

Investment Solutions for Insurers Roundtable

Solutions for a changing landscape

December 2017





Clear and Independent

Institutional Investment Analysis

institutional investment sector and are continually innovating new solutions to meet the

We enable institutional investors, including pension funds, insurance companies and consultants, to conduct rigorous, evidence-based assessments of more than 5,000

Additionally, our software solutions enable insurance companies to produce consistent accounting, regulatory and audit-ready reports.

To discuss your requirements

+44 (0)20 3327 5600

Find us at





CAMRADATA

CAMRADATA's Assisted Searches

For institutional investors with very specific manager search requirements, we run assisted searches on their behalf. This service is free of charge for institutional investors.

CAMRADATA Assisted Search added a new dimension to our tender process. " We were able to narrow the field in terms of the service we were after and gain interest from a wide range of market participants. A bonus was the help we received in coordinating a presentation day and providing a central neutral location at which to meet.

Peter Beaumont-Finance Director, Cornish Mutual

Below highlights just some of the asset classes CAMRADATA Assisted Searches have covered over the past quarter:

Passive UK Government Fixed Income Euro Corporate Bond Funds Fixed Income SRI

Global Equities SRI Emerging Market Small Cap Equities UK Equities SRI Multi Sector Fixed Income Active UK Government Fixed Income

If you would like us to carry out an assisted search, please contact us now

Tel: +44 (0)20 3327 5600 Email: info@camradata.com



Roundtable

Sponsor



AXA Investment Managers

Company Profile

AXA Investment Managers offers over 20 years' experience of working with insurers to design and implement integrated insurance solutions - from asset allocation, through capital efficient investment strategies and responsible investing, to balance sheet management and regulatory reporting.

In today's ultra-competitive environment insurers seeking to optimise their investment portfolios to meet their financial, accounting and regulatory objectives need a strong long-term partner, with the flexibility to adapt to their evolving investment priorities and resource needs over time.

AXA IM's deep understanding of the challenges that insurers of all types face, combined with our breadth of expertise across traditional and alternative asset strategies, means that we are uniquely well placed to help insurers meet tomorrow's challenges.

Ankit Shah **Investment Manager**

Ankit Shah is an Investment Manager at Antares Managing Agency. In this role, he is responsible for structuring and implementing overall allocation of Investment portfolios for Antares, ranging from risk mitigation to capital optimised allocation strategies across asset classes as well as keeping it within regulatory and

Solvency II framework.

Prior to joining the company, Ankit was working with Qatar Insurance Company, Doha, Qatar (parent of Antares) as Vice President - Investments, overseeing the investment operations and strategic asset allocation across the QIC group. Before this, he was Senior Fund Controller at AXA Investment Managers working on various UK and Pan European real estate funds and Group Financial Controller at UK Capital Investments Group. He trained as an Auditor and worked with Grant Thornton.

Ankit Holds a Bachelors in Accounting & Economics and is a Fellow at ACCA and Institute of Chartered Accountants of India.



Chris Price Head of Insurance Solutions, UK

Chris joined AXA IM in June 2016 as Head of Insurance Solutions UK. He joined from Deutsche Bank where he was Director of Insurance Asset Management and Head of Industry Solutions in the UK.

Prior to this, Chris spent five years as Financial Controller at Brit Insurance Holdings, two years at Markel Syndicate Management as finance director and three years at St. Paul Syndicate Holdings as Group Finance Director. Chris first joined the insurance industry in 1987 at English and American Group plc where he became Group Financial Controller in 1993. However his career in finance began at Coopers & Lybrand (now PWC) before becoming Finance Manager at Sea Containers Ltd.

Chris holds a Bachelor's degree in Pure Mathematics and Mathematical Statistics from the University of Exeter and is also a Fellow of the Institute of Chartered Accountants.



Scott Eason Partner

Scott is a Partner and Head of Insurance Consulting at Barnett Waddingham, responsible for managing the life and non-life consulting teams. He joined Barnett Waddingham in May 2014.

