Fidelity *Alternative Angles*

Unlocking systematic alpha through equity extension strategies

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STEVE ROSEN: Welcome back to *Alternative Angles*, the Fidelity podcast where we hear from investors about complex strategies outside the realm of conventional stocks and bonds. I'm Steve Rosen and I'm your host.

Paradoxically, sometimes better results come from relaxing a constraint while also maintaining discipline. Here's an example from the world of sports. For decades, professional basketball teams relied on a traditional offensive structure. Point guards initiated plays and distributed the ball, shooting guards and small forwards roamed the perimeter, and power forwards and centers worked near the basket. But over time, innovations in motion and spacing, combined with data-driven insights about shot selection, began to loosen those conventions. Constraints were relaxed and player skill sets broadened. But this flexibility did not come at the expense of structure or discipline. On the contrary, the new approaches were carefully designed to create more high-quality scoring opportunities. And while they introduced complexity and new forms of risk, teams that executed well achieved a leap in offensive efficiency.

In portfolio construction, active extension strategies follow a similar logic. In a traditional long-only portfolio, a manager can express conviction only by owning a stock above, equal to, or below its weight in the benchmark. On the other hand, extension investing relaxes the long-only constraint by permitting short selling. That adjustment expands the opportunity set and increases the manager's degrees of freedom, enabling larger allocations to the strongest long ideas and the expression of high conviction negative views. The trade-off is greater gross market exposure, but with the objective of achieving a higher information ratio while maintaining net exposure at a beta of about one. So just as innovation widened basketball's offensive playbook, extension investing widens the portfolio toolkit, aiming to improve risk-adjusted returns without losing sight of the benchmark. It's flexibility applied with discipline and guided by method.

Joining me today to talk about extension is Gil Haddad, Fidelity's Chief Investment Officer of Advanced Strategies and Research. Some listeners may recall that in episode eight, we were introduced to Gil, who spoke broadly about alpha capture. I won't repeat his experience here but suffice it to say he has an impressive background in data science and systematic investing, and here at Fidelity, Gil and team harness the firm's proprietary fundamental data, alternative data, and quantitative capabilities to produce pure alpha strategies for investors.

Gil, it hasn't been that long since we chatted, but there's so much interest in the breadth of your platform and specifically in extension, that I'm excited to welcome you back to the podcast.

GIL HADDAD: Thank you so much, Steve. It's very, very exciting to be back and I love the basketball analogy.

STEVE ROSEN: Well, thank you. I enjoyed thinking it through and putting it together. Now, since we've talked before and had a great conversation, let's dive right into today's topic. So how about if you start us off by defining active extension and tack on an explanation at a high level as to how an extension strategy could potentially produce higher alpha by relaxing the long-only constraint.

GIL HADDAD: All right, that's a great place to start, Steve. And so I'm going to anchor the conversation today in the equity space, just for the sake of clarity throughout the conversation. Now, what's an active equity extension? Let's start by defining it. It's a portfolio of stocks that allow you to keep the exposure around one hundred percent. So it's a beta-one portfolio, just like a traditional equity fund, but allows you as a manager to express your conviction both on the long and the short side, and in a way that's capital efficient. So common formats that you will hear about is one-thirty-thirty, one-twenty-twenty, one-fifty-fifty. So what that means, if it's a one-thirty-thirty, the manager holds a hundred and thirty percent long, thirty percent shorts, netting to a hundred percent of the exposure. So, let's take an example, simple example. You have a hundred dollars, and you want to short thirty dollars of stocks. And then so you use that proceeds and then you buy an extra thirty dollars on the long side. So your gross exposure is one thirty plus thirty, but then your net is one hundred. And then the portfolio will have a beta-one exposure to the market.

Now, let's address the second part of your question. So why is it relevant? Why is this format of a portfolio popular? So then you mentioned in your question, it frees the long only constraint. And then this is a very, very important one. So that's number one. It allows the manager to express the alpha both on the long and the short side. And there's a component of capital efficiency in it. And then, of course, there is more. But these are, broadly speaking, the largest ones. So let's talk about the core idea of relaxing the long only constraint. If you're a long only manager and then you are

managing relative to a benchmark, then you express your ideas by going overweight at bench or underweight. However, if you believe that you have a strong alpha or stock picking skill on the short side, the maximum you could go down is underweight to the benchmark weight. And then that's it.

