeah.

Rodrigo: **00:02:05** You're sounding good.

Mike: **00:02:07** Okay, good. It was a bit of a dodgy sound system there when I was getting ready. So, as we jump in, just everybody remember that whilst we're all portfolio managers for various companies, and products that nothing that we talk about on this call is recommendation. And our opinions are our own and based on information we consider reliable, but we're not making any warranties of the accuracy there. And anything we talked about, past performance or not, is not indicative of future results, and you're not guaranteed any kind of profit. And listeners should be aware of their own risk and risk tolerance levels and things like that, as they contemplate investing. We would like to have a wide ranging conversation on some of our strategies and how we think through the investment problem. And so we're going to be talking about that. But please make sure you understand that is not investment advice. And with that, gentlemen, away we go.

Adam: **00:03:02** I'm excited for this one because we're finally going to do a bit of a deep dive into the strategies that we run as sub-advisors for public funds in the US and Canada. And this is a manifestation of our life's work. Right? This is actually -- this is really exciting. This is not just like our day job. This is what we talk about in our spare time when we get together. It's what we argue about, it's what we read about, this is not just a job, it's a life's passion.

Rodrigo: **00:03:35** We invest in personally.

The Optimal Portfolio

Adam: **00:03:36** -- passion, what we invest in personally, and so we could probably go on and on here. But we're going to focus specifically today on how we think about the construction of an optimal portfolio. And we're going to start with this idea of alpha/beta separation, right. So, the idea that - yeah, go ahead.

Mike: **00:04:01** No, I think that something to keep in mind with that from a basic premise is that when you're thinking about investing, you're thinking about the potential use case for your investments and the potential risks that you want to accept and

the potential risks that you don't want to accept. And then you build your investment portfolio expressing what types of risks that you would like to hedge in the long-term, and how you want to think about hedging them, and how you want to build a portfolio around hedging those risks, whether those be long-term obligations, right, for retirement, for endowments. And so you'd have to think about, well, that's one thing I have to be concerned about: the growth and the inflation and the real returns tied to that. So, how might I express an investment portfolio that actually mitigates those risks in the long run and provides the return stream for the use case for those long-lived assets?

Richard: **00:04:56** And definitions I think are also important because as we've discussed in past episodes and amongst ourselves, one man's beta is another man's alpha. And these things are actually somewhat continuous, right? There's a bit of a fuzzy line between beta and alpha and definitions matter. So, I think we should make sure to define those as we move along.

Adam: **00:05:20** Yep, I think that's a good point. And I mean, specifically for the purpose of this -- yeah, yeah, we're not going to spend too much time on that, because that could consume an entire episode, or three on its own. But as we sort of get started, I think we should preface this by sort of saying, to our mind, the optimal portfolio is one that has the highest probability of delivering efficient returns above one's required rate of return, kind of regardless of whatever macroeconomic environment we might face in the future. And I think it's worth sort of reminding people that historically, the major forces that drive long-term asset prices, or at least the variability in long-term asset prices are primarily growth and inflation.

And so we want to create a portfolio that should be resilient in the face of both positive and negative growth shocks, and positive and negative inflation shocks. And we'll talk about a few other types of risks along the way, but those are kind of the ones that we want to, to the greatest extent possible, diversify away. And in doing so, harness the most liquid omnipresent betas or sources of return that are available to all investors, right. And so that's kind of I think, where we start with this idea of alpha/beta separation, where beta is an exposure to a broad asset class that derives its returns, because investors need to endure a certain type of risk. So, equity risk, obviously investors are enduring the risk of negative growth shocks. Equities do well during periods of benign inflation, better than expected growth, and abundant liquidity conditions. Basically, what we've had in place over the last decade, up until this year, really, has been a perfect environment, especially for US equities dominated by long duration tech-oriented companies.

But we don't always have those types of environments. Sometimes we have growth surprises to the downside. So, what works well when growth surprises to the downside? Well, typically, bonds do well, right? Because when growth

surprises to the downside, typically, there's a negative demand shock, and that leads to either disinflation, or sometimes outright deflation, which is a very positive environment for bonds, right? Sometimes, though, we have periods that are not very kind to bonds or stocks, right. And so we need to also add asset classes that could do well during inflationary episodes. And I think, obviously, this year is a really good case study about the types of markets that both do well, and don't do well in inflationary environments.

Mike: **00:08:44** Yeah, and you're …

Rodrigo: **00:08:45** Yeah. And I think I have a visual of that. So, just sorry, Mike. I just want to visualize this for a second from 1970 to now. So, everything that Adam described here are the different types of environments in which global equities, government bonds, gold, commodities, respond to the changes in inflation, and changes in growth. And the key thing here from a diversified perspective, just broadly speaking, is that those dynamics affect different asset classes in different ways. So, while all of these asset classes from 1970 to 2019, in this case, have made positive returns, they rarely lose at the same time. That makes sense. Right. So, I think that's an important, just kind of visual for people to see that indeed, there is benefit in diversification and there's structural reasons why they will act differently in the future and that this is not just kind of historical revisionist history.

Mike: **00:09:45** Right. Yeah. The fact that we've had abundant growth, benign inflation and abundant liquidity for all of but the last sort of six months, call it, has led investors largely maybe to become overconfident in some of the more passive oriented 60/40 portfolios which have been caught somewhat flat footed over the last six months.

Now there's a price for taking thoughtful diversification because you will have tracking error from benchmarks that are widely adopted at times, and it's going to feel like you're doing something very different than your friends. But in our opinion, if one considers the true long-term nature of an investment cycle, i.e., it's not five years. It's 20 years, it's 30 years. When you think about the -- even someone who's retiring today at 65, they're still likely to have a 20-year timeframe where they're going to have to navigate periods like we're showing on this chart where you have periods like 1960 to 1980, where the real return on a stock bond portfolio was negative.

And I think that in of itself, understanding how real returns function and how they impact assets that are designed for funding liabilities, that is an edge, actually. No one wants to talk about things in that regard. There's not a lot of real return discussions. Most folks are stuck in nominal land. There's a real challenge to that, though. And as you can see, in the chart that 1965 to 1981 period was devastating for assets that were just in the sort of growth type assets,

the 60/40. Now by adding thoughtful allocations to commodities to those assets that structurally respond well in inflationary impulses, you have a much more robust path. You're driving a four by four to work every day, and in the winter you get to work and in the summer you get to work

Richard: **00:11:52** Yeah, I think this chart, this chart is one of my favorite charts. And what this really summarizes is the cyclical nature of markets. And the fact that inflation and growth will also dictate liquidity. And liquidity, as we have seen, has been very vivid for the last 10 years will drive asset prices and can drive asset prices in somewhat crazy directions at times. So, recency bias has created beta in the minds of most investors as being equity beta. And as rates went down all the way down to zero, what was once a 60/40 became equities in cash because no one could hold bonds in their minds. And they couldn't really understand that holding equities was equally as dangerous because of the environment that they were in. So, this idea of taking a step back and taking a slightly broader look at history and understanding that 60/40 doesn't get you all the way there, many times.

Rodrigo: **00:12:51** Yeah. For those who are listening, what we're showing here is the US 60/40 portfolio from 1900 to today in real terms. And this begins our discussion on beta because most people consider this to be the beta portfolio, the go-to beta portfolio. And this chart just simply shows that, what I'd like to start with is in 1981, to basically 2020, we have been dominated by an economic environment of disinflationary growth, so persistent benign inflation. And we've been really reacting mainly for 40 years to growth dynamics exclusively. So, are we in a growth mode? Are we not? And the Fed has been reacting to *are we too growthy*? We can increase rates, or are we too heading into recession, we can print as much as we want to without any concern about inflation whatsoever, right.

In the last few months, we have started to recognize that the Fed is now hindered by the inflationary ceiling, that they now have to take inflation into consideration, like they did from 1900 to 1981. And the rest of this chart just shows that we, instead of being dominated prior to 1980, instead of being dominated by disinflationary growth, we were dominated by everything else; stagflation, inflationary growth, disinflationary bust. And in that environment when we are in those regimes, we see that the 60/40 portfolio as a beta component, that is what needs to be there for peoples' retirements for funding requirements and so on, is simply not there. And so I believe strongly that we need to, we need to assess the fact that we have been boiling a boiled frog in a slow boiling, for 40 years. And we might want to completely shift our mindsets that bond/equity non-correlation, bond/equity beta is not going to be enough and really bring everything into balance as we're going to describe like the way we think about beta right now.

Mike: **00:14:58** Yeah, I think …

Rewards For Risks

Adam: **00:15:02** Yeah. One of the ways that I really like to think about betas or allocating to sort of core, a core strategic asset allocation is by viewing the portfolio through four different risk lenses. Right? We already talked about two. One is growth risk, growth surprises to the downside, which is bad for equities, ostensibly good for bonds because it then leads to lower than expected inflation or demand. And then on the other side, inflation, right?

Mike: **00:15:40** Rod, can you pull up that… Yeah.

Adam: **00:15:43** And what I think many investors miss, and this, to me, is absolutely fundamental and core, is that markets will only reward investors for taking non-diversifiable risks. And growth risk and inflation risk are largely diversifiable risks. You can diversify them largely away. That doesn't mean that if you perfectly balanced between assets that thrive in periods of different states of growth, inflation, that you're going to have a portfolio with zero daily volatility. You're still going to have microstructure effects, uncertainty, different interpretations of the macroeconomic data, etc. You're going to have some portfolio volatility, and you're going to have some drawdowns, etc. But the returns will be relatively normal. And they will drift up over time, so long as capitalism is operating as expected.

So, if you can form -- how do you form an optimal portfolio to diversify away growth and inflation risks? Well, the first step is to ensure you have sufficient portfolio diversity. Diversity means having assets in the portfolio that are designed to thrive and react differently to different types of growth and inflation shocks. Stuff like domestic and foreign equities, domestic and foreign rates, as well as commodities, and potentially things like inflation break- evens. So, that's the first step, you have all of these different markets at your disposal. But diversity alone is not enough. You also need to create the portfolio in such a way that all of the markets that are held in the portfolio are able to express their unique personalities. And this is more complicated than you might think.

So, just going back to this idea of a 50% stock portfolio, 50% bonds, so 50/50 stock bond, right? Typically, investors will think that that's a balanced stock/bond portfolio. But in reality, because the stocks are so much more volatile than bonds, the personality of stocks completely dominates that portfolio to the tune of 90 to 95%. If you want the bonds to be able to express their personality, which is to act as ballast, during negative growth shocks, and/or negative inflation shocks, bonds need to compose a lot more of that portfolio. So, if you want bonds and stocks to be -- yeah, nominal terms, to be

equally expressing their personalities, then you might have to hold 80% in bonds and 20% in stocks. And now you've got a better balanced portfolio.