As well as his consultancy experience. Scott has held senior investment strategy roles at Legal & General and Partnership and was Head of UK Insurance Advisory at Societe Generale for almost 5 years. He is a regular blogger, columnist and speaker on investment issues and won the Actuarial Post's "Investment Actuary of the Year" award for 2016.

He has a particular passion for helping smaller firms achieve strong investment returns and is the author of Barnett Waddingham's Annual With-Profits Investment Return report.

Roundtable

Participants





Roundtable

Participants



Ian Coulman **Chief Investment Officer**

lan is an experienced investment professional with international experience and strong leadership and management skills. He possesses extensive investment knowledge of all major asset classes and a wide

variety of investment products and styles in fixed income, conventional equities and alternative asset classes.

As Pool Re's Chief Investment Officer, Ian is responsible for the development and implementation of investment strategy, strategic asset allocation and the monitoring of managers. Prior to joining Pool Re as CIO, Ian was Managing Director of Butterfield Asset Management, a wholly owned subsidiary of Butterfield Bank. The asset management subsidiary provided investment management services to high net worth individuals, institutions and retail clients.

Before joining Butterfield in 1998, Ian fulfilled a number of senior investment roles with AlG in London, Boston and Tokyo. Ian began his investment career with the private Swiss bank Lombard Odier.







Brendan Maton Freelance Journalist

A highly experienced financial journalist with an expansive network of contacts in the UK and across Europe. Brendan has written about pension schemes and national welfare systems from Finland to Greece for 18 years and understands the retirement savings industry in each European country.

Brendan has interviewed EU commissioners and national ministers; central bankers; pension scheme heads; insurance chief executives; chief investment officers; actuaries; union officials; professioal and lay trustees. He worked at Financial Times Business for eight years, finally as editor-in-chief of all international pensions titles. Brendan has spent the last ten years as a freelancer for a number of publications, including Financial Times, Responsible Investor, Nordic region pensions news and IPE. He is also Chief webcast host for IPE.

Brendan has acted as conference chair for Financial News, the UK National Association of Pension Funds, Dutch Investment Professionals Association (VBA), Corestone, Insight Investment, Marcus Evans, Robeco Asset Management, Sustainable Asset Management (SAM), Towers Watson.



Daniel Banks Director, Solutions

Daniel joined P-Solve in 2010 from Punter Southall where he worked from 2008. He currently works as an Investment Consultant for clients between £100m and £2bn, advising on areas including Manager

Selection and Strategic Asset Allocation with a particular focus on matching assets and liabilities in a consistent manner.

Daniel currently sits on P-Solve's Insurance Investment Committee, Investment Strategy Committee and Group Investment Committee. He splits his time between consulting with clients including both insurers and pension schemes alongside a focus on P-Solve's modelling and technical capabilities. He has been guoted in a number of publications such as Engaged Investor and Financial News whilst regularly giving industry talks such as at the Institute of Actuaries GIRO conference.



Solutions for a changing landscape



Financial markets have enjoyed bumper returns in recent years from bonds and equities. Going forward, however, they expect lower returns across the board as economies, notably the UK, struggle to grow strongly CAMRADATA held a roundtable on investment solutions for insurers in London this winter to see how insurers, consultants and asset managers viewed current alternatives to traditional asset allocations. The main findings were that alternatives have already been introduced in an effort to diversify yield and that the search for new ideas continues. Insurers are keen not only to find extra returns in fixed income but also to lower their portfolios' sensitivity to equity markets. Alternatives already trending include CLOs, long lease commercial real estate, assisted housing for the elderly, Multi-Asset Credit and Alternative Risk Premia strategies.

Insurers can familiarise themselves with these strategies with the help of good consultants and asset managers.

The panel recognised that financial markets have enjoyed bumper returns in recent years from bonds and equities. Going forward, however, they expect lower returns across the board as economies, notably the UK, struggle to grow strongly.

