

Choosing the right actuarial valuation approach

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Introduction

This report is addressed to parties with an interest in the funding of UK defined benefit (DB) pension schemes – in particular, trustees and scheme sponsors. There is currently much public debate on approaches to scheme funding with criticism that some of the approaches being used are driving inappropriate behaviour. The purpose of this paper is to get back to basics and consider what interested parties are trying to achieve when considering funding and what should be driving the decisions on contribution levels.

The UK has almost 6,000 DB schemes, providing retirement promises of different shapes and sizes to more than ten million people. All of these schemes share a common challenge; deciding how much money they need to deliver these benefits factoring in both the uncertain nature of the cashflows and the very long-term nature of the promises made to members. This is the purpose of an actuarial valuation, which trustees and sponsors are required to carry out by law at least every three years.

The long-term nature of DB promises means that the approach used by schemes to discount future cashflows to come up with a 'present value' of how much cash is needed to pay benefits is of critical importance. Given this, it is perhaps no surprise that there has been much debate in the pensions industry as to the most appropriate approach to set discount rates in actuarial valuations. In particular, many commentators have debated whether discount rates should be set relative to expected returns on the scheme assets, with reference to the yield on low risk assets such as gilts or even whether focusing on discounted present values is appropriate at all.

This is not a new debate. Similar arguments arose throughout the industry at the turn of the millennium when valuations moved away from dividend discount models towards mark to market approaches. The recent focus on this issue has been fuelled by the fall in gilt yields over recent years which has led to significant increases in the values placed on the liabilities in many cases.

This discussion is happening against a backdrop of increasing scheme maturity, with most private sector schemes now dominated by deferred and current pensioners, with few, if any, active members remaining. This brings with it its own set of risks:

- DB schemes becoming a legacy issue for sponsors and potentially serving as a distraction from their core business.
- Mature schemes having less time to recover from market shocks such as falls in equity prices, either through positive asset returns or cash injections from the sponsor.

Given this it is perhaps no surprise that trustees and sponsors are increasingly thinking about the long-term objectives for their schemes and using valuations to establish, refine and check progress against these objectives.

In this paper:

- We summarise the purpose of actuarial valuations.
- We explain the range of schemes' long-term objectives and how this affects strategic decisions.
- We show how this may affect the approach which schemes adopt for their valuations.
- We bring to life a number of case studies to see what this looks like in practice.

What is the purpose of an actuarial valuation?

Before examining the different ways of approaching an actuarial valuation, it is worth considering its purpose.

Aside from providing a statutory function, for many schemes a valuation acts as a staging post, providing a snapshot of where a pension scheme is along its journey towards its long-term destination, whether that be running on indefinitely paying benefits to members, or finding an ultimate home with an insurer.

Most pension schemes have thought about this long-term destination; in fact, our latest UK Pension Risk Survey suggested that over 90% of schemes already have long-term funding objectives.

For those schemes, the valuation is a key tool in assessing:

- Where the scheme is heading and how quickly it will get there.
- What returns the assets are expected to generate and the associated risks.
- How much cash is needed to bridge the gap.

The various valuation approaches explored in this paper are ultimately just different measurement tools. **Our approach to valuations is to ensure that schemes use the right tool for their particular circumstances and not let the choice of tool drive the decision making process.**

In other words, a scheme's objectives and strategy should drive the valuation methodology – not the other way around.

In our view it is best practice for schemes to check that their choice of valuation method remains appropriate as in many cases their objectives may have changed since they were last reviewed.

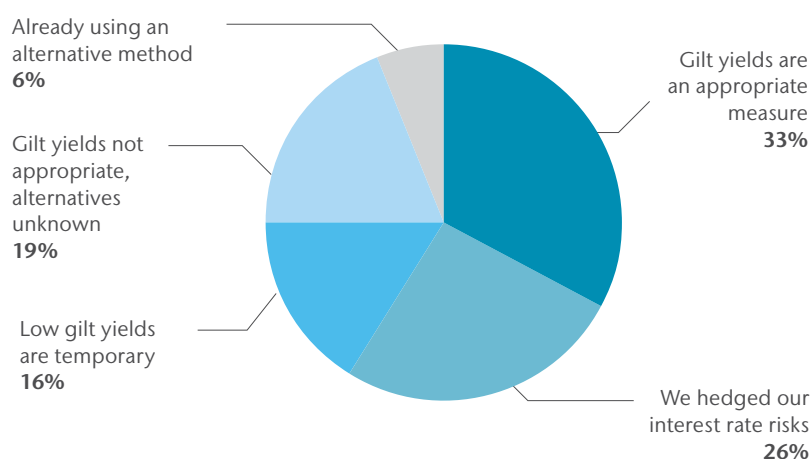
Your views

The most common way of valuing pension scheme liabilities is by using a discount rate based on the yield on gilts. As part of the Aon's 2017 UK Pension Risk Survey (including responses from 185 schemes with over £500 billion of assets), we asked schemes whether they felt this approach remained valid with gilt yields at such low levels.

