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Mature pension schemes – onwards and forwards

Analysis by the Running Off Mature Schemes Working Party

4 May 2018

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Introduction

- For various reasons it is very uncommon now for new defined benefit schemes to be established in the UK. The majority of the c. 6,000 still in existence are closed to new members and a significant proportion of those are closed to new accrual and hence frozen.
- Many of these schemes are already mature and over the next 10 years many more will get to a mature status.
- How those schemes are managed to their end point will impact the retirement incomes of millions of individuals, the management of over £1 trillion of assets and how many £100 billions of funds are released by schemes over the next 20 years as retirement spend, transfer to savings products and purchases of insurance products.
- The Working Party's objective was not to generate masses of new research and material. Instead what we sought to achieve was to bring together various reports and research that already exist and our own personal experiences in a coherent and consistent way so as to take readers through the topic of how mature schemes can be run off.
- There is, rightly, a lot of material within this slide book. We suggest that readers who would prefer to quickly get to the key conclusions and leave the detail for later should focus on slides 3 - 18 (executive summary, working party scope and discussion around what a mature scheme is and why it matters) and slides 68 - 96 (pulling the various detailed analysis together, introducing a framework for scheme run-offs, a discussion around scheme separation and scheme consolidation, conclusions and recommendations).
- We hope the Working Party's work helps inform readers of this topic and acts as a stimulus for debate and further research in this area and ultimately contributes to how these many schemes are run off.
- On 19 March 2018, after the Working Party had nearly completed its work, the DWP published a White Paper "Protecting Defined Benefit Pension Schemes". This set out material proposals to the way defined benefit schemes are managed. The Working Party has updated this slide book to reference this White Paper, where relevant.

Executive summary (slide 1 of 2)

The context

- This slide book documents the work of the Running Off Mature Schemes Working Party.
- Mature schemes are increasingly becoming the most significant category of defined benefit pension schemes. Less than 15% of schemes remain open to new members. Although there are some £1,800 billion of defined benefit pension liabilities[1] today we project that in 20 years (2037) they will have reduced to under £800 billion in current money terms of which close to 65% would relate to pensioners. Much of the reduction will be due to natural run-off but a not insignificant proportion will be transferred to bulk annuity insurers and the PPF.
- Mature schemes present different challenges to those facing open schemes across various areas such as funding, investment and risk management, operations and governance. Yet we have found little literature that specifically focuses on mature pension schemes.
- The question therefore is what practices and services are required across the industry to effectively run those schemes and what skills are required from practitioners within the industry including actuaries?

How the Working Party approached the topic

- The Working Party focused on twelve specific features of how defined benefit pension schemes are operated. For each feature we set out how we would expect its defining characteristics to change as schemes move up the maturity scale as well as setting out some observations of how today's mature pension schemes measure up against those characteristics:

1. Pace of funding	5. Cashflow matching (incl. hedging)	9. Bulk annuities
2. Covenant (incl. separation)	6. Asset allocation	10. Journey plans
3. Contingent assets	7. Outsourcing	11. Employer relationship/governance
4. Liability management	8. Locking down the benefit liabilities	12. Expense management

- We also considered how mature schemes / books are addressed in other jurisdictions and what can be learnt from comparators such as insurance companies and the Pension Protection Fund.
- The Working Party proposes a strategic framework for the management of mature schemes within slides 75 - 81. The framework begins with the vision of meeting member expectations as far as possible whilst avoiding a disproportionate impact on the sponsoring employer's business, and describes an approach for creating and implementing a scheme run-off plan.
- Finally, we explore in more detail three selected topics, namely Covenant, Separation and Consolidation.

[1] The value depends on actuarial assumptions used for measurement - the £1,800bn is an approximate figure on "best estimate" assumptions. As a comparison, the PPF estimated that the bulk annuity value as at 31 March 2016 was higher, at £2,123bn (source, Purple Book 2016)

Executive summary (slide 2 of 2)

Our recommendations

- This topic, the practices and techniques schemes can adopt to run-off as they mature, is huge and we have only touched upon it in this slide book. Nevertheless, we hope this slide book will serve as a ready reference source to those involved in mature scheme run-offs, and will help identify areas for future in-depth research.
- We found that in some areas the direction of pension scheme practice reflects what we would expect in an environment of increasing maturity, namely Liability management, Cashflow matching, Out-sourcing and the usage of Bulk annuities. However, in some other key areas we felt there was a gap between industry practice and what we anticipated, namely in relation to Employer relationship / governance, Journey plans, Locking down benefits and Expense management.
- Our key recommendations can be summarised as:
  - The industry should adopt a standard measure or measures of maturity to facilitate communication and analytics
  - Legislation/regulation should be adapted so as to more easily accommodate the needs of mature schemes
  - Schemes should develop comprehensive journey plans mapping out their intended run-off approach
  - It would be advantageous for there to be a framework for separation of schemes from sponsor employers, in some circumstances
  - Key industry bodies should identify what skills base and expertise are needed to efficiently service scheme run-offs
  - Most mature schemes would benefit from having a professional trustee appointed
  - Industry standardised member data and benefit formats should be developed
  - Schemes should focus resources to lock down their benefits (ie data and benefit cleansing)
  - Reserving for future expenses should be a norm for mature schemes
  - Adoption of the practices we have highlighted in this slide book would spotlight the benefits of some consolidation and prompt activity, whether that is taking advantage of outsourcers for selected services, master trusts or bulk annuity buyouts
  - The actuarial profession should sponsor research into the various facets to consider when assessing the target end game and options for a mature pension scheme. The DWP's March 2018 White Paper makes such research very timely given that the DWP intends to consult on the proposed detail of commercial consolidation vehicles later in 2018
- Millions of people rely on mature pension schemes for a significant proportion of their retirement income. We hope that this slide book serves to start building awareness of the challenges in running off mature pension schemes and helps the actuarial profession take a leadership role in enabling industry to develop the techniques and skills required.

Contents

Note:

- Some of the charts in the main body of this slide book are relatively small. They have therefore also been included in the Appendix as well in larger size format for ease of reading.
- The Working Party has made use of data and publications that were available up until around end August 2017. A couple of charts have been updated for subsequent releases of data, and slides have been updated to make reference to the DWP's 19 March 2018 White Paper "Protecting Defined Benefit Pension Schemes".

A. Working party scope

The scope – mature pension scheme management with a focus on the practical

In scope

- Mature UK defined benefit pension schemes in run-off (incl. DB sections in hybrid schemes)
- "Mature" is discussed later. For the purposes of the Working Party it was taken as meaning a scheme with a duration of 16 years or less
- Out of scope are schemes looking to wind up in the immediate term, and unfunded public sector schemes

Deliverables

- A paper, in the form of this slide book, that is accessible for stakeholders across the pensions industry. In effect, the start of an easy reference manual for future development
- Introduce a strategic framework for the management of mature schemes
- Identify areas for future focus and recommendations

Constraints

- Limit analysis to what is possible or observed within current legislation/market
- Focus on issues only experienced at the later stages of maturity

The benefits to the profession

- Deepen the resources available to actuaries in an area of growing relevance
- A reference piece of work to build upon in future through further working party work
- Identify advisory areas to which actuaries can add value

Working party members

- Costas Yiasoumi (Chair), Legal & General Assurance Society
- Graham Wardle, Legal & General Investment Management
- John McAleer, Aon
- Mike Walsh, Legal & General Reinsurance Company
- Nick Sparks, BMO Global Asset Mgt.
- Nigel Jones, 2020 Trustees and Mitchell Consulting

Acknowledgements

- Tim Keogh, independent, a key member of the Working Party for most of its duration, who contributed considerably in all areas
- Akos Reger, Allegro Consulting, an initial Working Party member who undertook analysis of overseas pension systems and established modelling we used
- Darren Blount, who used sample schemes from ITM's dataset to undertake analysis for the Working Party on data quality
- PPF and TPR for supplying source data to the Working Party for many of their published charts
- The two peer reviewers for their helpful comments

To pre-empt some questions …

- **DC schemes:** Out of scope. Mature DC schemes do have specific issues to tackle but the Working Party wanted to avoid broadening its remit too widely.
- **Hybrid DB/DC schemes:** The DB section is in scope.
- **Open schemes:** In scope if the employments are such that the value of future accrual is small, eg if only 5% of the original workforce remain eligible.
- **Stable position open schemes:** There are some open schemes for which mature might be interpreted as having reached a stable position where the liability mix remains largely constant (as opposed to immature when they first started with no past service). These are out of scope.
- **Winding up:** Schemes expected to wind up in the short term are excluded as they have different considerations.

Large schemes have often been the first to apply new techniques for managing their exposures

Friends Provident, 2003, swapped liabilities to floating, with no change to asset mix

The scheme decided to hedge more of its interest and inflation risk in 2003.

It used buckets of interest rate and inflation swaps to fully swap exposure to interest rates and inflation while still maintaining a high equity weighting.

The liability benchmark was, in effect, swapped to a LIBOR benchmark.

W H Smith swaps & LIBOR generating asset, equity call options, 2005

94% of the assets were invested in inflation and interest rate hedged investments, to match liabilities.

The remaining 6% was used to purchase long-dated equity call options designed to enable the fund to benefit from any higher equity returns.

This approach provided exposure to the upside on equities representing around 40% of assets.

Smiths Group, bulk annuity tranches, 2008

First bulk annuity tranche of £250m purchased in early 2008.

Since then Smith Group's schemes have purchased a series of further bulk annuities.

In February 2017 an £130m tranche relating to about 1500 legacy scheme pensioners and dependants was purchased.

Around £1bn of scheme liabilities have now been insured (= c. 25% of total scheme liabilities based on corporate IFRS disclosures at 31 July 2017).

Babcock International, longevity swap, 2009

The transaction caps longevity exposure for around £300m of pension in payment liabilities.

The transaction is the initial stage of the first ever longevity swap deal involving a UK pension scheme.

Other pension schemes of the Babcock International group subsequently completed longevity swaps.

Sources: Friends Provident and WH Smith – see Practical Implementation of Liability Driven Investment by The Finance, Investment & Risk Management Board Working Party, Dublin conference, June 2007. Babcock International – see Professional Pensions article, 26 June 2009. Smiths Group – see IPE 21 April 2008 and Smiths Group news release 1 February 2017

Small schemes have similar issues and needs to large schemes … but proportionality is different

- A question the Working Party considered at outset was whether its analysis should focus on smaller schemes only or schemes of all sizes.
- The conclusion was that the issues are similar to schemes of all sizes.
- However given the need for schemes to be proportionate in their spending, and for third party providers to recover their costs of developing new solutions, it was recognised that larger schemes would:
  - Have access to a wider range and depth of solutions than smaller schemes
  - Be the first to apply new solutions before they become sufficiently scalable for smaller schemes to also utilize
- Therefore the Working Party's analysis is intended to be relevant to schemes of all sizes but it is acknowledged that many larger schemes may already be relatively sophisticated in their approach.

We have not restricted our analysis to that practical only to small or to large schemes but we have drawn out distinctions where relevant.

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B. What is a mature scheme and why does it matter?

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What is a mature scheme?

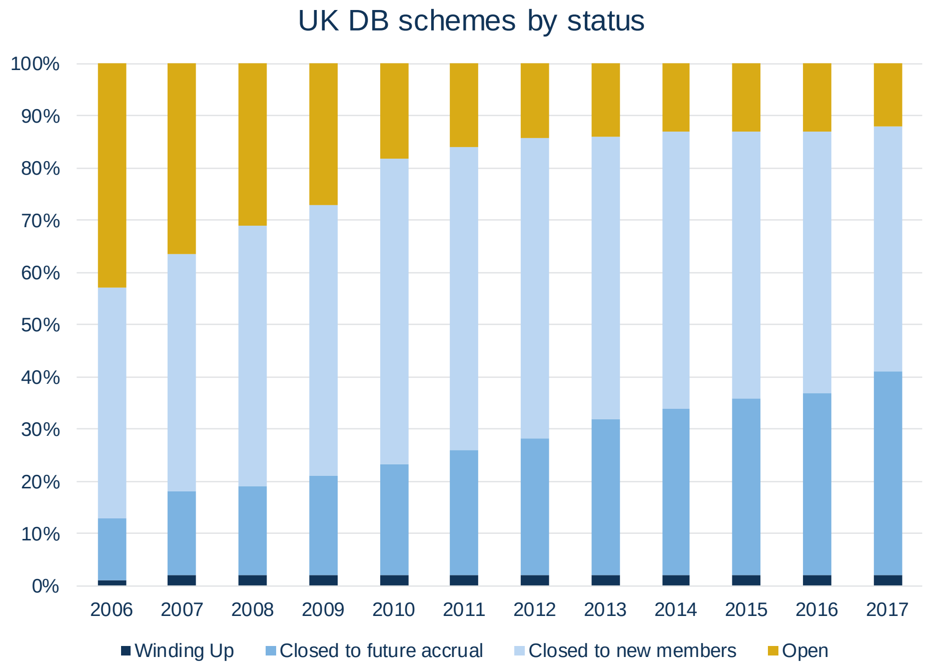
What is a mature scheme?

We define a mature scheme as one where the bulk of liabilities have already accrued and are anticipated to run-off for a number of years. That is, accrued liabilities are a large multiple of the value of all projected future accrual liabilities and winding up is not expected in the next few years.

Key behavioural characteristics driving the scheme's management

1. There is a real end point	As accrual is nil or limited the scheme is definitely in run-off and in demise rather than in a long term static or growth mode. Therefore there is a definite albeit actuarially uncertain end point
2. Benefit cashflows are known	Other than member optionality and demographic uncertainties, long term nominal and real benefit cashflows are highly predictable or could be once the right work has been done
3. Plausible time horizon to which to work towards	For most mature schemes termination and insurance via bulk annuities at some point in the next 20 years is a tangible possibility. This doesn't mean the scheme is actually targeting termination and insurance but the fact that it is a possibility instils various disciplines and mindsets 20 years is a plausible maximum time horizon against which stakeholders (eg trustees, employers) will initiate activity today towards a long term target goal. Beyond 20 years mindsets are more likely to be around deferral to the next generation
4. Key financial and operational risks could be locked down within a decade	Other than for catastrophic risks that cannot be easily mitigated/eliminated, stakeholders may reasonably expect no material financial or operational surprises/burdens from year 10 onwards 10 years is a sufficiently short but still long time over which the majority of pension schemes could and should tackle the issues relevant to mature schemes and by which time the most material funding shortfalls should have been rectified for most schemes
5. Cashflow becomes king	The funding impact of having to disinvest in depressed markets due to mismatched cashflows would be material ie disinvesting over several years in a depressed market to meet benefit cashflows could impact funding levels by several % or more
6. Scheme becomes irrelevant	As institutional memories about the pension scheme diminish the pension scheme progressively becomes less and less relevant to the sponsoring employer and its ongoing business and priorities

The data tells us that mature schemes are becoming the norm in the UK



Few of these will be in scope

Many of these schemes are in scope today. Most will be in scope within the next 10 years

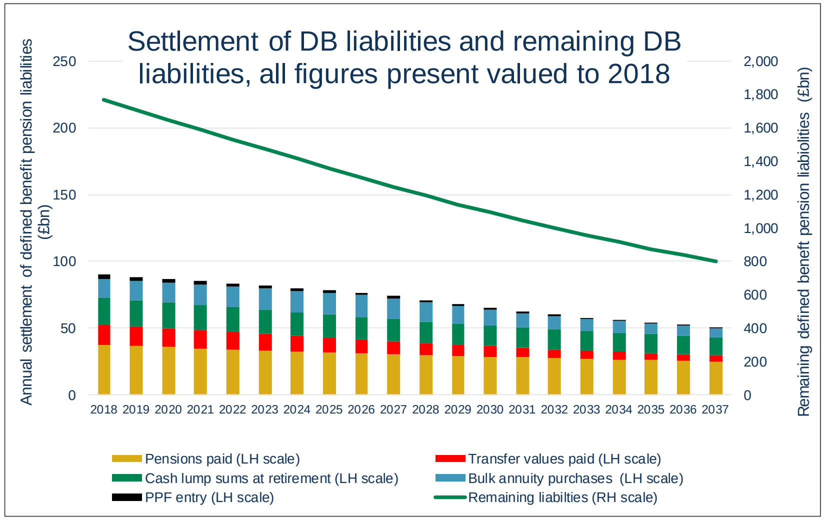
Chart source: PPF Purple Book 2017

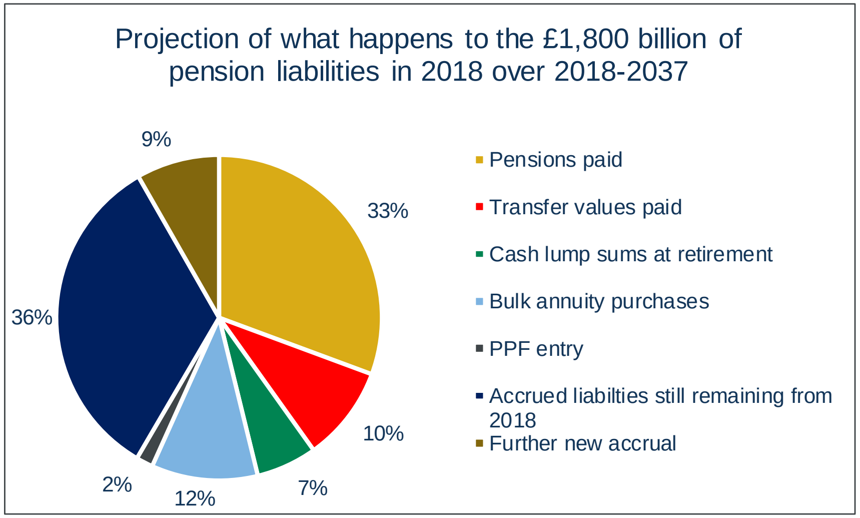
Many factors contribute to the closure of schemes to new members and/or new accrual, which over time leads to increasing maturity – here's six of them

Shift from pension expectations to pension rights	• The regulatory and political environment moved away from a framework of pension promises being fulfilled as long as the employer could afford to do so and anticipated long term investment returns materialised. • Pension expectations were replaced with rights (eg pension indexation) and promises with obligations (eg bulk annuity based debt on employer) • Some changes were retrospective (eg debt on employer framework) whereas others were not (guaranteed pension indexation)
Actuarial and financial practice moved to mark to market	• General financial practice moved towards mark to market (eg replacing book costs with current value) as did actuarial methodologies • Reduction/elimination of smoothing techniques increased sensitivity to risk (some would say inappropriately, but stakeholder sensitivity increased regardless of viewpoint) • This change in approach also opened up the debate of whether pension costs should be recognised on a best estimate basis or on a higher “strong likelihood of delivering” basis, the latter becoming the norm • This introduced higher costs and volatility to corporate balance sheets and P&Ls in an environment in which these then had tangible impacts on achieving corporate objectives • It also resulted in less stability to actuarial funding leading to perceived higher levels of corrective actions when funding was poor
The cost of pension promises increased	• Increased life expectancies and a lower interest rate environment had a genuine impact on costs but benefit structures did not alter sufficiently quickly in response • Other factors also led to more prudent asset strategies increasing expected costs • The cost reductions from being contracted out diminished • Discretionary benefits (eg pension indexation) became contractual without full recognition at the time of the impact on value/cost
DC became a viable alternative	• Legislation to encourage universal pension coverage (eg stakeholder pensions, auto enrolment) helped make DC acceptable amongst employers and credible to employees • The supply of good DC products by providers, quality DC advisers, better communication, improved technology and various other factors meant DC became a viable alternative
Operational costs of running DB schemes increased	• Increased legislative complexity, regulatory requirements and governance standards have led to higher costs of running DB schemes • Also, the operational costs of running schemes have become more transparent as activity has shifted from in-house to out-sourced • PPF levies added an extra layer of cost
Reducing voice of the employee	• Reduced trade union coverage and an altered balance between trade union and employer powers to effect change have made it easier to close DB schemes • Improved communication and change management amongst employers and advisers has facilitated the ability to move employees from DB to DC

The shape of the UK defined benefit pension market will change significantly over the next 20 years

- For illustration, we undertook a simplified projection of what might happen to DB pension liabilities over the next 20 years. We do not claim this as a best estimate, but just one of many plausible future scenarios.
- What it shows is a dramatic change over the next 20 years, with accrued DB pension liabilities reducing from c£1,800 billion in 2018 to only c£800m in 2037 (present valued to 2018). The projection shows the proportion of liabilities relating to in payment members increasing from c40% in 2018 to c65% by 2037, a sign of the significant maturing of schemes over that time.
- Whatever scenario actually unfolds, we think we can confidently say it will involve a material change in the DB pension environment with aggregate liabilities reducing significantly and substantial amounts being paid from DB schemes to members, to savings vehicles and insurers.

