Q&A with Brian T. Daly

SRZ's Systematic and Quantitative Strategies Practice

IN CONVERSATION WITH THFJ'S HAMLIN LOVELL

Brian T. Daly is a partner in SRZ's Investment Management Regulatory & Compliance Group, resident in the New York office. He advises hedge, private equity and real estate fund managers on regulatory, compliance and operational matters. Having spent nearly a decade in-house as general counsel and chief compliance officer of several prominent investment management firms, Brian is well versed in the wide range of legal and business challenges facing investment advisers, commodity pool operators and commodity trading advisers. In early October, Brian and SRZ's UK-based Regulatory & Compliance partner Anna Maleva-Otto held an event at the firm's London office, focusing on "Systematic and Quant Strategies: Current Trends and Challenges."


Brian T. Daly

Hamlin Lovell: Why are more hedge funds branching out into systematic and quant strategies?

Brian T. Daly: Quant has always been a very active part of the hedge fund landscape and it waxes and wanes in popularity. Right now it is definitely on an uptick, and global allocations to the hedge fund industry are on an uptick as well, so I think you're right, there is more quant exposure out there.

There are some new trends, however. For example, in the past managers that focused on systematic or quant tended to be "whole hog" in that one area (but there have always been some notable exceptions). Now, however, we are seeing more multi-strat managers finding a place in their portfolio for systematic or quant strategies.

HL: We've noticed that as well. Now we do see some of the larger fund managers actively putting a team together; Why is that?

BTD: Many managers are challenged to deploy and get decent alpha on large portfolios. Back when a $5-billion fund was a big fund, you could be a lot more specialized, but now $5 billion barely gets you into the top tier. We have clients in the United States, the United Kingdom and even in Asia that are $20 billion or more unlevered (levered capital, of course, can be multiples of that) so it's an imperative for those managers to find new places to deploy existing and new capital. These "places" can be new markets or new strategies, or a combination of new products and new strategies – which is what the systematic market tends to be.

HL: And the first quant funds dating back to the 1980s were probably CTAs?

BTD: Yes, I would agree. And typically clustered around Chicago. (Again, there are lots of notable exceptions.)

HL: But nowadays, what types of asset classes of strategies do you see quant and systematic being applied to?

BTD: Signal-driven systematic trading is where the bulge bracket of the quant systematic managers are today. Today's systematic managers are looking to trade based on triggers (often called "factors" or "signals") with predictive impacts.

The classic CTA model, which traditionally utilized very liquid financial and agricultural futures, is still alive, but it has been expanded to utilize equity instruments because now ETFs can be functional equivalents of index futures. We have clients moving these classic strategies beyond a universe of regular old FTSE 100 and S&P 500 futures, ETFs and equities to other markets around the world.

The real cutting edge in the quant world is coming from the combination of the signal-driven and CTA tools with the universe of big data. These initiatives are found at the intersection of the largest data sets in the history of the world and enough computing power to aggregate and parse it. There are lots of approaches to this being taken in this hybrid space and it is really an exciting area.

The one common factor to all of these strategies is that the instruments used have to be liquid. Managers are – in the markets they select, in the strategies in which they deploy their algorithms, and in the programmes they manage – looking for predictability of market effect and liquidity (i.e., enough data points) is a predicate to predictability.

HL: Are quant funds using algorithms mainly for signal generation or for trade execution or both?

BTD: Both. We just discussed using signals and factors. But in terms of execution, managers across-the-board are using quant execution products that are effectively offered for free by brokers through their platforms. They are commonly very simple algorithms (for example, "I want to trade VWAP over a certain time period") built into front-end executions systems. Some managers, however, develop their own execution algorithms and will link straight into a broker dealer or DMA platform. With this approach you can get much closer to the goal of straight through execution and straight through processing.

