The ReSolve Master Class – Episode Four

Adam:	**00:00:00**	Last episode, we finished off a discussion of diversity. Just as a reminder, diversity is about having asset classes in your portfolio that are fundamentally designed to respond differently to shocks in the dimensions of inflation, and growth. We finished the episode by mentioning that diversity alone does not produce diversification because you can have a diverse group of assets in the portfolio but if they're not weighted in the right way, then you've got a major imbalance, so that many of the assets are unable to express their unique personalities. The concept of diversification is a function of both diversity and balance, and so we're going to focus on balance today and wrap up this conversation of diversification.
Rodrigo:	**00:00:55**	Yeah. I think the ubiquitous term we see in this industry is this concept of a balanced portfolio. And what is a balanced portfolio? It tends to be, 60% of your dollars, go to stocks, 40% of your portfolio go to bonds. Assuming that the 40% are sovereign bonds, you have something that is going to thrive in a period of deflationary shocks, and you have 60% of your portfolio that'll thrive in a period of continuous positive growth shocks. The problem with this, of course, is that there is no true balance in this so called balanced portfolio. You have stocks that have 2, 3, 4 times depending on the regime, more volatility than the bond side. You have the maniac really taken over the asylum. If you think about from the perspective of risk and what the directionality of a 60/40 portfolio will be in a period of let's say 10 consecutive days where equities lose money, and 10 consecutive days where bonds make money, nine out of those 10 days you will see that 60/40 portfolio go down. So the magnitude is dampened a little bit by the diversification of bonds, but the direction is dominated by that equity risk of the portfolio. So this is not a diversified portfolio. There is diversity in it, but it's not in balance.
Mike:	**00:02:17**	It's in imbalance. That'll play out.
Rodrigo:	**00:02:22**	One analogy that I like to use is we tend to think in dollar terms when we put together a portfolio. What percentage of your portfolio is in this, what percentage is in that? The way I like to think of just a simple example, let's say 50/50 bond/equity portfolio, is a scale that has two spheres in it. And one that takes up the same volume as the other one, but one is made out of wood and the other ones made out of metal. Or you put it on a scale, there's no balance there, even though they look the same. If I paint them, you'll see them the same way, and we've all painted it in this dollar term. What we want to talk about today is how do we put our risk parity goggles on and see through the paint and recognize that one is metal, and the other one is wood?

Adam:	**00:03:04**	Let's put some numbers around that.
Mike:	**00:03:07**	I was going to say the same thing. Generally, if you have a 50/50 portfolio, what is the risk allocation?
Rodrigo:	**00:03:13**	Yeah, depending on the period you're looking at, you're certainly looking at over 90% of the risk is dominated by the equity side of the portfolio. This is again, not nine out of 10 days, you're going to see that the equity portfolio, take the equity side of the portfolio dominate the directionality of your 60/40 so called balanced portfolio. We need to modify that.
Mike:	**00:03:35**	Thinking back to the regimes we had, those four regimes, you have this massive bet on abundant growth, benign inflation, abundant liquidity, this is the bet you're making and if that works out, then that equity portfolio does really well because the bonds never really have to get in there. But at the end of the day, you have this very small sliver of bond risk.
Rodrigo:	**00:03:57**	Yeah, you go down four units of your portfolio from the equity side, go down, and one unit goes up. So you got the directionality in having some bonds and equities. But if you're down on stocks, you've lost four times more than you gained from your bond portfolio.
Mike:	**00:04:13**	Right. Further, that 60/40 portfolio is only operating now in two dimensions. When you have shocks that are related to inflation, and they are coupled with growth that is under expectations, you now have a massive blind spot, the 1970s or stagflation airy growth, we talked about that sector or that quadrant. So the stock/bond efficient frontier was in fact just a straight line. Stocks and bonds were correlated. So you got a little bit less risk by having bonds, but there was no negative correlation there. As Adam mentioned in the last episode, both commodities and gold had double digit real rates of return which would play, it would not have been nice to the 70s. I'll offer one other strange efficient frontier of the 00s, the 2000s, where it actually inverted, you're used to seeing bonds lower left and equity, upper right. And you see this efficient frontier. In fact, it was upside down through the 00s. So, you have these periods where in the 00s, you had inflationary growth. So you had gold and commodities and emerging markets. Equities do particularly well, what would not have been nice was to have that working in your portfolio while the S&P and NASDAQ bounced around for anywhere from 10 to 14 years before having positive returns. We covered diversity last time and that was some of the blind spots, the 60/40 portfolio has, but now we have to give some serious thought to how are we going to balance these exposures in order to make this portfolio robust, we want to be driving a four by four through the decades.

