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Multi-asset strategies

A Hedgeweek webinar report

In association with FIS

Tackling the data management challenge

Understanding and actively managing risk exposures

Applying AI and machine learning strategies

Why multi-asset strategies need real-time data systems

By James Williams

Introduction

In 2017, multi-asset funds recorded the greatest net inflows of any top-level strategy, delivered returns of more than 10 percent and grew their assets by 14 per cent.

Still, handling multi-asset portfolios is far from easy. They present a number of operational complexities for asset managers and fund administrators – not least when it comes to data management. Some 41 per cent of fund managers and 29 per cent of fund administrators do not believe they are effective at visualising and simplifying complex data.

To share some insights on the inner workings of multi-asset investing and why technology in the form of real time data systems can bring tangible benefits, Global Fund Media recently hosted a webinar in collaboration with **FIS**, one of the world's leading global financial technology and solutions providers serving over 20,000 clients globally.

Moderated by James Williams, Managing Editor of Hedgeweek, the panel included:

- Piotr Chmielowski, CRO and Partner, Fulcrum Asset Management
- Arne Staal, Head of Macro Systematic & Risk, Aberdeen Standard Investments

- Jim Warren, Head of Solutions, Strategy & Development, SEI
- Jason Baldesare, Director, Strategy and Solutions Management, FIS

No silver bullet

Multi-asset investing has risen to prominence among investors over the last few years in response to market performance, and whilst equity markets have held a north compass bearing, the correction this February is a sign of further turbulence lying ahead. Investors are under no illusion that global equities can continue reaching new record highs, year after year.

Bond yields are certainly showing more signs of life. US 10-year Treasury yields finally crossed 3 per cent earlier in May to mark a seven-year high but have since fallen back to 2.86 per cent (at the time of writing).

Factor in the ongoing Brexit influence and the uncertainty created by the recent Italian election, and one might begin to understand why investors are allocating to multi-asset portfolios, which can hold anything from private equity investments through to the most liquid stocks; and everything in between.

Given the shear breadth and range of instruments one might choose to hold in a multi-asset portfolio, fund administrators in particular need to ensure they have the right accounting and data management systems in place to support their clients. It is, in effect, a combination of system functionality and integration.

"Previously, you might have had a siloed system that could handle specific asset classes (e.g. equities) whereas now you need multiple systems that are capable of handling multiple asset classes. It is also important to make sure one has the right data at the right time and can report on it, be it for internal purposes or external purposes," explained Baldesare.

There is, however, no silver bullet solution to handling the operational demands of multi-asset portfolios. Much of it depends on integrating best-of-breed systems, across which data can easily be transferred to present the portfolio manager, or fund administrator, with a single, holistic view of the book.

"Handling multi-asset portfolios not only pushes our systems to do more and provide

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Jason Baldesare, FIS

better and deeper processing, but it is also highly dependent on what we and our clients are ultimately trying to do with all that data," said SEI's Warren.

The data management challenge

One of the most salient aspects of multi-asset investing is having a data model in place that is able to handle myriad types of data, store it, process it, and present it accurately.

Chmielowski explained that at Fulcrum, they hold securities data, derivatives data, pricing data, valuation data, macroeconomic data, transactional data, subscriptions and redemptions data, liquidity data, and even ESG data.

"There are 15 or more data sets, each of which comes with its own challenges and its own features. As the American author Clifford Stoll remarked, 'Data is not information, information is not knowledge, knowledge is not understanding, understanding is not wisdom'. Ultimately, we are trying to attain some wisdom from the data we use but it has to be acquired, stored and processed in a way that allows us to act on it."

How one consumes data in today's knowledge-based global economy is key, especially when running large macro-driven, multi-asset portfolios.

"You need your macro data to line up at the appropriate time to gain a consistent view across all of your asset classes. The problem of lining up pricing data across different time zones and markets, as well as dealing with different levels of liquidity, is a big challenge. We solve that by clearly

separating the consumption step and the storage step. We run a data science environment for storing all different types of data and making them consumable, then we use bolt-on tools for investment purposes," outlined Staal.

Data warehousing

Technology has come so far in a short space of time that it has solved the storage and consumption aspect; what still needs to improve, from a system perspective, is how to derive meaningful investment signals out of that data. Being able to marry up fundamental data that comes from balance sheets for firms that have both bonds and equities, is no trivial task.

SEI is one of the world's largest fund administrators and has been warehousing data to deliver it appropriately to clients for over 15 years. Over this period, the breadth of data it aggregates has grown and the way clients choose to utilise it has changed.

"We recognise that how data is intended to be used can help drive some of the data management practices. Processing data just because we have it doesn't help anyone. To approach your data management strategy optimally, you not only need to know how much data you want, and from what sources, but also how you intend to use it," commented Warren.