The CAMRADATA insurance roundtable kicked off with questions about the influence of data-modelling in asset allocation and risk-return scenarios. Insurers have long relied upon mathematics to build risk profiles for both liabilities and investments. With the increase in computing power, data models can now be fiendishly complex and resort huge amounts of information on a daily basis. But the CAMRADATA panel doubted that the processing power necessarily makes for better investment portfolio construction or more reliable investment returns.

"I see asset managers proposing strategies with prospective returns calculated to two decimal places," said Daniel Banks, investment consultant with PSolve, a firm which advises insurers and pension funds. "I think we need to be very careful with anyone touting that kind of precision. I would much rather they gave a range of returns, because altering any input to the model will change expected returns."

Banks puts the blame on words such as 'optimisation', which he believes should be replaced by 'robustness'.

Chris Price, head of insurance solutions, UK at AXA IM, agreed that techniques such as optimisation are just tools to develop scenarios to which expert judgement then needs to be applied.

To quote an insurance CEO recently:

"I would prefer a good underwriter with a pencil than a bad underwriter with a model," he said. Experience, for Price, is the hallmark of both good underwriters and good asset managers, coupled with a willingness to conduct due diligence on new products as they come to market.

Ian Coulman, chief investment officer at Pool Re, said: "We occasionally get involved in optimisation. These methodologies' biggest growth is in second line reviews or sense-checks, not recreating the world."

Banks clarified that the misuse of optimisation is often made by asset managers and investment banks looking to provide reassurance to insurer prospects about a new product or strategy. Insurers themselves are less to blame. But the insurers on the CAMRADATA panel recognised the temptation to rely on precise figures. Ankit Shah, investment manager at Lloyd's Managing Agency, agreed on the use of optimisation models for sense-checking portfolio allocation and returns. He added, however, that complete reliance on the same and expecting those re-runs in the actual investment universe every six months may be a mistake. In certain organisations, investment committees or the board rely heavily on optimisation and would question the CIO if the performance of an asset class was not in line with expected returns even six months into a mandate.

This is an example of board members doing their job of keeping employees responsible while not recognising that assets do not perform like clockwork. This was followed by an observation from the entire panel that the majority of board members are not investment professionals – their specialisms are in other functions of insurance. The perspective of a risk officer will be by nature different to the perspective of a chief investment officer.

Then there is the question of scale: Price reckoned there were up to 40 life insurers in the UK with under £100m in assets under management. These organisations might not have a big investment team. He recalled that in a previous job at such a firm, the board had challenged the investment department as to why they were holding derivatives when the return had been negative. "They did not understand the derivatives were a hedge," said Price.



"

The misuse of optimisation is often made by asset managers and investment banks looking to provide reassurance to insurer prospects about a new product or strategy



"We cannot begin to talk about optimisation because most medium and smaller insurers in the UK are not accessing 99% of the universe of assets," said Scott Eason, investment consultant at Barnett Waddingham, an advisory firm to institutional investors.

"In spite of all the talk about alternative assets, if you look at the UK market then you find 70-80% of these providers' assets are still in gilts, investment grade corporate bonds and equities."

UNIVERSE OF OPPORTUNITIES

If they are lucky, such an allocation might meet the insurer's liability obligations and commercial expectations. If in-house investment capabilities are stretched, that would be another reason not to stray into the wider universe of investment opportunities. But record low yields on sovereign bonds are pushing more and more insurers to explore beyond their familiar territory. Pool Re has already put 5% of assets to work in a Multi-Asset Credit Strategy, giving the manager freedom to allocate to High Yield, Emerging Market Debt and Loans wherever best value lies. Another 2.5% of assets in the risk portfolio will soon find their way into Alternative Risk Premia mandates . Coulman emphasised that these are diversifying mandates, taking some risk from long-only equity.