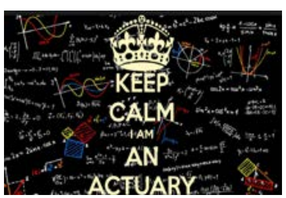




- In due course these projections could be updated to allow for commercial consolidation vehicles of the type proposed by the DWP's March 2018 White Paper. One commentator has suggested that as much as £500 billion of schemes may be suitable for transfer into such vehicles (Financial Times, 20 March 2018, UK's first pension consolidation fund targets £500bn in assets).

Notes: Pie chart shows % of 2018 liabilities. Hence they add to more than 100% due to new accrual. We have not set out underlying assumptions as the projections are simplified - the detail of the assumptions is less important – it is the broader picture demonstrated that is important. The %'s in the pie chart are driven by the assumptions made eg assuming a higher spend on bulk annuities would increase the 12%, lower the %'s for other elements, and the remaining liabilities in 2037 (green line in left chart) would be lower than £800bn. If projected actual cashflows were shown (rather than present valued to 2018) then then bars would be higher and pie chart %'s would change

Why does it matter?



- **Members:** There are millions of individuals in mature pension schemes. Maximising the likelihood that their benefits are delivered in full is key to meeting their expectations and the retirement they've worked towards.
- **Employers:** There are hundreds of billions of GBP of exposures in mature UK schemes. Sub-optimal management of these exposures could impact business activities with a knock on impact in employment creation and the economy.
- **Trustees:** Trustees have the unenviable task of overseeing the transition of their schemes into increasingly mature schemes that, in some circumstances, have lower margins for error. They require advice and services that are tailored to their new circumstances.
- **Actuaries:** Are already intimately involved in advising defined benefit schemes. An environment in which schemes are on a relentless path to maturity introduces challenges and opportunities. Actuaries are uniquely placed to help deliver a successful outcome to all stakeholders.

The different stages of maturity

- We have chosen to use duration to define the different categories of maturity. The Appendix includes material on using % of pensioner liabilities as an alternative measure of maturity.
- Although the duration levels below might be relatively adhoc, the nature of a scheme does change as it moves up these maturity levels:
  - Very immature, 22+ years duration
  - Immature, 20-22 years duration
  - Relatively immature, 18-20 years duration
  - Average maturity, 16-18 years duration
  - Relatively mature, 14-16 years duration
  - Mature, 12-14 years duration
  - Very mature, <12 years duration
- As a Working Party we have focused on the last 3 levels of maturity.

Notes: The above maturity definitions are taken from the TPR Annual Funding Statement Analysis, Tranche 11. "Duration" can be defined in different ways. Where we use duration in this slide book we are generally referring to the concept of a weighted term based measure, unless a specific definition is specified.

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C. Practice and experiences elsewhere

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UK life insurers

Insurance supervisory regime - designed on the basis that insurers should not (do not) fail

- Over the last 20 years a regular observation has been that some pension schemes will fail to deliver pension promises in full[1].
- Hence the pension scheme regulatory regime is designed to cater for pension schemes across the full spectrum ranging from “highly likely to deliver” to “highly unlikely to deliver”.
- This “failure to deliver” feature is partially (but not fully) a consequence of pension **expectations** gradually becoming pension **promises** over the last 20 years due to regulatory changes.
- The insurance regime assumes insurers should have no (or at worst a remote) likelihood of failure.
- Consequently, there are features within the insurance regulatory regime that have no direct parallel to the pension regime, such as solvency capital requirements.
- Nevertheless, it is useful to examine some of these as they are valuable in prompting whether there are lessons to take away for pension schemes.

[1] Between April 2005 and March 2017 some 894 pension schemes of insolvent employers have transferred into the PPF due to having assets insufficient to secure the PPF level of pension compensation via a bulk annuity and there are a further 103 schemes awaiting assessment. This suggests a rate of c1% pa of schemes since 2005 with insolvent employer and <100% PPF funded. Source PPF 2016-2017 Annual Report

Like in pensions, the insurance solvency regime has no specific aspects applying to closed books in run-off

- Interestingly, there are no specific aspects within the insurance solvency regime that apply to mature insurance closed books in run-off. To that extent, the position is similar to the pensions regulatory regime which does not have specific provisions to deal with mature schemes in run-off.
- However, as insurers have a much closer level of regulatory supervision than pension schemes there is a material practical difference.
- The practical application of the insurer regulatory regime is highly tailored to the specific circumstances of each insurer, especially larger insurers, and hence would reflect the specific requirements of a life fund in run-off.
- From a customer perspective (vs financial management), there is increasing regulatory focus on fair treatment of long-standing customers with particular focus on insurance back-books. In effect, ensuring that although an insurance book might be closed, customers continue to be treated fairly. There is no parallel within the pensions regime.

Selected characteristics impacting how insurers operate

Area	Description, as applicable to an insurer	Comment regarding pension schemes
Regulatory approach	Proactive and hands-on. Most insurers other than the smallest would meet their regulators regularly. Insurer regulatory approach supports a thorough approach to managing an insurer	Generally reactive. Supervisory resource applied on a risk based approach. Most pension schemes have no active engagement with the TPR
Shareholder returns	Typically target regular dividends to shareholders (if proprietary offices). Encourages cashflow risks to be managed, the objective being that the insurance book generates a regular reliable release of prudence / out-performance each year	This mindset could be applied by trustees if they so chose ie lock down risks so as to generate small funding improvements each year. Employer mindset likely to be around the scheme not severely impacting cashflow / dividend paying / balance sheet ratios, rather than a small positive release each year
Solvency 2 regime	Although not perfect, the regime strongly encourages an insurer to be run in a way that manages risk	No parallel for pension schemes
IFRS	Penalises balance sheet volatility as P&L directly impacted	Far more lenient approach than for insurers. Only one of many considerations when looking at risk management
Remaining open to new business	Relatively high regulatory hurdles to be open to new business	Low regulatory requirements for remaining open to new accrual and/or new members
Recovery and resolution plans	Required by the PRA. Considers aspects such as “what would you do if you needed more capital?”, “if it went really bad how would the insurer be dissolved etc?”. Encourages real “what if” planning	No direct parallel in pension schemes albeit high level risk mapping takes place for those that have fully adopted IRM. Arguably, recovery and resolution plans would have significant value for pensions schemes albeit unlikely to be proportionate for smaller schemes
Member options	The FCA closely supervises various areas impacting customers. One area of interest is value for money for member options. FCA supervision focuses on whether terms are justifiable with good and fair customer outcomes	No parallel for pension schemes albeit some TPR guidance on member options. Differences between insurance and pensions means different approaches make sense. However, degree of analysis and documentation by insurers is far more extensive. Arguably some pension options would not meet insurer fairness tests
Globally significant insurers	Insurers classed as globally significant have a greater level of supervision and additional capital requirements	Some UK pension schemes might be classed as “nationally significant” eg failure would impact significant numbers of individuals and likely bring political scrutiny – should they be identified and supervised more?
ORSA - Own Risk and Solvency Assessment	Annual. Requires insurers to take future developments into account including new business plans or the possibility of catastrophic events which might impact financial standing. A focus on identification, measurement and proactive management of risks	No direct parallel albeit high level risk mapping takes place where IRM fully adopted. Arguably, as the possibility of failure is recognised for schemes, worrying about the wide range of low probability catastrophic events might be disproportionate. Focus tends to be (quite rightly) on covenant risk and ALM risks

How does the PRA supervise small insurers?

It might be assumed that all insurers are large and hence their much heavier supervision is justified and proportionate. We thought it would be useful to set out some extracts from the PRA's website on the supervision of small insurers, albeit the PRA does not define what it means by a small insurer. This illustrates quite well the tighter regulation of insurers of all sizes. Generally speaking supervision of pension schemes is only likely to increase, hence the table below may be a signpost of things to come.

What is PRA's approach to the supervision of small insurers?	"The intensity of the PRA's supervisory activity will vary across insurers. The level of supervision will principally reflect the PRA's judgement of an insurer's potential impact on policyholders and on the stability of the financial system, its proximity to failure, and its resolvability. Other factors that will play a part include the type of business done by the insurer and the complexity of the insurer's business and organisation."
Do we have a supervisory contact?	"The supervision of smaller insurers will no longer be undertaken by a single team. The prudential supervision area of your firm will be supervised by the PRA. The conduct supervision area of your firm will be supervised by the FCA."
How often do we expect supervisory visits from the PRA?	"Small insurers will not be visited by the PRA on a fixed, regular schedule. Notwithstanding this approach, all insurers, regardless of category, will be subject to on-site work by the PRA - with some period of notice - at any time. In 2016 the Smaller Insurers Team has conducted pilot regional visits, meeting a selection of firms from a region. It is expected that this will continue into 2017."
Are we subject to Solvency II?	"In general terms, Solvency II applies to all insurance and reinsurance firms, including those firms in run-off, with gross premium income exceeding €5 million or gross technical provisions in excess of €25m."
How do the reverse stress testing requirements apply to my firm?	"Reverse stress-testing is part of our overall stress-testing regime and requires firms to: • clearly identify and assess the scenarios that renders a business unviable; • analyse the likelihood of these scenarios occurring; • determine the potential impact of this scenario on the viability of the firm; and • take mitigating actions now, or put in place triggers for actions in the future. The PRA will consider it important for insurers' senior management and boards to have an explicit understanding of the circumstances in which their firm might fail."

See: http://www.bankofengland.co.uk/pra/Pages/supervision/smallinsurers/faqs.aspx#2

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Overseas

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Overseas – we surveyed the three countries with the largest DB exposures: US, Netherlands and Canada

- Our purpose was to identify any materially different approaches to mature schemes than UK practice.
- We recognised that very different regulatory regimes, cultures and historic development of pension systems means that a comparison would be difficult.
- It was clear that overseas pension schemes face the same problems as UK schemes: low interest rates, increased longevity, low funding levels.
- Reassuringly we did not identify any "magic bullet" approaches or solutions that were not known to the UK market.
- Anecdotally there is no bias of UK schemes of non-UK multinationals towards/against de-risking. This suggests corporate attitudes to pension risk are sufficiently common regardless of nationality.

Key observations		
Investment delegation	**Annuitisation**	**Active members**
In all countries smaller schemes tend to delegate investment strategy and implementation	Far fewer schemes overseas are targeting annuitisation as their ultimate target	Many DB schemes remain open (primarily due to social expectations, employee representation etc) which means that extensive practices around mature schemes have yet to become common

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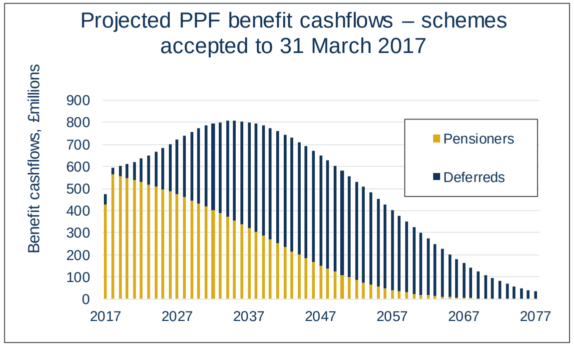
Pension Protection Fund

4 May 2018

Why is the PPF relevant?

- No active members.
- The PPF is a mature scheme in terms of duration of liabilities. New schemes onboarded by the PPF tend to increase its size rather than radically alter overall duration.
- At some point in the future the number of schemes entering the PPF will diminish meaning maturing will gather pace – the PPF knows this and has thought about it.
- The PPF has put considerable effort into devising a management strategy to run-off successfully in the long term.
- The scale of the PPF means that it has had the scope to consider most areas in depth.



Value of PPF liabilities at 31 March 2017

	£m
Deferred pensioners	11,005.8
Pensioners	10,267.8
Administration expenses to be met by the PPF	704.9
Current liability (AVCs to be discharged)	0.5
Total	**21,979.0**

Source for charts: PPF 2016-2017 Annual Report

How is the PPF managed – points relevant to DB pension schemes

Area	Observation
Strategy	Targeting self-sufficiency by 2030, by which time it is anticipated that new scheme claims on the PPF will be low in relation to PPF liabilities for past schemes. Self-sufficiency defined as fully funded on best estimate basis + 10% buffer
Models for decision making	Extensive analysis and stress testing of future funding/ cashflows through the PPF's "long term risk model"
Long term target	Much thought has been given to what would constitute self-sufficiency. The overall approach has been extensively modelled using the PPF's own long term risk model ("LTRM"). The PPF monitors the probability of achieving self sufficiency and extent of loss given failure
Benefits and data	Schemes tend to arrive ill prepared for winding up. Many have poor records, administration quality often having been a casualty of cost saving prior to the demise of the business. Benefit ambiguities common and costly/time-consuming to resolve. Often a professional trustee has arrived as the company enters distress who is grappling with this. However PPF assessment does force a once-and-for-all resolution of these issues – administration "clean" thereafter. The PPF has a simplified benefit structure and, in the extreme, can reduce PPF Compensation levels
Funding	Based on low risk metrics – accounts based on swaps/gilts without adjustment; LTRM on accounting or s179 measures; currently in surplus
Governance	Substantial in house executive management team plus a non-executive board
Use of insurance	None at present, reflecting size
Asset strategy	Strategic asset allocation of 40% liability hedging, 47.5% return seeking and 12.5% "hybrid" (characteristics a mixture of liability hedging and return seeking). Targets returns of liabilities + 180bps. Risk budget has been increasing based on requirements of levy payers and the currently strong covenant they are considered to represent
Expense budget	Managed based on a mix of in-house and external service providers, switching between these over time. Have recently started bringing investment capabilities in-house

Note: Various references including the PPF 2016-2017 Annual Report and the PPF December 2016 Statement of Investment Principles

Institute and Faculty of Actuaries

D. UK schemes – current practice and potential future developments

Introduction to this part of the slide book

- In this part of the slide book we take a tour across various features whose practice we'd expect to differ depending on maturity. For each of those features we ask four questions:
  1. How do we define that particular feature?
  2. Using a dashboard approach, what would we expect to observe for different levels of maturity? This is a theoretical viewpoint which does not necessarily take account of real life environment and pressures
  3. What do we actually observe? In other words, we step away from the theoretical and summarise what we see in practice
  4. How would we expect practice relating to that feature to change in future? Here, we consolidate what we expected and what we actually saw to comment on how practice might develop over the future
- The features we've covered are as follows. These are not exhaustive but they are a mixture of the features we felt were most relevant and that had observations and data available to make them interesting to explore. We feel all key areas relating to mature schemes are touched upon across these 12 features:
  - 1. Pace of funding
  - 2. Covenant (incl. separation)
  - 3. Contingent assets
  - 4. Liability management
  - 5. Cashflow matching (incl. hedging)
  - 6. Asset allocation
  - 7. Outsourcing
  - 8. Locking down the benefit liabilities
  - 9. Bulk annuities
  - 10. Journey plans
  - 11. Employer relationship/governance
  - 12. Expense management

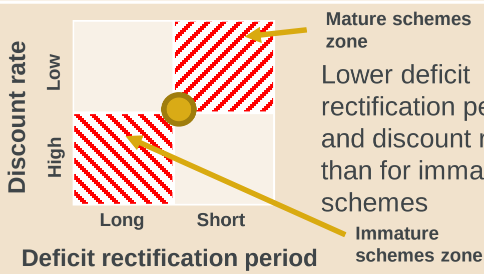
1. Pace of funding – introduction

What is it?

- By pace of funding we refer to how quickly shortfalls are recognised and rectified through contributions.
- This pace of funding is normally the outcome of the actuarial valuation process. This process reflects a complex series of interactions, primarily, between strength of covenant, asset/hedging strategy, powers and risk appetites.
- For the purposes or our analysis we have used two measures for pace of funding, namely:
  - Deficit rectification period
  - Discount rate for technical provisions
- These are not perfect measures but their advantage is that there is industry data relating to them and they should act as a common measure for comparison between schemes.
- To some extent discount rate is also a proxy for asset strategy, which is considered in a later section as well.

