INNOVATIONS IN MULTI-MANAGER PORTFOLIOS





portfolio institutional April 2024

DISCUSSION: INNOVATION IN MULTI-MANAGER PORTFOLIOS

Asset owners appointing specialist investment managers to build a portfolio provides many benefits but also challenges. We brought a panel of experts together to discuss how innovation is improving efficiency in the multi-manager portfolio market.

Like many industries, the institutional investment story has been one of evolution. A decade ago, diversified growth funds became a cornerstone of institutional portfolios, but were soon replaced by a growing interest in the stock-picking expertise associated with multi-asset funds.

Now the market has moved towards multi-manager portfolios, where specific investment managers are appointed to provide investment ideas and implementation. Such strategies offer expert access to a range of asset classes across different geographies though employing a variety of investment styles.

But with each manager operating independently, somebody has to manage them.

We are living in a time where technical innovation is transforming many industries, so how is it changing the way investors manage their multi-manager portfolios?

portfolio institutional sat down with a panel of insiders to find out.

The traditional approach

A multi-manager portfolio can either be a fund of funds, which invests in several funds, or a manager of managers vehicle, where different portfolio managers are hired to manage assets in separate accounts. But which approach do investors prefer? For Geoffrey Challinor, a manager of managers approach allows him to access a boarder universe of managers, such as firms that do not have a presence in the UK. That universe can be expanded by tailoring the investment portfolio to a bespoke set of guidelines. "For some institutions, having a tailored solution is absolutely critical to achieving what they require," he said.

Another benefit of the multi-manager approach is that you can generally access managers at a lower fee than through a fund of funds vehicle.

However, fund of funds has greater flexibility when changing managers, as a manager of managers approach requires more extensive operational due diligence to be completed. "As a result, "there is arguably an opportunity cost to running a multi-manager solution that you wouldn't have in a fund of funds", Challinor said.

Katie Roberts reaffirmed the importance of tailoring the investment approach for institutional investors. "They want the customisation, especially when it comes to sustainability, as many institutional clients have exclusion lists and their own definitions around sustainability.

"So having flexibility around tailoring the exposures that the underlying managers are taking, whilst still having the alpha



and value coming through from their process, is valuable for clients," she added.

The discussion then turned back to the challenges of using a traditional multi-manager portfolio. "There are operational frictions that can rise to the surface," Jon Eggins said.

"You get the benefit of diversification; you get the benefit of delivering the raw excess returns from the underlying managers at a lower volatility profile, but when you move into a new market you have to open a new custody account," he added. "A lot of people in this room, for example, would have probably sent their passport to India in the past."

Another challenge is the day-to-day cashflows that come in and out of the portfolio each time an investor re-allocates to underlying money managers. It's a process that could be more efficient. "Standard rebalancing activity is almost like a mini-transition event, when you have to move money from one manager, who might be investing in one asset class, to another," Eggins said.

A centralised model

So the multi-manager approach offers diversification and expertise but there are concerns among investors that it is inefficient in some areas. And so, in response to such concerns, a more centralised approach has emerged. "The big move we have seen in this space is the idea of investing through models," Hilkin said. "Taking direct control of assets and separating insights from implementation.

"So fund of funds is 1.0, manager of managers is 2.0 and centralising your investments and investing through models might be 3.0.

"That is a big space where we have seen innovation," he added.

And innovation is something St. James's Place looks for to improve its service, to give their clients what they want, Hamish Gibberd said. "Our proposition has evolved in line with that," he added.

This evolution has included using a manager of manager single-asset approach and centralising some of its operations. "We are having some success with that, but we are always thinking 10 years down the line," Gibberd said.

"There is always more efficiency to pull out of the process, there is always going to be a focus on cost. It is where you can squeeze those efficiencies using technology or a new approach. So we look at everything."