Pool Re still has 60% of assets by value in short-dated corporate bonds and sovereigns, and 20% in index-linked gilts. The latter obviously protect against inflation. Because Pool Re exists to provide reinsurance should commercial buildings be destroyed by terrorism, it is inflation in construction materials and resources that is one measure by which the investments need to keep pace with. But given the distorted conditions for gilts, Coulman noted that Pool Re is also looking to be smarter with its linkers allocation. "Research suggests that if the break-even yield of UK linkers goes to 3%, then we should sell linkers for nominal bonds," he said. "We have established parameters around a rolling 5-year UK inflation break-even yield that will allow us to determine when linkers offer value or are expensive."

Antares has also been diversifying by investing into Private Credit, Alternative Risk Premia as well as in alternative real estate assets.

Recently they allocated into US seniors' housing with no construction risk to the investment: the properties are already built. Investors like Antares are looking for inflation-linked returns from the ongoing charges to tenants. Shah said he expected an internal rate of return of 13-14%. Just like ARP for Pool Re, however, alternative real estate is a diversifier for Antares. "We are dipping a toe in the water," said Shah.

AXA IM has offerings which it believes can help UK insurers vary and improve their sources of return. Among them, Price picked out a fund of long lease UK commercial real estate. The basic advantages are long duration and sensitivity to price rises. Both suit life insurers, pension funds and motor insurers with Periodical Payment Orders. The latter are annuity-like payments for successful claimants from serious car accidents. The AXA IM's fund duration is over 23 years while three-quarters of tenancies are inflation-linked.

Eason made the point that the largest insurers can command or create their own bespoke portfolios of specialist or illiquid assets. A fund is one practical means of smaller insurers getting access to similar opportunities.

A second offering for current times from AXA IM is Collateralised Loan Obligations (CLOs). Under the standard Solvency II model, CLOs are expensive to hold. The EU regulator has generally put a high tariff on securitised instruments. Price noted that only the biggest insurers were interested in CLOs once Solvency II was in force because this tier had the resources to create their own internal risk models, which could justify holding the likes of CLOs. Price said that as Solvency II beds down and insurers take another look at what they hold and what is required, a second wave of insurers will be prepared to look at CLOs as they move to an internal model approach to Solvency II. AXA IM's parent, as one of the world's largest insurers, has been invested in CLOs for decades. But AXA IM is not just offering copycat exposure to its clients. "The first thing we do is listen," said Price. UK insurers can get the benefit of AXA's experience in CLOs and also help in understanding and modelling risks and returns.

But hasn't the EU regulator suggested that these are risky assets? Here is a moot point about models and the use of historical data. Price points out that decisions taken by financial regulators after the Global Financial Crisis mean that CLOs were aggregated with worse performing instruments such as CDOs when the Standard Solvency II model was calibrated. "Even though CLOs performed well during the crisis their structure and creditworthiness have been further improved since," he noted.

Coulman then gave a good example of how insurance markets in practice get comfortable with new lines of business.



We cannot begin to talk about optimisation because most medium and smaller insurers in the UK are not accessing 99% of the universe of assets

Decisions taken by financial regulators after the Global Financial Crisis mean that CLOs were aggregated with worse performing instruments such as CDOs when the Standard Solvency II model was calibrated



"When there is not sufficient data, people will add an extra premium to compensate for the lack of certainty. As that new line of business establishes itself and things settle down, the volume of data goes up and premia tend to come down."

Price gave the example of insuring commercial space satellites. "Lloyd's started covering this as a new market, when there were no historical data for guidance," he said. In time premium rates softened as the satellite market matured. The panel reckoned that investing in new asset strategies follows the same trajectory.

Eason, however, made a special case for multi-asset credit strategies (MACs). With these, he said clients are better off looking at the manager's capabilities rather than working from their strategic asset allocation to the characteristics of the asset class and then manager selection. He noted there is always a danger that by the time the Board and various functions such as the Risk Committee has approved any new investment, its attractions might have waned (the whole panel acknowledged this). In the case of MACs, Eason said that danger was multiplied because of the variety of asset classes accessed and so it was better to start with the manager's capabilities.