A subset of traders are on the higher frequency side. (I say “traders” instead of “managers” because many HFTs tend to be proprietary traders or specialized broker-dealers.) The higher the frequency of a strategy, the more likely that manager is to have its own dedicated execution algorithm. So when you get to the ultra-high frequency side, you’re in a race, a true speed contest. HFT opportunities exist for tiny periods of time, so HFT and ultra HFT traders try to locate their machines as close to the exchange “floor” (which itself is a computer network) as possible. They limit the length of wiring, the number of junction points, and streamline the signal path through software and hardware modifications. Here, the speed of light is a limiting factor, because you’re generally sending your signals through fibre optic lines. These managers will also often write their own execution code and they will strip it down to get code that is leaner and requires fewer decisions (and therefore is faster).

HL: What kind of regulatory issues are raised by high frequency trading?

BTD: High frequency is square in the cross hairs of the regulators in the United States, United Kingdom and Europe. Part of the reason for that is systemic risk; the regulators are genuinely afraid of managers that can move so quickly. We’ve just discussed the need for speed in execution and we had the flash crash in the United States, the causes of which are still being debated to this day. But what is clear is that the regulators are fearful of and suspicious of managers that can move massive amounts of trades, deploy massive amounts of capital and get that all done before any human can notice something is going wrong.

To some extent, that’s a legitimate concern and that is where it’s up to the higher frequency managers to demonstrate to the brokerage community and to the regulators that they have sufficient safeguards in place and that the markets also have sufficient safeguards in place. That dialogue will be ongoing for years to come.

HL: What kind of regulatory issues are raised by non HFT systematic trading?

BTD: With the systematic managers, there’s a whole host of issues, but many of them can be related to existing doctrines. Take allocation, for example.

The old 1930s concepts of allocation just won’t help anymore; those focus on bucketing; in other words, regulators don’t want you to take all your good trades and give them to client A (who pays you higher fees) and give your crummy trades to client B (who pays you less). That abuse still exists, but is pretty much inapplicable to systematic and quant managers.

Allocation issues for systematic managers can take the form of this scenario: Assume you have two models: (1) a capital constrained alpha model that uses signals that degrade quickly and (2) a risk-parity/smart beta/etc. model that has lower expected returns and lower expected volatility. If you’re supposed to be treating those clients fairly at all times, how can you allocate a new alpha signal to one and not to the other? There are a lot of ways to answer that, but managers have to be very clear with their clients up front and say, “This is the product I’m offering, and these are its characteristics. I want you to know I have another product which has different characteristics, and I’ll be allocating my staff time, my resources, and my innovations among the two.” The manager still needs to demonstrate that it is acting in a fair and responsible way, so if there is some objective way of allocating resources that’s very useful.

This issue is exacerbated when one model is capacity constrained because that means that the manager may be closing off that opportunity to investors in the other fund. Now, a manager is entitled to take the position that its hedge fund is not a bus - it is not required to stop at every corner and take on new passengers - but the manager still needs to be fair to clients and needs to disclose what it is doing.

HL: Can these conflicts arise between multiple vehicles such as offshore funds, 40 Act funds, and managed accounts, and generally which types of vehicles are most suited to quant systematic strategies?

BTD: The conflicts can arise in any context, they can arise among two private funds and definitely they can arise when you have different translations, such as where you have a 40 Act fund with specific regulatory requirements for exposures and diversification etc., and a relatively unconstrained private fund. In some sense the conflict is easier to manage when it’s between two different types of funds, because you have the regulatory structure to effectively guide you and you can very clearly say, “I am prohibited from pushing these five strategies into my 40 Act vehicle” because they are simply not compatible with that regulatory regime.

HL: Are public funds suited to systematic strategies?

BTD: It is a challenge to get many systematic strategies into a public structure. There are some very notable successful examples of that being done, but in general the constraints on shorting, diversification requirements, and the liquidity requirements that are required of UCITS and 40 Act funds tend to require a fairly severe re-thinking of a systematic strategy that otherwise runs in an unconstrained and private fund environment. If you succeed, what you have is a different product.

HL: So it’s going to display a large tracking error?

BTD: Yes, but tracking error may not even be the right concept. It’s such a different product that it might need to be assessed on its own. Investors may ask, “Can you explain why my 40 Act fund is performing differently than your private fund?” And the answer might be that it is a very heavy translation, not a simple dialect change. It’s like going from Spanish to Chinese, not from Spanish to Portuguese.

HL: Right, that’s how radical the difference is?