However, Momentum Global Investment Management is firmly in the traditional "fund of funds and manager of managers camp" and are not using a centralised system, although they

THE PANEL



Geoffrey Challinor Fund manager, multi-manager Schroders



Jon Eggins Managing director, head of portfolio management Russell Investments



Hamish Gibberd Portfolio strategies manager St James's Place



Andrew Hardy Director, investment management Momentum Global Investment Management



Logan Hilkin Director, customised portfolio solutions Russell Investments



Katie Roberts Head of client solutions Fidelity International are exploring it as an option, Andrew Hardy said. He added that cost is a big drawback to using a fund of funds. "You end up with an extra layer of custody and admin costs that add little to no value," he said.

Another issue is that a fund of funds is not as nimble as it could be. "I'm sure that I'm not the only one to have experienced account opening delays," Hardy said. "In theory, you should be able to buy a fund in two to three weeks, but it can often take three months or more to set up an account.

"So there are a lot of advantages to the manager of managers approach," he added, although he admitted that the firm has only been able to implement that in portfolios of significant scale due to there being minimum account sizes.

"Using a model-based approach takes away a lot of those constraints. As well as the cost benefits, you can move a fund of funds portfolio to being effectively directly invested," Hardy said. Roberts added that a model-based approach helps with reporting, a process that is more difficult if you are investing in several funds. "With the model approach you have direct investments so you can respond much more quickly and efficiently to client questions.

"That is much harder if you are combining funds from lots of different asset managers. So there are some real benefits to going down the model route," she added.

And a centrally managed model can provide the ability to respond quickly to major events. Eggins gave the example of a manager in a portfolio quitting the firm or a strategy being shut down: "It can take months to find an alternative, but if everything is in one portfolio, you can pretty much instantaneously start transferring the implied weight from one manager strategy to another."

However, Challinor pointed out the risk of using a model solution. "You are taking on a level of execution risk that is otherwise carried out by the external manager," he said. "So you need to be super confident in the capabilities of the model solution, with traders that have experience dealing in the required markets and trading instruments that they are comfortable with."

Managing the managers

One of the biggest issues is accessing the latest comparable data on the stocks in the portfolio.

For a multi-manager portfolio, holdings data comes from the custodian daily, unlike with a fund of funds, where accessing information on each underlying stock "is only possible with a longer lag and thus is less timely", Challinor said.

Gibberd added that having a manager of manager on a single asset class is a particular benefit as you get a clear mandate with specific monitoring criteria. "That flows up quite nicely through the structure you put in place around that," he added.



Eggins' first job in the industry was batch processing equity manager holdings into a database, which has grown into a system that holds data on all active managers. "So you always have access to what the universe of managers looks like, which is key for manager research," he said.

"On portfolio construction and attribution, there has been a constant battle around buying analytical engines and tools and realising there are certain things they can't do. Or building them yourselves and realising that you are an investor, not a technology firm," Eggins added.

Despite his reservations around not acting like a tech company, Russell has developed its own internal tool. "We decided to build that out primarily because it is so valuable to think of it from an asset owner perspective, rather than a tool that is built for a stock picker or bond manager," Eggins said.

One issue has been aligning the tool with analytical systems and all asset classes, so the same exposures and factors are included in your risk and attribution analysis. "This has been one of the bigger, heavier lifts," Eggins said. "It was a challenge for just about everyone in the industry. You talk to one provider and get a great equity model. Then you talk to another and you get a great fixed income model – how do you bolt them together?

"So building that in-house as an integrated system has been a major effort for our own portfolios and hopefully soon something we will be able to offer clients on their own desktops as well."

Eggins described this as an ongoing journey, especially in a multi-manager portfolio, where data cleanliness is the biggest

problem. "Building the core web-based front end is easy these days, compared to just making sure the underlying data flowing through is clean," he said.

Russell have worked to simplify the process of changing managers through their EPI model. Eggins said appointing a transition manager when firing a money manager is still prevalent in the industry. "But at Russell we have built our own transition management desk," he added.

To highlight the time it has traditionally taken to change managers, Eggins discussed the time he was running small cap portfolios. "It would take a month by the time you decided to fire a money manager, wait for a certified list of their securities and then trade slowly and thoughtfully because you don't want to move the market too much," he said. "I used to mentally block out one month for a small cap transition.