Now, what you're missing there, of course, is diversity. So, the idea of taking all of the global equity markets, all of the global bond markets, all of the global commodity markets, potentially break-evens and some more exotic instruments that respond well or differently to inflation and growth dynamics, and then giving them appropriate weight in the portfolio so that all of them are able to express their unique personalities, the portfolio is in proper balance. This is the Global Risk Parity Portfolio. And it should, in general, diversify away growth risk and inflation risk, which should prompt you to ask, well, then, what sort of risk am I rewarded for? Why should I expect a properly diversified Global Risk Parity portfolio to deliver returns, long-term premium? And that's because there are risks that you cannot diversify away, right? Specifically, the risk that central banks unexpectedly change future cash rates.

So, we're seeing that today where, over the course of so far this year, certainly the Fed has come out and said, we're going to raise interest rates and investors have then repriced rates all along the yield curve. Now, why should that matter? Because, well, why do investors move their money out of safe cash, which can be immediately used for consumption, and where there's no risk of nominal decline in value, and put it into risky assets. Like stocks or longer term bonds or commodities, right? Well, they do that so that they can earn a premium over what they would get from holding all their money in T bills. But that assumes that those risky assets are priced to deliver an excess return over T bills.

So, let's assume that before the Fed starts raising rates, markets are priced to deliver, let's just pull the number out of the hat and say, a 4%, let's say equities, for example, or price to return a 4% premium over cash over the long-term. And then the Fed goes in and they raise rates. Say they raise rates of 2%, 3%. Well, now stocks need to be repriced lower, in order to preserve what investors require, that 4% excess return over cash. And that doesn't just apply to stocks, it also applies to bonds, and all other assets around the world. So, this is a risk that cannot be diversified away. The other risk that cannot be diversified away, is the required risk premium. So, sometimes investors feel like they want to get geared up, they want to take risk, they're more concerned with getting return on their capital, so they're willing to accept lower risk premiums, and that drives asset prices higher. And other times they're feeling more cautious, more concerned. And they're going to require a higher risk premium to entice them out of their safe cash investments.

So, this can kind of be proxied in markets by, for example, the P/E multiple, right? When the P/E multiple is expanding, it's because investors are willing to accept less forward return for the same amount of risk. And when PE multiples

are contracting, they're requiring more return to entice them out of risky assets, right? So, you've got diversifiable risks, growth and inflation, which you can diversify away with a properly constructed risk parity, Global Risk Parity portfolio, mostly, and then you've got non-diversifiable risks, the risk of unexpected shocks and future cash rates and the risk of changing risk premia. Those are the risks, the only risks that the market should reward you for taking, because they're the only risks that the market or that you cannot diversify away with a properly diversified and balanced portfolio.

Rodrigo: **00:23:07** Yeah, the policy risk is the black or the gray box in the policymaker's head from one day to the next, communicated incorrectly, can have a massive impact on prices immediately. We saw this in the bond massacre of 94. We saw it in 2004 when rates were starting to increase, we saw it again in 2018 with Powell unexpectedly mentioning that he was going to tighten in September by 60 billion a month, and then the nowhere near neutral. Like these are the language that can affect prices negatively. And then shortly thereafter, in 2018, when he used strong language or Draghi's comments during the credit crisis, and you know, what is it under all? What was the famous Draghi quote?

Adam: **00:23:57** Do whatever it takes.

Rodrigo: **00:23:58** Yeah, the whatever it takes comment, then it's on the opposite. It's risk. It's risk to the upside, though, right? So, you're getting positive, you're going to rise in asset classes across the board, right. So, that is truly un-- it seems very undiversifiable, unless you get relatively lucky, or they communicate it slowly and clearly, at which point the markets can adjust slowly, right, the shock isn't as bad. And then sentiment is COVID. That's -- or the credit crisis, when somebody just prices in the panic, the animal spirits, and the animal spirits cannot require a low P/E, or require a low P/E before they invest. So, very, very -- otherwise there's no excess returns

Richard: **00:24:38** So, I think this is a great starting point for the discussion, right, the ability to invest in a broad set of asset classes, not restricting yourself to a narrow subset that has performed really well over a very convenient or a very benign regime. But the next point is to say, okay, how do we implement some of these things? And Adam when you were describing the sizing of a risk parity portfolio that has bonds more weighted than stocks, for instance, I can imagine a lot of people's alarm bells are going off because of what's happening to bonds recently. And what we then get into is a discussion about how when volatility spikes for an asset class that is falling, and correlations come in for equities and bonds, you would de-emphasize bonds in the portfolio and increase the allocation to asset classes have been doing particularly well recently, which lowers their volatility. Right? Which obviously is commodities and has been commodities for 12 to 18 months.

Adam: **00:25:42**

Yeah. I mean, I think it's important to recognize that there are a variety of ways to sort of skin the risk parity cat, so to speak. Obviously, one of the earliest exponents of the concept was Bridgewater and Ray Dalio with their *All Weather Portfolio*. And they took the view that portfolio construction should be a function of fundamental economic drivers, and economic risks of each of the different asset classes. And they set a strategic portfolio. In other words, basically, fixed weights is our understanding anyways. I haven't worked at Bridgewater, but I've certainly digested all the material that's out there to digest on it. And it seems that they set a strategic long-term asset allocation.

And so for example, during March 2020, when equities were falling, the Bridgewater All Weather Portfolio would be rebalancing by selling bonds, which had gone up in value and probably over-represented in the portfolio relative to the strategic target, and would be buying equities on the way down. Now, that contrasts with many of the commercially available funds like AQR's fund and the Invesco fund, and some other implementations where the portfolio actually changes in constitution through time, in reaction to changes in estimated correlations and volatilities, etc. And also, to your point, Richard changes in terms of total portfolio exposure, right.

So, we sort of conflated two points there, but I think we need to get back to that original one, which is, if you have a portfolio that's in proper balance, then it probably holds an abundance of bonds, because bonds have much lower risk than both commodities and stocks. And obviously, a portfolio that holds an abundance of bonds would probably be expected to have maybe too low an expected return to meet most investors' investment objectives. And so, there's two ways that you can increase the expected return on that portfolio. One is to increase concentration and the sleeves in the portfolio that might be expected to deliver higher absolute returns. So, for example, sacrifice diversification by increasing your exposure to equities, or if you've got a strong inflationary view, increasing your concentrated exposure to commodities.

The other way that you can do it is to preserve the diversity and balance in the portfolio, and then borrow to increase the total exposure. So, maybe instead of having 100% exposure to this diversified balanced portfolio, you've got 200% exposure or 300% exposure, right, in order to hit different risk/return targets. And so, to that end, sometimes, or some risk parity implementations, when the estimates are that volatility is increasing, and correlations are collapsing towards one, they need to reduce aggregate portfolio exposure in order to preserve their target portfolio volatility. And then they'll expand that exposure when volatility calms down and correlations become closer to normal again.

But then, of course, you've got -- and those will act procyclical at times. So, we would expect those types of implementations to be selling equities, selling

bonds and selling commodities into a major drop like March of 2020. But at the same time, the most strategic implementations like Bridgewater's All Weather, like we already talked about, will be increasing their allocation to those markets at the same time. And so -- counter cyclically. So, there should be a balancing effect in markets that would prevent these more procyclical risk parity implementations from exacerbating in any material way, the moves in markets in one direction or another.

Rodrigo: **00:30:23** I'll also like to dig a bit deeper as to why those two exist, right? So, if you think about the original idea of All Weather from Ray Dalio's perspective, it wasn't for the business. He never thought it was going to be a business product. He did it for his estate, because he knows alpha creation is so difficult that he didn't trust anybody but himself or him running his family's alpha. Now, for his estate, he came up with a framework that would allow him to say, do this very simple thing, and do not change. And that he would feel comfortable that if that was actually implemented, he would have and his family would have a balanced exposure to those risks over time.

When Bridgewater clients found it interesting, they started simply applying that for them. And it could have been, there's two things that, you know, I'm speculating a little bit here. But there's also a value. If you're dealing with billions and billions of dollars, being less active and being more strategic is actually useful. It's actually probably a bit more -- you're having to explain less, and it makes sense from a beta perspective. And they deal with a lot of AUM. So, it wasn't meant to be any sort of active management.

The concept, however, can translate into what you described, that procyclical one, the one we're adjusting to a certain level of volatility, where our job is to get paid to do stuff, right? This is what AQR, Panagora, all the risk parity managers, we are living and we are managing, and we're managing significantly less, a lot of, us than risk parity. And so you can actually provide the risk profile that the individual client asked for, the drawdown profile much better by being procyclical over time, and you get paid to do that. And therefore, we're able to implement that.

So, as you mentioned, this is just two broad spectrums of risk parity. Then we can get into the details, there's still you know, what tweaks are added in different risk parity implementations. But broadly speaking, going back to the idea of what risk parity managers are trying to do, is to really diversify away what is diversifiable. And what bothers me just going back to the average, the average investor, average market, average pension plan, average foundation, is that they choose not to diversify away things that they can, right? There is more things to diversify. A portfolio is taking massive inflation risk, almost all portfolios we see, and that's not necessary.

Adam: **00:33:00** Yeah, they're taking on risks that they're not getting paid for.

Rodrigo: **00:33:02** They're taking on risk that they're not getting paid for. They can take a massive growth risk because the 60% of equities represent 90% of the risk in the portfolio. So, what we're trying to, I guess over years and days and saying the same thing in different ways is to say, listen, there is no reason for you to do this when you're dealing with a portfolio where you can lever up or down, right. Going back to the original Nobel Prize winning concept of the capital market line instead of the efficient frontier, right. Going toward equity to get your returns is not appropriate, if you have the ability to use a modest amount of leverage in order to get your required returns. So, this is what we're trying to pound the table on everybody in this space is you're blind if you're not seeing the risk that you're taking that you don't get paid for. Let's get paid for the risks. Let's start there for our beta portfolio.

Mike: **00:33:53** That's a point I want to come back to because we did get off on a little bit of the -- into puzzle pieces rather than the big picture on the front of the box for a moment. And just thinking about and thinking through the larger picture of, okay, so you are going to build a fulsome portfolio, that's beta. Well, why are you building that? And you're building it partially because you want the most efficient way to harness the various betas in the world at the lowest potential risks. So, you've got to consider all the asset classes as Adam and Richard and Rodrigo alluded to. So, you need a good universe set.