Now, if you're relaxed long only constraint, that allows you to actually take a short bet on the security. And then that allows you to capture the alpha from that short side. And then you use the proceeds, and then you can fund the long side. Using the proceeds along the long side, you can add more to your longs, and then it allows you to capture alpha from both sides. And then all while maintaining a net exposure of a hundred percent or a beta-one. So what you would have achieved from that perspective is you have alpha from the short side, you're maximizing capital efficiency, and then you're maintaining your exposures the way you want them to remain.

STEVE ROSEN: Okay, nicely put. Now, before we jump into the nitty-gritty of extension, I want to take a step back for a brief recap on Fidelity's approach to alpha capture. As we talked about in episode eight, it's systematic and it incorporates signals from Fidelity's fundamental data with signals from alternative data. So, let's first review the fundamental inputs to your model. To generate reliable signals, they'd need to be produced and memorialized consistently at scale and through time. So tell us about how the fundamental research department creates and maintains efficacious data from which you can pull signals.

GIL HADDAD: Absolutely so now this is starting with the fusion alpha platform which is our alpha capture platform it capitalizes on three sources of alpha. The first one being the analyst's data, the second one are the best ideas from our portfolio managers, and the third one is the alternative data. The first two are proprietary to Fidelity. We've never shared them with the outside and we never will. And the third one is differentiated, and we've spoken about why we believe it's differentiated. Now, let's zoom in on the fundamental data. We believe this is one of the richest fundamental data assets on the street. And we've spoken about it in the past but let me repeat a little bit of why do we believe we have conviction in that statement. So the firm has done an incredible job at collecting and storing data from our fundamental investors for multiple decades. And then that turned out to be an incredible data asset in a treasure trove of information that allows us to generate alpha over time. So let's put it more concretely in examples. If our analysts meet with company management, we capture information about the date of the meeting, the attendees, and if there's a note after the meeting we capture that information then they go proceed with their with their job and then they do they conduct research on the security. And then they update their financial model on the company. We capture a lot of information from that financial model. Then they go write a note on the security. And then that note is very, very detailed. It has a rating from a strong buy to a strong sell. It has a price target. It has a variety of flags that are indicative about the

fundamentals of the security. And then it has a long-term thesis. It has their analysis encapsulated in that note. All of that information is captured. Then they go update their paper portfolio that's based on their own coverage. That information is captured.

Now, if we think about that, this is a sequential process, meaning that there's information that our fundamental investors are digesting through their research by talking to management, by looking at different types of data sets, whether alternative or non-alternative data sets. And then they're synthesizing that information. And then we're collecting it at different notes throughout the life cycle of their idea generation. Now, as it turns out, that incremental information on the fundamentals carries a lot of alpha in it. And it's very indicative about how the company's earnings are going to go at the end of the quarter and next quarter and so on and so forth. So that granularity of fundamental data is incredibly important. One way to put it, to use an analogy, not in basketball, but sort of in healthcare, is consider it as the comparison between having a heart monitor versus an annual checkup. An annual checkup is you measure one time a year, or in this case per quarter, versus having incremental information about what's going on with the company over time. And then you can capture that by measuring and then collecting information throughout the lifecycle of the idea generation that's pretty sequential in nature. And then that turns out the firm has done an incredible job at collecting and storing data that is very granular. And for us, this is an incredible source of information that allows us to capture alpha from Fidelity's best fundamental investors.

STEVE ROSEN: Okay. And moving to alternative data, what kinds does your team create and procure?