As can be seen from the chart beside, around 25% of schemes are either using or considering adopting alternative valuation methods with a further 16% believing that this is just a temporary problem, demonstrating that this is very much a live debate.

This ties in with more recent analysis we performed on valuation methods adopted on Aon valuations since 2016, which suggested that just over half of schemes now use a gilts plus approach with the remainder adopting other methods (with cashflow methods becoming increasingly popular).

Are gilt yields still appropriate for discount liability values?



Long-term objectives

The recent DWP white paper on Protecting Defined Benefit Pension Schemes and subsequent Annual Funding Statement from the Pensions Regulator have both focused on the importance of taking a long-term view when setting funding targets for DB pension schemes.

With the increased maturity of schemes a prevalent factor, the two most common long-term objectives are:

- **Buy-out** (ie to secure the liabilities with an insurance company).
The regulatory environment that insurers operate within (Solvency II) means that insurers pricing of buy-out deals closely follows the yields on low risk assets such as gilts, swaps and high quality corporate bonds. Therefore, schemes with this objective are likely to eventually want to invest in similar assets in order to track annuity pricing and retain liquidity so that the assets can be easily sold or transferred to an insurer when the opportunity arises.
- **'Self-sufficiency'**
This can mean a variety of things but it typically means a position where the scheme is not expected to have any significant reliance on the sponsor in order to pay the benefits. There is a wide range of low risk investment strategies in which trustees could eventually invest to satisfy this objective and they may not have determined in advance precisely what the portfolio will be.

Our experience suggests that self-sufficiency investment strategies can be split into the following categories:

- **A stepping stone to buy-out**
Buy-out may currently be a distant prospect and the trustees may wish to focus first on a more realistic low risk target that places limited reliance on the sponsor. Once this target is achieved, attention will then turn to buy-out. Although there is no expectation of buy-out in the short-term, schemes with this objective are likely to also eventually want to invest in low risk liquid assets that will facilitate annuity transactions, whether that be in a single transaction or incrementally when prices are attractive.
- **A long-term self-sufficiency strategy**
Where the trustees are willing to continue to run the scheme on relying on their sponsor covenant rather than transferring the scheme to an insurer, for example because the scheme believes this is likely to be more cost efficient in the long run or for other reasons. Here the scheme is likely to want to reduce risk in a cost effective fashion, helping the trustees gain certainty that benefits will be paid as the scheme matures and reducing the chances that there will be future calls on the sponsor.

In the same way that UK insurers adopt different investment strategies, there are a number of ways in which schemes can achieve their 'self-sufficiency' aim depending on their beliefs.

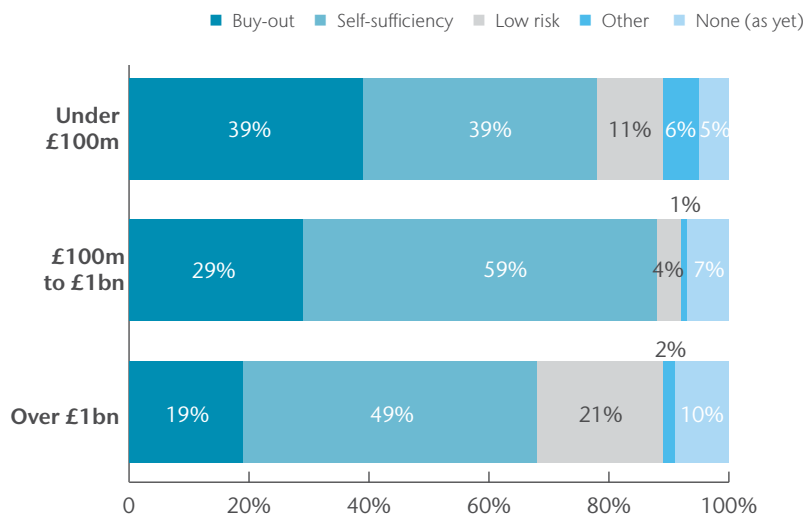
One approach is to buy and hold assets that generate cashflows that closely match future scheme benefits, with a buffer held to provide a cushion against unhedged risks. Alternatively the scheme could be primarily invested in hedging assets with a small allocation to non-matching growth assets. These portfolios could include gilts, swaps, corporate bonds or more illiquid investments such as infrastructure.

Objectives – What are schemes actually doing?

Of course, there are many other possible endgames for pension schemes beyond self-sufficiency and buy-out. Some schemes remain open to new members and are designed to run on in perpetuity; commercial consolidators are a rapidly developing area and may offer a more cost effective alternative to settling with an insurance company in some cases, and some schemes may be content to continue to take risk and rely on sponsor covenant indefinitely.

As part of the Aon’s 2017 UK Pension Risk Survey, we asked how schemes would describe their long-term objective. While the chart below demonstrates that responses vary by size of scheme, the overwhelming majority of schemes see the long-term end game as buy-out or self-sufficiency.

Long-term objective by scheme size



Source: Aon 2017 UK Pension Risk Survey

Aside from scheme size, the choice of long-term target and investment strategy is also likely to be driven both by investment beliefs and the strength of the sponsor covenant.