Adam:	**00:05:52**	How do you translate that into dollars? Well, you have to give 80% of the assets in the terms of this 60/40 portfolio, roughly 80 plus percent of the assets to fixed income, and 10 to 15% to equities, in order to find that balance.
Rodrigo:	**00:06:07**	That's a naive example. It's two asset classes. In our previous episode, we included gold, we included TIPS, we included real estate and commodities and that creates... you have to understand the risks that you're taking, the correlations within these asset classes in order to find balance. And there's a wide variety of ways to define what risk is defined, what balance is. But broadly speaking, the idea is to have equal risk contribution across each one of these asset classes so that each component of the portfolio can manifest its unique diversification properties.
Adam:	**00:06:41**	This just occurred to me. Think of a color wheel. The idea of stocks and bonds in a portfolio and 60/40 weights is analogous to having one color, and just fading the concentration in that color. Whereas ideally, you've got two different colors on your color palette and the portfolio is where those two colors overlap to create a brand new color. So you don't just want to dilute the impact of equities, which is what you do when you just add some bonds to a mostly equity risk oriented portfolio, you want to add two completely different colors. And you want the overlap to create a brand new color, Except the portfolio is greater than and different from the sum of the parts. So by holding the stocks and bonds in 20%, stocks, and 80% bonds, now each of those markets are able to express their unique personalities. Again, to Mike's point, extending this to include the concept of diversity, we want to have all of these different markets that are designed to fundamentally respond differently to each of these major economic regimes, held in the portfolio. But we want them held in weights so that all of the unique sources of return are able to express themselves with an equal amount of risk. All of their unique personalities are able to shine through and the sources of risk that just happened to have a low, ambient or natural level of volatility are not completely overwhelmed by the sources of return that have high levels of volatility. If you combine these concepts of diversity, all these global markets and asset classes with balance, now you have what we call a Global Risk Parity Portfolio.
Rodrigo:	**00:08:36**	This generally tends to be where we lose people, they shut down the Master Class and walk away, especially if we think about what's happening today with yields. I just said something that will make most people's stomach churn which is that your portfolio is going to be dominated by bond risk, where bonds are near zero or somewhere negative. And so the question is, why are we doing this? Well, the answer to why this is important is because you're still looking at it from this dollar perspective, when you put your risk parity goggles on, you have equal risk, you have equal amount of impact from the bond side even though in the dollar terms

is much higher than the equity side or the commodity side. A very highly volatile commodity will have much greater impact to your P&L than a movement from the bond portfolio, which is just significantly less volatile. So that's the first thing to talk about. You've got to always think through risk allocation and risk parity goggles and you'll find that you're in perfect balance.

Mike: **00:09:35** I think a classic example of that would be the feeling that you're saying or the thing that you're sharing is, I'm going to predict now. I think yields are low and I'm going to predict that that's going to be an impact on the portfolio. Fine, if we introduce commodities into this mix, then you get a portfolio on a capital weighted basis that's half bonds, 25% equities, 25% commodities, very rough numbers. But again, you've impacted another bet, another source of return into the portfolio that might do really, really well during a period when bonds do really poorly. Contrast that to the 60/40 portfolio of the 70s as an example. If you had 25% of your portfolio risk weighted allocated to that commodity area that did very well, your portfolio is robust. Thinking about experiencing multi decades of returns and real returns of a portfolio that's very long lived and trying not to jump around and do a bunch of prediction. Again, you're prepared, you're ready for these outcomes. We're going to get to prediction, but then you can measure your predictions against a very viable prepared counterfactual or prepared portfolio. Because you're going to jump around and do a bunch of stuff and say, I'll do this and that. Well, what do you compare that to? Was that robust? No, nothing. No bad? I don't know the future. I'm going to be a diversified portfolio, and then how might you impart prediction.

Rodrigo: **00:11:06** The issue with this is always this idea that when you're truly diversified, there's always something in your portfolio that's killing it and there's always something in your portfolio that's killing you. And it's that latter part that's really difficult for people to look at day in and day out, month in month out, year in year out and see it losing and not do something. I think Mike you always say, don't do anything just stand there? I'm going to mix that up. But the whole point is that diversification is really hard. And when you have things in your portfolio that are killing you, what you end up having is a much smoother equity line, but not necessarily the best performance.

Adam: **00:11:48** Well, this is actually the elephant of the room because I'm sure those of you who are listening are thinking, 50% in bonds, my returns are probably going to be pretty low. So it's worthwhile stepping back, when you've got a portfolio of equities, let's just use the S&P 500 as an example. What you really have is $1 of equity in the equity portfolio, but those companies also have on average about $1 of debt. In fact, what you've got is $1 of debt and $1 of equity. Your equity portfolios leveraged up two to one on the actual equity in the firm. Now let's move towards a risk parity portfolio and let's just use Mike's heuristic, call it 50% in bonds and 25% in stocks, 25% in commodities. Obviously, if you were to just hold that 100%

invested in that portfolio, the excess return on bonds is lower because they're lower risk. But you don't have any leverage in the portfolio, or you only have leverage from the equity component. If you just wanted to take the leverage up to what you would naturally have with 100% equity portfolio, now you've got the opportunity to earn a substantially higher return. You're going to borrow some money to invest in more than $1 of the risk parity portfolio. You're going to lever up the portfolio and therefore lever up the expected return. But you're borrowing against a diversified portfolio rather than borrowing against a portfolio that is only fundamentally designed to do well in periods of strong growth, benign inflation and abundant liquidity conditions.