"The model-driven process allows it to be much swifter," he added. "Once you have a contract with a money manager, and they are built into the system and are delivering holdings information or model portfolios, the transition can happen almost instantaneously. You are not waiting for the certified list.

"You are just making the transaction pretty much like a weight change. Now, one of those weights is going to zero, but it still becomes effectively like a weight change."

Challinor points out that this is a benefit of the fund of funds structure, whereby you sell units in one manager and buy units in another. "So you are turning the portfolio over immediately," he said.

Hilkin agreed, adding that Russell's models came out of a fund of funds approach. "You have the lens at the top where you see your manager's listings, like a fund of funds. If you want out of a particular line then you delete it. And then if you look at the next layer down you see your assets flow through."

Speaking from my seat in the US, it feels like if in 10 years' time you are just selling mutual funds, you might be in big trouble.

Jon Eggins, Russell Investments

The active and passive debate is also a factor. "How do we move more towards the attractiveness of passive – decreasing cost and being more efficient – but still have the relevance to react to one of our neighbouring countries invading another and not waiting for the index to respond," Hilkin added.

"That was a key point when we designed our models: how do we get better access to our managers and that came from fund of funds."

Another benefit of Russell's centralised strategy is that it can provide access to managers who are not distributing in a particular region.

CUSTOMISED PORTFOLIO SOLUTIONS



Whatever your challenges, we have the experience and deep capabilities to help you manage your exposures and navigate the road ahead.

Our suite of services can be customised to support your in-house investment team gain greater portfolio control, limit costs, reduce risks, and enhance returns:

- Transition management
- Trading & execution
- Enhanced portfolio implementation
- Overlay services
- Completion & factor portfolios

Learn more

CAPITAL AT RISK

Issued by Russell Investments Ireland Limited. Company No. 213659. Registered in Ireland with registered office at: 78 Sir John Rogerson's Quay, Dublin 2, Ireland. Authorised and regulated by the Central Bank of Ireland. Russell Investments Limited. Company No. 02086230. Registered in England and Wales with registered office at: Rex House, 10 Regent Street, London SW1Y 4PE. Telephone +44 (0)20 7024 6000. Authorised and regulated by the Financial Conduct Authority, 12 Endeavour Square, London, E20 1JN. KvK number 67296386

Hilkin said that Russell likes to find managers on the up and up because you can get them cheaper. "But it is also believing our research to just go and find the best of the best and sometimes the best investors are not the most expensive."

He added that the firm has a two-portfolio manager shop on the border of Sweden and Denmark that focuses on emerging markets, which doesn't distribute in the US. "But when you access through a model, if you are doing the trading yourself and you are licensed, then in theory you can pick up whoever you want. You are not waiting for them to build up their workforce," Hilkin said.

"Furthermore, if a client comes to us and says they want to be ESG aware, we can access managers that aren't necessarily thinking about ESG, but we can use implementation to tilt the portfolio in that regard, within a certain level of tracking.

"It is pretty impressive how much carbon reduction you can get from just introducing 20 basis points of tracking error into a portfolio and then putting in exclusions," Hilkin added.

"Working in models allow you to access managers because they are good managers, not necessarily just because of how they fit into what you want in the fund," he added.

Gibberd then raised a concern with the model approach. "If you start to adjust for something that is not a manager's core approach, if they have a different view on ESG, for example, how do you ensure that they perform the way that you hired them to if you are overriding their decisions?"

Hilkin replied that is about the ability to identify where you are making decisions, whether that is separating implementa-

tion from idea generation with the managers, or your own investment decisions based on a policy, such as to decarbonise. "How often do you get to say what the impact of that decarb was on the strategy you hired a manager for?" he added. "In this case, if you are doing something like taking on 20 basis points tracking error, you always have the model to reference as your truth point."

Working in models allow you to access managers because they are good managers, not necessarily just because of how they fit into what you want in the fund.