Investment beliefs

Gilt pricing – Gilts are often regarded as the least risky asset for pension schemes and the yields on these tend to be the biggest driver in insurance company pricing. Therefore, it is the ultimate aim of many pension schemes to invest in these assets. However, gilt yields are at historically low levels and so some investors are currently reluctant to buy them.

Illiquidity premium – Pension schemes are long-term investors and they normally have quite a lot of certainty in their benefit payments. Therefore, they should be able to benefit from the extra premium that can be held through holding illiquid assets. However, holding illiquid assets does reduce flexibility and, for example, it is unlikely that an insurance company would take a transfer of your particular illiquid assets if you wanted to go down the buy-in/buy-out route.

Credit vs growth (e.g. equity) asset risk – Most investment strategies involve some risk. Some of the risks that pension schemes are exposed to include credit risk through holding corporate bonds, the risk of an equity market crash or the risk of hedge funds ‘blowing up’

or simply not generating returns. Often trustees have views on which of these different risks they are most comfortable with which are likely to impact on their investment strategy.

Attitude to disinvestment risk – When a scheme becomes very mature, it will need to disinvest in order to meet the benefit payments. There is a risk that this will force the trustees to be forced sellers of assets when they are at a low. How the trustees decide to manage this disinvestment risk will have an impact on the investment strategy. Generally, trustees either try to reduce this disinvestment risk either through diversifying (so not all assets are at a low) and having a robust plan for disinvestments or through purchasing income producing assets.

Governance and cost constraints – Some investment strategies require far more governance than others, although it is often possible to delegate much of this. In this context, cashflow driven investment strategies are likely to require more time and resources from the trustees.

Covenant

In theory the covenant may impact on the long-term objectives as follows:

Weak – Likely to be buy-out or consolidator because the employer is not expected to be able to support the scheme long-term. The only way to guarantee benefits is to pass them to an insurer.

Medium – The covenant is still uncertain over the long-term and a consolidator or buy-out are both likely to increase the security for members.

Strong – The strongest companies may be expected to be around for the long-term. They may still want to pass the liabilities to an insurer (whereas transferring the liabilities to a consolidator may represent a weakening of the covenant) but they can probably support a self-sufficiency policy too.

In practice, though, it is not usually so simple. For example, there are schemes where the covenant is so weak that the sponsor is never likely to be able to pay sufficient contributions in order to bring the scheme up to full buy-out funding and they cannot afford to take the investment risk that would be required to achieve it either. Such schemes, which are typically relatively well-funded and very mature, may tend to adopt a self-sufficiency approach.

So while the covenant may be a relevant factor when considering the valuation approach we do not think a particular covenant on its own would preclude any particular approach.

Plans for getting to long-term objectives

In addition to the long-term objective and its associated investment strategy, the trustees will need to have a plan to get there in terms of investment returns and contributions. This will need to consider:


- Expected timescale to reach the long-term objective.
- Balance between contributions and investment returns.
- When to de-risk (eg if funding improves faster than expected).
- What to do if funding deteriorates.
- What to do if strength of employer covenant changes.
- Scheme maturity.


The choice of valuation approach will need to reflect the trustee and sponsor views in these areas and balance these with practical issues such as objectivity and simplicity.


What is in the toolbox?


We now consider how each of the different valuation approaches may deal with the factors set out above.

We have considered four main valuation approaches:

 **Gilts plus**
This is where the discount rate is set relative to the yields on government bonds ('gilts') plus a margin to allow for returns on non-gilt assets within the asset portfolio.

 **Best estimate minus**
This is where the discount rate is set relative to the estimated expected future returns on the assets and then a deduction is made to provide a margin for prudence.

 **Cashflow driven**
This is where cashflows are backed by certain income-generating assets and the discount rate is chosen relative to the yields on these assets.

 **Stochastic**
This is where the future is projected forward over 1,000s of different simulations and the discount rate is set relative to a certain probability of 'success'.

Overlapping approaches

While we have presented this as four different methods, there is actually a lot of overlap between the different methods. For example:

- The discount rate may be derived at the valuation date by any of the methods above but then for simplicity and objectivity, a simple index (e.g. gilt yields or RPI) may be used for monitoring in between valuation dates. This may particularly be the case if no decisions are to be based on the funding level in between valuation dates. Our research suggests that while only around 50% of schemes now use a gilts plus approach for setting the discount rate at each actuarial valuation, around 90% of schemes use a gilts plus approach for monitoring.
- A combination of approaches may be used, such as a best estimate minus approach in the near term (reflecting current holdings in growth assets) and a gilts plus or cashflow driven approach in the longer term (reflecting an expectation to move to lower risk assets in the future as the scheme matures).

Gilts plus

Introduction

Under the gilts plus approach, the discount rate is set relative to the yield on gilts (either the whole yield curve or perhaps gilt yields of a certain duration) plus a defined margin. Although this sounds like one method, in practice there are many variants on this, for example:

- The margin may vary pre and post-retirement or vary over time in a pre-defined way.
- The starting point may not actually be gilts but another low risk asset class for example swaps or high quality corporate bonds.
- Some schemes will keep the 'plus' fixed while others may vary this addition from time to time.