You then need a methodology from which you're going to allocate to and this is what everyone was talking about, with the different variants coming from each of the asset classes and some way to rebalance. All of risk parity provides those types of metrics and frameworks, but it also provides the opportunity of a well-balanced portfolio for which now you're going to make bets against with your alpha. And if you don't start with a very diversified, very robust and thoughtful way to allocate across all of these assets, I find you've started lost. You don't even have a map. You have a compass, but no map.

And so I think it's critically important in this discussion about the mix of alpha and beta is your beta portfolio is your *do no harm portfolio*. It's the most robust portfolio you can think of that will weather all the seasons, i.e., all-weather. And then you can start thinking about how you might bet against it. And secondly, you can measure whether your bets against that are actually effective over time. And these, I think, are critical points to building the combination, building both the beta initially and then layering on some sort of alpha on top of that.

The Basics of Risk Parity

Richard: **00:35:49** I love that framing, Mike. Yeah, I was going to say, I love that framing, because it does really summarize this notion that our view of a risk parity portfolio is the

neutral starting point. It is the neutral stance. And anybody that thinks of their 60/40 as the natural beta is not a student of history, is somewhat affected by recency bias, but he's making a very active bet on a particular regime. And that, you might call that their pursuit of alpha. It's not beta so much, because you're making very active bets. So, I wanted us to maybe from that starting point, talk a little bit about how -- we've been talking about procyclical versus counter cyclical risk parity, then you start getting into implementation and tactical tilts. And so how do we think about those -- that implementation in terms of preserving … of beta.

Mike: **00:36:42** Let's start at the basics. So, maybe, Adam, what are the basics of risk parity? What's the basal assumption in the portfolio construction? Like where we start there and then let's go from there -- Yeah.

Adam: **00:36:55** That's a good question. Right. So, a good way to think about risk parity is that it's the mean variance optimal portfolio. In other words, it's the most efficient portfolio that you can construct if you believe that markets are risk efficient. So that you believe that big diversified asset classes like global equities, global bonds, global commodities are priced appropriately for their level of risk. And if that's true, just sort of inverting that it means that all of these big global asset classes are expected to have to produce the same return per unit of risk. In other words, the same excess return above cash per unit of risk, the same expected Sharpe ratio. So, if all three of these big major buckets are expected to deliver the same broad Sharpe ratio, then a Global Risk Parity Portfolio, along the lines of how we describe this construction is mean variance optimal, which means it is the most efficient portfolio that you can create. Right? So, it's simply saying an asset's return, excess return is proportional to its risk. So, markets are risk efficient. Okay.

Now, I love that we came here because I was really hoping we were going to have a chance to talk about the different methods of construction for a risk parity portfolio, and sort of setting aside for a second, the way that Bridgewater has chosen to do it based on kind of economic fundamentals. We approach it more from a quantitative standpoint. And I think a lot of practitioners and a lot of quants attack this from a systematic standpoint, a quantitative standpoint. And what do they do? They take all these different global markets and they say, well, I'm going to try this risk parity implementation, and I'm going to then back test this implementation going back as far as I have data. And then I'm going to test this implementation going back as far as I have data, etc., etc., right?

And then they'll look at the results and say, well, I will choose to run the implementation that had the highest Sharpe ratio over my test horizon. That has a lot of flaws. One big one is that typically, the historical test horizon consists primarily of a single type of regime. So, I'll give you an example. We wrote a

paper called *Risk Parity - Measures and Methods of Success*. We tested a variety of different risk parity implementations. Some of them were, they kind of weighted the markets in the portfolio based on the inverse of their variance. Others weighted them on the inverse of their volatility. There's a bunch of different cuts at this. But if those that weighted on the inverse of variance, by the way, that hierarchical risk parity method that Deprado suggested, weights these broad asset classes and markets on inverse of variance. Okay. That gives much larger weight to low vol assets, which means that it gives them, historically, it will have given a much larger weight to global bond markets.

Now, from 1980 to today, global bonds, well, maybe not today, but you know, until six or 18 months ago, global bonds had had a much higher Sharpe ratio than either equities or commodities over that sample horizon. And therefore, implementations that by construction, will emphasize bonds or have a higher weighting and bonds, are going to look a lot better. They're going to produce a higher historical Sharpe ratio than other methods. But we need to recognize that those methods are not well balanced. They do have a much higher exposure to rates and so are especially vulnerable to an environment like, for example, the recent environment that has been very unkind to rates, right.

So, it's important to construct a risk parity portfolio not from the perspective of what delivered the best back test, but rather, what design methodology makes you maximally resilient to all of the major economic risks, the growth and inflation risks that you may face in an ambiguous and uncertain future.

Rodrigo: **00:41:51** Right. So, that is a -- I mean, it's a quick highlight, if you read through the paper, we're labeling this *risk parity*, right. But if you read through the paper, we've labeled each one of those methods different things, right, hierarchical subspace, max diversification, ERC. This just goes to show when people go online and rail against a fund that did poorly, and they say, look, risk parity has done so bad quarter. Reality is that you'll find another one that's done really well. Right? So, there's different methods.

And the key here is not, like Adam said, not to look at and choose the best back test. That is the problem that every quant gets into, but really understand and try to maximize your understanding of the dynamics in markets, and create a risk parity portfolio that might not have the best back test, but from a fundamental perspective, from a true understanding of the dynamics will provide the greatest balance going forward, right, first principles and so on. So, that's a beta.

Also, let's go back up to risk parity. And we're talking about risk parity with that assumption that every asset class has the same Sharpe ratio. That is something that was popularized by AQR, by Panagora, by maybe not so much Bridgewater, but I guess, Bridgewater as well. What other beta concepts could be just as good,

assuming that we're living in the same universe, that we're including commodities, that we're including equities, that we're including bonds and so on? We certainly have a view on that. So, let's talk about alternative betas here from the context of a multi-asset balanced portfolio. So, Carry is one of them.

Mike: **00:43:33** There's the mathematical side of it. Right. So, you have a series of mathematical calculations that you can make based on what? Well, some assumptions. Well, what are the assumptions that you might be making? Is it the true risk parity assumption that volatility is directly related to a return? Or is it like, you mentioned, Rod, and I'll throw it back over to Adam, Carry or the yield on a particular area? How might that inform the portfolio, and are there others?

Adam: **00:44:01** Yeah, great question. And just for disclosure, we combine our Global Risk Parity Portfolio with a *Carry strategy tilt*, and we're going to get into why that is. But I mean, again, risk parity assumes that at all times a -- first of all, broad global asset classes are priced to deliver a return in excess of cash. Okay. If capitalism is operating appropriately, and so investors should expect to earn a premium for taking more risk. And it assumes that returns are in proportion to volatility. Volatility is a measure of risk, returns are proportional to risk, and so returns are proportional to volatility.

But are there other ways that we might feel a proxy risk? I think one of the ways that you might go to proxy risk is the yield on a security. So, for example, a longer duration bond, typically, in a normal environment has a higher return, a higher premium or yield than a lower duration bond. And that's because investors that invest in this longer duration bond have to endure higher price variability because of its longer duration, and are more vulnerable to changes in inflation expectations and real rates over time. So, you could say the same thing with equities. Higher yielding equities are reflecting a higher risk of the vulnerability or variability of cash flows, a higher risk that a company may or may not pay dividends, etc.

And so you go through these, the other thing is that you don't always have an environment that's normal. So, this year is a great example. We had, in some cases, major inversions of the yield curve, where cash rates were higher than rates that were further out along the curve. And in fact, you had a higher expected return from cash than you did from taking duration risk. So, that violates the basic assumptions of risk parity.

So, what I like about this Global Carry Strategy is it says, we've got the same diversity in terms of our universe. We're investing across all these global asset classes that are fundamentally designed to do well in different economic environments, we are accounting for their different levels of ambient risk, so, we're making sure to hold them in balance. But if a market is priced to deliver negative excess returns, for example, if the yield curve is inverted, or the

dividend yield, the implied dividend yield on an equity market falls well below cash rates, or a commodity market goes deep into contango, then we probably don't want to hold that market long. We may even want to hold that market short, because we're going to harvest the yield on that market from going short, rather than being long, right.

So, it's diversifying across different frameworks. Risk parity says risk and return is connected by volatility. Global Carry says risk and return is connected by yield. And we're still delivering the same principles of diversity in balance, but with different frameworks for the relationships between risk and return. And the great thing about this is that, at least empirically, and I think for strong fundamental reasons, a Global Carry Strategy that invests across global equity markets, global bond markets, global commodities, has a very low correlation to a traditional risk parity portfolio. So, you get this diversified beta portfolio and another diversified beta portfolio, equally resilient to different types of economic shocks, and coming together to deliver a whole portfolio that is substantially better than the sum of its parts.

Richard: **00:48:21** One of the other components that we haven't really mentioned here yet, but that is crucial, whether you're talking about bad beta or sort of less optimal beta and moving towards more diversified better beta, let's call it, is the frequency of rebalancing. Right? I mean, we were talking about this offline and how the S&P is an active strategy, once you drill down to its constituents and how it gets rebalanced. And it's got a growth/momentum tilt towards it. And the way that you implement risk parity can also vary quite a bit. Whether you're running it counter cyclical or pro cyclically, and how often you rebalance.

We wrote the *Rebalancing Premium* white paper that talks specifically about how you can earn an excess return just on the basis of this rebalancing. But that's also, I think, a key component for us to talk about and how, again, this type of beta is not a beta that everyone can do on their own. And it's somewhat more sophisticated and requires a little bit more implementation than what people might expect by just holding equity beta.

Adam: **00:49:32** Yeah, I think that there's a lot there.

Mike: **00:49:33** Yeah, I think there's a lot there too, Richard. Well, I just think that brings into what does the -- and we talked about this previously, what does the structure allow? What is the ability to actually gain enough leverage to include all of the asset classes? Is there any limitations that you're facing on boots on the ground, that feedback into the calculations that you're making that you have to adjust for? So, yeah, yeah. Well, there's a behavioral side of it too. Yeah, you're absolutely right. So, there's a lot there. I'll let you guys decide which one of these…

Rodrigo: **00:50:06**

Yeah, there is. And I think one of the -- I think in the interview that you did with Antti Ilmanen, one of the things that stood out for me and we did the work on it in the *Optimal Commodities* paper that we wrote was how people have a tough time agreeing or believing that there is a positive risk premia for commodities, right? They say, what are you talking about? There's no rational reason as to why any single commodity is going to have a yield that's going to be expected to make any positive returns over time. But then where this magic really comes from, where the yield that we achieve in commodities, comes from the fact that there's significantly more diversification across the commodity spectrum than any other asset class. And when you apply a well-diversified portfolio of commodities and rebalance them at a certain frequency, you extract a rebalancing premium for free. It is entropy being able to grab from the winners, giving to the losers before they mean revert, that provides that excess return over time.