RISING WITH PRICES

PSolve's Banks had a different take on analysing new or unusual asset classes and strategies. PSolve's aim is to understand the drivers behind any investment, instead of taking for granted the claims of any prospecting asset manager about its strategy. This discipline means challenging widely-regarded beliefs in investing, such as the inflation-linking power of property. "We looked at the UK property market in aggregate and found that over time its link to inflation was not that strong and in some cases could even be considered negative," said Banks. He was clear that because the research was an aggregate of all sub-sectors, including retail, there was still room for belief in the inflation-linking power of certain sub-strategies. But the PSolve conclusion was that in periods of economic depression, landlords sacrificed rent rises in order to sustain tenancy rates.

Likewise, Banks' reckoned High Yield does not over the long term add much more value than Investment Grade. The trick is to enjoy High Yield periodically, during an upcycle. If insurers follow PSolve's thinking, then the need arises to figure out how to allocate dynamically through the cycle.

A need for skeptical enquiry is borne out of asset managers' habit of inventing new asset categories or disguising their products to suit a hot new category. Eason said that he had met a manager who wanted to place its latest product as an alternative risk premia category. "It was essentially a corporate bond fund with the illiquidity premium of corporate debt as the magical alternative risk premium," recalled Eason. It wasn't corporate debt that bothered Eason but the masquerade of a newfangled concept. Needless to say, the fund failed to meet Barnett Waddingham's transparency criteria to be considered for clients.

On the other hand, Eason said he had failed to find a supplier for a dynamic absolute return strategy for with-profits insurers. Barnett Waddingham wanted a strategy that would sit between equities and bonds, generating a return with less beta and considerable alpha. This sounds like a punchy Diversified Growth Fund or even fund of hedge funds but Eason reported that he had not found an asset manager willing or able to deliver the right characteristics.

Price noted that there are fashions in investing. On property, for example, he said that the average exposure to property among UK insurers is lower now than it was 20 years ago. This is beginning to change as Solvency II rewards insurers that diversify their portfolios.

The panel ended on a note of pragmatism when it comes to finding managers of alternative strategies. "Often you find that the increased returns these strategies offer get wiped out by the manager's fees," said Eason.

"The truth is that when returns are low, the fees account for a larger percentage of total return," said Price.

QUANTITATIVE TIGHTENING

The CAMRADATA panel then looked to the future. Banks remarked that while there was much geopolitical uncertainty, returns from financial assets had been excellent. He said that newspaper headlines were full of shocks and revelations but volatility on capital markets has been remarkably low. Price said that in the UK we are at near-full employment, although Shah added that it was the lack of wage increases that is contributing to the air of dissatisfaction among the population.

Given the healthy returns from assets, did the panel see insurers looking to take risk off the table? The consensus was that economic growth would continue in the US and pick up elsewhere. The complex uncertainty of Brexit, however, was expected to stifle the Bank of England's role, leaving it likely to make just a couple of 0.25% rate rises at most in the next eighteen months. Price posed the question whether general insurers might allow their fixed income portfolios to roll down the curve and shorten duration in the expectation of reinvestment returns. Responses from other panelists were muted, reflecting a wider cautiousness in asset allocation moves. Instead, Coulman referred to the "new normal" of lower rates and pointed out that if there was a downturn, the Bank of England didn't really have a new means of kickstarting the economy. "Stagflation could be a big worry," he said. On this, Banks sounded a pessimistic note that he could not see the UK growing its way out of debt any time soon by means of increasing productivity. "We are a service economy," he said. "In manufacturing it is possible to get 6-7% productivity gains. But in the service sector the maximum has historically been a lot lower."

Price suggested that Quantitative Easing had reduced spreads significantly. "The question now is what Quantitative Tightening will do," he said. Central banks' attempt in 2011 to tighten fiscal stimulus proved premature and damaging across Europe.

In spite of these worries, the panel remained phlegmatic. Referring to the "new normal", Coulman elaborated that if all yields have moved down in step, then there was no reason to change asset allocation dramatically. Yes, all assets are expensive by historical standards. Yes, insurers should look for alternatives. Generally, however, investors had to accept lower yields across the board. "A steepening of the yield curve is what insurers really want but I am not sure we are going to get it," Coulman said.