Aligning with the investment strategy

If the trustees have invested in gilts or have a long-term objective which involves investing in gilts (such as self-sufficiency with gilts used to match the cashflows) or that closely tracks movements in gilt yields (such as buy-out or settling with a consolidator) then adopting a gilts plus approach will have the advantage that the current funding liabilities will move in line with that long-term objective.

Concern about solvency

If the covenant of the employer is weak then there may be a concern that the company could become insolvent within the next few years. If this were to happen then the most relevant measure for the trustees would be a solvency or buy-out measure. Given that the main driver of buy-out liabilities is the yield available on gilts, there is a strong argument for discount rates on the current liabilities to be based on a gilts plus approach so that they move in a similar way.

Objectivity and simplicity

The gilts plus approach has significant advantages in terms of objectivity and simplicity. The future return on gilts if held to redemption will be known and easily available. In addition, this method is flexible and can be easily adjusted to reflect changes to scheme or employer circumstances or to make use of the flexibilities afforded by the scheme funding regulations.

The tool for the job?

A gilts plus approach might be a good choice where:

- The scheme has purchased gilts or swaps in order to better match its long-term objective.
- The scheme is not invested in gilts, but there is a reasonable chance or direct need for the long-term objective to be attained within the next few years.
- There is a definitive plan to get to the long-term objective, for example where a scheme uses funding triggers to move from its current investment strategy to its long-term strategy.
- There are concerns about the solvency of the sponsor.
- Simplicity and objectivity are important.

Best estimate minus

Introduction

Under the best estimate minus approach, an assessment is made of the best estimate return on the scheme's investment strategy. Depending on the investment strategy there may be significant subjectivity in making this assessment and so a margin for prudence needs to be incorporated. Again, in practice this approach can take a number of different forms, with the most common approaches that schemes adopt being:

- A fixed deduction from the best estimate return.
- A fixed proportion of the expected return over the expected return on government gilts is deducted.
- A stochastic model is used, whereby an agreed percentile of return (typically between 60% and 70%) from the simulations is chosen for the discount rate.

Aligning with the investment strategy

If the scheme is invested in growth assets, and the trustees do not expect to switch into assets underlying their long-term objective in the near future then adopting a best estimate minus approach can help manage funding level volatility compared with other approaches.

Objectivity and simplicity

The future investment return on growth assets such as equities is not known and there is a lot of subjectivity and uncertainty in any estimate. The trustees and sponsor may be comfortable with this, particularly if the strength of the sponsor is such that assumptions that turn out to be overly optimistic are not problematic.

While there is necessarily a significant amount of subjectivity with this approach, there is also an element of complexity. Stochastic approaches are commonly used to determine expected returns, particularly where the portfolio is complex. Therefore this approach can attract higher costs than say a gilts plus method and as a result it is common for the discount rate to be recalibrated infrequently.

The tool for the job?

A best estimate minus approach might be a good choice where:

- The scheme has a significant allocation to growth assets.
- Where there is little concern about the buy-out position because there is no intention to buy-out in the foreseeable future.
- The scheme is open to new entrants with no long-term plan to de-risk.
- The scheme and sponsor is able to absorb volatility inherent in growth assets.
- Where the stability of the disclosed funding objective is an important issue.

Cashflow driven

Introduction

The starting point for a cashflow driven approach should first be a consideration of the source of the income to meet each benefit payment, factoring in the current investment strategy and how this will change over time. This involves making a number of assumptions, for example:

- The return on the current assets backing the pension payments would typically be taken as the redemption yield on those assets less a prudent margin for default.
- The return on any growth assets will typically be derived in a similar way to the best estimate minus approach, although a more detailed consideration may be required if it is necessary to split out the income and capital components of returns.
- There will also need to be an assumption for the prices and yields on any bonds that will need to be purchased in future to cover future cashflows.

Aligning with the investment strategy

If the trustees have a current strategy or long-term objective which involves assets generating income to match the pension payments as closely as possible (ie a cashflow driven investment strategy) then this suggests that the valuation approach should be aligned with it. This may be the case for schemes that have a long-term target of self-sufficiency with little appetite to pass the scheme to an insurer.

Scheme maturity

There might be less benefit from building a cashflow driven investment strategy for an immature scheme since there is likely to be significantly more uncertainty in the cashflows and it is unlikely that you could find suitable assets to produce the income to support the longer-dated benefit payments. This is one of the primary reasons why insurers charge significantly more to insure immature deferred liabilities, than pensioner liabilities.

Objectivity and simplicity

The cashflow driven valuation approach is significantly more complicated than the gilts plus or best estimate minus approach since a much more granular consideration of the investment strategy is required. While the redemption yields on the assets in a cashflow matching portfolio can be calculated, this takes time. As such daily monitoring might be difficult. Furthermore:

- The level of defaults and creditworthiness of the portfolio will need to be kept under review to check that the assumed margin for default remains reasonable.
- If the scheme is relying on reinvestment then the rates at which the assets can be reinvested will need to be kept under review.
- The trustees will need to be alive to potential significant changes to cashflows, for example, through members' options or large movements in inflation when the benefit increases are linked to inflation but with caps and/or floors.