GIL HADDAD: So let's think about alternative data as any information that can be used to evaluate investments that falls outside of your traditional data toolkits, such as financial statements, SEC filings, earnings calls, or sell-side research. So think about if financial data is, or conventional data is what the ads already see in their terminal, its alternative data is everything else. Now, it turns out that it takes a lot of effort to be able to identify, source, procure, and ingest the alternative data sets in a compliant fashion and being able to produce these forecasts that are very meaningful. So the firm has done a great job over the last few years by investing very heavily in alternative data by building an organization that allows us to extract these insights and creating these KPIs and then we share them broadly with our investors to help them improve or increase their convictions around their ideas.

Now, why is it important? Because it extends the senses of our investors beyond the balance sheet into the real world and then how the consumers are spending their time and money, how the

supply chains are reacting to a specific shock, and then how the fundamentals are changing in real time. So it allows you to get a deeper view, an earlier view, and oftentimes a very differentiated view. So going back to my healthcare analogy, again, traditional data is getting your yearly physical exam. And an alternative data is like having a fitness tracker that is monitoring you twenty-four seven and allows you to count every single calorie that that you're burning, every single step that you're taking. That's all indicative of what's going to happen to your health. And then that allows you to take it in real time. Now, some of the examples we use, if we anchor on the question of how do consumers spend their time and money? Now, we take cohorts of investors, and then we procure a credit card data. And by the way, everything we do goes through a very rigorous compliance process to allow us to consume the data in the most compliant ways and we cannot use MNPI, we cannot use PII.

But let's take the example again of how consumers spend their time and money. We procure data from credit cards, we procure data from email receipts, we procure data from geolocation. Now these three together, allow you to understand consumers for specific cohorts, for example, a male population between the ages of eighteen to twenty-five, how much of their discretionary spending is being spent on restaurants and what kind of restaurants and then how often are they going to the location and then how often are they ordering online? As it turns out, these questions are indicative about the fundamental health for many, many companies. It allows you to look at QSR restaurants and then is the specific cohort of population spending more money, less money, about the same relative to the competition?

So broadly speaking, we use data around consumer activity, just like the ones I mentioned, data that allows us to track how consumers are spending their attention on the web. So think about web traffic and app behavior, geolocation that is indicative of everything that's happening within the physical world, whether it's at restaurants or at factories, for example. Satellite imagery, this is a common one. Information from text. Think about the information that's being put out on the web, whether it's in posts or blogs, you can extract sentiment or information out of that. Job postings is a very popular one to allow us to track indices around what industries are hiring, what industries are slowing down and so on and so forth. You have sensory data and of course anything that's relating to the government and regulatory data. So all of that gives us a body of information that is very, very rich, very unique, and allows us to expand our opportunity set in the alpha capture in a way that is very productive for us. So again, it gives us an information edge. It gives us a more granular and higher frequency data. It's differentiated because it takes a lot of resources and a lot of money and dedicated teams for you to be able to do that. And it allows us to increase our confirmation and conviction. And of course, it allows us to expand our opportunities up to the short side as well.

STEVE ROSEN: So from what you've just described over the last few minutes, it's apparent that you sit at the intersection of fundamental investing, quantitative research, and data science. So bringing it together give us a sense as to how your systematic model integrates the broad and deep fundamental data sets with the alternative data to construct the portfolio.

GIL HADDAD: So we have these data sources, the ANAS data, the PMBus IDS data that are proprietary to us, and the alternative data. Each one of them is a source of alpha. We create signals from each one of these sources. And it's not one signal. It's many, many signals. And then these signals are rooted in fundamental theses about predicting future return effectively, but all from a fundamental perspective. And then we put them together, and then in a systematic portfolio construction approach that has very, very tight tolerance around risks, and you create a balanced portfolio that expresses the alpha from those three sources, maximizing the idiosyncratic risk and generating what we believe to be superior risk-adjusted returns. And that's how we achieve the balance in our portfolio from all these sources of information.

STEVE ROSEN: Interesting. So now I'd like to get into how allocators might think about extension. In your view, is it a replacement for a core equity allocation, or is it a complimentary sleeve with the potential for a higher information ratio? Is it portable alpha? I guess what I'm getting at is how do you think it fits in an institutional portfolio?