So, you can't -- maybe you can make an argument for gold, although gold has its own characteristics that has no yield. But you really can't make it for a well-diversified commodity index, right? And there's new indices coming out for public consumption that are getting closer and doing better with the rebalancing premium. But the ones that are the most liquid out there, the ETFs that are available, tend to have the same issue that we've been talking about, which is an imbalance from an optimal commodities perspective where we're overweighting based on liquidity of the energy markets and underweighting on other commodities that can offer significant rebalancing premium.

So, the rebalancing premiums is a crucial discussion to have on the commodity sleeve. But then, of course, once you have that tight, and you have that dialed in, that commodity bucket, the equity bucket, the fixed income bucket, are also quite differentiated. And that entropy harvesting that you have will create an excess return, which is going to another objection that people have is like, why would I invest in bonds right now? They're yielding nothing. Or why would I invest in equities, they're so overvalued? Well, because in order for you to move away from an optimal weighting between those three buckets, remember, in our paper, we showed how the rebalancing premium assuming a zero return across all assets is around 3%. The rebalancing premium is very high, it actually rivals the equity risk premium.

But the moment you move, you overweight one of those buckets or underweight one of those buckets, the optimal rebalancing premium goes down. So, if you have a view, if you have a real view on I want to go long this or I want to take out that, it's not just how much you'll make, but with that view, there is a benchmark that you need to beat, which is how much above the rebalancing premium I'm giving up, will I make to execute on that view? And that is absolutely crucial. Right? The rebalancing premium is a large hurdle that

every investor, passive investor, thoughtful, *I have no view of the future*, needs to make, before they start having views on the future, if that makes sense.

Adam: **00:53:19** Yeah. Yeah. No, that's an important point that just rebalancing alone in commodities, is expected to produce a premium that rivals the equity, the historical equity risk premium at a similar level of risk, which is pretty remarkable.

Mike: **00:53:36** It's actually just an interesting discussion point on that too, I mean, if you have to have unique bets to maximize that opportunity for rebalancing. Just digging into that a little bit more deeply as I think folks are appreciating that, as they're listening, is the rebalancing premium, if you own five, 10 securities, but zero dispersion, they're all doing the same thing. There is no rebalancing premium.

Richard: **00:54:00** 500 stocks in the S&P.

Mike: **00:54:02** Yeah, and very few bets when we've done PCA analysis.

Richard: **00:54:04** It's 1.2 bets as we've -- yeah.

Mike: **00:54:06** And so this is a very important point. So, it comes back to that universe concept we talked about at the beginning; a thoughtful universe makes a big difference. And then parsing that universe, right, what are things that are just acting the same and similar and aren't providing diversity? And how are you going through that universe in order to inject the most diversity to the portfolio with each additional bet, if you will, or in some cases it's an asset class? But this is why really thinking about the universe is important. And then thinking about how it's going to be weighted and allocated too, so that it reflects an appropriate amount of risk for the portfolio, are essential to creating this optimal beta exposure. Right? And I don't know if now is the time that we move a little bit into alpha?

Rodrigo: **00:54:54** I think we are. Can I just …

Adam: **00:54:56** Well, hold on. Before we move on, I just want to make -- I also want to cover because let's sort of, I think, some people might sort of be wondering, well, this is all interesting in theory, but how should I map this to different products? And I think that, sure, there are obviously different products that are available to most investors that try to express sort of a risk parity concept, right? Some of these structures have limitations that require compromises, right? So, for example, there's a risk parity ETF that's had really high adoption, and we're admirers of the concept and of the implementation. But as an example of one of the compromises, because there was a desire to limit the amount of leverage in the portfolio while preserving the volatility and expected return, there was a decision to increase the duration of the bond component, right?

So, the bonds that are held in the portfolio are mostly kind of 30-year treasury bonds, right. And they don't really allocate to foreign bond markets. They rely pretty well exclusively on US rates. Well, obviously, over the last 30 years, having that duration, that has worked out really nicely. But in the recent environment, the weakness is exposed, right, because obviously, duration in this environment, you would have been much better off to hold a diversified ladder of different bond maturities inside a portfolio that also holds commodities, etc., at higher, a little bit higher leverage than you would be to hold just high duration fixed income securities.

You know, there's also a limitation on the ability to invest directly in commodities in an ETF, right. And so instead, they've tried to proxy that exposure using commodity related equities. So, that obviously has influenced the performance and would be expected to influence the performance of a product like that, in environments where the actual commodities themselves are doing very well. But maybe the underlying equities are doing better than the market because they're commodity exposure, but because of their overall beta exposure, they're still being dragged lower.

Mike: **00:57:25** You make a great point, because also think about those providers who have a full opportunity to use all of the various products, but they have limited their commodity exposures, because they've looked through history and said, oh, well commodity stuff only happens sort of 15 to 20% of the time. And there isn't a risk premium there that we can explain. So, thus, we have decided to have a smaller commodity exposure in our risk parity products, which again, has implications. And as an allocator or buyer of a product or strategy, you need to think those things through. Is that what you're looking for in your portfolio? Is that your desire? Certainly, that has given those portfolios with less commodity exposure, prior to the last eight months, call it, pretty significant tailwinds. But now we see that changing a little bit. And so these are challenging things. There's no easy answers to these questions. And we, I think, would sort of side a little bit more on balance. And probably we can, because we're smaller managers, you know, half a billion dollars in AUM. We have more things that we might be able to do. You get to 10 billion or 100 billion, you get less -- there are things that hamstring you a little bit.

Rodrigo: **00:58:46** This goes back to one company's perception of what beta is, right? There's also an implementation that says, look, we've identified that in fact, the risk premium is not the same between all asset classes. In fact, it's higher for equity. So, we're going to overweight equity. So, again, I think when you look at large institutions that are bought into the risk parity concept, they're not choosing one thoughtful risk parity manager and doing it all, they are allocating across the board, because that's their best bet of getting that four-by-four truck that you spoke about Mike, right. So, I think it is, again, important to know that broadly speaking,

we're speaking the same language, but there's implementation differences and also ensembles are always a great thing.

Active Alpha

Richard: **00:59:26** Guys, I think we did a good job. Yeah. So, I think we did a really good job of setting the stage on conversations around beta. Once we start implementing higher rebalancing frequencies or tactical tilts as Carry is, I like to think of that somewhat more on the Active Alpha. So, I like to think of this beta and alpha conversation more on a continuum as opposed to a binary conversation of one versus the other. So, you start with a beta that's a little less active or rebalances less frequently, you add some tactical tilt, which is the example Adam was giving was Carry. That already moves us a little bit more in the direction of alpha. So, I think now we've set the stage to perhaps talk about alpha in a broader sense.

Rodrigo: **01:00:12** Sure, sure. And let me just kind of set the table using Mike's analogy, right? What we've seen when we got into the business was people saying that they had these kind of portfolios that were well balanced between bonds and equities and 60/40. And what we saw was a bunch of Ferraris out in the road, right, that can really, really just go when the streets are clear, and there's a growth environment, nothing's in their way, abundant liquidity and so on. What we've talked about right now is creating a four-by-four, right? That it's not the fastest, it can get through tough terrain, it can get through rain, it can get through snow, it'll get you to the other end, right. So, we built now the base, kind of four-by-four all-weather terrain truck.

Now, we're going to talk about what we can do with that truck, maybe add a Tesla OS system that you can change the settings, right? Like, thinking about the -- …

Mike: **01:00:07** It's amphibious.

Rodrigo: **01:00:08** -- the Tesla cyber truck, right, where you can actually race it from zero to six. You can change the settings to be a race car, to be more -- all this stuff that now becomes alpha. Right? And so now we can start saying, okay, how do we make this four-by-four more malleable, depending on the terrain that it sees? Okay.

Mike: **01:01:28** Well, you can look at it that way. I think these are kind of slightly different components too, right, so you're going to have a sports car, maybe it's in the back of your truck. You have a motorcycle, you can pop off and handle rough terrain, I don't know. The analogy is, I think secondary to the idea that the best beta portfolio now allows you to select against that beta portfolio, when you think you have some edge that provides better and more insights than your beta stack is giving you. So, now the alpha stack is something that, how do you approach that? How do you say, and I think thoughtful construction with the

Carry side is a very interesting complement. It's almost acting like fake alpha. It's thoughtful beta, can also sort of present itself as a little bit like beta, thoughtful construction, that rebalancing premium.

But now let's get into alpha. Okay, how do we think because alpha is hard, right? This is not a risk premia you get for sort of sitting on your hands and bearing the non-diversifiable risk factors. This is, we're actively going into the marketplace, because we think we can kind of take money from somebody else.

Rodrigo: **01:02:40** Yes. And before we get into the alpha side, let's set the table. Alpha should be non-correlated to beta, our beta, that risk parity component. So, that's what we define as alpha, right? And alpha is a zero-sum game for the most part. Why is it that we've spoken in the hundred-so podcasts that we've done, 90% about risk parity, and 10 to 0%, about alpha? Because we can't talk too much about alpha. We can't say too much specifically about what we're doing. But maybe Adam, walk through what alpha is, and what the issues behind talking too much about alpha are. And then maybe we can get into more accessible, like long/short factor components and dig into that as a way to give something to the audience.

Adam: **01:03:32** I think it's worth going back to our beginnings, actually, because I think that helps to kind of tell the story, right? Like, we spent -- back in 2011, we published a paper called *Adaptive Asset Allocation*. We laid out all of the rules that an investor might use, in great detail, to be able to execute a strategy on his or her own to replicate this concept. And over time, we've written papers on all manner of detail for Trend, stuff on Carry, Seasonality. We've gone into great detail in the past on the underlying drivers of our edges. And in the last couple of years, we have dramatically shifted course. And so what happened, right?