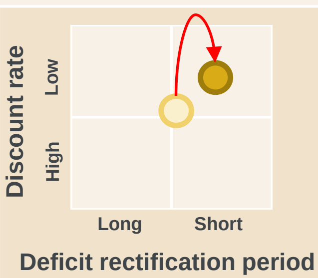
Dashboard – what we'd expect

Relatively mature



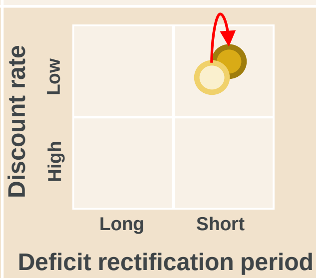
Lower deficit rectification periods and discount rates than for immature schemes

Mature



Deficit rectification periods and discount rates reduce by tangible amounts as schemes mature further

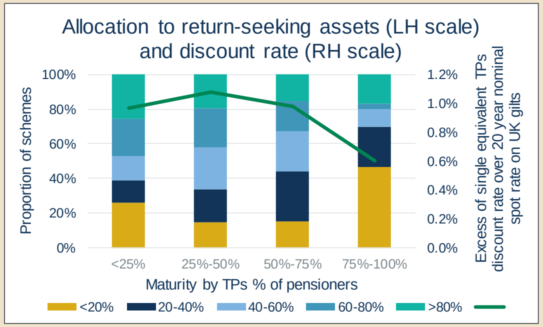
Very mature



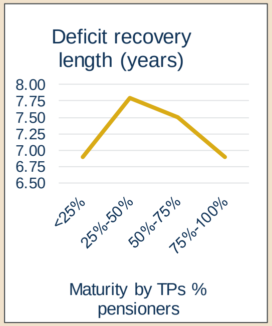
Expect further but much smaller reductions in deficit rectification periods and discount rates as there is a limit to which these can reasonably reduce

1. Pace of funding – observed practices

What the data shows



- TPR data shows discount rates reduce with increased maturity.
- Although the reduction is apparently small, at 40bps between 50-75% and >75% pensioners, this nevertheless corresponds to a not insignificant higher funding level of perhaps 6% of technical provisions.
- It can be seen that the change in discount rate corresponds with reductions in asset risk.



- Recovery plan lengths are marginally shorter for more mature schemes but the quantum of c.1 year is not felt to be material.

Qualitative observations

- For mature schemes funding contributions are expressed as £ amounts, with or without index-linking, reflecting the breaking of the link with active pensionable salary roll.
- Where investment strategies are more defensive, the scope for recovery plans to rely on investment outperformance is less, so we would expect contributions to be higher for a given monetary deficit and recovery plan length. So the apparent similarities of recovery plan length might mask higher contributions as % liabilities for more mature schemes. Data for this is not available in the public domain.
- Even for the most mature schemes, funding targets generally rely on a level of investment return above gilts until the last pension payment is made.
- Contributions are generally based on employer affordability and the balance of power between sponsor and trustees – maturity is not usually a driving factor.
- Mature schemes typically have higher levels of hedging /matching and as a result are more likely to use a ‘gilts+’ approach to setting discount rates (and use of full yield curves) which ensure consistent asset/liability valuation and a more precise measure of reliance on returns from non-matching assets. Use of ‘swaps+’ or ‘bonds-’ discount rates is less common.
- Behaviours are largely size-independent.

Note: Source for charts from TPR Scheme Funding Statistics June 2017. The left hand chart can be read as follows: The second column represents schemes that have between 25%-50% of TPs represented by pensioners. The gold coloured slice at the bottom of that bar represents schemes with less than 20% of return seeking assets and by reading off the left hand scale the proportion of such schemes is c. 15% of all schemes with 25%-50% of pensioner TPs. Now reading off the green line in that column and the right hand scale it can be seen that the average TP discount rate across schemes of this maturity is c. 1.1% above gilts.

1. Pace of funding – looking to the future

Evolution of TPs

- The focus on TPs does not capture the essential arbitrariness of the measure – a scheme which is fully funded on TPs is (generally) not de-risked and cannot afford full bulk annuities.
- We would expect a trend towards ‘self-sufficiency’ TPs which implies a more stable position for a fully funded scheme. This will likely be reinforced by the DWP’s proposals[1] for promoting clearer funding standards including taking a long-term view when setting a scheme’s statutory funding objective.
- We would expect more emphasis on assumptions other than the discount rate as the scheme becomes more fully matched.

Avoiding the forgotten legacy trap

- As noted elsewhere in the slide book, it is harder to obtain contributions from a sponsor which no longer has any interest in the success of the scheme beyond avoidance of regulatory action or reputational loss.
- So we would expect mature schemes with the same funding position to generally demand a stronger funding solution. It can be helpful to argue that a recovery plan extending long beyond the last retirement lacks credibility even if not strictly relevant economically.

Starting from the ALM

- For most schemes without full hedging, the idea of paying fixed contributions up to a fixed recovery period end date 10-15 years hence does not reflect reality because of the level of uncertainty. A recovery plan is only likely to end (in the sense of deficit contributions stopping) when a satisfactory level of de-risking and funding is achieved.
- In particular it will increasingly be seen as pointless to present separate “funding” numbers whilst the real strategy is embedded in the journey plan which flows from investment modelling.

Bridging the buyout gap

- Many schemes would wish to buyout at some point, even if that is after an extended period of running as a closed mature scheme. However, even self-sufficiency technical provisions do not cover the gap between technical provisions and buyout funding. Whilst this gap narrows with time it is still very material and easily lost sight of. We would expect schemes to become more sophisticated in how they derive their buyout funding level.

Running faster to keep up

- As cash outflow increases the level of deficit contributions required to keep the funding level from falling rises. This effect is magnified in the presence of assumed investment outperformance. Given the focus on funding levels as the benchmark (rather than £ shortfalls) we would expect this effect to lead to increased de-risking. See the Appendix.

Note 1: See DWP’s March 2018 White Paper

2. Covenant (incl. separation) – introduction

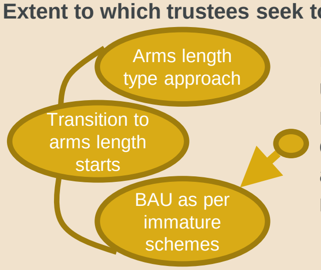
What is it?

- The combination of the sponsoring employer's ability, willingness, and obligation to support the scheme. This flows from the structure of the legal relationship with the sponsor, the degree of access to its assets and cashflows, and is constrained to the extent that these assets/cashflows are inadequate to meet the scheme's needs.
- At the extremes, the covenant may be very strong (e.g. a government guarantee) or zero (the sponsor has no remaining resources). Most schemes have a covenant which is intermediate, and the covenant then has a substantial influence over the level of risk which the scheme can or should take in relation to investment strategy and the level of funding.
- TPR expects schemes to recognise that covenant, funding and investment are usually closely intertwined, and adopt an Integrated Risk Management process to deal with them together.

Dashboard – what we'd expect

Relatively mature

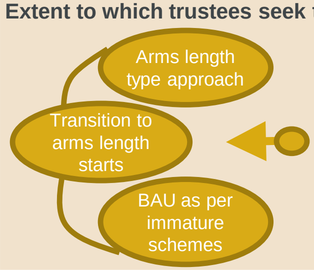
Extent to which trustees seek to lock down covenant



Example: Clear understanding of the nature of the covenant and appropriate monitoring

Mature

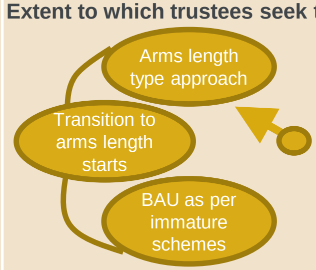
Extent to which trustees seek to lock down covenant



Example: S75 risks associated with cessations by individual employers identified and managed

Very mature

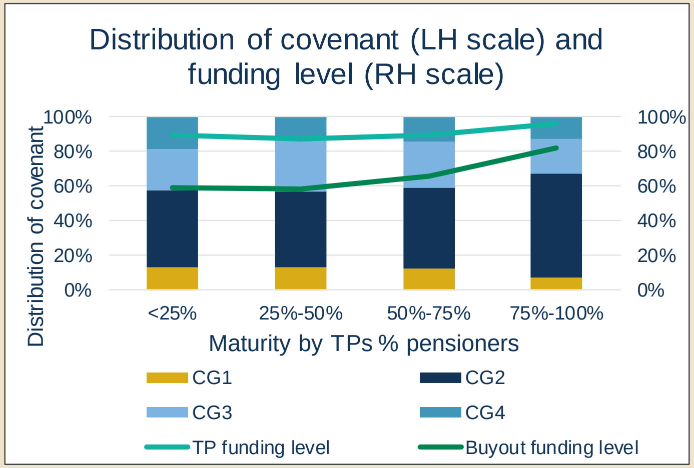
Extent to which trustees seek to lock down covenant



Example: Sponsorship rationalised to a single entity with clear legal arrangements around access to group resources

2. Covenant (incl. separation) – observed practices

What the data shows



- Mature schemes show a lower dispersion of weaker covenants than other schemes. (Interestingly, the prior year data (not shown) showed similar covenant dispersions for all maturities – so over the year the covenant position appears to have improved the most for mature schemes).
- Perhaps a reason is mature schemes with CG3/CG4 employers work even harder to get to buyout due to the weak employer covenant. This then reduces the number of mature schemes with CG3/CG4 employers to those for which buyout is not yet attainable.

Covenant Group definitions: CG1 = strong, CG2 = tending to strong, CG3 = tending to weak, CG4 = weak

Qualitative observations

- For mature schemes, weaker covenants have typically resulted from the decline of the sponsor and/or its restructuring, such that the scheme no longer has access to the main sources of value. Often trustees do not expend resources (and expense and goodwill) to lock down legal arrangements around the covenant until it starts weakening (by which time it may be too late).
- Even where the covenant is stronger, it is unlikely that the scheme is still seen as core to the requirements of the business. So engagement with the sponsor will often be a contractual one with a legacy liability to be managed, and with the sponsor viewpoint of the scheme being primarily from a financial perspective only.
- See section 11 for the implications for behaviour and governance – here we concentrate on the legal /financial issues.
- Contingent assets are used in a significant minority of cases to provide additional/alternative security – see section 3.

Note: Source for charts from TPR Scheme Funding Statistics June 2017

2. Covenant (incl. separation) – looking to the future

Risk appetites and strengthened covenants

- Unlike at present, it will become common for the risk appetite of the sponsor and trustee and the approach to scheme management to vary considerably depending on covenant. This will be particularly true for mature schemes, because their cashflow needs typically increase the funding sensitivity, and the period over which it is sensible to address deficits is typically shorter.
- Because the risks run in schemes will become more closely attuned to affordability and mature schemes will seek to lock down the covenant including legal arrangements around covenant, relative covenant will strengthen.

Separation between scheme and sponsor

- Thus far it has generally been a priority to maintain the link between the sponsor employer and the scheme – historically TPR has not promoted “abandonment” transactions which broke the link, and articulated that the best security is a healthy sponsor.
- However, as the maturing process continues a responsibly executed separation process will increasingly be accepted as value-adding and become more common – recent well publicised examples, which may form template arrangements for further cases in future, are Halcrow, BHS and British Steel.
- We also note that DWP plans to consult[1] on a legislative framework and authorisation regime to enable employers to break the link to a scheme in conjunction with the scheme entering a commercial consolidation vehicle.

Securing the best result for members

- Following on from the above, a much larger number of schemes will formally acknowledge that there are substantial risks to the delivery of full benefits for all members which the sponsor cannot adequately address. They will then focus on maximising the outcome for members until circumstances beyond the control of the trustees force crystallisation of the funding position into either PPF entry or PPF+ partial benefits secured with a bulk annuity or a commercial consolidation vehicle[2].
- This will likely lead a large variety of unique and complex funding / investment strategies and legal structures and difficult trade-offs around how different cohorts of members gain/lose.

Notes 1 and 2: See DWP’s March 2018 White Paper

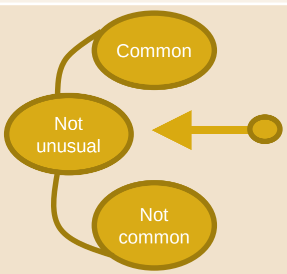
3. Contingent assets – introduction

What are they?

- An asset or other security, outside of the pension scheme, that can be utilised by the trustees for funding purposes in the event of pre-agreed triggers.
- A contingent asset is useful as a means of avoiding trapped surpluses ie reduce scheme funding but offer a contingent asset to the trustees.
- Within a mature scheme surplus cannot be utilised via a reduction in future service contributions and so the risk of a trapped surplus is higher.
- An advantage of suitably structured contingent assets is that they reduce PPF levies.

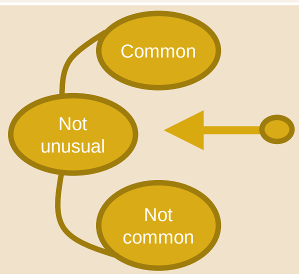
Dashboard – what we'd expect

Relatively mature



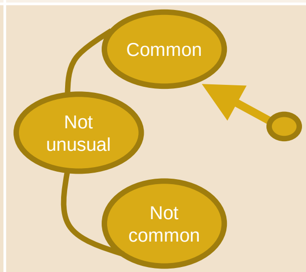
We'd expect contingent assets to not be unusual - trustees want better funding, employers want to avoid trapped surpluses

Mature



We would not expect increased prevalence of contingent assets for a slightly more mature scheme

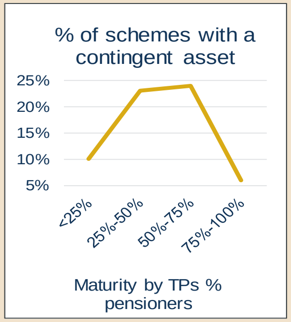
Very mature



For very mature schemes we see three scenarios: (a) scheme already in surplus, or (b) strong covenant, or (c) contingent asset

3. Contingent assets – observed practices

What the data shows



- The data shows that prevalence of contingent assets increases as schemes become more mature but then suddenly drops off for very mature schemes. Previous year data (not shown here) shows a similar position.
- An earlier chart showed much better average TP and buyout funding for the most mature schemes (eg 66% buyout funding in the 50-75% maturity band vs 82% in the >75% maturity band). Hence there may be less need for contingent assets, particular given covenant distribution showing only 33% of the most mature schemes with "weak" or "tending to weak" covenants.

Qualitative observations

- The majority of contingent assets are parent support rather than escrow or security arrangements.
- Available data excludes asset-backed contribution arrangements which typically have similar economic characteristics to property-backed contingent assets but are classed as actual assets.
- Experience suggests that contingent assets are very diverse in both design and significance (eg a guarantee may be crucial if unlimited and backed by a strong sponsor, but near-worthless at the other extreme if limited and backed by a weak vehicle) – treating them on their merits is crucial.
- Size of scheme generally doesn't impact prevalence of the types of contingent assets used . The exception is a charge over assets which is much more prevalent for smaller schemes[1].

Note: Source for charts from TPR Scheme Funding Statistics June 2017
[1] Source Aon's Global Pensions Risk Survey – 2017

3. Contingent assets – looking to the future

Transition to direct parent support

- As discussed in the covenant section, we expect parents will increasingly opt to be the direct source of scheme support rather than guaranteeing the obligations of their subsidiaries, so the prevalence of parent guarantees may fall.

Use to manage pre-buyout period

- We believe that many mature schemes will move to a position where the employer is able and willing to buyout but reasonably wishes to control the process so as to get the best deal. Contingent assets in the form of security over property and/or an asset pool provide a natural mechanism for this.
- At one extreme, assets can be put in an escrow account and managed in a way consistent with, and co-ordinated with, those of the scheme, with a view to them being used to insure the scheme at a later day with a reversion to the sponsor if not required. This is currently uncommon.
- Alternatively a broader range of assets may be held in a pool, or security granted over sponsor assets. Because of the lower level of matching these will generally need to be over-collateralised to achieve the same level of security. This may be acceptable if the employer does not want to provide cash to purchase specific assets in advance, therefore retaining flexibility to raise the final buyout balance payment in another way at a later date.
- As the likely level of buyout funding required becomes clearer, use of an increasingly hedged escrow asset pool becomes more attractive. However it may not make sense for funds which are certain to be required, as usually escrow returns are taxable until the funds are actually transferred to the scheme.
- Security to the trustees can be provided by a bank guarantee, but the bank will often seek security arrangements in the background which may have a similar effect to providing security/guarantee to the trustees directly. This can be a route to parent company support.

Trapped surplus management

- As funding levels improve over time employers will be reluctant to pay additional funding if they are advised there is a likelihood of trapped surplus. Contingent assets will be used to bridge the gap to trustee target funding.

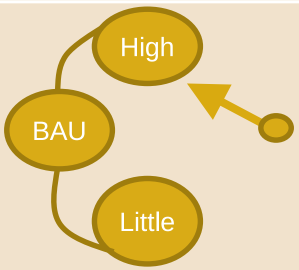
4. Liability management – introduction

What is it?

- Liability management is the reduction of risk via changing the shape or the quantum of the projected benefit cashflows from those otherwise payable in the normal course of events. This is typically effected by crystallising some or all of future pensions in exchange for an immediate or deferred monetary value. Examples include transfer values, flexible early retirement, pension increase exchange, trivial commutation and winding up lump sums (WULS).
- Liability management is usually enacted by actively highlighting (or slightly modifying) existing options to members (either on standard or enhanced terms) or by instead offering members additional choice e.g. via changing the shape of their benefits.
- Execution is either via a (targeted) multi-member exercise or on a member by member basis in response to life events.

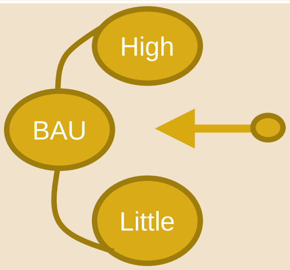
Dashboard – what we'd expect

Relatively mature



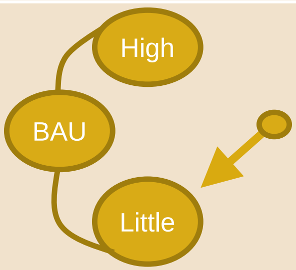
Multi-member exercises being run **<u>or</u>** active decision made not to actively offer options on a multi-member basis

Mature



Many multi-member exercises likely to have already been effected. Options now offered in response to life events such as retirement

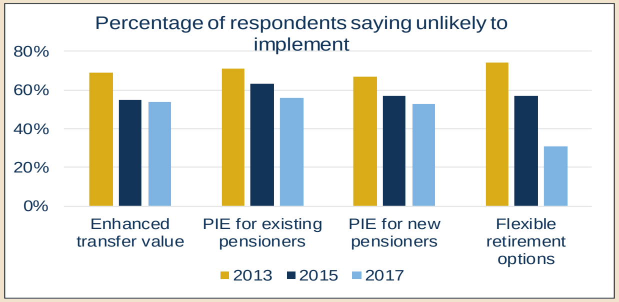
Very mature



Few opportunities remain for members to take options. Benefits largely crystallised and cashflows locked down.