GIL HADDAD: So this is a great question, Steve. So and it really depends on the nature of the organization that we're talking to. We've had the luxury to talk to a wide variety of investors over the last twelve months. And for us to get to build this partnership and then learn about the problem that they're trying to solve. And then it boils down that the right answer boils down really to the allocators' level of comfort and the infrastructure that they have in place. So the first one, it could be a straight swap for a core active equity position. If they believe that the manager is able to generate alpha both on the long and the short side, and the portfolio is constructed in a fashion that the risks are controlled very tightly, and they can afford to have a level of leverage in their portfolio, then that's a realistic outcome. They can take a core active position, swap it with an equity extension. And then the goal there would be to generate a higher IR with a more capital efficient product.

Now, the second one, the second option is to use it alongside existing equity managers as a complementary sleeve. And then so what that means is an allocator would have a portfolio of, let's take for the sake of simplicity here, ten managers. They can replace two of them with an active equity extension. And of course, after they get comfort with the alpha profile and the portfolio construction approach and then the consistency of the alpha over time, and then how much do they believe that this is persistent going forward? So that would be in addition to long-side equity

managers. The third one is using it in a portable alpha construct. So portable alpha and equity extension are not the same. And although they tend to be confounded sometimes, they're not really the same. In the portable alpha, you're effectively getting your beta one exposure with a vehicle. And it could be whether futures or a different index or asset class. And then your alpha is generated from a market neutral portfolio with a certain level of leverage. And then in equity extension, you're actually taking the benchmark. It's benchmark relative. It's a beta-one. And then you're generating alpha from both sides. And then we spoke about the different constructs, one, thirty, thirty, one, fifty, fifty and so on and so forth.

Now, we listed three scenarios. So one is you have a direct swap. The second one, you put it alongside existing managers. The third one, you use only the alpha component from that strategy, and then you source the beta from somewhere else. But the reality is, the best way to think about it, it's like an adjustable wrench. And it can tighten the same bolts that you already have that you can fix with an old wrench, but it allows you to reach for new bolts that your old wrench cannot fix effectively. And then the answer is really up to you. And it boils down to your comfort level and your infrastructure as an allocator. We're always happy as we engage with our partners to talk to them about where do we believe this portfolio fits best for them.

STEVE ROSEN: Okay. And in what market environments is an extension strategy either advantaged or disadvantaged, say, versus long only?

GIL HADDAD: So let's go a little bit further here. So the underlying premise of an active equity extension is that the manager can generate alpha from both the long side and the short side. We spoke about relaxing the long only constraint for you to achieve alpha on the short side and the capital efficiency. But all of that is rooted and the underlying thesis that there's a spread between your longs and the shorts. So in environments where fundamentals matters, and there's a high dispersion between the good companies and the less good companies, and the manager is able to pick these stocks very effectively, then this is an environment where equity extensions will tend to perform very well. And then again, this is when there is a high dispersion environment between the longs, and the shorts and fundamentals really matter. Now, when everything is moving in tandem on one side or the other and very low dispersion, then you're taking a short, but it's not actually generating the alpha that you would expect. So you're paying trading, financing, and borrow on the shorts that ends up eating away at your alpha. So it's less effective. So again, it's more where environments where there is spread in the companies and high dispersion environments.

STEVE ROSEN: That makes sense. And then in your opinion is there an optimal level of gross exposure in an extension strategy?

GIL HADDAD: So this is a question that's very near and dear to my heart because we get it in a lot of meetings that we engage with our investors. And the answer to that is really that the optimal gross exposure is really based on where the last dollar of leverage is still earning you more alpha than it costs you in fees. So let me repeat that. So you're taking leverage. So the last dollar that you put in the portfolio is earning you more alpha than it costs you in fees. And then the fees are going to be trading, financing, borrowing, and of course, subject to a certain level of risk. So, I would invite all the allocators to look at it that perspective, because I know from a brand perspective, one-thirty-thirty seemed to be the most popular fifteen years ago. And then in the most recent wave, we hear about one-fifty-fifty, but then the reality, there's nothing magical about those numbers, except that it's based on your alpha model and then how you believe you can generate the alpha. And then again, the dollar that you're investing, is it earning you more alpha than it costs you in fees, friction, and risk?