Well, what happened is that when we were sharing all of the things that we were thinking and that we were implementing, we were largely deriving our alpha edges from the academic literature. You know, there have been other groups that had published widely disseminated papers that described pretty well how to generate these edges, right? Like we just talked at length about Carry. There's a paper by Koijen, who's affiliated with AQR, on how to build a Carry strategy. You know, we do it slightly differently. I think ours is better. I'm sure AQR does it differently in practice than they described in the paper. But you know, somebody who understands futures markets and is reasonably proficient with quantitative methods could build a Carry strategy from that paper, and it will probably do very well over time. And people could build a diversified Trend strategy from a lot of the things that we've published over the years.

What happened in what was it 2018, right, is we circled back with a contact of ours, an acquaintance of ours, who had worked with us for a few years, as we were just getting started, then went to work in Chicago as a prop trader, and just had made just an unbelievable success with his methods.

Adam: **01:06:07** I'm not going to go. And he came, and he sort of described what he was doing. And we were like, no, that can't work. There's no way that can't work in public markets. All of the academic literature, all of the academic assumptions, the entire school of the University of Chicago, and Wharton says that the methods that you are advocating, can't work. And he said, well, okay, that may be what the literature said. But I've been using these methods for years to generate just obscene levels of P&L with just assuming little in the way of risk. And it was that existence proof that gave us the impetus to go and try these things that had previously been verboten, that we had been brainwashed into thinking were not worth exploring or impossible.

Rodrigo: **01:07:12** We railed against it.

Adam: **01:07:13** We did. We totally railed against it, you know. And over the ensuing 18 months or two years, we built a prototype, we innovated on it, and we discovered that, in fact, all of the things that this person had been telling us were absolutely true. And that there is magic here. And so what's interesting now is that we can't, as responsible fiduciaries, talk in any detail about exactly how we run our alpha strategies. Because while the tools that we use are -- they're sophisticated, they require relatively deep quantitative expertise. It's not that no one else has access to these tools, are these concepts, right? They could, in theory, be reverse engineered, if we'd sort of divulged a few key tenants.

And so the reality is we can't, and we won't, because our clients depend on us to hold these secrets sacred, to continue to generate excess returns for them, because that's what they pay us for. So, it is a really interesting shift in thinking, from publishing everything in a very open way to realize that you have, I don't know, I hesitate to say a secret that no one else is willing to acknowledge or explore. And then having performance demonstrate that there is gold in then there hills, and now being not really able to talk about it.

Rodrigo: **01:09:00** You've got enough people on this call already. Shall we then -- …

Mike: **01:09:03** No, it's interesting, though, because we used to talk about … and his thoughts about, you can put the rules on the front page of the paper, but people won't follow them. And we've had experience with people trying to duplicate and replicate adaptive asset allocation as we published it. By the way, past performance is not indicative of future returns, but .78 Sharpe, max drawdown of less than 7% for about 10 years, just saying. So, that has been out there, and we've been running that - that's real. That's a strategy. It's SMA. But we have heard others try to run it and they all want to put their secret sauce on it and make a change and they blow up. And so that's something that we've heard.

So, there are some things you can put out there and you can put the stuff on the front page of the newspaper, and there's a behavioral requirement to be able

to navigate following whether it's Trend ,or so some other sort of systematic program that will have a Sharpe ratio of 50 to 75 basis points over time, maybe and maybe it's non-correlated to the portfolio. I'm not sure that's alpha. I don't actually think a simple Trend strategy is alpha anymore. You can buy that pretty much off the shelf, you can look at all kinds of ways to think about that.

But how you might harness that? There's ways to make it alpha. And that is something that we continue the research process. I think this is the Red Queen syndrome, you must keep running just to stay still. Right. So, that's the first thing. The first thing about developing and executing on excess returns that are non-correlated and are unexplainable is that they don't last. And so as soon as you publish a bunch of rules and say, hey, this is how we're going to do it, that particular thing is on death row, from the perspective of being alpha.

Rodrigo: **01:11:08** Right. So, I think, then, we can still talk about -- alpha is an interesting thing. Because, for example, the smart beta stuff that's out there, like long/short market neutral, lifestyle premia, all this stuff. I don't know if I will consider them alpha, but I certainly will consider them non-correlated. I certainly consider them something that's out there that people can use, but yet, they're still not using it broadly, or using in the right way, right? You see an underperformance in the past couple of years. And you think about it as well, how could they be losing that much money when everything is making money? Well, that's called diversification. And if they make money over time, over a full market cycle, then you got your beautiful piston going down while your other pistons are going up.

So, it's -- while there may, let's move away from like, pure alpha, and just talk about the other betas that are out there that are being minimally used. We can get into how you can continue to improve your portfolio, you continue to add tactical tilts, that will help you thrive even further, possibly through policy shocks, possibly through sentiment periods that were un-diversifiable before. These aren't perfect hedges for sentiment, they're not perfect hedges for policy shocks, but you can -- it's your best bet in many respects, because these have the ability to be short or long and provide some protection some of the time.

Ensembles

Richard: **01:12:34** So, this gets into another topic that we've talked about quite a bit, which is ensembles, right, which is the whole idea that you don't want to rely on a single specification for any kind of phenomena that you're trying to harvest. I think this is one of the ways that you could implement tactical tilts, which again, going back to the idea that this is a continuum, and beta can be built upon. And you can have different kinds of beta that require a little bit more sophistication. Another way to implement that is you can have many different ways to skin the Carry cat, the scary cat or the Carry cat. But you can then add some of these

other beta tilts that you're referring to Rod. What are some of those, and how do we think about the diversification of implementation?

Rodrigo: **01:13:26** I think, look, we're going to lean towards what we consider to be the most accretive because we have a limited amount of time here. And we're going to talk about some tactical tilts. And that could be accretive to a long-only kind of *All Weather Risk Parity Portfolio,* okay? And from that perspective, there are a few blind spots still.

Adam: **01:13:44** What do you mean by tactical tilts? Why are we calling them tactical tilts? Can we …

Rodrigo: **01:13:48** I'm saying -- I'm just talking about the difference between, for example, a market neutral equity long-short, where you're just trying to -- like the style premia ones, you're just trying to find a complete idiosyncratic risk. You know, that's been hard, that is really whatever Sharpe ratio you see in the back test, it's been smaller in live performance because the markets are micro efficient, right? The equity markets are micro efficient. But on the multi-asset space, what we've discovered from our experience in our research is that macro markets continue to be macro inefficient. And so if we were to choose a topic to discuss right now, I call it tilt Adam, because multi-asset, long-short is not neutral, right? It's taking directional bets long and directional bets short, and there's no kind of -- there's no forced requirement to be neutral in any way. So, that's what I meant by tactical tilt.

Adam: **01:14:42** I just don't want it to be confused because a lot of people don't get tactical as like, being tactical long and short of an equity index or something and that's just not it at all. *It's a diversified Trend strategy or diversified Carry strategy or diversified Seasonality strategy or Value strategy,* etc. Right? We're trading 80 different markets, and we're trading them based on these different signals, right, these different market features. And in a traditional sense, typically, if a market has been going up over the last one, two, three, six, 12 months, etc., then you are going to take a long position in that market, and vice versa, take a short position if it's been trending down. But you're trading all of these different markets as a diversified portfolio. Right? And you've got longs and you've got shorts moving in tandem. And so yeah, I just find that tactical can get a little bit sticky in terms of what people perceive.

Rodrigo: **01:15:52** Yeah, so let's talk about like, Trend as a beta, for example, right? It's still again, it's not a widely adopted, I don't know how -- it's a beta that's under used, let's say it, but it can be fairly, you can look at any paper, grab a relatively easy implementation. And if you have futures expertise, you can capture the vast majority of that beta, right? And that is accretive to the portfolio, it does offer certain value above and beyond what a Passive Risk Parity Portfolio can do. So, we talked about what characteristics, like why does that exist? Well, it can be all

the reasons that Danny Kahneman, Amos Tversky, came up with, right, the idea of herding behavior of anchoring and adjusting of Cascade Effects. There are willing losers out there in the market that have to hedge or want to hedge their commodity price risk in order to smooth out cash flow so that they can go out and get a loan at a better price or go out in the market and raise equity because they have predictable cash flow. So, there's reasons why these things exist and why you're able to continuously harvest in the face of a world that does apply billions and billions of dollars to this strategy.

Mike: **01:16:59** But those are our betas, right, Rod? Do you -- Yeah.

Rodrigo: **01:17:02** Yeah, it's beta. But again, I think we can talk about in the context of what you can stack on top of risk parity, right?

Richard: **01:17:07** But are they betas though? Because I want to push back a little, because I'm sure there's going to be lots of people that are going to be hearing this, and they're going to say, wait a second. Trend following is not a beta, it's an alpha strategy. And depending on the specification of Trend, you might have short-term Trend, which is regarded as crisis alpha to a lot of people and is deployed as such. So, I think this is …

Rodrigo: **01:17:27** That's why I said, I think …

Richard: **01:17:28** Nomenclature and definitions become really important.

Rodrigo: **01:17:31** You can become a -- yes, you can add alpha to the Trend. But just broadly speaking, I'm going to stick behind the fact that it's in -- that you can get access to a basic beta component right now. And that it's broadly underused, sadly, and it's a beta that's available to you in ETFs and mutual funds that you can implement.

Adam: **01:17:47** Yeah, like a Basic Trend Index.

Rodrigo: **01:17:48** It's a basic trend. Now are …

Adam: **01:17:49** Where they disclose the rules, there's nothing -- yeah, nothing…

Richard: **01:17:51** It's been commoditized through an ETF you can somewhat call it a beta. Yeah.

Rodrigo: **01:17:55** Can you do better in Trend? Of course you can. Can you add alpha in Trend? Absolutely. But my point is that you can stack this on top, and add to the diversification.

Mike: **01:18:07** In looking back, you always -- well, there's the best Trend provider. What you need to be able to do is demonstrate that you knew what the Trend construct

was before and you constantly adapted that with efficacy that showed you actually found the spot there all the time. And that …

Rodrigo: **01:18:25** …

Mike: **01:18:27** -- if you can do that.

Richard: **01:18:30** Well, it's the reflexive nature of markets, versus the efficient hypothesis that a lot of the academic literature leans on. And it's the pragmatic realism of understanding reflexivity. And to your point, Mike, the whole idea of the Red Queen hypothesis, which is you got to keep adapting, or it's adapt or die, right? It's kind of Darwinism for markets, in a sense.