4. Liability management – observed practices

What the data shows



- Available data in recent years show increased awareness and willingness to utilise liability management approaches.
- It is likely that appetite has increased through more understanding of the risk framework following a period of stasis immediately post the revised Code of Practice applying to Incentive Exercises (published June 2012).
- Member led transfer values have increased in popularity since the pension freedoms in 2015 – a survey of 800 financial advisers by Royal London indicates a growth of more than 50% in the volume of transfers out from DB schemes in the 12 months to June 2017. This change in behaviour complements the de-risking focussed exercises undertaken by schemes.

Qualitative observations

- Routinely seen as an integral part of the de-risking journey plan to full-funding/self-sufficiency. Trustees are increasingly embracing liability management exercises rather than them being something strongly encouraged by sponsors.
- Tends to increase scheme maturity / reduce duration of liabilities when implemented via encouraging transfers out of non-pensioners and / or re-profile of pensions with less emphasis on annual indexation.
- Practice tends to be consistent for both small and large schemes. The outcome of liability management exercises for small schemes is much more dependent on the engagement of a small number of individuals - therefore the overall outcome is more volatile.
- Trustees, employers and advisers are generally fully cognisant with the Code of Practice on Incentive Exercises.
- Robustness of offer and communication around the exercise is essential. Exercises are now customarily built around sharing of value with members from a risk mitigation perspective rather than seeking to retain all funding gains.
- Most schemes will do at least one exercise during run-off with particular emphasis on cost effective disposal of small benefits and reducing complexity/hedging costly benefits.
- Care required for “vulnerable” members (e.g. > age 80, health issues) as financial decision making may be impaired.
- Winding up lump sum (WULS) exercises are common for schemes being wound up. This suggests trustees would offer WULS whilst ongoing as well if legislation allowed them to do so.
- It remains to be seen whether such exercises have lead to increased selection against pension schemes and indeed, whether the cost of this will ultimately be picked up by sponsors.

Chart source: AON Global Pension Risk Survey 2017

Note: Correlation is not causation – data by scheme maturity was not available. Although the chart shows increasing willingness to implement member option exercises, which correlates somewhat with increasing scheme maturity, it cannot be assumed the underlying factor is maturity.

4. Liability management – looking to the future

Optimal strategy

- Most mature schemes will have a detailed long term strategy incorporating the structured use of member options.
- Experience shows that allowing for typical take up rates and the range of available options, liability management can alter/remove around 20-25% of liabilities and forms part of medium term journey planning, with the liability management strategy dovetailing into the run-off plan for the scheme.

Timing

- Schemes will generally seek to complete multi-member exercises before the scheme becomes overly mature although cashflow constraints can impair the optimality of any liability management strategy.
- Successfully timed exercises will give greater cashflow certainty, increased funding clarity to trustees and sponsors together with enabling members to refine their retirement planning and make better informed decisions.

Actuarial

- Techniques will develop to inform how option terms and funding assumptions should be adapted to reflect the potential selection effects of multi-member option exercises although selection is perhaps difficult to gauge at the individual scheme level.
- The potential impact of selection is likely to factor into bulk annuity pricing via increased premium pricing where the (perceived) risk of selection has increased due to scheme-based liability management exercises.

Bulk annuity market

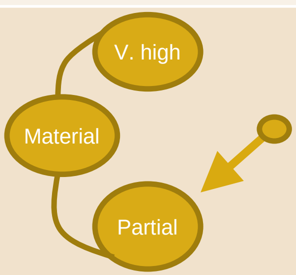
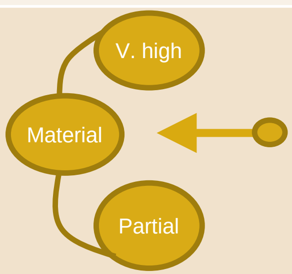
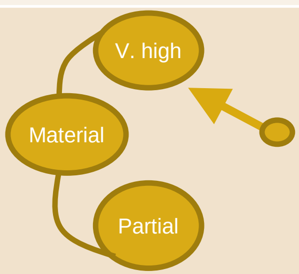
- Products may develop that mean trustees can undertake liability management exercises after agreeing bulk annuity purchase without excessive loss in financial upside.

5. Cashflow matching (incl. hedging) – introduction

What is it?

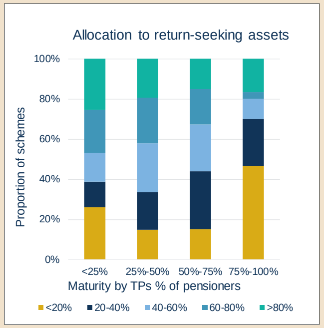
- Purchasing assets and hedging instruments so that cashflow receipts coincide with benefit liabilities.
- There is an assumption that schemes should be more matched as they mature. Otherwise they are exposed to forced asset sales to fund benefit outgo either at depressed prices in liquid markets or in the face of illiquidity.
- Capital losses are particularly painful for mature schemes as they have less time for assets to grow to make back the shortfall.
- It is generally accepted that matching assets take the form of bonds (and swaps) with the key pay-out uncertainty being credit risk.
- Liability Driven Investment Strategies ("LDI") have become a key way for schemes to manage these risks.
- Actuarial decrements, like mortality, would continue to impact liability cash flows, and so an element of uncertainty remains.

Dashboard – what we'd expect

Relatively mature	Mature	Very mature
 Focus is around reducing volatile return seeking assets and purchasing bonds with duration similar to liabilities	 Return seeking assets substantially reduced. Care to purchase bonds with matching cashflows. Swaps or pooled LDI funds common	 Significant emphasis on matching cashflows. Illiquid assets accepted as long as cashflows match

5. Cashflow matching (incl. hedging) – observed practices

What the data shows



- Schemes have shown a material reduction in allocation to return seeking assets, with an increased focus on managing risks.
- The primary toolkit for doing this over the past 15 years has been a Liability Driven Investment (“LDI”) strategy, which uses a mix of fixed income derivatives and bonds to manage the interest rate and inflation risk in the liabilities.
- Total exposure to LDI has risen to £900bn as at 31 Dec 2016, with around 1,800 schemes now employing some form of LDI strategy (Source – KPMG 2017 LDI Survey).
- Chart shows lower allocations to return seeking assets for the most mature schemes but there remains a significant proportion for which this is not the case.

Qualitative observations

- LDI strategies have become increasingly used over the past 15 years as they give schemes increased certainty. The use of leverage (primarily through swaps) allows schemes to manage risk whilst not tying up capital and sacrificing return required to meet deficits.
- LDI is now largely commoditised with all schemes now able to access leveraged solutions, usually through pooled funds. Bulk annuities offer perfect cashflow matching on a pooled basis – one of the many reasons for their purchase.
- For mature schemes that have had LDI for a number of years (over 10 years), the level of leverage in portfolios will now be much smaller as deficit contributions have been used to pay down leverage (i.e. purchase bonds physically, instead of using derivatives).
- Despite the fall in yields over the past several years, trustee boards of mature schemes that have historically not run hedging strategies have recognised that they can’t afford to be running unhedged risks. So they are often the most receptive to running high hedge ratios.
- Increasingly LDI strategies are incorporating a further element of cash flow matching through the integration of credit and LDI. This is done either synthetically (i.e. CDS) or physically by purchasing corporate bonds.

Chart source: TPR Scheme Funding Statistics June 2017, based on the 1,324 schemes in actuarial valuation tranche 10 analysed by the TPR

5. Cashflow matching (incl. hedging) – looking to the future

Increased focus on cash management

- Derivatives have become a fundamental part of scheme asset strategy to meet cash flows, but regulatory change is forcing users of derivatives to hold more cash for collateral.
- This leads to a funding drag (as cash earns less than gilts), which mature schemes can't afford.
- The relatively illiquid nature of longer dated cash flow matching assets (for example property funds), means that cash flow negative schemes need to be able to access cash efficiently when required.
- Over the next few years, we expect an increased focus on cash management (i.e. minimising drag) and liquidity (i.e. maximising liquidity to meet benefit payments) within scheme portfolios.

Increased use of synthetic strategies (credit and equity)

- Historically schemes have obtained interest rate and inflation hedging "synthetically" (through swaps), whilst maintaining "physical" exposure to return seeking assets to repair deficits.
- Changes in the regulatory and investment landscape mean that this relationship is starting to shift, with schemes now holding more "hedging" exposure physically (through bonds), and accessing return seeking exposure to repair deficits and protect capital through derivatives.
- Mature schemes in poor funding position need to protect capital first and foremost, so we expect an increased focus on strategies that can protect capital without sacrificing return.

Increased focus on matching insurance company asset positions

- When schemes are far from buyout (both in terms of funding position and time frame), it is enough to try and broadly match the strategies underlying insurance company bulk annuity pricing.
- As schemes mature, where buyout is the end target, schemes need to be much more conscious of the asset mix that they hold and how an insurance company views this.
- Illiquid or esoteric instruments will lead to bulk annuity insurers pricing bulk annuities less keenly or bulk annuity purchase being impeded until those assets are sold.
- Further matching of the granularity of insurance firms preferred asset mix will be key for mature schemes.

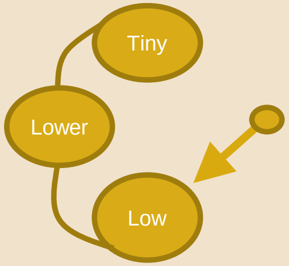
6. Asset allocation – introduction

What is it?

- The mix between “matching” and “return seeking” assets. Matching assets (eg bonds) have relatively predictable payouts other than credit risk. Return seeking assets have less predictable payouts but higher expected returns.
- The expectation is that as schemes mature there will be increased allocations to matching assets as:
  - The impact of deficits become more painful
  - The risk of trapped surplus becomes larger
  - The likelihood of having to disinvest during depressed market conditions gets larger, and
  - Time horizons are too short to take investment risk
- This expectation is largely formed based on how insurance companies and “self sufficient” schemes run their investment strategies.

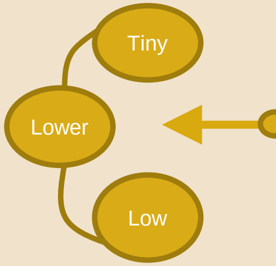
Dashboard – what we’d expect

Relatively mature



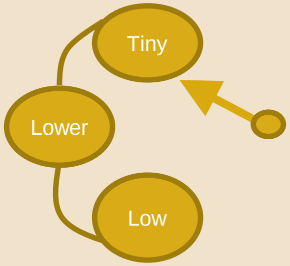
Return seeking is the smallest asset class but still nevertheless sufficiently large to make a material impact on expected returns

Mature



Return seeking allocation significantly lower. Funding triggers to reduce the allocation further are common.

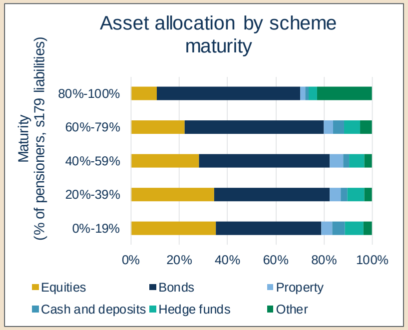
Very mature



Return seeking either nil or very small with a definite plan in place to reduce to nil.

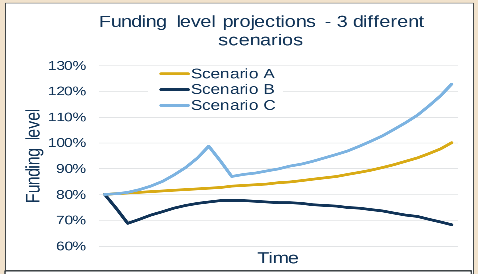
6. Asset allocation – observed practices

What the data shows



- PPF data shows the higher the maturity the lower exposure to return-seeking assets.
- However the difference is not as much as might be expected.
- The 60-79% maturity band schemes have a c 40/60 bonds/return seeking allocation, compared to c50/50 for the very immature 0-19% band schemes.
- Beware of extremes: the data for 80-100% maturity band schemes is dominated by a single large scheme.
- Unweighted data is not published. No other data has been found that shows prevalence by scheme maturity in materially more granularity.

Qualitative observations



Scenario A: No market volatility. Asset return = assumptions made for each year in recovery plan
Scenario B: During first 3rd of recovery plan asset returns negative in early years then higher in following years. For the last 2/3rds of the recover plan period asset return = assumptions made
Scenario C: During first 3rd of recovery plan asset returns higher than assumed in early years but then lower in following years. For the last 2/3rds of the recover period asset return = assumptions made

- Increased allocations to matching assets over time is generally seen as a "good idea" and is implicit or explicit in many flight plans.
- The intellectual basis is the increased risk from adverse experience for a negative cashflow scheme, since the opportunity to benefit from subsequent asset recovery is lower.
- Typically the strategy is based on reducing the exposure to return-seeking assets without necessarily relating this directly to actual risk bearing capacity.
- Schemes targeting self-sufficiency often seek a return of c50bps above gilts and unhedged longevity. Spread may be higher. Often silent on expenses. So still a significant risk retained. Experience is that self-sufficiency asset allocations typically comprise c85% fixed interest (mixture of credit and gilts) plus some diversifiers.

Chart sources: Asset allocation chart – PPF Purple Book 2016 – note that the heavy concentration to 'Other' for the 80-100% mature schemes is explained by one large scheme with a heavy concentration in annuity policies. Funding level chart from TPR's Annual Funding Statement Analysis (Tranche 11)

6. Asset allocation – looking to the future

Increased focus on recovery risk

- Although exposure to return seeking assets is typically reduced as schemes mature, the average exposure remains above what might be expected. This may be due to:
    - The overriding need for schemes to keep hold of risk assets to repair deficits
    - Trustee preference for assets that they understand (i.e. equities) / level of investment knowledge amongst trustee boards
    - The continuation of the low yield environment after the global financial crisis, means there aren't many alternatives that provide the required yield
- Asset managers already have products that look to provide less volatile returns, through a "multi asset" rotational approach (e.g. Diversified Growth Funds, Absolute Return Funds). There is likely to be an increased focus or requirement for schemes to adopt this type of approach (either through a product, or through internal investment strategy) to protect capital and reduce time to recover from drawdowns in asset values.

Increased focus on 'matching'

- Matching means alignment of scheme assets to liabilities through cashflow matching or to portfolios that will maximise the value offered in a buyout.
- There is currently no regulatory requirement for schemes to run a "matched" investment strategy and hence there is a large range of approaches. In future there may be a requirement for schemes to consistently report their degree of matching.
- Currently, matching solutions tend to focus on the fixed income elements of the portfolio. Future solutions are likely to seek to incorporate all asset classes in a consistent way. This presents operational challenges (data quality, consistency and availability for example) that will need to be overcome.

Increased focus on synthetic and "Algo" solutions and associated liquidity management

- Synthetic solutions allow the greatest combination of flexibility in investment and risk management strategy at least cost.
- However, synthetic solutions require more attention to liquidity management and counterparty risk. It is also important that synthetic solutions are transparent to trustees and do not present burdensome valuation and operational issues.
- A regulatory focus on cost control and transparency, may lead to more "innovative" solutions being proposed (e.g. algorithmic stock picking strategies rather than relying on expensive fund managers), but these lead to their own risks which need to be managed.

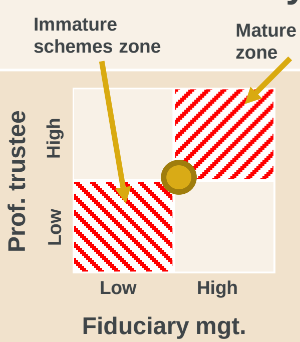
7. Outsourcing – introduction

What is it?

- The extent to which the operations for running the scheme, including governance, are outsourced to third parties not connected to the membership or the corporate sponsor.
- Pension schemes already undertake a large degree of outsourcing albeit the largest schemes often retain significant in-house operations. Consequently, for measurement, we need to select aspects where outsourcing is not universal.
- For the purposes or this section we have concentrated on three measures, namely:
  - Investment outsourcing – the measure selected is prevalence of fiduciary management as industry data is available
  - Governance – the appointment of professional trustees
  - Operations – actuarial valuation processing, administration and usage of technology

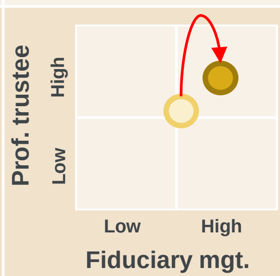
Dashboard – what we'd expect (professional trustees and fiduciary mgt.)

Relatively mature



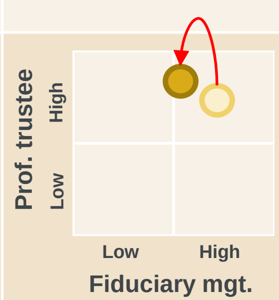
Not uncommon to see professional trustees, but many still only company and MNTs. Fiduciary management getting traction

Mature



Professional trustees more common. Increased prevalence of sole prof. trustees. Fiduciary management peaks

Very mature

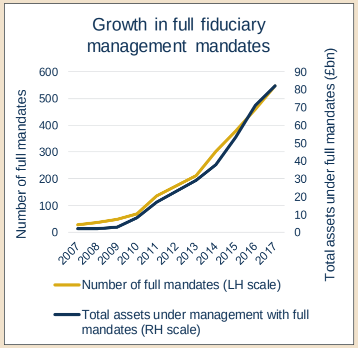


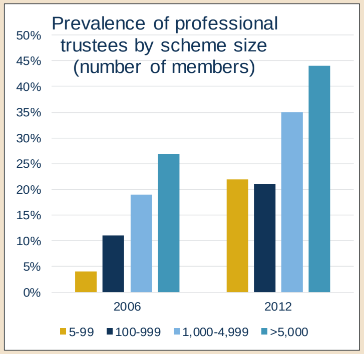
Trustee boards typically professional / sole trustee. Less usage of fiduciary management as strategies less active, more "set and maintain"

Note: By "actuarial valuation processing " we mean computation of the various actuarial values rather than the advisory component

7. Outsourcing – observed practices

What the data shows





- Correlation is not causation ie increase in fiduciary management and professional trustee prevalence is likely not only in response to increasing DB scheme maturities.
- Nevertheless, directionally, increased prevalence is as anticipated.
- Average size fiduciary management mandate has remained relatively static over the 10 years shown, at c£150m. Given increasing asset valuations / funding contributions this suggests fastest pace growth is for smaller/medium scheme sizes.
- Latest TPR data (eg TPR Trustee Landscape Qualitative Research, October 2015) suggests that professional trustee prevalence may now be as high as 35% in 2015, up from c25% in 2012. Again, growth has been greatest across small and medium size schemes.