While the cashflow driven valuation approach is expected to provide stability, it could lead to a sudden and large readjustment if a significant event occurred such as the credit crisis in 2008. For example, an increase in the yields on the portfolio could reflect an anticipated increase in the level of defaults. If this happened and the fixed margin for prudence was no longer regarded as appropriate then the discount rate may need to be reduced and this could lead to a significant step change in the disclosed liabilities.

Cashflow driven valuations are still in their infancy and so the tools for monitoring in between valuation dates are still being developed. However, cashflow driven approaches are designed to be stable so arguably daily monitoring matters less. However, where day-to-day monitoring is still required schemes using this approach often express the discount rate by reference to something simpler but which has some relationship with the portfolio rather than looking to reassess each quarter. In these cases, the trustees are less concerned about the funding level between valuation dates but are more concerned about monitoring the level of defaults and the creditworthiness of the portfolio.

The tool for the job?

A cashflow driven approach might be a good choice where:

- The trustees and sponsor have limited appetite to pass the scheme to an insurer in the foreseeable future.
- The scheme has a significant allocation to income generating assets that will be held to redemption to closely match benefit payments to members.
- The scheme is mature enough to have relatively predictable cashflows to make this approach viable.
- The scheme is not reliant on significant growth returns in order to fund the scheme and pay benefits.
- The trustees and sponsor are less concerned with the market value of their asset portfolio, and more concerned with the ability of the assets to pay benefits.
- The trustees and sponsors feel that the benefits of this approach outweigh the additional costs associated with the valuation and ongoing monitoring (although investment manager costs may be lower).

Stochastic

Introduction

In all of the above methods a lot of time is spent working out a single, snapshot value of the liabilities - the Technical Provisions. In one sense schemes are forced down this route, after all legislation requires you to calculate a Technical Provisions figure. However there are a number of potential issues with this.

- What is important is whether you expect to have enough money to pay members' benefits and the extent to which further cash is needed to bolster these chances.
- The future is highly uncertain. Single numbers do not convey the significant spread of possible outcomes - ie being fully funded on a technical provisions basis does not guarantee you will be able to pay benefits, likewise a deficit does not mean that money will run out. Snapshot deterministic valuations based on a single set of assumptions do not convey this.

A stochastic valuation can help address these issues.

How does it work?

A stochastic valuation projects the scheme's assets, future benefit payments and contributions being paid into the scheme under thousands of different scenarios. Based on these simulations it is possible to estimate how likely it is that you will have enough money to pay the benefits.

If the modelling suggests you have a high enough chance of paying the members' benefits (perhaps in more than 70% of the simulations) then you are largely done. You will need to calculate a single value as part of your statutory reporting – but the focus of the scheme very much remains on the likelihood of being able to pay benefits.

However, if the modelling shows a chance of success that is not high enough (particularly if under 50%) then the question is how much more in contributions needs to be put in, and over what timescales, to increase that to a high enough chance? You can then model different contribution patterns and investment strategies until you determine an approach with an acceptably high chance of paying benefits and manageable levels of risk.

Objectivity and simplicity

On the face of it a stochastic valuation avoids two significant steps – the need to make assumptions and the need to place a value on the liabilities. Unfortunately it is not that simple. There are still assumptions being made - it is just that they are hidden within the stochastic model, and they are typically an awful lot more complicated than in other methods. And although you might not need to place a current value on the liabilities to work out your contributions, you still need one to disclose to the Regulator, the PPF and the members.

A stochastic valuation also involves substantially greater modelling than the others. However, many schemes already use such techniques for their investment strategy reviews, so also using it for funding discussions may not be a big step.

The tool for the job?

A stochastic approach might be a good choice where:

- The trustees and sponsor are more interested in the long-term prospects of being able to pay benefits and the risks to this, rather than tracking daily movements in markets.
- Scheme viability is a concern and you want to maximise the chances of paying benefits given a limited amount of contributions.
- The trustees and sponsor are both comfortable with a higher level of technical sophistication.
- The scheme is already adopting stochastic approaches for other purposes (for example asset liability modelling).
- Schemes want to take an integrated approach to assessing scheme funding and investment risk.

Summary and conclusions

Bringing together everything discussed in this paper, there are clearly many different factors that we recommend trustees and sponsors should consider when deciding which valuation approach to adopt.

- Existing beliefs and what this means for the scheme's investment strategy.
- The long-term objective for the scheme and the plan to get there in terms of contributions, investment returns, risks and timescale.
- The strength of the sponsor and how this might evolve over time.
- The appetite to use more technically sophisticated approaches.

For most schemes, the concept of a low risk endgame is appealing. The world is rapidly changing and outside of the public sector, very few schemes are fortunate enough to benefit from an indefinitely strong sponsor.

It is probably therefore no surprise that our research suggests that more than three-quarters of schemes want to get to a point where there is little or no reliance on the sponsor, whether that is by buying out, passing the scheme to a consolidator or reaching something akin to self-sufficiency.