Logan Hilkin, Russell Investments

So, there is no interaction between an adjusted portfolio and the manager model. "That is almost always true," Eggins said. "This will pivot us to fees as well.

"Occasionally, if the departures you are looking for are significant enough, like building a Sharia mandate, then you probably want to go to the manager and say: you are back to separate account land, but with a model delivery instead. And then conversations about fees and everything else become irrelevant." When approaching this, investors should set a ceiling, Hilkin advised. "There is only so far you can push this. We talked about tracking, but after you get to a certain point, you have got to go back to the manager and ask for something customised."



Eggins added that this is not just about ESG overlays. It is also about tax-loss harvesting, which is a big deal for US-based clients. "So you can take a manager portfolio that might not be tax efficient, put it into a model portfolio, and then do tax-loss harvesting, creating some tracking error, but at a benefit to the shareholder. And the same goes, no interaction back with the money manager as well."

Influencing decisions

The conversation then turned to how managers are selected to work within a portfolio.

For Momentum, cost does not drive its investment decisions. "We start by trying to find the best managers and the best alpha opportunities. Cost is generally quite far down the list," Hardy said.

If a manager has a high initial headline cost, the firm will not make a judgement until the end of the research process. "Even if it ends up being high after a negotiation, maybe there is a place for it at a smaller weight in a portfolio.

"Our approach to equity manager selection has always been to find up-and-coming managers in the earlier stage," he added. Lower costs are a benefit of that approach but there are more intangible, hard to measure benefits around hunger, focus and alignment. "When you leave a big shop to set up on your own as a boutique, there is a lot of alignment that comes with that. You are ready for it and have the performance track record," Hardy said.

"The hunger you have when you have only \pounds 50m under management, but think you have the capacity of billions is immeasurably higher than when you are fat and happy with a lot of clients and a lot of assets, which makes you less nimble. You spend a lot of time on other stuff and lack that marginal drive to find the best ideas. Various factors that ultimately lead to superior investment performance are no longer so supportive.

"It is hard to measure and is exciting. What always makes managing research and multi-manager portfolio construction enjoyable is having the privilege of interviewing and getting to know the best managers out there and ultimately curate them into a portfolio.

You want to create some optionality, but you don't want to overwhelm the room with choices.

Hamish Gibberd, St James's Place

"Lower fees are definitely a benefit of identifying managers earlier in their lifecycle but are not the driver," Hardy added. Costs, of course, include issues such as FX, ticket charges and brokerage fees. Manager of managers mandates need scale or these costs become relatively expensive. "Frankly, it is not a high priority within our investment process," Hardy said. "We have a separate operational due diligence process, which would cover some of those things, and material shortcomings could probably be managed from then on. But by that point, you may be mentally invested to some extent, so it deserves more attention than it gets."





For Hilkin, cost is an interesting topic because it tells you whether or not it is worth looking under the hood. He added that when you trade you have taxes to pay, you have commissions for the brokers to pay and you have spread and impact. "If you are in a global multi-manager portfolio, you are doing FX not to hedge your currency, but to settle your trades." Hilkin clarified that if you are in a restricted market for your equity exposure, such as Taiwan, then you will pay six or seven basis points because the Taiwan dollar is a restricted currency. "But if they could talk and do a handshake, then they could strike a better deal.

One of the challenges in the multimanager space is that each manager is looking at different data sources to determine whether something is good or bad.

Geoffrey Challinor, Schroders

"With multi-manager 2.0 you still have the problem of managers being separate and not co-ordinating," Hilkin said. "In a perfect world, maybe we would have managers co-ordinate on that kind of stuff, which models start to open the door on." Eggins then picked up the point about accessing managers early in the lifecycle and investment outcomes being the prime criteria, with cost second.

"You can through a model delivery mechanism access managers that are less willing to negotiate on fees," he said. "They may have a favoured nations clause as well or they might be at capacity. "And so because the capacity ratio is not one for one, because it is a different type of portfolio structure, the ability not just to lower costs, but to access strategies that are otherwise inaccessible has been powerful as well," he said.