Macro Factors

Adam: **01:18:51** Innovate or die. Yeah, exactly. I just want to harp on Rodrigo's point there, because I don't think it had enough play because I kind of went in a slightly different direction, right? Why do we focus on macro factors? And it's because remember, Mike -- Rodrigo, this is Samuelson's dictum, which is Samuelson, famous economist, wrote in a letter, I think, to Robert Shiller that he thought that markets are micro efficient, but macro inefficient. Which is to say and I'm taking editorial license here a little bit, but my interpretation of that is that the vast majority of capital in the world, especially active capital in the world, is siloed by asset class. So, you look at a typical institution, that institution is going to have a big equity team, a big fixed income team, maybe they'll have an alts team, maybe they will have a privates team. Okay.

But there's almost nobody at the company that is trying to figure out whether this bond market is relatively more attractive than this other equity market or this commodity market, or what have you. So, the opportunity for strategies that take an active view on whether you should be short two-year rates in the US and long crude, Brent crude etc., expand across 80 different markets, there's a very limited amount of capital that is chasing that. So, I'm going to call it like 99.9%, of all active computational power and capital deployed and human skill in markets is oriented towards trying to pick the best stocks or trying to pick the best bonds. But not trying to arbitrage across all these major global markets. Really, it's just global macro firms, and Trend followers and maybe global multi-strats that are doing that. And as a result of that, we would expect the anomalies or inefficiencies in the multi-asset space to be larger and persist for much longer than any inefficiencies that might have existed in the individual security space. So, that's a big reason why we focus on macro hedges.

The other which I think we don't talk about enough, is that we can express the macro hedges using futures, which means that we have futures just provide an incredibly efficient way to stack returns, because they provide, pretty well as

much leverage as you would want, at a cost of leverage that is better than any other way that you might want to acquire leverage, as part of an investment strategy, because the global futures markets arbitraged by the world's largest institutions, that have access to bank lending rates, and are arbing spot against the different futures markets and etc., to make sure that the borrowing margins are as razor thin as possible. So, I think that's an overlooked advantage.

Richard: **01:22:12** And you're also dealing and you're also trading against some of these other non-economic players that are in the market that are providing these opportunities, whether it's a producer of a commodity, or whether it's someone that uses that commodity as an input to their production, and they have to hedge the price of that commodity regardless of any price, but they just have to get a position against it. Or central banks, for that matter, that massive gravitational force in markets that central banks have represented for the last 12 years and in a non-economic way. And there are somewhat willing losers because they are deploying an economic agenda, a political agenda, and that offers these structural reasons why these things work.

Rodrigo: **01:22:58** Yeah. I'll also say another thing when it comes to the concept of like, this alpha overlay that like -- what you see a lot in like long-short equity, right, where let's talk about market neutral. They're really trying to find complete, divorced idiosyncratic risk from what's happening in the real world, right. They're trying to find an alpha in a long company and an alpha in a short company. And they're extracting that and providing the little kind of whipped cream on top of your risk parity portfolio, regardless of what's happening out there from economic dynamics. And that is, obviously used institutionally, it's very useful, it adds a layer of return 1-2%. Hopefully, consistently, hopefully, an absolute return approach if you claim that you can harvest that over time and be an absolute return every year. So, you're adding a little layer.

But it's not necessarily adding to the benefit of portfolio construction. There isn't an element of predictability in zigging when the rest of your portfolio is zagging. Now we haven't done -- haven't written about it yet. But as we explore and understand further that this multi-asset long-short, what we do identify is that in any one of these strategies, we talked about Trend, but Seasonality is also a long-short component that is a -- well, I'm not going to say the word tactical, but a macro factor that tends to do its own thing. And similarly with Carry and relative Value and Mean Reversion. All of these tend to do best when there's chaos, right? They tend to have more P&L when things are falling apart than when there's a low volatility kind of non-trending non-volatile environment.

And so, it's a unique -- it's an interesting characteristic because when there is benign inflation and persistent positive growth, assets go to the thing that everybody wants and likes right now, which is an equity overweight portfolio

and fixed income, right, that zig and zag but generally move up together. So, when that's happening, the multi-asset, all of these multi-asset factors, these macro factors, underperform and do okay, but not great.

Richard: **01:25:19** The allure of diversification goes away in those environments.

Rodrigo: **01:25:23** Well, my point is that it has a characteristic. We can tell that it's likely to do poor -- less well, in a period of calmness in the global economy. When inflation rears its ugly head and inflation starts breaking relationships with currencies, when central banks start deferring the way that they're going to respond to that inflation. When supply chains start to be disrupted, when war starts, when things start to break, all of a sudden, what you identify is wide dispersion across these asset classes, and broader opportunities to make money across long-short multi-asset. And the longer this happens, the higher the P&L will be.

And so from the perspective of adding it to a beta portfolio, we can now add it as a piston to portfolio construction with some predictability, broadly speaking in certain regimes, that when there is chaos, when there's less liquidity, when there's negative sentiment, when there's policy shocks, risk parity, beta is just going to do worse, it's going to have a tougher time. And it just turns out that multi-asset long-short tends to do better. So, it's just from a portfolio construction perspective, when we're talking about adding an alpha layer on top of your risk parity, that to us, has been the most attractive way to build out this business, your best beta, and your best complementary alpha overlay or macro factor or so on, right.

Richard: **01:26:49** I'd like you to go back to Adam.

Adam: **01:26:51** Just to Rodrigo's point, I just want to make a bit of a clarification before we move on. But I think it's important to highlight that there are definitely sort of macro factor strategies that are like by design, by the mechanics of their construction, going to do better when volatility spikes, right? Obviously, Trend is a good example of that, because it's effectively just kind of rolling strangles or straddles at different tenors, across all these different asset classes. But there are definitely strategies under the hood that are designed to do well in other environments.

But what you do need is dispersion. You don't necessarily need chaos. But what you do need is, at least to have a few different markets, providing a little bit of movement of volatility in different directions for different reasons. And so for example, that period from, call it, 2016 to 20-- 2015, 2016, 2017, everything was kind of moving in sync. It was -- I don't know if you recall, this was like the risk on, risk off environment. It was really just one bet.

Rodrigo: **01:28:04** Yeah, it was risk on, risk off.

Adam: **01:28:05** Yeah, that was also unpalatable for many multi-asset strategies. Because while there were risk off environments, everything kind of moved together. Right? So, there was no dispersion.

Rodrigo: **01:28:16** Liquidity on, liquidity off is what it was.

Adam: **01:28:19** Right. So, by combining the multiple macro factor strategies, as long as there is some sort of dispersion, as long as kind of central banks are not acting in a coordinated way to mute volatility everywhere in every asset class all around the world, like happened during that really unusual time, there should be macro factors in there that are doing relatively well, in most other macroeconomic environments. The trick is to have more than one macro factor that you're including, right? Because to your point, many people sort of, Trend obviously, is the darling over the last year or two, right? And everybody's enamored with Trend, not really recognizing or maybe internalizing the fact that Trend can go through long periods of drought, where you kind of have five, six, seven years of up and down with fairly sizable troughs that shake a lot of investors out.

And especially if you're an investment committee that needs to keep a board interested in a strategy, or you're an investment advisor that needs to keep a client interested in a strategy, while it languishes for four or five years in a row, well, that's challenging. What ends up happening typically is that these strategies get abandoned at exactly the wrong time, kind of three to four years into a bit of a lull. And right before they begin to start doing the job that we know that over the long-term on average that they're going to do. Which is why making this multi-asset concept or sorry, the multi-factor or multi-strategy concept, so important.

Rodrigo: **01:30:12** Yeah. And you can see here from this, I guess, I don't know how much you can see in this chart. But let's focus on the colors, right? This is just a series of macro factors from Carry to Mean Reversion to Trend to relative Value to Volatility. And, the green one is Trend, right. So, I remember in 2009, that by 2009, I mean Trend had literally done double digits for a decade, right? The amount of money that went into those strategies after the credit crisis, because it also did double digits in 08 and did pretty well in 09. The amount of money that went in there looking at all the possible investment styles that they could get into, also did well. This one is the one that got most of the money. It reminds me of private equity and private credit right now, which is because it's done so well, all the alternative sleeve money is going to them, and possibly at the wrong time. Right? If you study Trend going back 600 years, you will identify decade-long periods where Trend just kind of meanders kind of low, single digit, sometimes a couple consecutive negative years, even though it's designed to be absolute return.

So, understanding that, what could -- what other signals that have repeatable factor-based type of return harvesting could you get into? Like we mentioned Seasonality, we mentioned Mean Reversion, we mentioned Volatility. All of these are non-correlated, attempting to become absolute return. Any one of them can have a lost decade. And it's really tough to identify which one is going to be the one that has a lost decade. Certainly nobody thought that in 09 for Trend. And by allocating singularly to Trend for a decade, it's gone from being the most allocated to alternative in 09, to like the least allocated to alternative in 2020.

In fact, the AHL had made a killing in Canada and in 06, 07, 08. By 09, it went to the Canadian feeder fund, went to almost a billion dollars, and then slowly bled out to $20 million in December of 2019, where the person who owned the feeder fund called me and said, will, you guys take over the fund? AHL's just leaving. They're leaving. That's too small of an account. We can't get any interest, right? And we tried to make it work, but … didn't kind of coincide. And they had to close the fund, literally three months before the COVID crash, right. And so it's important to understand that it's really tough to hold on.

Richard: **01:32:43** AHL did really well to close the loop on that one.

Rodrigo: **01:32:49** And it did really well, starting in the crash and continuing today. Right? So, what I'm trying to -- the importance of this story is that as a single style, it's really tough to hold. Equities on their own are really tough to hold. 30-year treasuries are really tough to hold, right? Commodities are really tough to hold on their own. They're less tough when you put them together. And the same thing applies to Trend. And then what else can we do? What about Seasonality? What about -- So, you can see what we're getting at is ensembles, diversification continues. And in particular, the multi-asset that tends to have a characteristic that is complementary to everything else.

Adam: **01:33:29** There's another important point here that I want to pick up on as well. Because I think many, hopefully, many listeners will be thinking, okay, yeah, I know I buy the fact that I need to get exposure to not just one or two styles, but like as many diverse styles in which we have some long-term conviction as possible. And they're thinking, okay, where am I going to go find a Trend fund and Carry fund and Seasonality fund, and a this and that, and whatever, right? And I think that misses a really important point. And that is that when you combine them by having an individual exposure, independent funds or even independent accounts, then you lose a couple of really important things.