Qualitative observations

Investment

- In 2015, Government mandated that the assets of the 89 Local Government Pension Schemes ("LGPS") should be merged into six pools to benefit from economies of scale, hence outsourcing investment management and administration processes.
- Increasingly smaller schemes are looking to use investment platforms (including fiduciary managers) who leverage economies of scale to provide integrated governance, operational and delegated investment management, to run scheme assets.

Governance

- Increasing scheme complexity and regulatory expectations have led to increasing prevalence of professional trustees, often driven by employers who recognise that a well managed scheme is a significant advantage regardless of funding position.
- As professional trustees sit on a number of scheme boards, they are more able than lay trustees to keep abreast of developments in the legislative, investment and services landscape. This in itself accelerates increased use of outsourced scheme services.

Operations

- Pension schemes have been relatively slow to embrace new technology, but in recent years there has been a growth in specialist providers of outsourced operation functions including administration and actuarial valuation processing eg one of the more common platforms provides risk reporting and valuation functions for c1,200 schemes covering c£600bn of liabilities[1].

Chart sources: KPMG 2017 Fiduciary Management Survey, TPR Occupational Pension Scheme Governance Survey September 2006, TPR Defined Benefit (DB) Scheme Running Cost Research April 2014 (NB we have sought to use data / adjust data to reflect professional trustees operating across multiple unconnected schemes rather than a professional that acts only for schemes of the same employer group). Source 1 – Risk First website. Note: Correlation is not causation – data by scheme maturity was not available. Although the charts show increasing penetration, which correlates somewhat with increasing scheme maturity, it cannot be taken as assumed the underlying factor is maturity

7. Outsourcing – looking to the future

There are a number of ways that the outsourcing landscape can evolve, but we believe the following trends will continue:

Outsourcing of services

- As schemes continue to mature and become legacy the member experience philosophy will continue to shift from “excellent service” to one of “sufficient service” (ie pay the right benefits to the right person at the right time, but no more). This will drive many schemes to move from traditional administration providers to specialists that align to (cheaper) type of service philosophy.
- Increased penetration of investment platforms, including fiduciary management, appears inevitable.

Governance

- A future scenario could be that all schemes have a professional trustee on the board with a large proportion of schemes only having a sole professional trustee. At the smaller scheme size this would be a byproduct of consolidation – see below.

Scheme consolidation

- The pace of scheme consolidation, of various degrees, will gather significant speed especially for small/medium pension schemes. Consolidation is, in effect, a way of outsourcing activities. The driver will be increased pressure from various sources to operationalise the running of schemes, to manage financial exposures more effectively and gathering scrutiny on costs.
- DB master trusts exist but are yet to gain extensive traction. However, there are some large DB master trusts eg TPT Retirement Solutions (formerly The Pensions Trust) has c£9bn of assets representing the amalgamation of many different schemes[1].
- Bulk annuity insurers are effective consolidators with some having absorbed hundreds of pension schemes representing multiple £bn of liabilities. We expect that the consolidation benefit of bulk annuity insurers will become more apparent to industry resulting in operational pressure (in addition to existing financial/risk pressure) to utilise bulk annuities.
- The DWP’s March 2018 White Paper proposes commercial consolidation vehicles. Under the proposals schemes with little connection to the original parent would be pooled and run on an “insurance lite” model, asset and risk management and services pooled to benefit from economies of scale, with the original sponsor employer breaking its link to the pension liabilities. DWP intends to consult further on the detail of its proposals towards the end of 2018 or start of 2019.
- Whilst there are significant barriers to merging benefit structures, covenant exposures etc, LGPS asset pooling into Collective Investment Vehicles (“CIVs”) shows a way for the asset side.

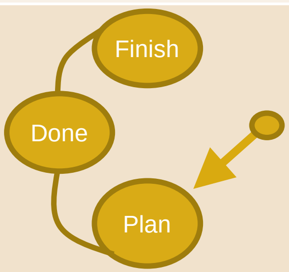
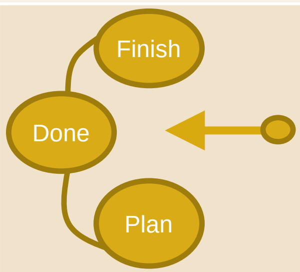
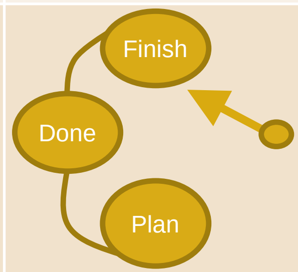
[1] Source is TPT Annual Report and Financial Statements 2016

8. Locking down the benefits – introduction

What is it?

- The extent to which projected future benefits are known other than for actuarially uncertain aspects (eg mortality) or price inflation.
- At a high level this generally comes down to data being fully validated and benefit entitlements being audited/legally reviewed.
- Some "known unknowns" may be catalogued, for example that GMP equalisation hasn't been actioned.
- Also, it may be acknowledged that some data may be impossible to keep 100% up-to-date, for example marital status.
- A misunderstanding of benefit entitlements, perhaps due to historic benefit changes not being enacted in a legally correct manner, can lead to significant delays for some schemes in winding up.

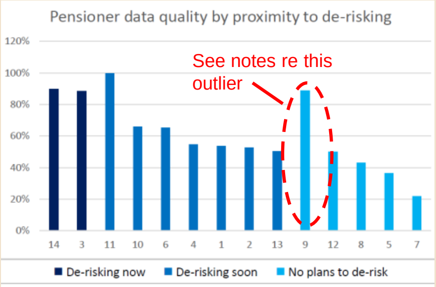
Dashboard – what we'd expect

Relatively mature	Mature	Very mature
 If data and benefits haven't yet been validated / audited then it is within the scheme's calendar of future activities	 Data and benefits have been validated and audited. However, proportionality will apply so scope may have been restricted	 Data and benefits fully validated including resolving how to deal with "known unknowns"

8. Locking down the benefits – observed practices

What the data shows

- ITM analysed data quality for a sample of 14 pension schemes. It cut the data by (a) pensioners and dependants in payment % (as a proxy for maturity), and (b) by each scheme's stated proximity to de-risking via bulk annuities.
- No obvious correlation between maturity and data quality.
- There is an apparent correlation between proximity to de-risking and data quality.



Qualitative observations

- The importance of data quality is increasingly flagged to trustees, so the topic is visible. However, we did not find that this is linked to scheme maturity eg TPR's 2016 record keeping survey (undertaken by orb Research) did not break down results by maturity.
- A relevant area is bulk annuities - usually purchased by mature schemes, especially pensioner buy-ins:
    - Insurer feedback is that data quality has generally improved - typically trustees undertake cleansing before approaching insurers
    - Nevertheless it is not uncommon for some benefit detail to only get resolved in the very final stages of a transaction - suggests that benefit audits, even for mature schemes, do not necessarily adopt a deep dive approach. It has been known for a small number of potential transactions to fall through due to issues uncovered through a data audit.
    - It is normal for insurers to agree to hold their pricing basis as long as post transaction data/benefit cleansing changes premium by < x%. For small-medium size pension schemes advisers usually push for x% to be at least 5%. This suggests it is felt there is a plausible chance, for some schemes, that data validation could impact liabilities by a few percent ie a not insignificant % of mature schemes have not locked down benefits
- TPR's 2012 guidance on winding up pension schemes suggests that it is not uncommon for pension schemes to leave locking down benefits fully until as late as possible. To state some extracts:
    - "*The wind-up process usually highlights deficiencies and errors in the scheme data and will usually necessitate a data cleansing exercise. … For ongoing schemes, it's less often recognised that the quality of member records is vitally important as, for example, they form the basis of the actuarial valuation … trustees should consider making an upfront investment to rectify any data issues and then carry out data review exercises on a regular basis*."
- No small scheme / large scheme bias for quality. Large schemes often hampered by past mergers where historic info. not kept.

Chart sources: Analysis undertaken by ITM for the Working Party. See Appendix for full detail. Outlier (Scheme 9) – this scheme, unusually, has a policy of cleaning pensioner data at point of retirement which leads to a good data quality score

8. Locking down the benefits – looking to the future

The direction of travel is clear

- We envisage that in future it will be the norm for mature schemes to have locked down their full detailed benefit provisions and data as a matter of course, and certainly well before they are forced to do so ie well before wind-up or purchasing bulk annuities. This would be consistent with how a life insurer operates.
- Detail that may not matter too much for funding valuations (eg the exact pro-rata rules for the final pension payment on death) would all get dealt with.
- Although today many trustee boards focus on the conditional and common data testing that TPR has promoted, going forwards they will anticipate and deal with the significant areas of risk that could arise from legacy issues like misinterpretation of rules and drafting errors.

The drivers for increased focus

- There will be many drivers for this, including:
    - Regulatory practice is increasingly towards greater focus on data management and on ensuring data is complete
    - Increased use of technology and outsourcing within pensions lends itself to a “once and for all” codification of benefit structure and data capture, much like a bulk annuity insurer does when onboarding a pension scheme
    - Increased availability of trustee time, either as other more pressing issues are dealt with or professional trustees are appointed, will ensure focus in this area
    - Supply side pressure as more and more firms that offer benefit and data cleansing services promote those services and the general raising of the bar on this topic
    - The general trend (rightly or wrongly) towards reducing the financial risks inherent within pension schemes
    - As the historical detail around defined benefit pension schemes becomes increasingly distant it will be recognised that the window of opportunity to efficiently capture that information will be lost

The role of actuaries

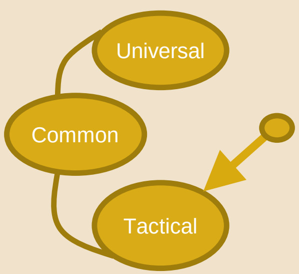
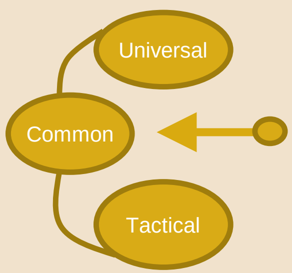
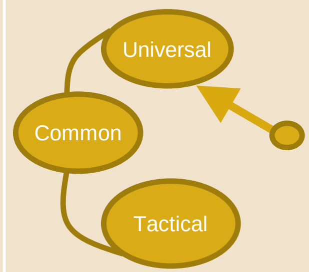
- Actuaries can play a key role by ensuring clients understand the advantages of investing time to undertake full benefit provision and data cleansing, in project managing and/or undertaking the activity and in valuing the resulting impacts.
- Actuaries, in their professional roles, need to form a view on whether data quality and benefit information is reliable and fit for purpose eg for actuarial valuation purposes, IFRS etc.

9. Bulk annuities – introduction

What is it?

- Purchasing annuities to exactly match the benefits for selected members.
- Bulk annuities can be held as an asset where trustees continue to retain responsibility for the members ("buy-in") or transferred to members so that members become policyholders of the insurer ("buy-out").
- There is a significant UK market in buy-ins and buy-outs aimed at complete risk transfer.
- For de-risking purposes a buy-in is primarily used for pensioner liabilities. Deferred pensioners annuities are common only for winding up a pension scheme through a buy-out.
- Transaction volumes are still small though relative to defined benefit pension liabilities across the UK. £10-15bn per year is less than 1% of those liability exposures per year. It is questionable whether a material (eg 3x) near term ramp-up in demand could be met by insurers without material price increases.

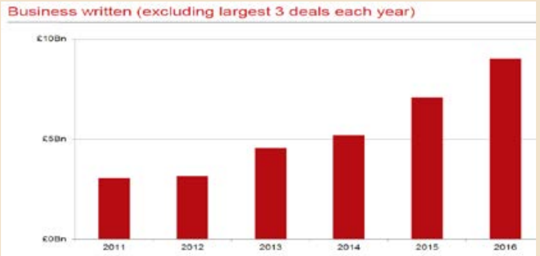
Dashboard – what we'd expect

Relatively mature	Mature	Very mature
 Bulk annuities not uncommon. Generally purchased as seen as offering good value vs other secure asset classes such as gilts or high quality credit	 Bulk annuities common as part of a deliberate strategy to de-risk with scheme termination in say 10 years being targeted	 Trapped surplus issues greater and longevity highly uncertain except for large schemes. Bulk annuity usage almost universal – most trustees have an objective to wind up via a buy-out

9. Bulk annuities– observed practices

What the data shows

- The bulk annuity market is material, with c£12bn of defined benefit pension exposures insured in each of 2014, 2015, and 2016.
- A strong increasing trend of small/medium size bulk annuity transactions – see the chart. It is not possible to tie this to increasing scheme maturities - no data was found showing bulk annuity purchase prevalence by maturity.



Qualitative observations

- Transactions can be split into:
  - Event driven – voluntary winding up, insolvency at >100% PPF funding, or de-risk to facilitate a corporate deal
  - Opportunistic – the ratio of scheme assets to buyout costs is seen as favourable; the sponsor has cash to meet the balance of cost, these deals vary with market conditions.
  - Planned – a long term effort is put into aligning the scheme with the terms of a buyout/buy-in provider which then executes when everyone is ready and affordability triggers are met
- The more mature a scheme the more likely it is to purchase a pensioner buy-in for de-risking purposes. Mature schemes are often more opportunistic as de-risking is perceived as a good thing (eg sell matching gilts to buy a similar yielding bulk annuity) whereas immature schemes may question the rationale of reducing risk/return targets.
- Also, anecdotally, insurers target direct marketing towards more mature schemes which suggests purchases are more likely there, especially partial pensioner buy-ins.
- However, full scheme buyouts are not typically correlated with maturity (other than there being no active members) with transactions generally driven by affordability and often by corporate activity that requires closure of any pension exposures. As data/benefit quality used for purchasing bulk annuities for buyout purposes is not flawless this also suggests bulk annuity purchase is often event or opportunity driven rather than part of a long planned process.
- We suspect a correlation between longevity insurance / swap purchases and maturity. Collating data to show this is out of scope[1].

Chart source – Presented by John Baines, Aon Hewitt, to the Bulk Annuities and Longevity Swaps Member Interest Group of the Institute and Faculty of Actuaries on 28 March 2017. Note 1: Our experience is that longevity insurance or longevity swap purchases are by schemes in which pensioners represent a large proportion of exposures. Note: Correlation is not causation – data by scheme maturity was not available. Although the charts show increasing bulk annuity premium volumes, which correlates somewhat with increasing scheme maturity, it cannot be taken as assumed the underlying factor is maturity.

9. Bulk annuities – looking to the future

Smaller schemes

- These will continue to head towards buyout even when at the early stages of maturity. The key precursors will be (a) no active members, and (b) whether the trustees have undertaken the "big ticket" activity that is nowadays often undertaken pre buyout eg liability management exercises. After then it is down to affordability and any events that necessitate a buyout purchase.
- A key reason for buyouts for smaller schemes will be lack of economies of scale and the pension issue being sufficiently small, for many employers, to be affordable.
- Should financial conditions experience a step change resulting in vastly improved affordability then bulk annuity volumes at the smaller end may increase several fold.

Larger schemes

- Continued use of bulk annuities but more sophistication in assessing their benefits vs self-sufficiency. Lack of economies of scale are less of a push factor vs small schemes so pace of bulk annuity growth might not be as high as for smaller schemes.
- However once a scheme reaches a very mature state (i.e. duration < 12 years), even if large, a bulk annuity is likely to be very tempting for most employers given the funding cost is likely to be relatively small.
- Buyout is not necessarily a medium term or even a long term target. The focus is on continued (and increasing) usage of bulk annuities to selectively remove risk depending on risk appetite – "top slicing" is a recent example of this where only the largest pensions are secured since these represent a concentration of longevity risk, but additional options are likely to develop as insurers and advisers innovate.
- Longevity insurance / swaps still relevant here but remains niche, as it does for smaller schemes.

Active members

- In schemes where active members are a small minority, active members may find their active membership is terminated at short notice when buyout becomes affordable.

Consolidation vehicles

- A key alternative to buyout will be DB master trusts or other non-insured consolidation vehicles, should these gain traction. The DWP plans to consult[1] on commercial consolidation vehicles where employers break their link to the scheme - much of the analysis in this slide book will likely remain relevant where this is the target (albeit in suitably altered form).

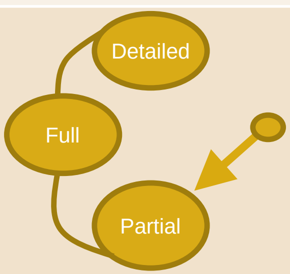
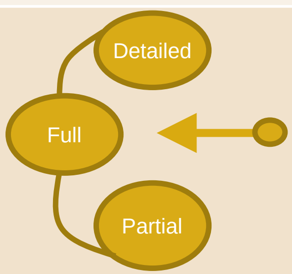
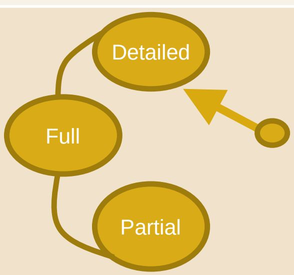
Note 1: See DWP's March 2018 White Paper

10. Journey plans – introduction

What is it?

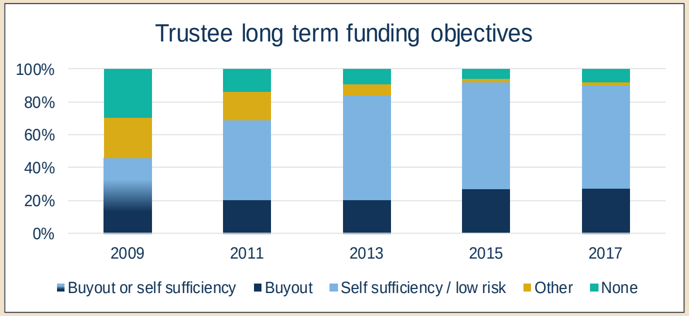
- TPR now requires schemes to develop integrated risk management plans (IRM) integrating funding, investment and covenant, and encourages a long term focus.
- Many schemes have developed this into a “journey plan” covering expected changes of investment and funding strategy towards an end date where the scheme is seen as substantially de-risked (typically from an interest rate/inflation perspective), thus creating a “secondary funding target” which is stronger than technical provisions.
- There is no standard definition for a journey plan, but we take it to mean a detailed plan articulating overall objectives for running off the pension scheme and the steps that will be taken to achieve those objectives.

Dashboard – what we’d expect

Relatively mature	Mature	Very mature
 The focus is primarily around managing funding and the path for de-risking assets as maturity and funding level increase	 Journey plans now also cover operational aspects relevant to run-off and with end game targets now being definite rather than aspirational	 Detailed plans that cover in depth the timing and process for run-off and termination

10. Journey plans – observed practices

What the data shows



- The reduction in the "other" and "none" category (green and yellow at top of columns) from over 50% in 2009 to c. 10% in 2017 suggests an increasing prevalence of long term planning.
- Also, the distribution of long term objectives appears to have settled down between 2015 and 2017.
- Hence, it appears that most schemes now at least have the basic premise of their long term funding / asset approaches considered.