We have discussed the benefits of using these models, but not about their limitations. What do investors need to know when using them?

Fund of funds is a more accessible approach than manager of managers, which requires a different level of education, Hilkin said. "It involves taking on trading risk, so you need to do your due diligence on the people who are trading on your behalf.

"You need to make sure they have the right liability for writing trade events as if you have a trading desk you need to have a trading event budget. "That absolutely introduces a limitation in terms of it requiring more education," he said.

"Although the benefits, I would argue, outweigh in favour of centralisation, you have to be diligent and make sure you understand the implementation, that you are partnering with somebody who has a passion for implementation in their bloodstream."

ESG

Sustainability and responsible investment have become a mainstream investment driver for many, if not all, investors. So how are the environmental, social and governance pillars of ESG being included in these centralised models?

Regulation dictates that pension schemes in the UK have to show how they are protecting their assets from climate risk and other environmental threats, while institutional investors in Europe have Sustainable Finance Disclosure Regulation (SFDR). Roberts said that Fidelity's clients want to focus on decarbonising and how it will impact performance, although she is seeing more of a shift towards the S in ESG.



"Clients want to invest in companies that are doing the right thing for the communities that they work within and for their employees," she said. "It is much harder to do from an investment perspective. It is harder to get your hands around, but that is what we are starting to see.

"And clients want to understand what the real benefit of sustainability is," Roberts added. "They don't want to tick boxes. They want to know how many trees they have saved, how many cars they have taken off the road and how much of the ozone layer they have had a positive impact on. They want to turn it into real numbers."

But this is difficult given that reporting timelines for investment portfolios work on daily, weekly, monthly and annual cycles, while ESG is a multi-decade issue. "Your impact right now is probably tiny, but you have to start somewhere," Roberts said.

A popular question Roberts and her team face on this issue is: where do we start? In response, they do not offer the Fidelity view; instead they show the different ways to approach this so investors can decide what will align with their objectives. "So I help them frame the question, rather than giving them the answer because they need to work it out for themselves," Roberts said.

Having clients from different jurisdictions is an issue, Eggins added, and ESG can be a controversial topic in some parts of the US. "So not having a firm-wide view, but helping clients navigate to where they want to land is super critical."

Russell assesses their managers against the different ESG categories as part of its research ranking process. "That has allowed us to build a bespoke sustainable manager universe to select from, just like we have a value-manager universe and a growth-manager universe," Eggins said. However, ESG is a broad church and Gibberd warned against offering too many options. "You want to create some optionality, but you don't want to overwhelm the room with choices," he said. "We have a large fund in place and it is amazing how much carbon reduction you can get by not taking too much tracking error against the global bench," he added.

But it is interviewing managers where investors can make a difference. "That is where you can get to the grain of it. Without the model approach, they are the ones doing the security selection. They are the ones that we are going to be interviewing in that regard.

Lower fees are definitely a benefit of identifying managers earlier in their lifecycle but are not the driver.

Andrew Hardy, Momentum Global Investment Management

"It is clearly going to evolve," Gibberd said. "Sustainability Disclosure Requirements (SDR) is huge. It has been a while coming, but it will be helpful in terms of setting out what the next few years looks like and then we will see what that brings." Measuring your social and environmental impact across the managers in these models is another issue, a point highlighted by Challinor. "One of the challenges in the multi-manager space is that each manager is looking at different data sources to determine whether something is good or bad," he said. "Then they make decisions based on their philosophy around if, for example, Tesla is good for being green or bad for its governance. It is complex.

"The challenge would be, if you are trying to achieve a better than benchmark score across the E, S or G metrics, or on a netzero pathway, if each of the underlying managers are looking at things through a different lens, then you can't guarantee that the portfolio is going to be managed to that.

"It is something you can review over time in a multi-manager structure, but you can't influence that because you don't have the discretion of the underlying," Challinor said.