Number one, you lose the opportunity to net trades, like a lot of these strategies have reasonably high turnover. And you can imagine situations where trend is buying a market at the same time that the value strategy is selling the same market. So, if you have them in two separate accounts, you're going to go ahead

and buy in one account, sell in another account. Now map that out to five or six different sleeves that are all relatively uncorrelated. You've got a huge amount of unproductive trading if you hold them all in different accounts or different funds. Whereas if you consolidate them all in the same account, and you're just taking the average, so Trend says I need to buy 10% of this market but Value says I need to sell 8%, so I'm going to go ahead and buy 2%, just the difference, right? Then you're reducing your trading costs by an absolutely massive amount and our internal calculations, just for using our five, just plain vanilla factor sleeves suggest that that alone, by combining them as an ensemble in a single account ,may improve performance by 20 to 25%. Net performance by 20 to 25%. Okay.

The other thing is that if you hold all of these different line items in different funds or different accounts, then it's much harder to get -- so, let's say all of these different strategies have their own, the volatility of the individual strategies are all 12%. Okay. But because they're also uncorrelated, you put them all together, they have a volatility of, say, 6%. Right? But you can tolerate or you need a higher risk budget to allocate it to all of these diversifying strategies to offset the risk, for example, in your core portfolio. So, how do you get, how do you then increase the amount of risk budget that you have in the strategies or maybe you want a higher risk budget, because you just can tolerate more risk and want higher returns? Well, that's really hard. Whereas if you run them all as an ensemble, you can then look at the total portfolio after you've ensembled them, and run that ensemble at a higher target volatility. This is not even mentioning the behavioral challenges of holding five different line items where each of the different line items could easily go through a lost decade, or certainly three or four or five years of low or negative performance. And their individual draw downs, right.

Rodrigo: **01:36:56** It's interesting to see how, like, from an institutional perspective, when you're looking for multi-asset, you find a lot of multi-strats, and this is why. You'll find like the Trends, there will always be the Trends, as you suggest the pure Trend manager. But then once you move up, layer up, you'll see multi-strats that are like systematic global macro, or just pure global macro. There's a reason for that is because there's accretive value and being able to air out those votes, everybody's voting every day on what they want, go long and short, you're making one single trade. So, that's a crucial component. And so if you're looking for an alpha stack to put on top of your beta, then look for multi-strat, right? You want to have as much of that as possible.

Richard: **01:37:41** So, tactical tilts, alpha, we've used this now somewhat interchangeably here. But I think we should also …

Rodrigo: **01:37:47** Much to my chagrin.

Richard: **01:37:51** Yeah, but I think we should also going back to what Adam was saying earlier about the evolution of our thinking, and some of the other dimensions of alpha, that we have discussed and come across, and that good debates around and research directions, speed, execution, efficiency, and execution. These are some of the other dimensions of alpha that we have read a little bit in literature as well as talked to other managers. And can we talk a little bit about this?

Adam: **01:38:21** Yeah, yeah, right.

Richard: **01:38:27** Can we talk a little bit about this?

Mike: **01:38:28** As a concept though we did, *is speed of trading, alpha*? And I have a different opinion than maybe some people here and my answer is no. I mean, if you're adding excess value, okay, over minutes, days, that's fine. But you could also be adding that over months, you could be structuring trades in certain ways, you could be thinking about the way in which -- if you're expressing discretionary macro, the bottom line is you have to be right, at some point, and you have to manage that trade that you put on, and it has to be considered something that is not just the benefit of holding the assets.

Now the benefit of operating on shorter timeframes is that you've got much larger sample, you can be more highly confident in whatever you're doing having some sort of statistical relevance. And this is probably why it takes 10 years to 20 years to have managers get accepted as actually being providing alpha because they go through several market cycles and they have some weirdness about them that provides them excess return. They also, in my experience, those people also have these long periods that are very frustrating too. But so that -- I mean, that's my two cents. I think that you know that speed is a thing.

Richard: **01:39:45** That correlates to size somewhat, Mike. I mean, smaller managers can definitely trade, you know, high frequency is a small capacity game.

Mike: **01:39:55** Exactly right. So, how much capacity does the anomaly provide you, before you and others arb it all away.

Richard: **01:40:04** When you're managing hundreds of billions of dollars, what kind of edges can you implement at higher frequencies where -- and to make an impact to the portfolio? So, I think size and timeframes are two sides of the same coin when it comes to, in terms of implementing certain alpha strategies.

Adam: **01:40:23** That's a good point, because the -- I mean, look, all things equal, right, the fundamental law of active management says that the more bets you take, the higher your information ratio or your risk adjusted alpha, should be, all things equal, right? Now, you got to overcome higher trading costs when you're trading more frequency. There's other operational challenges. So, what is true in theory

isn't always true in practice, that's for sure. But I think you also raise a good point, Mike, in terms of evaluating funds.

Like, if you're evaluating a discretionary macro trader who prides himself on having one or two key trades a year, right? So, after 10 years, you've got maybe a sample size of 10 or 15. Right? So, I think it's valid to sort of say, well, if I'm evaluating a manager, I'm going to need a longer horizon to evaluate a discretionary macro manager who's making one or two major bets a year, than I will need to evaluate a manager that is making a lot more bets, a lot more regular bets in the portfolio, just because you've got a much larger statistical sample from which to evaluate significance.

Mike: **01:41:35** You can also fire that manager more quickly.

Adam: **01:41:38** More quickly, totally. Absolutely. Yeah, that's a good point.

Mike: **01:41:42** With a higher degree of confidence, let's say all things equal.

Adam: **01:41:44** Yes.

Tail Protection Strategies

Rodrigo: **01:41:45** Yeah. So, we talked about the beta, we talked about the multi-asset macro factor components. I do want to talk about something that's always been near and dear to my heart to complement those two things. So, we talked about the multi-asset macro, macro inefficient, and that gives us an extra edge, and so on and so forth. And it has a kind of understandable profile that complements beta. Now, there is something that's a bit of a blind spot, both from a risk parity perspective, and sometimes, sometimes from macro factor perspective, which is risk parity can have negative sentiment, where all that diversification magic you get from treasuries going up, gold going up and equities going down in a negative sentiment environment all of a sudden disappears for three to five trading days, when cash is favored over any risky asset, right?

And there's a bit, you can see it in any risk parity that October 08, there's a bit of a gap down. And we saw it saw risk parity holding up pretty beautifully in the first half of the COVID crash, and in the second half taken a step down, right? Multi-asset, because they're not, this is one thing I'll give market neutral, is that if you're truly market neutral, and you get -- you have that market risk taken off, in an environment like that, you may not get a big gap down. Whereas, if all of your signals are pointing directionally long-risk at the wrong time, you might also get caught off side in a negative sentiment environment or a negative liquidity shock.

Rodrigo: **01:43:30** So, one of the things that I've always found important for me to talk about, and I know there's been a lot of live discussions at ReSolve here, but the tail protection strategy, the ability to go long volatility, when long volatility is the only thing going up. And so there's many ways to skin this cat, if you want to go back to the discussion we had with Jason Buck on this. You can do it with options, you can do it with …, and with the VIX, the B stocks and futures. You can do it with a bunch of derivative products.

But the goal of this other component is really to -- it's not going to do much most of the time. But if a big event, a big gap down a big liquidity event happens, you have a fighting chance of having a big offset in case your macro factor is offside and your risk parity will be. Macro, sometimes it's neutral, sometimes it's in the right position and provides that tail protection on its own and sometimes you get caught off side. So, having that extra component if you can get it is, I think, ideal, right, from an all-weather approach to investing.

Mike: **01:44:33** I think this is a freaking classic example where construction matters a lot. And there is a tremendous amount of potential alpha. And you have to think about what kind of return stream you want to create in manifesting some sort of vol trade. Like you have to think that through with respect to your other portfolios. So, that's part of the alpha contemplation. To buy these strategies off the shelf, I mean, we've just seen the worst abuses of back testing from the large banks. And that's another topic as well as people contemplate these things.

Rodrigo: **01:45:11** Yeah. Listen to the Schindler podcast.

Adam: **01:45:12** Even in academics. One of the seminal papers in this field, I remember three or four years ago, getting it, reproducing it and discovering that there was a major error and getting in touch with the author and him acknowledging and then republishing the article. So, there's also that that happens.

Mike: **01:45:31** Absolutely. And the major investment banks, they pump out strategies on a regular basis. And the great thing to look at is when they send you these, if you ever get these documents, as you look at the origination date, and you see this survival bias, and what you see is they'll send you a list of 100 potential strategies you can buy. You look at creation date, and you'll see maybe 2% of the strategies that have lasted for five or 10 years. And the rest, they're all brand new back tests, because believe me, they sent out 100 back tests a quarter, for the last 10 years. And 98% of them were garbage.

Rodrigo: **01:46:08** If anybody wants, like an actual allocator, like Teachers' Pension Plan, big, big allocator, listen to the Chris Schindler podcast we did where he goes through, I think it was the first podcast we did with him, where he goes through his personal experience with these guys. And we just kind of get the back test and

then see the live results and it would be amazing back test, flat line. Right? That's a great conversation to have.

But let's take it back. I think one of the things that we have -- we talked about the components we wanted to talk about today. I think what's important to talk about is going back to your people constructing their own alphas, betas, and tail protections and all that the volatility sizing is important, the volatility targeting is important. Adam alluded to this or not alluded to, he explicitly explained the issue with finding a bunch of 10 vol managers. Aside from the inefficiencies is that when you have non-correlated, a handful of 10% volatility alpha managers, you put them together, all of a sudden, you have a five vol portfolio, right. And the beautiful thing about futures, if you can create an ensemble of betas and alphas all in one implementation, is that you can increase that target volatility to something that's useful for the rest of your portfolio, whatever that is, right.

And so that's the benefit of having futures. And if you think about the public funds that we sub-advise in the US, for example, for Rational Funds, right, like we have, if you X-ray it from the big moving parts, you X ray, the risk parity or beta component, that's around eight vol, right. Which is similar to what you can get for any -- in a bunch of funds and mutual funds…

Adam: **01:47:42** The big commercially available funds are run at about an average, long-term average of about eight vol, right. So, basically, you have the equivalent of a full risk parity fund, is one component of this strategy that we sub-advise exactly.

Rodrigo: **01:47:57** Exactly. And then on top of that, you have the alpha sleeve stacked on top. So, if you read the *Return Stacking* paper, going to returnstacking.com, you'll get a nice understanding of what I mean by stacking. But you get for this product, for every dollar you're going to get that eight vol exposure for risk parity. But on top, you're going to get around a 10-12 vol exposure to alpha, right, 13 vol. Together, because of their low correlation, you're getting somewhere between 11-12%, right, plus the tail protection on top.