Given this it is equally unsurprising that many schemes have continued to decide to use gilt based approaches for their valuation. The prices of gilts provide a good baseline for understanding both the costs of settling liabilities and running a low-risk portfolio in the future.

Equally there are a number of schemes who do not fit this mould. For example, the scheme may be open to new entrants, or will be run-on over the medium term in a self-sufficient fashion, avoiding paying over a premium to an insurer or consolidator.

For all schemes, the key takeaway is that the different valuation approaches are ultimately just measurement tools. Schemes need to ensure that they select the right tool for the job, and not let the tool drive the decisions. As schemes increasingly turn their focus towards the long-term, this provides the perfect opportunity to more than just kick the tyres on historic approaches and instead to ensure that the tool you use moving forward is the right one.

We hope that you found this paper interesting and informative.

If you have any questions or would like to explore any of the issues raised in further detail, then please contact us at talktous@aon.com or speak to your usual Aon consultant. We would also like to give recognition and special thanks to the authors of this paper.

Andrew Claringbold

Tom Yorath

Case Study 1

Long-term intention to be invested predominantly in gilts

Background

The scheme had assets of around £1bn and was around 90% funded on its Technical Provisions basis (with a single equivalent discount rate of around gilt yields plus 1.2% pa). Level deficit reduction contributions were set based on a five year recovery plan. The scheme was fairly typical with around 40% pensioners and duration of around 20 years and had been closed to new entrants since 2002 albeit some benefits were still accruing. The trustees deemed the employer covenant to be 'strong'. The investment strategy was broadly 50% growth assets and 50% bonds (with around 60% of the bonds in gilts) – around 45% of the liabilities were hedged relative to gilt yields.

Views

The trustees (supported by the sponsor) had the following beliefs:

- While the trustees did think that gilts were currently expensive, they believed that these would be the assets that the scheme would normally want to hold (if they could afford them). They were not confident that gilt yields would rise in the short-to-medium term and accepted that they could go down further. If the opportunity arose they would like to de-risk further into gilts.
- While they did not have any immediate plans to buy-out the liabilities, they accepted that this would likely be the ultimate endgame and they would be interested in buy-ins for pensioners if the price was right.
- The trustees had the objective that when they were fully funded on a gilts basis they would be still hold 15% in diversified higher return-seeking assets, whilst hedging all their interest rate and inflation risk.
- Funding level triggers were set which would cause the fund to disinvest from growth assets and switch into gilts as the funding position improved.

Valuation approach

The trustees wanted a valuation approach which was consistent with their long-term objective to be invested in gilts (or at least assets where the primary driver of returns would be movements in gilt yields). This was particularly important because they had funding level de-risking triggers and wanted the triggers to at least partially reflect the price of the assets that they were looking to purchase. This led the trustees to choose to use a gilts plus approach.

The trustees accepted that adopting a gilts plus approach when 55% of the assets were invested in growth assets would potentially lead to volatility in the funding level. However, while the trustees would prefer not to have volatility, they believed it was more important to understand where they stood relative to their long-term objective as it would make planning easier and they were prepared to utilise the flexibility that exists within the current funding regime.

Outcome

While the funding level was somewhat volatile, it has improved significantly in recent years. The trustees were able to monitor the funding level on a daily basis since the gilt yields were simple and objective to obtain, and the improvements in funding resulted in a number of triggers being hit. Furthermore, these triggers (being gilt based) were largely driven by the prices on the assets that the trustees were looking to purchase. Whenever a trigger was hit, this allowed the trustees to de-risk quickly and lock into the gains made. As a result of these triggers the trustees were able to de-risk three times (in favourable conditions) such that:

- They increased their bond allocation from 50% to 65% and their hedging to 65% of the liabilities.
- They are now over 100% funded on their previous Technical Provisions target and focussing more on their longer-term target.
- Their investment risk (as measured by Value at Risk) has reduced by a third.

Case Study 2

Contribution volatility a concern and no immediate plans to de-risk

Background

The scheme held assets of around £700M and was around 85% funded on its Technical Provisions basis (with a single equivalent discount rate of around gilt yields plus 1.0% pa). Deficit reduction contributions were assumed to continue for another nine years. The scheme was fairly mature with around 60% pensioners and duration of around 18 years; even so, the scheme was still open to accrual and the trustees and company were keen to continue this. The trustees deemed the employer covenant to be at the lower end of 'tending to strong'. The investment strategy was broadly 60% growth assets and 40% bonds – around 30% of the liabilities were hedged relative to gilt yields.

Views

The trustees (supported by the sponsor) had the following beliefs:

- While the trustees accepted that it would eventually want to de-risk into gilts and corporate bonds, they had no immediate plans to do so. They regarded bonds as expensive and were relying to some extent on investment returns to recover the deficit.
- They believed that the discount rate should reflect a prudent estimate of the expected return on the assets rather than introduce unnecessary volatility through measuring the liabilities relative to an asset class it did not hold a significant proportion of its assets in (and had no plans to change this in the near future).
- The reported cost of providing future benefits was important to the trustees. If a valuation approach was adopted that did not reflect the returns on the scheme investments this could require 'unnecessarily high' contributions and lead to pressure for future service benefits to cease.