Qualitative observations

- The de-risked target is typically "self sufficiency", but it may be buyout. Typical target dates c2030 but may be later
- The level of detail in the plan and, in particular, the triggers for change and the degree of commitment varies widely - we suspect there is an advisory bias here.
- Advisers are encouraging "implemented consulting" solutions which can include automatic monitoring and automatic execution when triggers are reached.
- Typical target dates normally driven by negotiation rather than being straight outputs from an actual projection of liabilities and risk.
- The level of risk in the early years may make the uncertainty over the date of reaching the target high, especially if the approach is limited to "de-risking when we can afford it".
- Trigger design represents a difficult balance between providing certainty of execution where opportunities might be time-limited at the potential cost of doing something which would not be considered advisable if assessed at the time. Some triggers are only advisory as a result. Implemented providers may prefer a fixed formula to reduce their commercial risk, but this may be at the expense of the optimal courses of action.

Chart source: AON Global Pension Risk Surveys 2015 and 2017. The 2017 survey figures were weighted by the Working Party to derive the aggregate figures shown in the chart. In 2009 the survey did not differentiate between Buyout and Self-sufficiency hence the chart shows only a single entry that year in the blended blue colour

10. Journey plans – looking to the future

Improved understanding of "what will it be like when we arrive?"

- The DWP's proposal[1] of a Chair's Statement will ensure increased clarity on a scheme's end destination – it is expected to cover topics such as the scheme's long-term financial destination and a description of the scheme's strategic plan for reaching the statutory funding objective.
- We expect a focus of what "self-sufficiency" looks like and of what changes to the investment approach will be needed by the time of arrival. Also increased attention to the residual covenant for compatibility with "self-sufficiency", and hence the choice of self-sufficiency target.
- Also, consideration of when (if ever) it would be desirable to move from self-sufficient to bulk annuities, the extra funding quantum needed at that point and how this might be delivered and secured.

Understanding of steps to be taken during the journey to self-sufficiency

- Attention to when best to implement investment changes.
- Manager requirements should evolve; what is the right time to add/remove managers or remove illiquids (e.g. property)?
- What is the optimal time to implement complex hedging arrangements? Arguably a high level of sophistication only adds value when other major risks have actually been mitigated – some current approaches are over-engineered from this perspective.
- Recognition of the change of focus from equity risk/monitoring to credit risk – once most of the investment return is sourced from credit, the biggest risks may (counter-intuitively) be compressed credit spreads preventing rollover of existing debt at the required spread.

Increased analysis of choices of target dates

- Target dates will be linked to trustee planning around future covenant dependency and on how fast maturity level has progressed, rather than currently in some cases being "far enough away to make the plan add up".
- Full integration with the formal valuation recovery plan and current investment strategy.

Inclusion of non-financial steps

- For example when administration will be outsourced or liability management conducted.
- Journey plans are likely to develop into a broader run-off business plan.

Better articulation and experience of operation of de-risking triggers

- Improved clarity of de-risking philosophy: De-risk as fast as possible or to earn risk premiums for as long as possible within a constraint? Often triggers are adopted without recording what they seek to achieve, which makes it difficult to adjust them consistently over time.
- Triggers for investment switching will capture market conditions on the buy side as well as the sell side – "reduce equities by 10% when gilt yields reach 2.5%" is less well targeted than a formula that triggers the switch based on the relativity between equity and gilt markets.
- Readiness to adapt triggers and mechanisms in light of actual circumstances – "even the best plans never survive contact with the enemy".

Note 1: See DWP's March 2018 White Paper

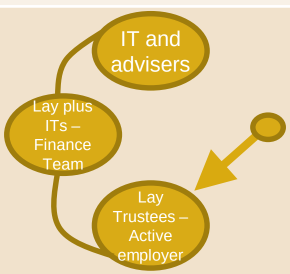
11. Employer relationship/governance – introduction

What is it?

- Immature open schemes have historically been organised by HR departments within sponsors, with trustee boards representing the employer and active member interests.
- Over time the employer relationship typically switches to the finance department since a mature scheme has less, and ultimately zero, relevance to the business operations linked to the original liability creation, but rather represents a legacy cost.
- The employer relationship may change rapidly if the original business is closed or sold without the scheme.
- Mature schemes require increased focus on trustee independence with sponsor employees less able to be seen as not conflicted, especially in the chair role; getting good trustees can be harder and/or require payment.
- Pensioners' interests are often different from actives/deferreds.

Dashboard – what we'd expect

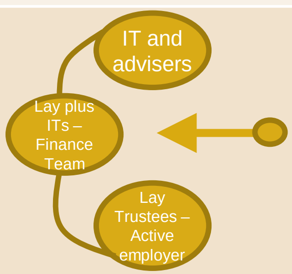
Relatively mature



Focus begins to change towards run-off

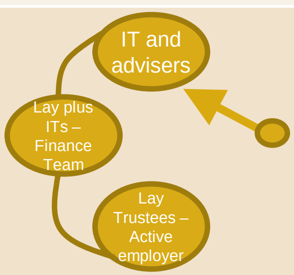
Note: "IT" means independent trustee

Mature



Actively manage to determine successful outcome

Very mature



Implement solutions and wind-up scheme

11. Employer relationship/governance – observed practices

What the data shows

- Although there is an increasing prevalence of professional trustees including sole trustees across the industry, there is no data that breaks this down by maturity. One anecdotal data point is that a disproportionate number (vs the general proportion of schemes with professional trustees) of bulk annuity purchases are by schemes with professional trustees which suggests that perhaps the most mature schemes are more likely to have a professional trustee appointed.

Qualitative observations

- The engagement and skill and knowledge set for lay trustees is typically lower than required to ensure a successful full term pension scheme run-off.
- An employer's focus is often on short-term financial implications only.
- Lay-trustees rely heavily on advisers but do not always have the skills to question appropriateness and necessity of actions. For example, sometimes a huge amount of the governance spend is on reviewing administration reports – the standard of administration services and treasury management is important but in the context of successfully managing a scheme, some of this time might be better spent elsewhere.
- Sometimes there is undue focus on protecting trustee exposure due to complex / ambiguous legislation (eg GMP legislation) and the potential (albeit perhaps remote) chance of personal exposure on trustees.
- Employers and lay trustees sometimes get entrenched on opposite sides leading to a full breakdown due to:
    - Lack of understanding of the detail of required decisions e.g. on investment strategy
    - Lack of understanding of the full picture
    - Differing risk appetites
    - Different conflicts / goals e.g. lower contributions vs pension increases
- "Obvious" risks are sometimes reduced without recognition that they are perhaps instead being redistributed (eg reducing investment risk transfers underfunding risk to the sponsor instead).
- Issues are usually more exacerbated for small schemes / sponsors where financial and time resources are more limited. Large schemes usually have a more extensive governance arrangement, a greater adviser spend budget and (as a result) more engagement with the employer.

11. Employer relationship/governance – looking to the future

The right trustee structure for a mature scheme

- There will be an emphasis on having the right trustee structure and trustees in place. The power to determine that structure may even be removed from the employer.
- It will become unusual to have decision making employer representatives on the trustee board.
- Effective ongoing joint employer/trustee management groups will be developed (and perhaps required) to ensure collaboration where possible, to minimise avoidable conflict and to effectively manage the conflict there is.

Helping employers govern effectively

- There will be an expectation, and perhaps even a legal requirement, to have named employer decision makers (who may be at parent level) directly accessible to the trustees.

The support structure

- Trustees likely to hire their own secretariat rather than rely on company resources (eg company secretary) as separation develops.
- Larger schemes may employ their own executive staff, eg CIO, CRO, rather than outsource it all to consultants.

Building on the IRM framework

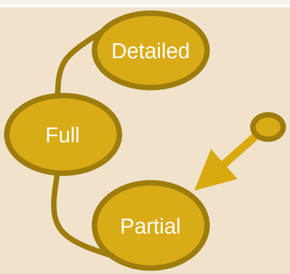
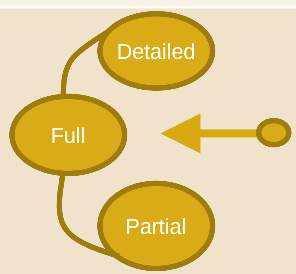
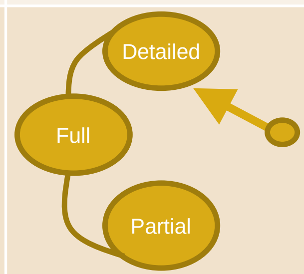
- The IRM framework will become the de-facto vehicle through which trustee objectives for the scheme are articulated and employer buy-in to that is evidenced. A member friendly version of that framework will become part of the annual scheme disclosure requirements to members.

12. Expense management – introduction

What is it?

- Scheme costs are a significant part of the long term liability.
- Typically they are funded by the employer on a ‘pay-as-you-go’ basis. This becomes less tenable with time.
- It becomes desirable to explicitly reserve for future expenses to ensure they can be funded and decisions properly reflect expense implications.
- Trustees do not fully control their advice purse strings if all expenses are paid by the employer.
- Administration remediation costs increase with time – it can however be difficult to fund especially if expenses are driven by sponsor cost - cutting priorities rather than what is good for the scheme.

Dashboard – what we’d expect

Relatively mature	Mature	Very mature
 Focus on expense control commences in conjunction with increased outsourcing of services. Too many future uncertainties for proper reserving	 Full analysis of future expense reserve undertaken. Aligned with scheme journey plan	 Detailed expense reserve including analysis of expense risk. Expense mgt. influences journey plan eg does a bulk annuity now make sense?

12. Expense management – observed practices

What the data shows

See Appendix for data sources and assumptions

- We were unable to locate data showing prevalence of reserving for scheme related expenses for UK pension schemes[3]. However, data is available from which reserves can be estimated so as to give a sense of materiality:

Size of scheme (members)	Assumed mean Technical Provisions	Mean total scheme costs (2012 data)	PV scheme run-off costs as a % of TPs	PV PPF levy as % of TPs	Winding up expenses assuming winding up in 25 years, as % of current TPs	Total PV of expenses as % of TPs	Scale down as source data a mix of open / closed schemes + as schemes mature many services will move to compliance minimum + in-built prudence in methodology[3]
12-99	£8m	£52,126 pa	16%	1%	1.5%	19%	19% becomes, say, 9 to 14% of TPs
100-999	£60m	£154,437 pa	6%	1%	1.5%	9%	9% becomes, say, 4 to 7% of TPs
1000-4999	£360m	£547,877 pa	4%	1%	0.9%	6%	6% becomes, say, 3 to 4% of TPs

Qualitative observations

- Our experiences are that it remains the norm to not include a reserve for future scheme related expenses in TPs.
- Perhaps this is a throw back to the days of open schemes when expenses were typically met by the employer as a % of payroll. Also, TPR guidance[1] does not encourage establishment of expenses reserves eg "*Administrative expenditures … which are due to be met directly by the employer need not appear on the schedule of contributions*.", "*Trustees should treat the PPF levy as an annual expense item*."
- However TPR's June 2009 statement[2] does suggest expense reserving for weak covenant schemes "*… technical provisions should be set at the level at which they can be expected to meet the full … expenses in future.*"
- The PV of future costs can be material[4], with our broad brush figures ranging from 4% to 7% of TPs for medium size pension schemes and considerably higher for smaller schemes. For smaller schemes our calculations suggest that the gap between technical provisions and buyout would fall from 30% to 21% if expenses were fully reserved.
- Expense risk[5] can be material but is not in our experience normally quantified. For example, the risk of additional regulatory requirements, higher than assumed expense inflation, estimation risk etc.
- In addition to explicit scheme costs there are other costs, some visible (eg separate employer advice) and some softer and hence more difficult to assess eg employer management time. These are not usually quantified.

1. See para 137 in TPR Code 3, Funding Defined Benefits, July 2014. 2. See TPR Scheme funding and the employer covenant, June 2009. 3. The Working Party presented its preliminary analysis to various actuarial seminars and often asked for a show of hands from actuaries present on expense reserving by clients – responses varied considerably from the minority to a sizable proportion with at least one scheme reserving for expenses. 4. Applying these % of TPs across all UK schemes, results in an aggregate PV of expenses across all UK defined benefit schemes of c£50bn. 5. Expense risk means the possibility that expenses may turn out higher than projected

12. Expense management – looking to the future

Detailed expense planning

- The DWP[1] has flagged the importance of expense management which will help this area get the focus it deserves.
- It will become normal for detailed short term forecasts of expenses to be on the trustee agenda (eg next 5 years).
- Reserves for the PV of future expenses will start being introduced into technical provision calculations and these will reflect the intended scheme journey plan. This will become increasingly prevalent with increasing scheme maturity.
- The large PV of some types of annual scheme expenditure (eg active management fees, advisory costs etc) will bring into greater focus justification of the value add / pressure on fee levels and a more holistic review of services. It will also lead to some services being brought in house by larger schemes eg in-house actuarial function.

Expenses risk

- Schemes will also start looking at expenses risk eg plausible stress scenarios. Given the likely materiality this may then encourage schemes (and service providers) to seek to lock in long term service agreements as a means of controlling costs whilst also offering service providers an attractive stable source of long term revenue.

Visibility of expenses will inform journey planning

- The materiality of projected aggregate expenses will make very visible the advantages of consolidators, whether that is master trusts, bulk annuity insurers or indeed other consolidation models that may appear in future.
- It will also feed into trustee decisions on how thorough they need to be eg a heavily advised and tailored GMP equalisation approach vs a pragmatic approach adopted by many other schemes.

Some scheme expenditure will be brought forward

- Once a reserve is established for future costs it then, to some extent, becomes less relevant as to whether that activity is actioned sooner rather than later i.e. the issue is a cashflow one rather than cost incurred one.
- Some actions may therefore be brought forward leading to more efficient future scheme operation.
- An example is data cleansing and locking down detailed scheme benefit provisions which is often typically deferred until close to bulk annuity purchase.

Note 1: See DWP's March 2018 White Paper

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E. Pulling everything together

What does it all mean?

- We started this slide book by seeking to define a “mature scheme” since, without a common understanding, parties may talk at cross purposes.
- The Working Party then took a look at current practice in relation to mature pension schemes as well as experiences elsewhere of running off mature long term life and pension exposures.
- This section now looks to coherently pull that previous work together. We:
  - Firstly, summarise the dashboards across the 12 features we investigated and make some observations on those
  - Secondly, we set out a framework for the management of mature pension schemes
  - Thirdly, we deep dive into selected topics, namely Covenant, Separation and Consolidation
  - We end with conclusions and recommendations

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Summarising the dashboards

Dashboard - summary

- Green: Observed practice consistent with expectations
- Amber: Observed practice not inconsistent with expectations but further to go to get there / more data needed to ascertain the position
- Red: Observed practice not where it needs to be

Note: to read charts and text below in larger font, refer to source slides

Relatively mature | Mature | Very mature

1. Pace of funding - slide 32 (amber)

- Relatively mature: Lower deficit rectification periods and discount rates than for immature schemes
- Mature: Deficit rectification periods and discount rates reduce by tangible amounts as schemes mature further
- Very mature: Expect further but much smaller reductions in deficit rectification periods and discount rates as there is a limit to which these can reasonably reduce

2. Covenant (incl. separation) - slide 35 (amber)

- Relatively mature: Example: Clear understanding of the nature of the covenant and appropriate monitoring
- Mature: Example: S75 risks associated with cessations by individual employers identified and managed
- Very mature: Example: Sponsorship rationalised to a single entity with clear legal arrangements around access to group resources

3. Contingent assets - slide 38 (amber)

- Relatively mature: We'd expect contingent assets to not be unusual - trustees want better funding, employers want to avoid trapped surpluses
- Mature: We would not expect increased prevalence of contingent assets for a slightly more mature scheme
- Very mature: For very mature schemes we see three scenarios: (a) scheme already in surplus, or (b) strong covenant, or (c) contingent asset

4. Liability management - slide 41 (green)

- Relatively mature: Multi-member exercises being run or active decision made not to actively offer options on a multi-member basis
- Mature: Many multi-member exercises likely to have already been effected. Options now offered in response to life events such as retirement
- Very mature: Few opportunities remain for members to take options. Benefits largely crystallised and cashflows locked down.

5. Cashflow matching (incl. hedging) - slide 44 (green)

- Relatively mature: Focus is around reducing volatile return seeking assets and purchasing bonds with duration similar to liabilities
- Mature: Return seeking assets substantially reduced. Care to purchase bonds with matching cashflows. Swaps or pooled LDI funds common
- Very mature: Significant emphasis on matching cashflows. Illiquid assets accepted as long as cashflows match

6. Asset allocation - slide 47 (amber)

- Relatively mature: Return seeking is the smallest asset class but still nevertheless sufficiently large to make a material impact to expected returns
- Mature: Return seeking allocation significantly lower. Funding triggers to reduce further common.
- Very mature: Return seeking either nil or very small with a definite plan in place to reduce to nil.

7. Outsourcing - slide 50 (green)

- Relatively mature: Not uncommon to see prof. trustees, but many still only company and MNTs. Fiduciary mgt. getting traction
- Mature: Prof. trustees more common. Increased prevalence of sole prof. trustees. Fiduciary management peaks
- Very mature: Trustee boards typically made up of prof. trustees / sole trustee. Reduced usage of fiduciary mgt. as strategies less active, more "set and maintain"

8. Locking down the benefits - slide 53 (red)

- Relatively mature: If data and benefits haven't yet been validated / audited then it is within the scheme's calendar of future activities
- Mature: Data and benefits have been validated and audited. However, proportionality will apply so scope may have been restricted
- Very mature: Data and benefits fully validated including resolving how to deal with "known unknowns"

9. Bulk annuities - slide 56 (green)

- Relatively mature: Bulk annuities not uncommon. Generally purchased as seen as offering good value vs alternative asset opportunities
- Mature: Bulk annuities common as part of a deliberate strategy to de-risk with scheme termination in say 10 years being targeted
- Very mature: Trapped surplus issues greater and longevity highly uncertain except for large schemes. Bulk annuity usage almost universal – most trustees have an objective to wind up via a buy-out

10. Journey plans - slide 59 (red)

- Relatively mature: The focus is primarily around managing funding and the path for de-risking assets as maturity and funding increase
- Mature: Journey plans now also cover operational aspects relevant to run-off and with end game targets now being definite rather than aspirational
- Very mature: Detailed plans that cover in depth the timing and process for run-off and termination

11. Employer relationship / governance - slide 62 (red)

- Relatively mature: Focus begins to change towards run-off. Note: "IT" means independent trustee
- Mature: Actively manage to determine successful outcome
- Very mature: Implement solutions and wind-up scheme

12. Expense management - slide 65 (red)

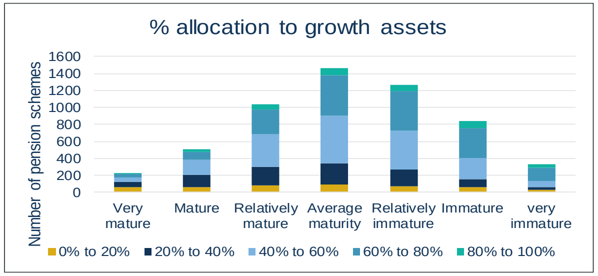
- Relatively mature: Focus on expense control commences in conjunction with increased outsourcing of services. Too many future uncertainties for proper reserving
- Mature: Full analysis of future expense reserve undertaken. Aligned with scheme journey plan
- Very mature: Detailed expense reserve including analysis of expense risk. Expense mgt. influences journey plan eg does a bulk annuity now make sense?