So I invite everybody not to anchor on the label and then make sure to understand the underlying alpha model and how it's being expressed. So a well-run one-thirty-thirty-thirty could easily beat a sloppy one-fifty-fifty. So when you think about the growth exposure and the level, it's really based on the underlying model.

STEVE ROSEN: Now, go ahead. I interrupted you. Go ahead.

GIL HADDAD: Maybe if you allow me to say a couple more things. So when we speak about the alpha model, so it's really based on the strength of the signal, understanding a good understanding of the long side to short side from an alpha perspective, the capacity of the short book. So when you're taking an extension, you're effectively shorting. You need to believe that you're able to short in a way that is economical that you're not paying more in cost than alpha, and then your risk tolerance and target and then finally your implementation cost is how much are you willing to pay on implementation cost and a very good understanding of what that is.

STEVE ROSEN: Alright, now as I mentioned upfront, I want to further drill into extension. So moving a bit away from the broader description of your alpha capture platform, and away from how allocators might think about it, I want to get to some specific questions about your approach, your resources, the research you do, and of course your opinions about extension specifically. So to start us off there, how do your models account for or neutralize input biases?

GIL HADDAD: That's a great question. So now, any data set that you consume will inevitably have some sort of biases in them. So as a researcher and the portfolio managers working together on the

strategy, the first thing we look at is a deep understanding of the data from the bottoms up and then we want to make sure that we understand the ins and the outs of it really, really, really well. And then to understand where does this data demonstrate efficacy, where does it not work, and so on and so forth. From there, we start to create signals. And I want to compare it with the traditional quant strategies here for a second. And not to say that one is better than the other, but just to compare and contrast philosophically how these signals are constructed to remove the bias. In our process, we start to understand the data, you understand the biases. And the first thing you do is you isolate the alpha by removing the factors or regressing out the factors and factors as defined by a risk model of your choice. And then the reason we do that is we want to make sure that we zoom in and isolate the pure alpha that cannot be explained by any risk factors such as growth, value, quality, momentum, you name it.

And then from there on, you repeat the process across each and every signal. So take signal, for example, a price target. What you're saying there is I take the price target on strict controls in sample and out of sample, and you're removing the risk factors. And then whatever's left the residual is saying, this residual is predictive of future return, and it cannot be explained by any risk factor or by any other source. Take, for example, sell side. And then once you get comfortable with that, the signal is isolating the pure alpha, is the pure signal that has predictive power and removed of all the biases or as much as you can from the biases. And you repeat the same thing over and over and over again across all the signals and you put them together in a portfolio.

Now, by the point, you make it to the portfolio, most of your signals or all your signals are very high in idiosyncratic risk. And then, of course, you put constraints around risk in your portfolio to make sure that no biases creep into your portfolio. Then the reality is we never come even close to them. So as a result, you end up with a very high idiosyncratic portfolio. Now, compare that to a traditional call strategy. If you're not going through the steps that we're going through at the beginning, you end up with signals that will have different loadings on different factors or risk factors. And then by the time you put it in the optimizer, you're trying to put constraints on specific factors. But then by that stage, it's already too late. You don't know what's alpha and then what's confounded with another factor such as value, quality, growth, momentum, or what have you. So our approach is to really turn it on its head and then make sure to remove all the biases all the way upstream at the signal level and then make sure that the portfolio is constructing the portfolio from the highest idiosyncratic ideas.

STEVE ROSEN: Now, just a minute ago you used the term predictive power. And I'm curious, is there a difference in the predictive power of your signals for the long side of the book versus the short side?