In order to build a data model that is robust enough to access the data one needs, it is necessary to have an enterprise data management view. Traditionally, one might have had in-house applications to handle specific areas of the middle and back office for PE accounting, hedge accounting, traditional long-only accounting, corporate actions, etc. But managing multi-asset class portfolios requires bringing everything together, under one roof.

"Investment managers are asking for reporting, performance and risk information on these combined portfolios – so how do you bring that all together? How do you get all the data in one place to look at and report on using one system of records? It comes down to doing integration the right way; smart integration that solves a variety of complex problems that come with multi-asset class portfolios.

"We've used our integration technology to bring together two of our industry-leading solutions in this space (to achieve this smart integration)," confirmed Baldesare. This integration allows our clients to bring together these two asset classes into one seamlessly integrated solution with a single system of record and GL for accounting.

"The problem of lining up pricing data across different time zones and markets, as well as dealing with different levels of liquidity, is a big challenge."

Arne Staal, Aberdeen Standard Investments

Data commonality

Having a well-defined data management model that can be leveraged across integrated systems will go some way towards ameliorating the investment management process. In addition, it is important to consider what the common features are when bringing together a variety of data sets. What are the parameters for merging them? What insights are you hoping to uncover?

"One needs to take a flexible approach to this because even though you might know what that usage might be today, in six months' time things might have changed.

"At Fulcrum, we avoid taking a compartmentalised approach. The team that manages macroeconomic data is in constant collaboration with the team that manages the rest of the data. The outcome is only as good as its usage. If more than one group of people is looking at a combined data set it leads to cross-referencing and over time, the data becomes cleaner and more usable," explained Chmielowski.

The point is not simply to avoid using incorrect data points. The front office wants to have clean data presented to them in a way that facilitates their decisions but also minimises the amount of time spent wondering if the data is correct and relevant.

This is an ongoing exercise and should involve multiple teams working together to achieve the best investment outcomes.

The risk management challenge

Ultimately, the approach to risk management will depend on the specific objectives of the investment strategy and the idiosyncrasies of the portfolio management team. Moreover, it will hinge on the ability to understand risk exposures in near real time, in order to pivot across or within asset classes and actively manage market risk.

As Staal said during the webinar: "We spend time worrying about how things like derivatives and cash instruments are aligned so we can properly see the risk of the derivative on an underlying cash position."

The February sell-off, especially in US equities, was a good example of why you need to look at risk in real time as equity markets became disconnected from bond markets to some extent. "You could only monetise that situation by having systems that were agile enough to do so in real time," added Staal.

Over time, the composition of a multi-asset portfolio changes, and as a result, so do the risk characteristics. According to Chmielowski, this is most prominent immediately after the portfolio has changed. To manage risk effectively requires straight-through processing and the knowledge that all portfolio positions, at the start of each trading day, have been correctly executed and feed through the system.

"For the strategies that we manage with the use of derivatives across multiple asset classes, having not just one side of the trade but multiple components of the trade simultaneously accounted for in the portfolio management system is important.

"This allows us to look at short-term risk forecasts. If the markets move dramatically, you don't want to take actions based on incomplete data, because even if it's a risk reduction action this can lead to an increase in risk," said Chmielowski.

Baldesare said that FIS spends a lot of time and focus on real time risk, moving systems to real time online processing and changing the architecture of underlying applications so that as transactions are processed, positions are updated in near real time.

"That position-level data flows back to the front office so that the portfolio manager always has an up-to-date view of the

portfolio; i.e. updates on cash positions and other details that might be included in the IBOR, regardless of the portfolio constitution.

"As more OTC derivatives find their way into these complex portfolios, being able to take a derivatives processing engine to manage the OTC derivative lifecycle is important. It also needs to integrate with the accounting engine so that the two can talk in real time," remarked Baldesare.

"We don't yet think the machines have the wisdom of human beings. We need to watch this space carefully, however, and see where AI best makes sense."

Piotr Chmielowski, Fulcrum Asset Management

Applying AI and machine learning

The pace of innovation within artificial intelligence has been incredible. In 2016, AlphaGo, a self-learning AI system developed by Google DeepMind, beat Lee Sedol, the world's best Go player, demonstrating an incredible ability to not only think like a human being, but surpass one. AlphaZero has taken things a step further. Without any human input, the AI programme achieved a superhuman level of play in chess, shogi and Go, taking just four hours to learn the rules of chess, for example.

This underscores the potential of AI and for the financial industry, we are only just beginning to scratch the surface.

Multi-asset managers are looking closely at its potential but for the time being, AI applications to the front office remain somewhat limited.