There is always a danger that by the time the Board and various functions such as the Risk Committee has approved any new investment, its attractions might have waned

"

The complex uncertainty of Brexit, however, was expected to stifle the Bank of England's role, leaving it likely to make just a couple of 0.25% rate rises at most in the next eighteen months



In 2018 insurers continue to look to alternatives to help tackle the investment challenges ahead



Insurers are adapting their investment strategies to the continuing low yield environment, according to a new report from the European Insurance and Occupational Pensions Authority (EIOPA). Its survey of trends in the investment choices of nearly 100 European insurers over the past five years reveals a search-for-yield behaviour that includes increased exposures towards lower credit rating quality fixed income securities and also more illiquid investments such as non-listed equities and loans.

Large insurance groups also appear to be investing more into non-traditional asset classes such as infrastructure, mortgages, loans and real estate, the EIOPA report added.

EIOPA's findings chime with AXA IM's experience. Where insurers used to restrict themselves to government bonds and investment grade credit, they now want to include illiquid products and alternative credit to improve yield in a capital efficient way.

A good example of some of the difficulties for insurers looking to move up the credit continuum is where annuity writers would like to include higher yielding assets in their matching adjustment portfolios. Some otherwise very attractive assets fall foul of the very restrictive rules.

"The problem is that, in plain form such assets don't meet the matching adjustment rules. Fortunately, we can help insurers structure some of those asset classes in a way that will make them eligible for matching adjustment," Price explains. "AXA IM is seeing growing demand for this service."

Dutch mortgages, for example, are not valid in plain form but can be restructured to meet matching adjustment rules. "Equity release mortgages, student loans and ground rent are other possible alternatives, but they also necessitate a sophisticated solution. For that reason, life insurers often look to outsource their requirements to asset managers with the appropriate expertise," Price says.

It's not just the expertise but also the ability to originate the appropriate product that encourages insurers to outsource, Price points out: "At AXA IM we're originating a broad range of products for our parent as well as for our third party insurer clients, and that makes us an attractive option."

Non-life insurers also want to improve yield in a capital efficient way and they are increasingly open to investing in illiquid products and alternative credit risk.

"Insurers have been reluctant in the past to consider equities because of the capital charges they attract," Price says. "But the sustained bull run in the equity market has led more insurers to talk to us about capital efficient ways of taking equity risk."

Another asset class gaining popularity among both life and non-life insurers is direct property, according to Price. "In the UK, the property market took a knock following the Brexit vote when some funds locked up as overseas investors withdrew money. It meant insurers were a little less keen until the early part of this year."

Now that the property market has stabilised insurers are growing more willing to consider property investment in the UK, as well as in the Eurozone and US. Property will become even more attractive as an asset class in the medium to long term, he predicts.

"It's worth remembering that the assets we discuss with our insurance clients are assets in which AXA itself invests – as a group, we eat our own cooking, which can be a big comfort to third party insurers," Price says.

The burgeoning collateralised loan obligation (CLO) market is a case in point. CLOs' yield and diversification benefits are attractive to insurers like AXA – but they are inherently more complex than familiar corporate bonds.

For many insurers, particularly small and mid-sized companies, it's helpful to work with an asset manager who has the expertise, experience and track record to do the heavy lifting on analysis and due diligence, and also provide support to internal teams on modelling, implementation and reporting.

"That's the capability that AXA IM offers to the market. We are owned by an insurance group and we have an insurance outlook on investing. We have a long history of originating and managing CLOs which has served our group and all our clients well," Price says.

Insurers of all sizes can benefit from working with an asset manager that's part of a large insurance group, including having access to niche market expertise and co-investment opportunities. AXA IM has many relationships with banks, sponsors and private equity companies and sees the bulk of the attractive deals that come to market.