Dashboards – mature scheme practice consistent with expectations – observations

- In four of the twelve features investigated, practice for maturing schemes appears consistent with what we would have expected.
- In the area of ***Liability management***, there is clear uptake of exercises or an intention / propensity to undertake an exercise in future. Data broken down by maturity in this area was not available so it is not possible to demonstrate a clear correlation with a maturing pension market. Nevertheless, actual year on year direction reflects what we'd expect as schemes generally become more mature and focus on securing their liabilities and hence increasingly use liability management as a key tool.
  - We believe it would be helpful if schemes could undertake "WULS" exercises whilst an ongoing scheme – this would certainly help simplify winding up / bulk annuity exercises and also create a more balanced position between schemes winding up or deciding to run-off.
- When it comes to ***Cashflow matching***, there is a clear pattern of reduced allocations to (not cashflow matching) return seeking assets for increasing scheme maturities and also, the increased year on year prevalence of LDI.
  - In future we see increased sophistication of "cashflow driven investment" approaches, with the approaches being used by insurers being looked at as a starting point.
- ***Outsourcing*** was a more difficult feature to measure - we used a litmus test of take up of fiduciary management and usage of professional trustees. Both these areas show a massive increase of prevalence – although it is difficult to tie this entirely to increasing scheme maturities it is nevertheless consistent with what we would expect.
  - Going forwards we believe that an area of focus for trustees and corporates will be development of a robust outsourcing policy, which is interconnected with many of the other twelve features we investigated.
  - We believe that introduction of industry wide standardised data and benefits formats would offer considerable advantages.
- The fourth area was ***Bulk annuities***. It is not surprising to have seen an increase in usage in bulk annuities and many of the bulk annuity firms promote that they are the natural home for legacy pension exposures.
  - We would expect increasing usage of bulk annuities by small / medium size schemes that do not have economies of scale and so benefit from a bundled bulk annuity product – the key damper here might be alternative consolidation vehicles.
  - The future demand from larger schemes is more difficult to predict – demand may certainly increase, or it may reduce in aggregate should large schemes start running themselves like insurers and corporates are able to successfully convince investors that such an approach "deals with the problem" from a corporate risk perspective.

Dashboards – mature scheme practice semi-consistent with expectations – observations

- In four of the twelve features we investigated, market practice was not necessarily inconsistent with what we would have expected.
- ***Pace of funding***: Data showed that pace of funding did appear to increase / become more prudent the more mature the scheme.
  - We suggest that it would, overall, be beneficial if employers were always able to access future surpluses – this would avoid employers (rationally) underfunding or encouraging trustees to excessively reduce risk so as to avoid trapped surpluses.
  - We also feel it would be helpful to reduce the number of different funding measures used for mature schemes (eg technical provisions, solvency, best estimate etc). Once a scheme has a run-off journey plan and starts adopting a cashflow driven investment approach, that is from where the real funding requirements can be derived.
- ***Covenant (incl. separation)***: We found that in general more mature schemes reported better funding levels and covenants. We also noted the recent high profile cases of separation between schemes and sponsors (Halcrow, BHS and British Steel).
  - We believe scheme separation will become more prevalent as more schemes find (and accept) that they will never be able to fund full benefits and hence should opt for the second best alternative (see “Greatest Good 2”, June 2017, The Pensions Institute). Some of our other suggestions in this slide book will help in decision making
- ***Contingent assets***: Data showed reduced prevalence of contingent assets for the most mature schemes, which we did not initially expect, but this perhaps is consistent with the covenant / funding level position which is better for the more mature schemes.
- ***Asset allocation***: Although allocation to return seeking assets did reduce for the most mature schemes, the reduction as not as large as we would have expected. However, to some extent this is a consequence of using averages. As the further chart to the right shows, within those averages are some mature schemes with very high return seeking asset allocations and some with less. We speculate that the ones with high allocations are those with weaker covenants that have no choice but to try and invest themselves to a better funding level. For example TPR highlights (see chart source) that of the 700+ schemes with duration 14 years or less, 200 have over > 60% in growth seeking assets.



- We believe it would be a worthwhile exercise to survey the background to the higher than expected allocations to return seeking asset allocations for very mature schemes. Although the established industry norm at present is towards risks being hedged / cashflows being more closely matched, there may be useful lessons from these schemes, that can feed into more analysis (eg a future working party) into asset allocation approaches for mature schemes.

Chart source: TPR Annual funding statement analysis, Tranche 11

Dashboards – mature scheme practice not consistent with expectations – observations

- In four of the twelve features we investigated, market practice for maturing schemes was quite different to where we believe it needs to be.
- ***Locking down the benefits***: It is surprising that most pension schemes only undertake extensive data and benefits due diligence as they get close to purchasing bulk annuities.
  - We believe this an area for quick win – not only does it mean issues can be recognised (and tackled) sooner reducing future uncertainty but it can also facilitate aspects such as outsourcing, speedy bulk annuity purchase etc.
  - Perhaps annual statements to members on data/benefit quality would help prompt activity, as would further influence from TPR.
- ***Journey plans***: At present most journey plans focus primarily on funding and investment aspects and are often not working documents but something produced and then filed away as part of the triennial actuarial valuation process.
  - We believe there is significant advantages in extending journey plans into full blown run-off plans that bring together all the relevant factors to take the scheme to the position of meeting all its liabilities – we set out later in this section methodology that could be used to that effect. Those run-off plans can then be used to drive forward various activities leading to a better member outcome.
- ***Employer relationship / governance***:
  - There would be meaningful benefits from structuring mature scheme trustee boards and their secretariats to have the right set up and skills for scheme run-offs.
  - In addition, for schemes that have not already done so, in the majority of cases disentangling the employer from the trustee board decision making will be appropriate albeit this doesn't mean trustees / sponsor employers should not work collaboratively.
  - Also, we suggest that employers of mature schemes should need to justify why they do not have a professional trustee. In addition we believe that the MNT provisions in PA95, which were drafted with active schemes in mind, are past their sell by date and should be overhauled.
- ***Expense management***:
  - We believe holding a reserve for future expenses should be the norm for mature schemes, not the exception.
  - Although disclosing worsened headline funding positions may not be welcome, these are genuine liabilities, and recognising their quantum would result in clearer trustee management actions. For example, outsourcing policy, bringing forward expenditure (eg to lock down benefits – see above) as the cost is already recognised, better assessing the pros / cons of a bulk annuity etc.

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Adopting a framework for mature scheme run-offs

xpertise Sponsorship Thought leadership Progress Community Sessional Meetings Education Working parties Volunteering Research Shaping the future Networking Professional support Enterprise and risk Learned society Opportunity International profile Journals Supportin

4 May 2018

A framework for mature scheme run-offs

- We have developed a framework for planning, managing and monitoring the run-off of a mature scheme. This is intended to be compatible with the requirements for Integrated Risk Management but covers a broader range of issues.
- The framework develops an approach to scheme management under three strategy headings which are explored in more detail in the following slides.
- We believe it is helpful to set out a vision of what the run-off is trying to achieve as part of developing a shared understanding. Below is an example vision for a typical scheme, but other schemes might have different visions, eg if there is no employer.
- The development of the approach adopted under the three strategic headings and its subsequent monitoring is informed by reviewing the implementation issues under the 12 themes discussed earlier in this slide book.

VISION

Meet member benefit expectations as far as possible whilst avoiding a disproportionate impact on the sponsoring employer(s) business

STRATEGY

1. Develop the journey plan
2. Create and maintain a shared understanding
3. Take opportunities

IMPLEMENTATION

1. Pace of funding
2. Covenant (incl. separation)
3. Contingent assets
4. Liability management
5. Cashflow matching (incl. hedging)
6. Asset allocation
7. Outsourcing
8. Locking down the benefit liabilities
9. Bulk annuities
10. Journey plans
11. Employer relationship/governance
12. Expense management

Strategy component 1 – develop the journey plan

- A strategic vision for the scheme should embrace all of the twelve implementation features we have covered in this slide book:
  - Most current journey plans address only financials and are vague about what happens once a self-sufficiency target (which is often not well defined) is met.
  - The non-financial aspects should be addressed:
    - Likely timetable to step through each maturity stage towards the ultimate target
    - Are there maturity stages which will either be jumped or never reached; if so, does everyone understanding why?
- Identify the most important steps:
  - Especially in smaller schemes where costs mean a small number of major steps can be better value than incremental change
  - As those most important steps are executed, the remaining path of the journey plan becomes more certain
- Consider how to document:
  - But be realistic – flexibility is good so do not set it in stone – consider it a working document
  - The discussion may be more important than the journey plan
  - More sophisticated versions may include items such as a key risks analysis to the strategy, but that will likely be unnecessary for the majority (eg employer default, PPF compensation levels reduced, bulk annuity pricing increases in relative terms etc)
- Keep relevant:
  - Ensure the journey plan is kept up to date
  - Use it as the central reference tool as to “what come’s next” so as to ensure activities scheduled in good faith are followed through
  - Measure success of activities as to whether they progress the scheme through its intended journey. Not all activities will have positive outcomes – for example a benefit audit may identify material benefit issues – perhaps that is negative (the issues need resolution before moving on + additional costs) or positive (better to know now and deal with it rather than it crop up at the end)

Strategy component 2 – create and maintain a shared understanding

- Sponsors and trustees should debate the issues involved in the scheme run-off and understand:
  - Commonalities of interest
  - Continuing tensions which will need to be managed
- A broad timeline should be developed identifying the key milestones around which the run-off would be planned:
  - When is the point at which it would no longer be sensible to run the scheme in its current form?
  - When is the scheme likely to be able to afford to reduce growth assets and start carefully matching cashflows?
  - When does benefit uncertainty (due to member optionality) cease to be a factor?
- Members should be told about what is likely to happen and when:
  - Expectation management should reduce future tension/confusion
  - They can then make more informed decisions in areas such as transfer values
  - Members should be part of the governance rather than on the outside:
    - If the trustees have a pensioner action group, they may have failed
    - Bringing members inside means they will appreciate the extensive requirements, issues and real costs in running a pension scheme
- Communicate the journey plan in part or whole to service providers:
  - It creates an opportunity for increased collaboration with the trustees
  - Service providers can adapt / offer new services to align and support the intended run-off

Strategy component 3 – taking opportunities

- The smartest schemes have a clear sense of direction but the flexibility to adapt – the future will not be in line with central assumptions
- This means having the governance and advanced thinking (via the process of preparing the journey plan) to react rapidly and strategically, especially to date-uncertain but foreseeable events, for example:
  - Opportunistic de-risking/buy-out
  - Changes in covenant where the sponsor needs trustee support
- Trustees should be prepared to take big decisions
- Also, trustees should not be a prisoner of past successes:
  - Things that have worked well will outlive their usefulness, eg in-house admin
- End with a whimper not a bang?
  - If the leg work has been done over the years the end point may not be exciting but that is probably good – trustee should not leave it too late to empty the too-hard box (eg data and benefit quality)
  - Timely de-risking is probably better than a fight over a surplus or a deficit

How are the key milestone dates identified around which to plan the run-off?

- As mentioned earlier, to inform the strategy it is useful to have a sense of the broad timeline over which a pension scheme is likely to run-off. To do so, an understanding of the relevant key drivers needs to be developed.
- Once an understanding of the key drivers is developed:
  - They can be monitored, with journey planning adapted accordingly for any changes
  - They can be actively managed where it is desirable to do so eg to accelerate maturity
- We set out an example below. This suggests seeking maximum employer funding in the next 5-10 years whilst the employer has the strength, aiming to achieve a cashflow matched investment strategy by around 2027-2030 and targeting bulk annuity purchase and winding up in around 2030-2035 (subject to affordability). By this time the scheme will be in the "Very Mature" category.

Metric	Current position	Maturity gate	Year in which maturity gate attained	Comment
Duration (years)	18	14	2028	Maturity sufficiently short to broadly match cashflows with physical assets, materiality reducing reinvestment risk and mismatch to bulk annuity pricing
Number of members	267	100	2034	Scheme related expenses disproportionate below 100 members (due to fixed costs and management time) vs a bundled bulk annuity solution
% of deferred pensioners in technical provisions	51%	15%	2032	Future benefit cashflows more predictable, as % of members with outstanding options is low. % difference between bulk annuity pricing and (prudent) technical provisions is low
Employer covenant	CG2	CG3	2027	TopCo sponsor in long term decline. Need to front end load funding where possible. Employer appetite for risk vastly reduced
Benefit cashflow as % technical provisions	2.6%	5.0%	2027	Size of scheme starts to rapidly diminish. Will become increasingly difficult to make up funding shortfalls by taking future investment risk.

How are the twelve implementation themes brought into the strategy?

- The current states of the pension scheme can be identified by comparing status against the three levels of maturity for each of the twelve implementation themes covered earlier in the slide pack. This produces a useful overview of how well advanced the trustees are towards the various characteristics we have summarised as features of different degrees of maturity.
- Target dates can then be developed for getting those characteristics to a state consistent with the anticipated maturity state at that time. These need to be consistent with the key milestone dates, derived in the previous slide, which ultimately drive the scheme's time horizon.
- The journey plan which is prepared articulates in detail the actions required to achieve the maturity characteristics across each of these twelve implementation themes during run-off.

Implementation theme	Current state	Next state	Change target	Comment
1. Pace of funding	Immature	Mature	2030	2030 is end of recovery plan. Structure of technical provisions assumptions means they become increasingly closer to bulk annuity pricing at each actuarial valuation to 2030.
2. Covenant (incl. separation)	Mature	-	-	Direct TopCo covenant in place.
3. Contingent assets	Immature	Mature	2030	Target to add contingent security for gap between funding and bulk annuity cost.
4. Liability management	Mature	-	-	Scheme wide exercise with high take-up completed in 2014. Target 2nd exercise in 2019
5. Cashflow matching (incl. hedging)	Relatively mature	Mature	2027/2030	Good level of cashflow matching already in place. Target 2027/2030 for fully matched status
6. Asset allocation	Immature	Mature	2027	60% return seeking. Target nil by 2027 driven by de-risk triggers and employer funding
7. Outsourcing	Mature	-	2034	Bundled low cost advisers/service providers already in place. Viable down to 100 members
8. Locking down the benefit liabilities	Immature	Relatively mature	2020	Carry out data and benefits audit within next three years. Defer codification of discretions and GMP equalisation approach until close to buyout
9. Bulk annuities	Immature	Mature	2030/2035	Seek to have secured all remaining exposures with bulk annuities by the end of this period
10. Journey plans	Relatively mature	Mature	2020	Financial plan with triggers adopted in 2015. By 2018 prepare a comprehensive plan listing detailed actions grouped into and managed via consecutive 3 year buckets
11. Employer relationship/governance	Mature	-	-	Independent trustee in place. Single legal sponsor with assets in UK
12. Expense management	Immature	Relatively mature	2020	Employer PAYG arrangement at present. Introduce wind up expense reserve by 2020, full reserve by 2030. Agree higher PAYG budget to 2020 to fund selected journey plan areas

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Covenant and scheme separation

Covenant – a critical, if not the most critical, factor in setting the strategy

- There needs to be a clear understanding of covenant, funding and investment and the links between them. As part of this IRM framework, covenant should be key to determining the level of risk a scheme takes.
- At one extreme, when covenant is very strong, the scheme will likely be flexible in terms of the risks it is running due to the strong backing from the sponsor.
- At the opposite end of the spectrum, with a weak or no covenant, there will need to be due considerations about whether the scheme should continue and, if so, how the risk is managed whilst still delivering best outcomes for members:
  - This will include discussions on mitigating further downside for the scheme whilst ensuring the scheme is being treated fairly relative to other creditors of the sponsor and has reasonable access to increased support should the covenant improve
  - Often, the best outcome for members will be to continue the scheme subject to priority drift not being too much of an issue, with a return seeking asset strategy despite the downside "risks", given downsides are typically valuation risks rather than short term cashflow risk
- In practice, most schemes fall somewhere in between these two extremes and there is often a great degree of subjectivity involved in assessing the strength and associated capacity for risks to be taken by the scheme. This can make the impact of covenant on journey planning relatively binary:
  - Schemes with strong covenants will likely have a strong sense of direction for determining their journey plans
  - Schemes with weak covenants will likely also have a strong sense of direction for determining their journey plans as, again, their position with regard to employer funding and risk appetite should be relatively clear
  - The trustees of those in the middle perhaps have the greatest difficulty in preparing their journey plan given the usually very different journey plans that would be expected for schemes in a confident long term BAU run-off vs those with a weak covenant.
- Regular covenant monitoring is also crucial to a successful journey plan. This should sit alongside an understanding of how the journey plan should change if there is a material change in covenant given how quickly covenant can move.
- A challenge for mature schemes is that covenant issues are generally more acute/polarised because of the shorter time horizon these schemes have and their legacy nature.

Covenant and scheme separation – an inevitable outcome for many?

- "Separation" refers to the process of severing the link between the corporate sponsor and the scheme. The replacement may be an alternative sponsor of substance or a shell company with little/no assets. In the latter case it is essential that as much residual value in the original corporate sponsor relationship is captured by the scheme.

- Thus far it has generally been felt a priority to maintain the link between the original sponsoring business and the scheme – historically The Pensions Regulator has not promoted "abandonment" transactions which broke the link, and articulated that "the best security is a healthy sponsor". TPR abandonment guidance from December 2008 is still in force. http://www.thepensionsregulator.gov.uk/guidance/guidance-abandonment.aspx

- Recent Pensions Institute papers[1] estimated that some 1,000 occupational defined benefit pension schemes are stressed as a result of having financially weak sponsors and highlight that the current regulatory regime focuses on one of two binary outcomes, namely paying full benefits or going into insolvency, without a "second best" alternative. However, as the maturing process for UK pension schemes continues a responsibly executed process of breaking the original sponsor link may be value-adding, and can be recognised by TPR as such, hence the move to the less judgemental expression "separation".