Finding managers who score highly on intent and processes could be one way to help investors achieve their long-term goals.

When evaluating managers, Momentum takes a scorecard approach in the same way they would evaluate business characteristics. "We separate out ESG characteristics and then distinguish between the intent and where you end up," Hardy said.

Clients want to understand what the real benefit of sustainability is. They don't want to tick boxes.

Katie Roberts, Fidelity International

"It is hard to standardise too much across different geographies and styles. So the outcome isn't always necessarily what you expect, so you need to consider the intent," he added.

Coming back to the broader theme of ESG, Hardy said that the control aspect the models can bring is important and a strong advantage over segregated accounts and fund of funds.

One example is proxy voting. "It is one of the easiest things to get right but holding companies to account is one of the hardest things to do in a fund of funds. You have no control over how managers vote unless you are a huge and disproportionate owner of the fund," Hardy said.

"With a model-based approach you can bring everything together and implement your own overlay, potentially with manager input but you can have full control."

Then there are sanctions. "It was complicated when we suddenly had these sanctions dropped on us and you need to show that your portfolios are compliant with all these restrictions, which is hard with a fund of funds, and equally hard with segregated accounts. It may require re-engaging with the manager and updating their IMAs, which can be a long process," Hardy said. "With models that is a lot easier."

Outlook

Evolution has been one of the big themes of this discussion, so what could happen next in the multi-manager portfolio market?

Challinor pointed to a trend in the US of a growing interest in active ETFs, which we haven't seen on this side of the Atlantic.

"Seems like it could quite easily travel over here," he said. "And if it does, it could change the way we put together multi-manager portfolios." Challinor believes that any change could be beneficial with it bridging some of the differences between fund of funds and a manager of managers solution.

"ETFs generally provide better look through to underlying holdings, albeit not all active ETFs offer that in the States," he said. "But being able to trade throughout the course of the day, if that were to develop in the UK, could potentially create some innovation in the multi-manager world," he said.

This is a theme Russell is looking into. Eggins finds the transparency angle of active ETFs interesting. "Giving managers comfort of daily transparency on the aggregated holdings of a multi-manager portfolio is something we are looking into as a challenge we think is achievable.

"Speaking from my seat in the US, it feels like if in 10 years' time you are just selling mutual funds, you might be in big trouble," Eggins added.

Hardy concluded the discussion on the theme of tokenisation, which has the potential to change things significantly, particularly in addressing some of the problems with fund of funds portfolios.

"If you realise the full potential of tokenisation, then suddenly fund of funds becomes a lot more efficient and a lot more competitive in terms of solving all of these frictions in the system," he added.

Whether tokenisation will have an impact or active ETFs play a greater role, it appears that multi-manager portfolios will, in some form, continue to influence institutional portfolios, although improvements in some areas are needed.

The evolution will continue.





Logan Hilkin is director of customised portfolio solutions at Russell Investments.

ENHANCED PORTFOLIO IMPLEMENTATION: REDEFINING MULTI-MANAGER EXECUTION

The problem: Currently, in the multi-manager fund space, portfolio managers are given the responsibility to control the entire investment process, from idea generation to implementation – we believe this is inefficient and compromising investor returns.

While a full-service portfolio manager structure is fine when localised to single manager funds, in a multi-manager setup, there are a number of inefficiencies that are often missed. This can lead to unnecessary complexity, additional cost, and operational challenges.

In a landscape where returns are increasingly hard to come by, we believe EPI presents an opportunity for asset owners to achieve significant cost savings while facilitating greater control of equity investments.

The EPI solution: There is a better approach to structure multi manager investments. EPI, or (Enhance Portfolio Implementation), is a model-based platform whereby you centralise trading and implementation, which can lead to:

1. Uncovering and taking back missed cost savings through reducing the amount of trading required.

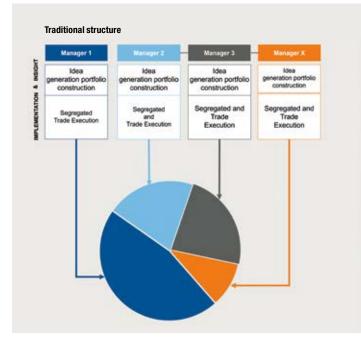
2. Easing the operational burden typically associated with multi-manager and fund of fund structures.