"For some strategies it helps in originating business if you can offer 'larger tickets' to the market," Price explains. "If we can offer assets to insurers with a similar appetite as AXA it provides those clients with access to that large ticket opportunity – in infrastructure or real estate, or corporate loans, for example."

As EIOPA's recent survey has shown, insurers of all sizes are starting to include more non-traditional assets in their investment portfolios. "It makes perfect sense in the context of the continuing low interest environment and the evolution in insurers' use of internal Solvency II models," Price says. "But because individual insurance companies don't usually have the required depth of expertise across the spectrum of asset classes there's now a lot to be gained from working with a manager that has scale and experience in the insurance market."

To find out more about AXA IM's 20 years of experience designing and implementing sustainable, integrated insurance solutions, please contact:

Chris Price, Head of UK Insurance Solutions Tel: 0207 003 1083 Email: christopher.price@axa-im.com

Andrew Douglas, Associate Director, Institutional Business

Tel: 020 7003 1615 Email: andrew.douglas@axa-im.com

This communication is for professional clients only and must not be relied upon by retail clients

It does not constitute an offer to buy or sell any AXA Investment Managers group of companies' ('the Group') product or service and should not be regarded as a solicitation, invitation or recommendation to enter into any investment transaction or any other form of planning. The views expressed do not constitute investment advice, do not necessarily represent the views of any company within the Group and may be subject to change without notice. Issued by AXA Investment Managers UK Limited, authorised and regulated by the Financial Conduct Authority. Registered in England and Wales No: 01431068. Registered Office: 7 Newgate Street, London EC1A 7NX.

The problem is that, in plain form such higher yielding assets don't meet the matching adjustment rules. Fortunately, we can help insurers structure some of those asset classes in a way that will make them eligible for matching adjustment



Chris Price Head of Insurance Solutions

It's worth remembering that the assets we discuss with our insurance clients are assets in which AXA itself invests – as a group, we eat our own cooking, which can be a big comfort to third party insurers



CAMRADATA

5th Floor, 80 Leadenhall Street, London, EC3A 3DH

+44 (0)20 3327 5600 camradata.com



Join us on LinkedIn



Important Notice

This document is produced by CAMRADATA Analytical Services Ltd ('CAMRADATA'), a company registered in England & Wales with registration number 06651543. CAMRADATA is neither authorised nor regulated by the Financial Conduct Authority in the United Kingdom nor the Securities and Exchange Commission in the United States of America.

This document is not intended to constitute an invitation or an inducement to engage in any investment activity. It is not intended to constitute investment advice and should not be relied upon as such. It is not intended and none of CAMRADATA, its holding companies or any of its or their associates ('CAMRADATA Group') shall have any liability whatsoever for (a) investment advice; (b) a recommendation to enter into any transaction or strategy; (c) advice that a transaction or strategy is suitable or appropriate; (d) the primary basis for any investment decision; (e) a representation, warranty, guarantee with respect to the legal, accounting, tax or other implications of any transaction or strategy; or (f) to cause the CAMRADATA Group to be an advisor or fiduciary of any recipient of this report or other third party.

The content and graphical illustrations contained in this document are provided for information purposes and should not be relied upon to form any investment decisions or to predict future performance. CAMRADATA recommends that recipients seek appropriate professional advice before making any investment decision.

Although the information expressed is provided in good faith, the CAMRADATA Group does not represent, warrant or guarantee that such information is accurate, complete or appropriate for your purposes and none of them shall be responsible for or have any liability to you for losses or damages (whether consequential, incidental or otherwise) arising in any way for errors or omissions in, or the use of or reliance upon the information contained in this document. To the greatest extent permitted by law, we exclude all conditions and warranties that might otherwise be implied by law with respect to the document, whether by operation of law, statute or otherwise, including as to their accuracy, completeness or fitness for purpose.

CAMRADATA Analytical Services and its logo are proprietary trademarks of CAMRADATA and are registered in the United Kingdom.

Unauthorised copying of this document is prohibited.

© Copyright CAMRADATA Analytical Services December 2017.