So this really is a decision you have to make. Do you want to lever up exclusively corporate equities? Or do you want to lever up, which are vulnerable to a wide variety of different economic situations? Or do you want to lever up a balanced diversified portfolio that is fundamentally designed to be resilient to all of the major sustained economic regimes.

Rodrigo: **00:13:52** Let's break that down in terms of the experience of the investor. An investor that chooses to be 100% equities is choosing generally because they want to get the best return. But what you're getting historically in terms of Sharpe ratio, so return per unit of risk is 25 to 30 Sharpe points. So for every unit of risk that you take, you're going to get 25 Sharpe points. When you put a well-diversified, even a simple Risk Parity Portfolio, we're looking at 50 basis points, 50 to 65 Sharpe points. That's more than double. For every diversity you take. The problem is that if you don't lever it, you have this very low volatility portfolio averaged around 5% and then you compare it against your equity portfolio, which varies between 15 and 20%. But if you were willing to take a 15 to 20% volatility risk every single year, with big left tail events that can bring your portfolio down 50, 60, 75, 90%, as we saw in the depression, then why wouldn't you want to lever up your bullet to the point of the risk that you're willing to take, let's say 15% of the balance of the diversified portfolio which is going to give you more returns for that same unit. In example...

Adam: **00:15:04** With less vulnerability, just bad timing luck.

Rodrigo: **00:15:06** You're not going to have, everybody knows that equities have these big left fat tails, meaning that there's these four standard deviation events that should only happen once every 10,000 years that are happening every seven to 10 years. But when you have offsetting asset classes, all of a sudden you get a much more normally distributed return series.

Adam: **00:15:23** But it doesn't just need to be left tail events either. It can just be long periods where either all global equities just don't do very well, maybe you're coming out of a period of extreme valuations and markets need 10 or 15 years to work off those extreme valuations. So, equities just go sideways for a while. Maybe bonds continue to do well, maybe commodities rocket higher. You don't only observe the benefits of this diversified portfolio during crashes. The idea is, you don't know which of these major economic regimes are going to be in over the next 5, 10, 15 years and you want to just be prepared for whatever outcome you get, and scale to an appropriate level of risk so that you're able to hit your required return but you're more likely to hit that required return in any major economic regime rather than just limiting it to the regime that's favorable to equities.

Rodrigo: **00:16:19** Yeah, the empirical results are much more consistent decade by decade. I just want to point out one thing, there's a big report done 10 years ago on risk parity by a large asset manager that's very equity focused. So it's a little biased. They went back and talked about how from 1940 to 1980 bonds had a 40 year bear market, that in real terms led to a 68% drawdown. The conclusion with the thesis was because that happened, you will be crazy to invest in a bond portfolio. In fact, the best place to be is in an equity portfolio. Now, what happened is the thesis was presented, but it wasn't tested. We did, and we're going to put this in the show notes, a presentation that goes back 90 years of risk parity and what we found is that during that period, indeed bonds were a massive drag. But in parity to commodities, and equities, and gold or gold stocks at the time, at the same level of risk as equities you outperformed it with a lower drawdown and you didn't have to predict that equities were going to do really well for 40 years. That lack of necessity for a prediction is what was absolutely key here. A lot of thesis are being thrown out there about balance and risk parity, nobody's testing that thesis.

Mike: **00:17:35** You mean something was killing it and something was killing you.

Rodrigo: **00:17:38** Question is whether people can stick to a 40 year drawdown in securities of course.

Mike: **00:17:42** In equity certainly. I think that's the other thing that is missed at the margin when investors talk about the intensely low yields. Those yields are also built in to the cash flow assets and the discounted rate on future equity, earnings and their dividends. So if you think that bonds are yielding very low and are expensive, you just have to remember that those are the same discounted cash flow numbers that are used in the valuations of other cash flowing assets, like real estate, like private equity, like equities. So if duration is your worry, because that's what you're saying these yields are so low, and boy have a lot of duration risk. Well, some of the largest duration risks are tech companies with zero yields and those future earnings discounted back to today at high valuations. I'm not making a comment on any kind of valuation today, I'm just saying that's an implicit assumption that you're making, and so you should recognize that.

Rodrigo:	**00:18:47**	Let's make that assumption and set up the next episode. The assumption is that we are in an incredibly expensive time for bonds and what you are also saying is that if bonds are expensive, everything is expensive. What if everything returns zero for the next 20 years? Is there a benefit in diversification? Is there a benefit in a Risk Parity Portfolio? I think one of the things that people don't understand the real value of is, the benefit of diversification from the perspective of rebalancing.
Adam:	**00:19:16**	Yeah, the fact that rebalancing can actually deliver a premium on its own, even if the underlying assets don't deliver on expectations.
Rodrigo:	**00:19:25**	Yeah, so even if we were to concede that everything is expensive and a riskier portfolio is not going to return anything, therefore I need to predict everything. We're going to talk about the hurdle that you need to beat from a rebalancing premium perspective in order to do that.
Mike:	**00:19:37**	Cool. Cue the music