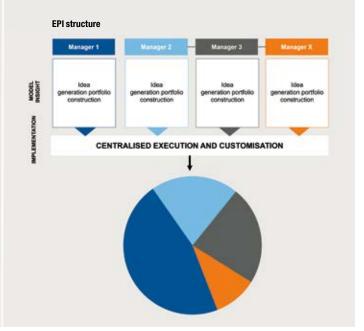
3. And **enabling new efficiencies** to quickly deploy client investment decisions, as well as achieve potential management and custodial fee reductions.

In addition, EPI enables you to factor in **ESG considerations** and **better conduct MiFID II reporting**.

How does EPI work? EPI combines investment insights from multiple managers into a single custody account. Investment managers continue to be responsible for the investment strategy, without having their philosophies and security selection compromised, with Russell Investments' EPI portfolio management team being responsible for *implementing* the strategy.

PI Partnership – Russell Investments





Track record: In the case of many of our existing portfolios and partnerships, we have seen consistent cost savings. Reining in unnecessary performance drags accounted for in taxes, brokerage charges, ticket charges, spread & impact, and FX spots to settle trades.

£47bn	13+yrs	130+
EPI assets	Track record	Managers
managed		have used EPI

+ 1; rs M

150+ Mandates using EPI

Source: Russell Investments as of 30 June 2023. For illustrative purposes only. Global Track Record = Global Equity Portfolio. Enhanced Implementation Inception: 11 June 2014. **ESG customisation:** If an investor indicates interest in applying ESG factors to their portfolio, once a common policy is agreed, it is possible to efficiently express it when implementing their portfolios directly in the EPI account. In most circumstances, no additional changes are needed from investment managers as all changes can be directly applied to the centralised EPI portfolio management process when constructing trades. Examples include:

– Implement specific exclusion policies by screening for controversial weapons, tobacco and companies with the lowest ESG scores in the investment universe.

- Reduce the funds' carbon footprint and reserves by at least 25%.



In 2020 Wales Pension Partnership (Partneriaeth Pensiwn Cymru), won the innovation award at LAPF Investments Awards. We are proud to be part of their continued success and innovation, adopting our Enhanced Portfolio Implementation (EPI) framework.

For Professional Clients Only.

Execution services are provided by Russell Investments Implementation Services Inc., member FINRA/SIPC.

Unless otherwise specified, Russell Investments is the source of all data. All information contained in this material is current at the time of issue and, to the best of our knowledge, accurate. Any opinion expressed is that of Russell Investments, is not a statement of fact, is subject to change and does not constitute investment advice. The value of investments and the income from them can fall as well as rise and is not guaranteed. You may not get back the amount originally invested. In the UK this marketing document has been issued by Russell Investments Limited. Company No. 02086230. Registered in England and Wales with registered office at: Rex House, 10 Regent Street, London SW1Y 4PE. Telephone +44 (0)20 7024 6000. Authorised and regulated by the Financial Conduct Authority, 12 Endeavour Square, London, E20 1JN.

Editor: Mark Dunne Pictures: Richie Hopson Layout: portfolio Verlag

Publisher:

portfolio Verlag Smithfield Offices 5 St. Johns Lane London EC1M 4BH +44 (0)20 7250 4700 Iondon@portfolio-verlag.com © Copyright portfolio Verlagsgesellschaft mbH. All rights reserved. No part of this publication may be reproduced in any form without the prior permission of the publisher. Although the publishers have made every effort to ensure the accuracy of the information contained in this publication, neither portfolio Verlagsgesellschaft mbH or any contributing author can accept any legal responsibility whatsoever for any consequences that may arise from errors or omissions contained in the publication. ISSN: 2045-3833