GIL HADDAD: So this is a great question. And then oftentimes we get it from investors, especially for Fidelity, that has a very, very long history of rich fundamental investing and then being very good at it. And then we get the question, you're a long-only shop, why do you think you can generate alpha on the short side? The reality is when you look at these data sources, it's imperative to understand what is it that you're capturing and then how the signals are constructed. Now, from a fundamental analyst perspective, if you take a coverage that's similar to a subsector and they're ranking their ideas from top to bottom, based on their fundamentals, what that is saying, it's expressing their views about what companies are going to have improving fundamentals versus companies that are going to have deteriorating fundamentals or one that are going to improve at a slower pace. And then that rank ordering is very important. And then for us, it's a great source of shorts because it's taking a subsector or something that resembles it. They're saying these are the best fundamentals versus these are the lowest fundamentals on the other side. Now you repeat that across all the inputs from the analysis and turns out to being a great source of shorts. And the alternative data is also a great source of shorts. But then going back to your question is, do we generate alpha more on the long side and the short side? Throughout our history of back test and the live track that we have for about a year and a half now, is we see a very comparable profile between the long side and the short side. And then that's something we're very happy with. And of course, it gives us more confidence.

Now, of course, if you pick a random one week throughout the period, you might see that one is fluctuating more than the other. But over the long horizon, we see, and we would expect that relationship to persist going forward, both on the long side and the short side. And then digging a little bit deeper, you will see that some signals monetize more on the long side. Some signals are more biased, some more on the short side. And, but when you put all these signals together, you end up on average an equal contribution from the long side versus the short side.

S**TEVE ROSEN**: All right. Now, how do you respond to investors who might be concerned about models producing crowded trades or concerned about your ability to maneuver through a short squeeze?

GIL HADDAD: So again, great questions and we get posed these quite often. And then these are the right questions to ask from an investor allocator perspective. Let me start with the short squeeze because that's a reasonably straightforward one. When we're constructing our portfolios, one of the things that we're lucky to have is a very broad set of inputs that have high output. So our viable universe in the US that we started with is about thirteen hundred securities. And then you have alpha on most of these names. And then when you're putting it in the optimizer, the optimizer is

maximizing alpha net of costs. So maximum alpha minus trading, borrowing, and financing costs. And whenever that difference is positive, then the optimizer is going to allocate some weight to it or trying to allocate some weight to it in the final portfolio. Now, when we do this, one of the things we have is the benefit of diversification. When you have alpha on such a broad set of names, you don't take any concentration in any one or two or a handful of names. So our maximum position size ends up being very, very tight. And then you end up with having hundreds of names. For example, the long-short portfolio has eight hundred to a thousand names in the portfolio. So any one name going against you is going to have a very, very small position. And then the impact of a squeeze will become negligible. Of course, you have to handle it, but then it's not going to be painful given the level of diversification that you have. And also, because our alpha is distributed across that entire universe, we benefit from that phenomenon.

Now, the first part of your question is when we look at crowding. And of course, in the last eighteen months, we've seen multiple bouts of crowding unwind and then that hurt a lot of similar type of portfolios. And that's something we monitor very closely. So it's incorporated in the risk exposures in some fashion and the portfolio construction and then the things that we're trying to hedge out. But we also we look at multiple crowding indices at the portfolio level to make sure that we don't have any unintended exposure. And then we look from indices from different sell side research on different brokers. And we also have our internal proprietary crowding factor that we monitor very closely. And then it allows us to understand what's the long crowding, what's the short crowding? Do we have any unintended exposure that we would like to hedge out? And that's something we put a lot of emphasis on. And fortunately, so far, we haven't found any exposure that's really unintended or an exposure to crowding that we did not know about.

STEVE ROSEN: Okay, now moving to sudden shifts or unexpected events that certainly come around; at times traditional quant models have struggled through those, so why do you think your process will be able to move through and perhaps is a little bit less susceptible to these structural breaks?

GIL HADDAD: So this is a great question, and then it warrants to take a quick step back and then try to draw the difference between the two sources of alpha between these two types of strategies, a fundamental and a quant, knowing that everybody's after alpha at the end of the day. But then a typical quant strategy is based or designed based on price patterns and historical return relationships. So what you do there is you have a definition of a factor and then based on that you amalgamate all the factors together, you put them in a portfolio that's risk controlled, and then you're saying that that's going to generate alpha. But then from a very abstract point of view is you're saying that the past is predictive of the future and as long as that rhymes is you would expect

that your strategy to work going forward. A process that's built on fundamentals and fundamental analysts is not based on price patterns or historical returns. So very simply, when the world changes, the analysts are studying the world, are collecting data, and they're changing their views. And then as a reality, they're capturing that information in real time, and they're changing and updating their views based on what they think the future will be.