"At Fulcrum we deal with large amounts of data during the investment process; much of this is market pricing data and a large part of it is for 'nowcasting', which is a macroeconomic approach to derive the current state of national economies and the global economy using fairly sophisticated models. Although this doesn't use AI, we are nevertheless processing large amounts of information that wasn't available 10 or 15 years ago within minutes of it becoming available," explained Chmielowski.

Natural language processing

One area of AI that Fulcrum is exploring is the use of natural language processing. In brief, this involves using algorithms to look at central bank statements as a means of understanding central bank intentions in a way that is detached from human emotion.

"It has been an interesting step and is part of the investment decision-making process, but for now we treat it as an additional piece of information for us humans to use. We don't yet think the machines have the wisdom of human beings. We need to watch this space carefully, however, and see where AI best makes sense," added Chmielowski.

Over at Aberdeen Standard Investments, they separate machine learning into two broad areas. One is to extract information from large data sets, and in so doing create a new set of statistics that the quant team can interpret as part of its portfolio/risk construction.

"Secondly, we look at it for investment decision-making from an alpha generation perspective where we use machine learning as a tool for hands-on decision making; simple predictive models designed to find relationships between the macro environment and what an asset class might do tomorrow.

"The end decision remains with the portfolio manager. However, we do run a limited number of strategies, where the machine makes the decisions. That for us was a fairly big step. Although the vision of AI completely taking over human decision-making is years away, it is increasingly being applied at the corners of our investment process," explained Staal.

In keeping with the earlier insights on data management, fund administrators are looking at how multi-asset managers are ingesting data and trying to come up with ways to help them turn that data into actionable insights. Artificial intelligence is key to this.

"Historically, the expectation was that we processed data in a timely and accurate manner and delivered information back to our clients. Now, at SEI we've got access to more data and better technology so we are trying to help them understand not only

what happened in the past that can be used in future modelling but making things more predictive. We're not satisfied just giving managers granular information on what caused something to happen, we are trying to show them in a more predictive analytical direction on how information might be utilised going forward, to help guide decisions on portfolio construction as well as investor behaviour," said Warren.

As with most technology, the way AI and machine learning is applied will be gradual, over time. For now, the most effective realm is the back office. There are already numerous tools using robotic process automation (RPA) and machine learning to carry out repetitive, manual tasks such as reconciliation.

In a multi-asset context this is useful. The more counterparties and asset classes in multi-asset portfolios, the longer it takes to put together a reconciliation programme. This could be weeks from start to finish: designing it, building it, testing it and deploying it.

"We've applied RPA and machine learning in our reconciliation solution to be able to look at data sets and recommend the construction of a reconciliation programme. Indeed, we've seen reductions upwards of 50 percent in the time it takes to onboard a new reconciliation. That's hugely impactful for our clients and the industry at large in terms of efficiency and cost reduction," explained Baldesare.

Conclusion

Over time, artificial intelligence might increasingly be deployed in the front office to achieve greater cash optimisation as the markets evolve. Regulation in recent years has led to the ability to clear OTC transactions with multiple centralised clearing counterparties. Even though the transactions may be very similar, the margining requirements may differ across different counterparties.

As multi-asset managers trade more derivatives that are centrally cleared, those using agile systems that can support the use of new AI tools, such as those seeking out the best margining costs (among other things), will be ideally placed to maximise returns and benefit their investors.

"We're not satisfied just giving managers granular information on what caused something to happen, we are trying to show them in a more predictive analytical direction."

Jim Warren, SEI

Moreover, to expand on Baldesare's comment regarding efficiency gains through the use of machine learning, further disruption could be achieved in the post-trade environment by deploying blockchain technology. "If it lives up to its promise, it will eliminate the need for reconciliation and processing trades after they are done. Executing a trade will be equivalent to having it cleared and this could bring huge efficiency gains," said Chmielowski.

Ultimately, is technology doing enough to facilitate the real time management of multi-asset portfolios?

"I think it is but we're not completely there," said Baldesare. In his view, it's necessary to have a data governance framework in place with the right processes, people and technology to handle the data management challenge, the regulatory compliance challenge, and so on.

"GDPR stipulates that personal data cannot reside in more than four systems; that could be a huge impact to a multi-asset manager's operations. Having good governance will allow you to understand the data challenge and put processes in place to manage and access the data appropriately. It requires all three components: people, process and technology. You can't rely on one or two of them," he added.

Staal said that the asset management industry is only just starting to see "what the impact of technology could be". Something that Warren agreed with: "I think the technology is there, it's just up to all of us to keep up with it rather than vice-versa."

Making sure one has the right data at the right place for the right purpose: "that's where we focus a large part of our effort," concluded Chmielowski. ■