BTD: It can be. It depends on the model of course, but for most managers, that's the challenge they're facing, that's the magnitude of it.

HL: There are thousands of CTAs out there, how can systematic managers differentiate themselves in what may be a crowded market?

BTD: It's like everything else. It's a combination of looking for new opportunities, demonstrating performance, and looking for sponsors. Again, you are right, there are lots of CTAs out there and they're even grouped as a class (called – funny enough - "CTAs"). Being grouped can be good, because you have an avenue for allocators; people can understand what you are, and they can put you in a familiar box, but on the other hand, it can be terrible, because now you're in a box and you have to distinguish yourself vis-a-vis other managers that are similarly categorized, so you have to look different.

What do we see people doing today? Well, with quant managers, we see them distinguishing themselves on approaches, some managers have a very market focused approach, other managers are very academically orientated. Looking at the offering materials, you can instantly tell which is which. There are pluses and minuses to both: an intellectual approach will appeal very strongly to certain investors and other investors don't necessarily want to see the professor in the room, they want to see a hardened market professional that has adapted tools and turned them into excellent trading opportunities.

The other way we see managers trying to distinguish themselves is in risk management. The risk managers in systematic and quant shops, by and large, are incredibly impressive; I think it's very difficult to get allocations in this market now without a very impressive, high profile, multi-degreed risk manager. The level of math required, just to start a conversation, is graduate level math. Which means many of us are not talking to them. (Laughs.)

HL: This brings me onto another question, which is intellectual property issues with quant systematic funds, how can they protect their intellectual property and are there likely to be more disputes between departing employees and their previous firms over who thought of what first and so on?

BTD: There have been several high profile examples over the past ten years of situations where employees from one company have gone to another, and brought with them disputes over intellectual property. This industry protects IP by using trade secrets, instead of patents, so it's harder for one manager to know if another manager is infringing. Now, if you see employees moving from one shop to another, and then the products start to resemble the old employer's, that's something people take a deeper look at obviously.

It is hard for managers to mitigate this risk, and they will generally enlist counsel to help disentangle what is common knowledge in the industry from potentially protected information of a prior employer. We work with managers when they on-board new employees and we train them to identify red flags, which can include a new employee who comes with a very specific set of requirements for his or her development environment. Say, if a new employee needs a particular operating system, has to programme in this specific language, needs certain non-substitutable third party applications, etc.; when the list of requirements gets long enough or is not negotiable, that's a red flag and it could be an indication that this person might only be able to replicate what that they did before. It is incumbent on the manager to make sure that the new employee really can create new intellectual property. If it's just window dressing, it's a liability for everybody involved.

HL: We're starting to see Silicon Valley hiring staff from Wall Street, do you think that Google or other technology companies could start to enter the asset management business, and would they be formidable competitors for quant systemic funds?

BTD: We do see the beginnings of a trend. We have started to see new managers coming in from the technology industry. The interesting thing is they're coming with a Silicon Valley mind-set and not a classic finance, private fund mind-set. Sometimes they have already set up a business along a venture capital model. The venture structure is one of "invest in me and I will give returns back to you over time." The private fund model, of course, is "I will build a management company, where the IP, technology, and people will reside. I will also build you a fund vehicle, that will hopefully generate returns over time, but does not own the IP." This is a different structure and the earlier we can adjust that, the better.

We also spend a lot of time in the launch process with our Silicon Valley entrepreneur clients, helping them to translate a pitch that works well on Sand Hill Road but might fall flat with pension allocators and other high net worth gatekeepers.

HL: How can Chief Compliance Officers exercise quality control and technical oversight of systematic investment processes?

BTD: I think one of the biggest challenges in our market for quant managers is setting up a unified quality control process that addresses trading safeguards and regulatory obligations. And it's very difficult, because the chief compliance officer is generally not somebody who has a master's degree from Caltech or MIT. It's an individual who needs expert help, so the challenge is to structure an environment - and we're not talking a global bank here, but a regular 25 person hedge fund structure – where the CCO can get the technical expertize she or he needs to be able to ascertain that the models are working according to plan – that it's not a sham, that it's not a bunch of fancy window dressing, that it adheres to risk parameters – without relying on the developers whose products are being tested. Some managers will actually hire an outside consultant (that's rare) and others will have a technical person assigned part-time to the CCO, somebody who is not an alpha generator, but is still knowledgeable, like an in-house programmer. That model we see more often than not.