So the first one is going to be backward-looking by design. It's going to be slower to adapt and crowded because a lot of shops have the same information versus our process or at least the way we'd like to think about it is based on some of the best fundamental investors on the street. It's incorporating their human judgment, their analysis about how the future might unfold, given all the information and the resources they have at their disposal. And then their repriced structure breaks pretty reasonably fast. And then because they're studying these situations, they're changing and updating their views, and then that gets reflected in their outputs. And they're quick to adapt. So, the best way that I could think about here is one is both of them are driving a car. One is looking at the rear-view mirror and then expecting that the future is going to look like the past. And then the other one is having a thousand sensors and radars and lighters that are telling you what the road ahead of you is going to look like. And then again, it's not that one is better than the other. It's just they're very different with respect to their philosophy and then how they're constructed.

STEVE ROSEN: I like that analogy. Now you were just speaking to risk, so I want to turn to risk parameters before wrapping up as we get close to time. So I'm curious, how does the model help you adjust so that exposures such as tracking error and beta remain in sync with expectations?

GIL HADDAD: So risk for us is not something that we bolt on at the end. It's really embedded through each and every step of our process. So when we start constructing the signals after we analyze and understand the data, the first thing you do there is you isolate the alpha. And then when we're saying isolate the alpha, there is implicitly in that statement is an understanding of where lies the risk in that particular signal. And then for you to be able to hedge it out or look at the alpha in isolation of the risk. And then you repeat the process across each and every signal in your alpha model. And then as a result, you end up with what you believe is as close to a risk-hedged alpha model as you can get. And then that's what gets fed into the optimization. And the optimizer is, again, maximizing alpha net of costs. And then there you have another layer of risk that you're embedding in your portfolio construction where you want to make sure that you're maintaining your exposure within very tight bonds. You're not breaching your limits either on the long side or the short side. You're maximizing IR (information ratio), you're saying you're tracking error or you're risk within tight bounds, and it depends on the construct and the client requirement.

And of course, risk doesn't end there, is after you trade the portfolio, it takes a lot of diligence for you to be able to analyze, do I have any unintended exposure? Was I taking a bet that I did not know about and so on and so forth. So really risk is a part of each and every step of the process and it's something that we take incredibly seriously because an absence of knowing the ins and the outs of the risk in your portfolio, you won't be able to generate the outcomes that your investors expect.

STEVE ROSEN: Very interesting. Now, we're at time so we'll end it there. Gil, thank you for sharing all this information. It's been really illuminating. And thanks for coming back to *Alternative Angles*.

GIL HADDAD: Thank you for having me, Steve. Have a good one.

Alternative investments are investment products other than the traditional investments of stocks, bonds, mutual funds, or ETFs. Examples of alternative investments are limited partnerships, limited liability companies, hedge funds, private equity, private debt, commodities, real estate, and promissory notes. Some of the risks associated with alternative investments are: Alternative investments maybe relatively illiquid. It may be difficult to determine the current market value of the asset. There may be limited historical risk and return data. A high degree of investment analysis may be required before buying. Costs of purchase and sale may be relatively high.

Stock markets, especially foreign markets, are volatile and can decline significantly in response to adverse issuer, political, regulatory, market, or economic developments. Foreign securities are subject to interest rate, currency exchange rate, economic, and political risks. Securities selected using quantitative analysis can perform differently from the market as a whole as a result of the factors used in the analysis, the weight placed on each factor, and changes in the factors' historical trends. Securities lending involves the risk that the borrower may fail to return the securities loaned in a timely manner or at all. If the borrower defaults on its obligation to return the securities loaned because of insolvency or other reasons, a fund could experience delays and costs in recovering the securities loaned or in gaining access to the collateral.

Past performance is no guarantee of future results.
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