But the point here is that, if we didn't -- weren't the ones getting the institutional exposure to futures contracts, to be able to get that risk back up to something useful, which we think is 11, anywhere between eight and 12%, depending on the market, then it's going to be really tough for most to continue to pile on diversification because you're just -- your absolute return will go down in spite of your risk adjusted return going up. So, it's so cool that now we have rules in the public markets. I mean, I never thought we'd get here. Did you guys? Like, when we first started on this journey, we thought it was all institution all the time, both in the US and Canada and the fund we sub-advise in Horizons.

The rules have changed enough from the regulators that they allow us to do this. They allow us to stack our best institutional quality beta, provide that in our best

institutional quality alpha, so that when you're buying our fund or a couple other stacked funds that we talked about numerous times, you're getting two things for one, two or three things for the price of one. Instead of buying a risk parity fund for eight vol and a long-short macro fund for 12 vol, you're getting both of those in a single product with all those efficiencies that Adam talked about. I mean, this is not just us. There's many of these now. It's super exciting. And I think we're finally getting somewhere where investors can survive a changing regime like the one we're seeing, where we can move away from 60/40 and then look to see what tools we have and find something useful. I'm super excited about all this stuff, just generally speaking.

Mike: **01:50:08** The other thing you bring up when you say that, that occurred to me too, we're talking about Schindler and we're talking about when you talk about alpha sleeves, the other thing that you have to, I think internalize, is alpha sleeves are going to have performance fees. And performance fees are assets when a manager is in drawdown, and most people will not keep their alpha managers when they are in drawdown. So, if you have those sleeves of 10 different managers that you mentioned, Rod, and you are behaviorally vulnerable like we all are, and they're targeting 10 vol, over 10 years, you're going to fire 14 of those managers in drawdown. And you're going to lose that asset, which is the free performance you get from being in drawdown on a performance fee.

So, it's another additional benefit of netting both the managers themselves but also across the strategy domains. And being able to make sure you're not falling prey for firing a manager and approach at an inopportune time and crystallizing that loss, moving that money somewhere else to a manager who's starting the performance fee at dollar one, on the way up.

Adam: **01:51:24** And resetting the high watermark, that's the key.

Mike: **01:51:26** Resetting the high watermark. That's a huge asset that you give away when you do these sleeves independently. So, you're not cloaking them to some degree, putting them together, allowing that rebalancing tailwind to take place amongst the strategies, removing the behavioral bias for you to make the mistake. Because fundamentally over 10 years, if you have 10 managers, you're going to fire a good 15% of the managers just on random noise. You will fire them in their drawdowns. If you see them down 15%, you're going to think they're not working.

Rodrigo: **01:51:59** Yeah. And isn't this one of the key benefits? I mean, if you're thinking about allocating -- if you're an institution and thinking about allocating to different sleeves.

Mike: **01:52:04** And alpha sleeves, in particular.

Rodrigo: **01:52:06** We want to think that institutions are super disciplined and they can deal with it being different. But clearly, we've seen it with AQR's performance, right? We've seen it when you're too specific, and you add that very specific sleeve to do one single thing, then you're subjecting yourself to a behavioral error, where you're going to have to fire them, right. And you're going to have less of that in a true multi-strat. Because by virtue of its diversification and higher Sharpe ratio, you're going to have a more consistent equity line.

Marry that with risk parity, now we're talking about something that has the strong potential of keeping you behaviorally even keel, out of all the options, assuming there's not a massive like, tracking error bias to like the NASDAQ, right? But just if you care about a full-fledged portfolio that is likely to provide the returns that you require in your retirement most years, without 10 decade long periods of flat returns, then marrying those two, putting them in a bucket where you're not seeing the equity lines provides that line item, that keeps you invested, keeps you less emotional. I think that's multi-strat, that's why multi-strat, that's why maximum diversification.

Mike: **01:53:27** There's a lot -- Go ahead, Richard.

Richard: **01:53:29** Keeping in mind that these are -- understanding that this is going to underperform on any shorter timeframes, the best market. While we were underperforming US equities in 2017 and 2019. We're now underperforming commodities, were underperforming oil.

Rodrigo: **01:53:49** But we're getting nothing but high fives.

Richard: **01:53:51** Exactly. But over longer timeframes, you avoid that concentrated risk that a 60/40 portfolio will have or that a commodity basket will have. And by being diversified, you will compound positively more often. And three, five, seven, 10 year horizons will get you closer to the top of the heap and much better chance of achieving your financial goals.

The Trade's Not Crowded

Adam: **01:54:19** I mean, I think we should unabashedly just own the fact that these products, these strategies that we sub-advise for, the one that we sub-advise for *Rational* in the US, the one that we sub-advise for *Horizons* in Canada are the culmination of 15 years of research and deep thinking and experience and are absolutely our life's work that I believe in wholeheartedly and I have all my investable assets invested in these products, some combination of these products. And I think in terms of optimal portfolio, the idea of having a full risk parity core base portfolio that combines a classic risk parity with a diversified global Carry strategy is unbeatable as a global core portfolio.

And I think the way we have approached the diversified alpha ensemble that we run on top is competitive with any other multi-strat competitor strategy that anyone might be considering. And the combination is truly -- then layer on the long-vol strategy, that combination, I think, is -- that's us putting our best foot forward, and I think is truly an optimal core portfolio that I think many investors should consider.

Mike: **01:56:02** And I would add, Adam, the trade is not crowded, it's nowhere near crowded. This is not a crowded trade. So, when you think about everybody wanting to get into certain things, and they're like, oh, my God, I got to have …, or I got to have X, Y, Z. This is not crowded.

Rodrigo: **01:56:19** And I'll say Adam, like when you talk to people about this, and you show like, simple charts, remember, in the beginning of this podcast, I showed gold, commodity, equities, there's a second chart that puts them together. And then there's a third chart that just balances in risk parity, and it's a straight fricking line. Everybody's like, that's impossible. And it's your line, right? The line that you put in the book that Antti Ilmanen actually quoted you on which *is I know it seems impossible, because diversification done properly, is indistinguishable from magic.* But it's not that hard. It just hasn't been provided to you. I was recently interviewed in a -- I was in the interview and asked, like, why is everybody just focused on the 60/40? And the reality was, that that's all they've had. They've been given all these years, a two layered onion, equities and bonds. And suddenly, we now have a multi-layered onion. And people are just starting to peel those layers. And it's going to -- this is why the not crowded trade, they haven't gotten through the third layer.

Mike: **01:57:19** Talk about the crowded trade. As we've opined over last year, peak 60/40. I think I've said that many -- peak passive and peak 60/40. I mean, …

Rodrigo: **01:57:32** And private equity, but I think -- the point I'm trying to make here is that it may seem impossible, it may seem like that's not real. It's not true. It's simpler than you think. It's simpler than you think and it will become, I think, in the next 20 years, the 60/40, it will become a crowded trade. But luckily, diversification is always you know, it's robust regardless of overcrowding if you do it in the right way. And there'll be more opportunities to diversify the concept. That's right, then you don't …

Mike: **01:58:03** One part of your portfolio is crowded. That's the part that's killing it. And there's other parts that are uncrowded that are killing you. And then they swap.

Rodrigo: **01:58:13** And that applies to the macro trades, that applies to all of it. Right. So, I think -- the message I want to send across is that all of this, we haven't even shown any charts, but as you go down the rabbit hole, you will be like, no way. That can't be. It's not that hard. It's very straightforward. The fundamental principles just

have not been provided to you. They have not been -- you have not had the opportunity to explore these because they weren't products available. Now, there are, we are really getting there. And now the catalyst to start peeling more of the onion, of the true onion has happened for the first time in 40 years, as inflation has gone above what we've seen in our investing careers. I think this is a great moment. I'm very excited about the future.

Mike: **01:58:57** Well, I think that particular concept, I mean I did the numbers. I recall years ago, we did those numbers on, hey, what were the earnings growth for the S&P over time? And it turns out the earnings growth from 1965 to, what was it, to all the way through 1999, the earnings growth for the S&P 500 is 7%, 7.06 for 65 to 81 and 7.04% from 82 to 99. Yeah, that's the earnings growth, right. And then if you look at the annualized real return, the annualized real return from 1965 to 1981 was -.5%. Contrast that to 1982 to 1999. For the same 7% growth rate of annualized earnings, you achieved a 14.83% real return. That's a dispersion of over 15% for over a 13-year period. So, what was up? Well, initial conditions were interesting. P/E multiples started at 23 in 1965 and the inflation via CPI was 2%.

1982 rolls along, you got P/E multiples of 9, and inflation via CPI is 10% and is volatile. If you don't think that we could have that type of thing manifest for the next 12 to 13-14 years, it's already happened. Stagflation is being talked about relatively frequently. Inflation is no longer transitory. Stagflation is a horrible environment for stocks. I keep hearing this, you know, that it's not. There are certain stocks that might do okay, but stocks in general, this is not a good environment. And I think this is what will drive change in behavior. It's crisis, necessity, change. And we've observed it. I mean, we're observing fund flows that are pretty dramatic. But it's been a long road to carry the albatross of diversity, and making sure we've hedged the inflationary impulse that has served us very, very well. And I think that message is going to continue to spread.

Rodrigo: **02:01:26** Yeah, agreed. I think it's a -- unluckily, unlike the 70s, luckily, today, you have access to things that can help you thrive. Not just lose less, which I think is what we've been accustomed to doing, but rather thrive in that environment. I think those inquisitive allocators that truly go down that rabbit hole will find success here. So, with that said, we're at two hours. Gentlemen, I appreciate you. Great journey, and this is, I think, the first time we've done the full-fledged journey, alpha to beta, to soup to nuts. So, thank you all for those who stuck around for two hours. Hopefully it was useful.

Richard: **02:02:20** Yeah.

Rodrigo: **02:02:29** Don't forget to like and share. Feel free to reach out to any of us on Twitter or on our website, investresolve.com. You guys know where to find us. And we'll

see you again next week. Who do we have or are we kind of taking a bit of a break during the summer?

Mike: **02:02:46** We're coming up on the summer break but we have you have somebody next week. Let's pop it up here.

Richard: **02:02:51** No, we have Cem Karsan. Yeah, Cem Karsan.

Rodrigo: **02:02:54** Oh, that's going to be great.

Adam: **02:02:55** And Brian Portnoy co-hosting so that's going to be a lot of fun.

Rodrigo: **02:03:01** Yep. All right, gentlemen. Thanks all.

Richard: **02:03:02** Have a great weekend.

Adam: **02:03:03** Thank you all. Bye.

Mike: **02:03:04** Queue the music.