As for the regulatory side, you also need to make your investors and your market counterparties comfortable that you've got controls in place independent of the CCO. There is generally a breakpoint between the research or development process, and the execution or production environment. That is a key place for CCOs to focus, because there should be a sign-off process here. There should be more than just a portfolio manager signing off on that process, others (the CCO, the Chief Investment officer, the chief risk officer, etc.) should be part of that approval process. FINRA has put out some guidelines for firms to consider, and MiFID 2 also contemplates these kinds of approvals.

HL: What about small firms when you've only got about three people and each person is wearing about four different hats, you can't have this number of checks and balances?

BTD: You can run out of hats, or at least you run out of bodies to wear the hats, but in that situation, the firm needs to focus on a few things. One is setting up some kind of objective test that runs in the background. For example, you might conclude that "We expected this kind of performance in these scenarios and we also measure output with these other risk metrics." You can run a programme in the background that spits out - once a day, or once a week - a report showing compliance with the expectations. When there is an exception, everybody in the firm can sit down and unpackage the model and see what's going on. So that's one way to socialize the risk management process.

I do think quant managers need to be sensitive to the "we don't have enough heads" argument, especially if the assets under management are sizable.

HL: Quant shops act as a magnet for scientists drawn from multiple countries whose mother tongues are different. How can this impact internal communication?

BTD: There are some interesting language issues. One is if you look in the United States, it tends to be a real melting pot of people who come into this part of the industry. People who are born and bred in America, and then a fair number of people from other countries coming in. So you can have, in one manager, native speakers of Russian, English, Korean and Chinese.

In the United Kingdom, you have all of that, but you also have this demographic dynamic in London where there is a sizable concentration of French expatriates in the quant funds. My armchair theorizing is that that's a direct product of the French educational system, where the best students are pushed into science and math.

HL: The difference is the jargon, because they'll be translating French words in a different way.

BTD: Obviously this is a challenge for the CCOs, because when people get together they tend to congregate, they tend to chat in a common language. CCOs also generally have email review requirements, so some managers will try to get an "English only" rule imposed for written/email/chat business communications.

There is a different language issue for quants, which is multiple coding languages. The older generation tends to programme in C++ or Matlab, and the newer language is Python. When different modules run in different languages, you can have in one fund environment people programming in three or more different languages. That's a real source of risk, a "handoff risk" between modules is exacerbated when the code on each side of the handoff is in a different programming language.

HL: Sounds like the babble of many tongues.

BTD: Absolutely. The SEC made that point as well in a number of presentations.

HL: How do you lawyers get to grips with the complexity of the subject, such that you feel adept at advising?

BTD: When I was a kid, I was an amateur computer programmer, but I drifted away from it. Then, in 2004, I came into the hedge fund industry and got back into it. So I had some old, old experience to revive, but the key was to listen to the investment folks and be as quick a study as possible. I think any lawyer who is diligent and who is willing to take an empty vessel approach with their clients can get there.

HL: You have been a lawyer inside funds and are now advising them from the outside. How do you keep up with the pace of change?

BTD: Having experienced the industry as an outside attorney, the biggest thing you have to do is you have to make sure that you are listening and you are open, because this world is changing fast; It's different now from what it was two years ago, it will be different in two years from now. With our new launches, we hear people talking about very new approaches. Every time we do a pitch, every time we advise, you have to have listened to the client, have them tell you what they do and don't do. You really have to ask yourself, "Okay, what is this manager actually doing? And what are they doing that's different?"

When you see as much activity as we do, we can see the trends. Then we can go back to our standard documents and concepts and rethink things, as we did with allocation concepts. It's a continual process. Quite frankly, I don't think every outside lawyer is going to be able to do that; they won't have the internal support. At SRZ, we are fortunate to have a large group of lawyers focused exclusively on representing funds and their managers, and we are one of only a few law firms with a dedicated group of regulatory and compliance lawyers within its hedge fund practice. THFJ