Valuation approach

The trustees wanted a valuation approach which would reflect where they were heading based on expected future investment returns and not introduce what they perceived to be unnecessary volatility. This was particularly important in this case because it could have a direct impact on members' benefits. Therefore, the trustees decided to first derive the expected returns based on the assumed future investment strategy and Aon's house views and then reduce this by a fixed margin for prudence.

Outcome

Over the period between valuations, the assets of the scheme performed well. Whilst expected future returns on the scheme's assets had fallen by around 1.0% pa over the period, gilt yields had fallen by substantially more (around 1.7% pa). If the trustees had been using a gilts plus approach then the funding level would have remained at around 85% but the deficit would have been around 30% higher (as a result of assets and liabilities both increasing). This, together with a reported future service rate which would have increased by around 10% of pensionable salaries, would have led to significant increases in contributions being required (even if the recovery plan was extended back to nine years).

However, using the best estimate minus approach confirmed that the scheme was still broadly on track to return to full funding over the long-term. While there was still an increase in the future service rate, this was at a more manageable level. Through adopting this approach, the trustees and company were able to more easily negotiate a funding plan that was acceptable to both sides. Furthermore, experience since has seen liabilities calculated under the gilts plus and best estimate minus approaches converge, suggesting that rigidly adopting a gilts plus approach may have led to unnecessary actions being taken.

Case Study 3

Cashflow driven investment strategy

Background

The scheme held assets of around £550M and was around 96% funded on its technical provisions basis (with a single equivalent discount rate of around gilt yields plus 1% pa). Deficit reduction contributions of around £5M pa were being paid each year and there were around three and a half years left on the recovery plan. The scheme was mature with around 70% pensioners and duration of around 16 years; no more benefits were accruing. The trustees deemed the employer covenant to be reasonably strong.

Views

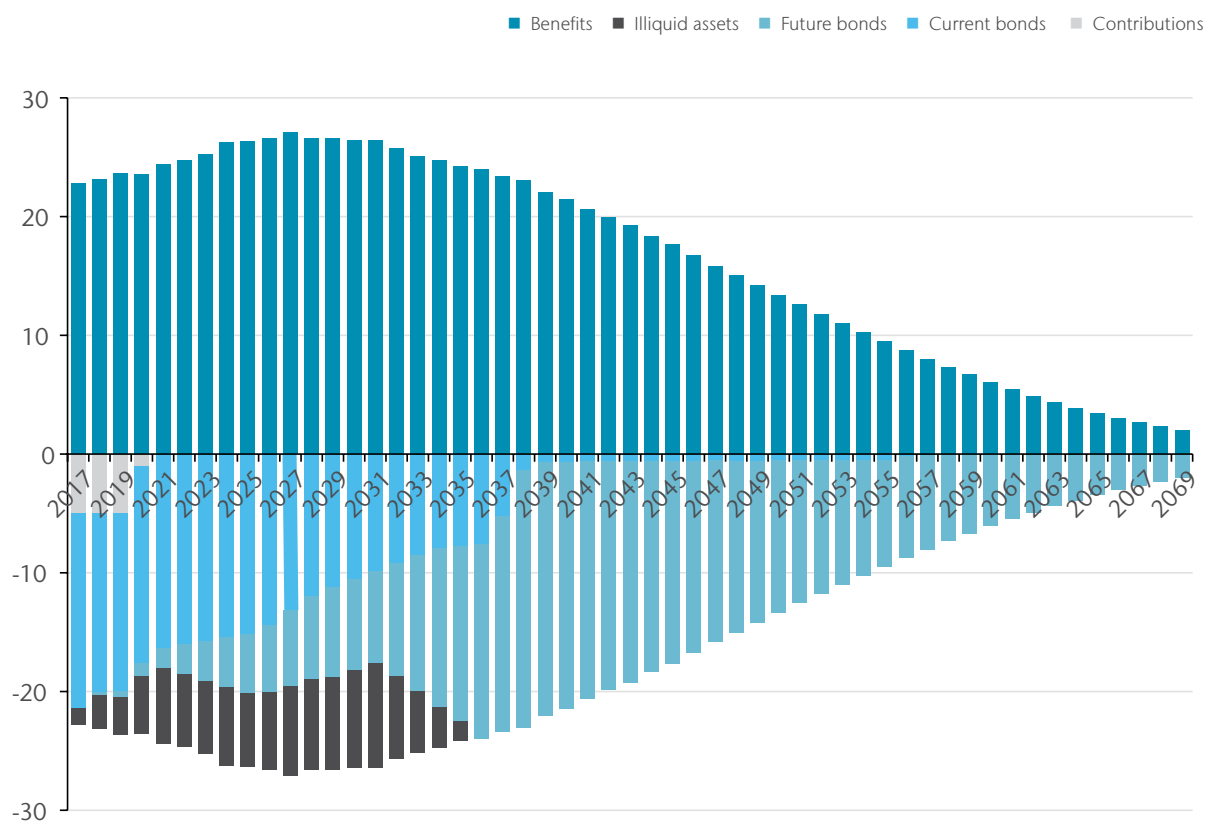
The trustees (supported by the sponsor) had the following beliefs:

- They believed that government gilts were too expensive.
- They were concerned that being a mature scheme, there was a risk that they would be forced sellers of assets to meet benefit outgo. This could significantly damage the investment performance if they had to sell them in a downturn.
- They were attracted to the idea of being able to gain extra returns through holding illiquid assets.
- The sponsor had told the trustees that while it was committed to the rest of the recovery plan contributions (and would still be able to make further contributions, if required) it did not believe that any more contributions were necessary and would rather that they run a low-risk portfolio rather than target buy-out.
- While not the main driver, the sponsor was also attracted to the idea of credit as it would reduce volatility in its accounting.
- The trustees were generally attracted to the concept of cash-flow matching.
- The trustees liked equities and did not like hedge funds.

Valuation approach

The trustees' beliefs led them to develop an investment strategy which was planned to produce income to meet the benefit payments.

Projected benefit payments and source of income to meet them



Source: Aon

This worked as follows:

- The buy and maintain credit and illiquid portfolios were designed to produce income (after a prudent allowance for default) to meet a significant proportion of the benefit payments in excess of the cash contributions over the first 15 years. The intention is that this will mean that the trustees are never forced sellers of equities.
- Equities were used to produce the investment returns required to get the fund to a position where it is expected to be able to meet all the benefit payments from a bond portfolio. The equities would need to be sold to buy future bonds which would then provide the income to meet the gaps between the benefit payments and the income generated from the current bond and illiquid portfolios. However, because they are not forced sellers there would be some flexibility as to when they were sold so as to avoid selling them in a downturn. Furthermore, there was some flexibility to sell them earlier or later than planned depending on how the funding was progressing.
- The bond portfolio does not provide full inflation protection. This was designed to be achieved through gaining some of the equity exposure through swaps and using the cash released to buy the inflation protection. Some of the cash released would also be available to meet any unexpected cash-flows. However, with such a mature scheme and no planned bulk members' options exercises these were not expected to be significant.
- Buy-out was unlikely to be feasible in the short-term as the scheme would be holding assets that would probably not be able to be transferred to an insurer. However, if things went well and funding improved more than expected then it did not rule out switching to a buy-out target at a later date (particularly given that the allocation to illiquids is projected to reduce).

The trustees wanted a funding strategy that was consistent with this investment strategy and did not lead to disclosing unnecessary volatility. This therefore led to the development of a cashflow driven investment approach. In particular:

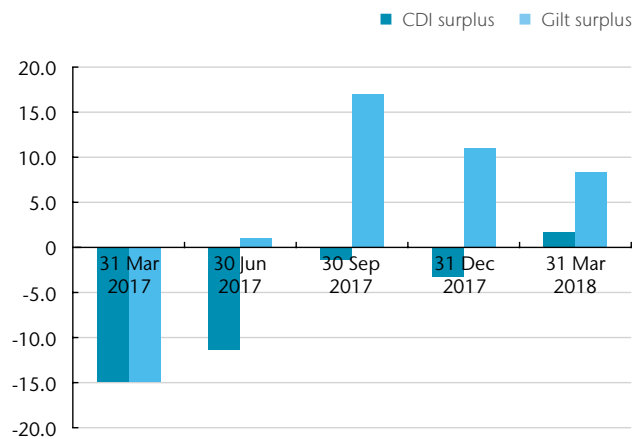
- The return from the bond and illiquid portfolios was taken as the redemption yield less a prudent margin for default.
- The return from the equity portfolio was taken as our house view on future equity returns less a margin for prudence.
- There also needed to be an assumption for the prices and yields on the future bonds that would need to be purchased. For this purpose, we assumed that the yields would be the same as is currently priced into the market with the same margin of prudence for defaults as for the current bonds.

Alternatively, this could have been expressed as a single discount rate of gilt yields + 1.1% pa as at the valuation date. This margin would expect to change over time partly as a result of changing yields on the portfolio but also as a result of the expected changes in investment strategy. In the long-term the expected discount rate is expected to converge to something like gilts + 0.6% pa (based on current yields).

Outcome

The disclosed funding positions (compared to those as if gilts plus a fixed margin had been adopted) are summarised graphically below:

Projection of surplus/(deficit) under CDI and gilts plus valuation approaches



Source: Aon

This was over a period when initially the credit, illiquid and equity portfolios performed quite well relative to gilts but over the last quarter, this was reversed partially. As can be seen, the disclosed funding position is less volatile under the CDI approach compared to a gilts plus approach. This is because for the income producing parts of the portfolio the assets and liabilities are matched.

Therefore, the cashflow driven valuation approach allowed the trustees to pursue a cashflow driven investment strategy and see the benefits of this in the disclosed funding level. It enabled the trustees to focus on the aspects which were important for the success of their investment strategy rather than being distracted by 'noise'.

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