- For a mature scheme where the commercial link with the sponsor is historic only, maintaining the original sponsor link becomes less important than ensuring that the covenant remains strong, or is not weakened. It may often be in the joint interest of the scheme and sponsor to transfer the covenant from the original sponsor to a continuing entity of appropriate strength, thus giving the original sponsor room to restructure. So "healthy sponsor" does not have to be "original sponsor".

- Even at the weaker end of the spectrum separation may still have value if it enables the sponsor to survive and even prosper, provided an appropriate share of the benefits flow back to the trustees. The difficulty for trustees, in particular, in this area is whether there is merit in compromising a reduction to the scheme benefits to a "PPF-plus" level even if it pushes the sponsor into insolvency. External risk factors, and PPF drift, over time could result in a deterioration in the funding position and trustees choosing not to compromise at PPF-plus levels could see members benefit – certainly at the younger end of the spectrum – deteriorate.

- Separation at the weaker end however remains fraught with difficulty from a timing and a compromising of benefit perspective, and also opens up the potential for moral hazard at the sponsor level.

[1] See the Pensions Institute papers, "The Greatest Good for the Greatest Number", December 2015 and "Greatest Good 2" , June 2017

Separation – recent issues and DWP consultation

- Case Study D of the IRM working party report[1] deals with the dilemmas for a relatively well funded scheme already closed, but not how to decide to separate or how to structure the separated vehicle.
- In 2017 the PPF announced[2] that for new separated pension schemes levies will be based on the "true economic risk", which could make it unattractive for schemes funded to levels above PPF benefits and unfeasible for those funded below. The new rules also seek to block schemes that are not fully funded to PPF levels from operating on a separated basis.
- It is a political question as to whether the PPF should potentially cross-subsidise such schemes from levies paid by ongoing schemes and, if not, the extent to which Government is prepared to underwrite the continuation of schemes by offering the PPF as a support mechanism in the knowledge that such scheme might pay higher benefits and/or take higher levels of investment risk than they would otherwise.
- However, it appears to be recognised that in some circumstances it is suitable for schemes to become separated from their employers. For example DWP has stated[3] that it will work closely with TPR, PPF, stakeholders and the pensions industry to look at whether it is possible, without increasing risk to scheme members, to make improvements to the Regulated Apportionment Arrangement process.
- Also, over 2018 the DWP is intending to consult[3] on commercial consolidation vehicles that will also enable employers to separate from their schemes. Hence, it looks like scheme separation will likely become a more common and accepted outcome for many schemes.
- The outcome of the DWP's 2018 consultation will hopefully result in increased clarity for trustees and employers on separation options so that they can more clearly manage their mature scheme run-offs, manage member expectations and avoid unnecessary advisory fee expenditure. The next section of this slide book considers consolidation vehicles in more depth.

[1] See Integrated Risk Management for Defined Benefit Pension Schemes, Integrated Risk Management Working Party, Staple Inn, March 2017
[2] See PPF, The 2017/18 Levy Policy Statement, March 2017
[3] See DWP's March 2018 White Paper

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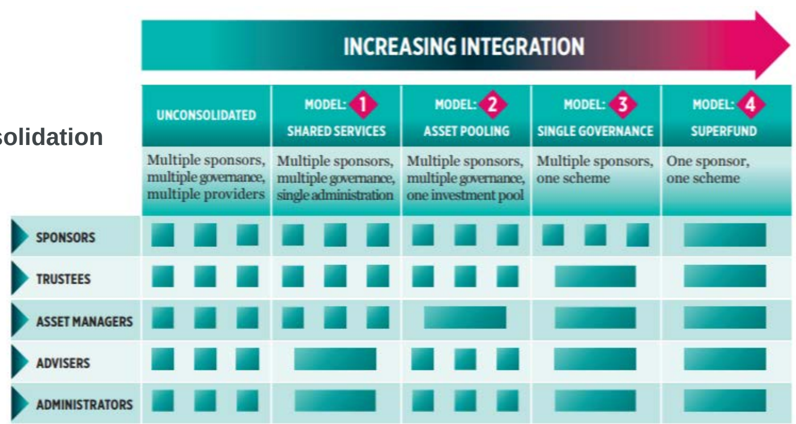
Consolidation – an inevitability for a maturing industry?

4 May 2018

Consolidation – the opportunities

- Whilst it is entirely reasonable to contemplate the run-off of schemes with billions of £ in assets over a period of decades, the vast majority of schemes do not have scale and so the economics of running them off individually are not attractive.
- This has led to calls from some quarters to make it easier for legacy schemes to consolidate, given that market forces alone do not appear to have provided the necessary impetus to date, other than within the buyout market (seen as too expensive?) and through the PPF (a mark of failure involving substantial member benefit cutbacks?). The PLSA actively promoted the idea, as set out in its report “The case for consolidation”.
- Consolidation as an option was raised by the DWP’s 2017 Green Paper[1] and since confirmed as a proposal by the DWP’s 2018 White Paper.
- Consolidation can take many forms (see PLSA chart below) – at one level the widespread use of third party administration represents a substantial level of administrative consolidation already in place. However the current debate focuses on going further:
  - Standardisation of benefit design allowing further administration consolidation/efficiency
  - More use of consolidated investment vehicles
  - Allowing non-associated employers to merge smaller schemes into master trusts
- The merger of non-associated employer schemes into “superfunds”, with a break from the employer covenant, is the biggest potential prize for advocates.

Four models of consolidation



[1] DWP Green Paper, Security and, Sustainability in Defined Benefit Pension Schemes, February 2017
Chart source, PLSA paper “The case for consolidation”

Consolidation – low(-er) hanging fruit

- Administrative consolidation is limited by individuality of benefit design.
  - Current legislation in theory makes it possible to standardise benefits on a cost neutral basis but it does not make it easy to make changes which benefit some members at the expense of others
  - There is no model for a standard simplified benefit design which might attract lower administration costs, and even if there was the payback period for the costs of making the change might not be seen as attractive.
  - To overcome this, legislation would need to actively encourage non-consent retrospective standardisation of benefits and provide protection for those sponsoring the change
  - Bulk annuities could also become more accessible if schemes could moved to a standardised benefit formats in advance (eg quicker quotations, benefit features requiring disproportionate capital in the insurance regime).
  - A good example is the PPF, which operates a standard benefit structure. Although it might be expected that members would accept altered pension levels (the alternative being far lower pensions in the context of an insolvent employer and no PPF), scheme members also appear accepting of altered contingent dependent definitions without apparently any complaint.
- Investment consolidation is often seen as a way of cutting fees and/or allowing access to a wider range of investment classes asserted to offer superior risk/return characteristics.
  - Large asset managers offer access to significant economies of scale, even for smaller schemes.
  - However, this impact is limited by non-consolidation of liabilities and covenant, requiring bespoke investment strategies – there is no shortage of low cost unitised investment alternatives but the mix must be tailored and continuously adjusted.
  - Smaller schemes are also less likely to want to run for the lengthy period needed to capture returns such as illiquidity premia.
- Industry standard data and benefit formats, allowing the vast majority of pension schemes to codify member benefit entitlements, could act as a catalyst for increased outsourcing and scalability:
  - The benefit structure of most pension schemes should now be relatively static and even where it is not, it is unlikely that new benefit features will be implemented which differ to what has been seen before elsewhere.

Consolidation – the potential for 'superfunds'

- The merger of non-associated employer schemes into 'superfunds' where the basic covenant/funding/investment risks are in some way shared, rather than just administration and investment execution, is potentially the biggest prize but one which has significant barriers.
- Neither the PLSA nor the DWP's White Paper tackled on detail the major barriers to such entities. However, over 2018 DWP intends to consult on detailed proposals it is drafting for commercial consolidation vehicles, the consultation intending to cover:
  - Establishing a commercial consolidator
  - The criteria to be met for a scheme to be eligible for entry into a commercial consolidator
  - The ongoing relationship with the sponsoring employer
  - The long-term funding objectives for the consolidator
  - The amount of buffer capital required
  - The investment strategy that should be adopted
  - The circulstances in which third party capital providers can extract profits
  - The level of funding below which the consolidator cannot fall and be permitted to take on new schemes
  - Interaction with the PPF
  - Governance and alignment of interests
  - The regulatory framework and levies charged
- Assessments were published by the ACA and the IFoA in response to the DWP's 2017 Green Paper. Both were cautious about the concept, especially the IFoA, with the focus being on facilitating the lower hanging fruit. See the responses to question 6 in:
  - http://www.aca.org.uk/files/ACA_responds_to_DB_Security_and_Sustainability_consultation-10_May_2017-20170510115226.pdf
  - http://www.actuaries.org.uk/documents/05-14-ifoa-response-dwp-defined-benefit-pension-schemes-security-and-sustainability
- Also, implementation of much of what we have described in this slide book should vastly bring onto a firmer footing the run-off of mature pension schemes. This would increase efficiencies, member benefit security and so, hence reducing the benefits from a consolidation model.
- In the following section we review the PLSA's consolidation model given it is the most developed model that has been published, and highlight the key issues raised from the Working Party's perspective. We have focused on what seem to us the most important issues rather than a paragraph-by-paragraph analysis of the PLSA's proposals. The DWP's consultation will no doubt work through the various issues related to consolidation vehicles in some detail.

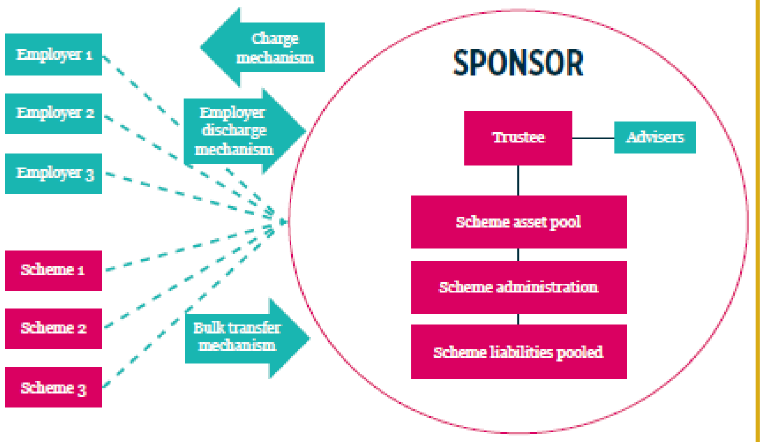
Superfunds – the PLSA model

- The extract on the right from the PLSA report highlights the broad model.
- Viable consolidation vehicles for commercially sponsored schemes are unlikely to be feasible if there is ongoing cross-subsidy between the sponsors. This implies a model based on separation. The PLSA model reflects this, but the PLSA's work to address the complexities is not yet fully developed.
- In particular, individual separation deals highlight the moral hazard issues involved, with the potential for the covenant to be undervalued and thus the scheme "dumped" to the benefit of shareholders and loss to members/PPF.
- However, it could be that the cost savings and opportunities to free up sponsors to invest in sustainable growth would more than balance such losses, such that the model was still desirable for the system as a whole, even with a level of moral hazard, and that the Government might be prepared (implicitly or explicitly via the PPF) to underwrite this.
- Where the current covenant provides a buyout level of security, it would seem unreasonable to allow consolidation vehicles to provide less than buyout security, thus allowing sponsors who can afford their commitments to reduce and/or up-risk them. For these schemes the current buyout model remains valid, perhaps with benefit standardisation encouraged.

In essence:

- Employers would pay a fee – either upfront or in the form of secured debt – to substantially reduce scheme underfunding and discharge themselves from responsibility for the scheme.
- If the trustees of the scheme agreed, following consultation with members, the scheme and all its assets and liabilities would be transferred to a Superfund.
- Members' benefits would be aligned to a common Superfund structure. Negotiations between sponsor, trustees and consolidator agree an actuarially equivalent conversion to the Superfund benefit structure.
- Superfunds would be authorised and supervised by TPR and would demonstrate the highest standards of governance.
- The Superfund would be managed to and maintained at a funding level which gives members greater prospects than now of receiving their benefits, and is less expensive to access than buyout.

FIGURE 12: ESSENTIAL FEATURES OF A SUPERFUND



“Superfund” – schemes with weaker covenants

- The opportunity for full consolidation vehicles appears to lie in the weaker covenant space, where significant failure risk exists anyway, but perhaps could be re-distributed in a more desirable way. Government would need to create a regulatory “safe harbour” for the uncomfortable compromises involved, since “doing nothing” is usually perceived as the safer option by trustees and sponsors even when the outlook is poor.
- Consolidation could be based on defined ambition or fixed benefits of lower value than existing promises – there are arguments for each but it may be desirable to fix on one or the other to simplify the options available to small schemes and their sponsors.
- Arguably unless the fixed benefits have buyout security the model is defined ambition anyway, since there would remain a chance of failure and superfund managers would need a mechanism to reduce benefits to accommodate this – it is just that benefit reductions would occur later.
- The target for a standardised approach could be small schemes (80% have less than 1,000 members[1], averaging c£45m of liabilities each). Large schemes could retain the ability to bespoke their separation arrangements as they can now, the benefit of consolidation in itself being less significant.
- Assuming a defined ambition model, it would be necessary to offer a mix of fixed and at-risk benefits with the mix reflecting the funding available up front through a mixture of scheme assets and a separation payment which compromised the covenant. Separation payments could be cash or equity/loan notes – a valuation mechanism would be needed for the latter which was fair to existing superfund members.
- A superfund would need private equity negotiating skills in order to ensure fair value for the covenant similar to those deployed by PPF negotiators. It would also need the skills and appetite to manage a private equity/loan portfolio made up of non-cash payments and to hold or realise these in an optimum way – lack of appetite to hold these is a problem for the PPF as a Government agency under the current model.
- More than one superfund might be appropriate to deal with radically different levels of funding, as with life funds, eg one which imposed benefit reductions up front for weaker entrants and another which merely had the right to reduce in future.
- Rules and process for determine when the superfund has failed and so enters the PPF would be required up front. The regulatory system would have to influence investment strategy to ensure that excessive levels of risk to the PPF (and implicitly taxpayers in the event of its failure) were not run.
- Who would run such superfunds is a problem. Given the risks of non-delivery of member expectations which are implicit, commercial providers may not wish to expose their balance sheets or reputations. Organisations like the PLSA could have a role with implicit Government support.

[1] Source – PPF Purple Book 2016 Fig 2.1

Consolidation examples

- The Local Government Pension Scheme (LGPS) and The Pensions Trust (now branded "TPT") are often highlighted as examples of the benefits of consolidation.
  - However they also highlight the barriers to wider adoption of their models.
  - LGPS does not share the normal covenant issues of commercially sponsored schemes - LGPS covenant is vested in local government
  - Until only very recently TPT focused on the schemes of non-commercial sponsors (eg charities) – targeting schemes with sponsors across very disparate backgrounds may introduce new challenges
- Several ex-nationalised industries (eg Rail, Electricity) operate industry-wide schemes but with separate covenants and may provide a better model of a streamlined operation which does not seek to separate or consolidate the covenant. They do have the benefit of common benefit designs and legacy administration.
- Insurance funds in run-off are often consolidated but this is in the context of full funding and they often still retain the burden of different policy designs and legacy systems albeit with the benefit of common (consolidated) management. Some insurers specialise in the consolidation of insurance funds in the UK or globally, for example Phoenix Group, Chesnara and Admin Re (part of Swiss Re).
- In the Netherlands the regulators have actively encouraged consolidation amongst 'DB' schemes and there has been considerable consolidation as a result (schemes classed as DB[1] down from 705 in 2007 to 295 in 2016). However Dutch schemes are generally well funded and "defined ambition" so the questions of how to fund the existing deficit and separate the covenant do not arise, at least not to the same degree.
- Bulk annuity insurers are consolidators, with some insurers having fully insured hundreds of pension schemes covering hundreds of thousands of pension scheme members. Two UK bulk annuity insurers, Legal & General and Rothesay Life, have also recently leveraged their experience in bulk annuities to also consolidate life books, with each of them having acquired part of an Aegon life book in 2016. This perhaps suggests that many of the aspects regarding consolidation and/or running off mature funds are common across pension schemes and life companies.

[1] Source – DNB (Netherlands Regulator) table T8.11 (downloaded 15.6.2017) from https://www.dnb.nl/en/statistics/statistics-dnb/financial-institutions/pensioenfondsen/pension-schemes/index.jsp

F. Conclusions and recommendations

Conclusions

- There is no doubt that the UK defined benefit pension environment will look very different in future. By 2037 we project that current pension exposures of £1,800 billion may have reduced to under £800 billion in current money terms.
- The question therefore is what practices and services are required across the industry to effectively run those schemes and what skills are required from practitioners within the industry including actuaries.
- The topic of the practices and techniques schemes can adopt to run-off as they mature is huge and we have only touched upon it in this slide book. Nevertheless, we hope this slide book will serve as a ready reference source to those involved in mature scheme run-offs, and helps identify areas for future in-depth research so as to enable the effective run-off of the many schemes that are being relied upon by millions of individuals for retirement income.
- We found that in some areas the direction of pension scheme practice reflects what we'd expect in an environment of increasing maturity, namely Liability management, Cashflow matching, Out-sourcing and in usage of Bulk annuities. However, in some other key areas we felt there was a gap between industry practice and what we anticipated, namely in Employer relationship / governance, Journey plans, Locking down benefits and Expense management.
- Although we can look through to the practices adopted by very large pension schemes (they are usually at the cutting edge of what will follow tomorrow), by insurers or by the PPF, we have to recognise that the vast majority of pension schemes by member numbers are relatively small. 80% of pension schemes have under 1,000 members but they only represent 10% of total scheme liabilities (source Purple Book 2016). Consequently there is a question of proportionality – nevertheless it appears to us that much of what we cover in this slide book would benefit mature schemes of all sizes if adopted.
- We cannot look at what industry practices are appropriate for mature scheme run-offs assuming the environment for pension schemes remains unchanged to today's. There is industry debate around consolidation vehicles, there is discussion about how those schemes that are likely never to afford to pay full benefits might separate from their sponsors with compromised (ie reduced) benefits as a better alternative than limping year on year until failure and debate about whether "de-risked" investment strategies really are the most suitable approach. It might be reasonable to suggest that these debates have come to the fore as a natural consequence of the general maturing of pension schemes.
- With such a huge topic it is difficult to consolidate our thoughts into a small number of recommendations, but we've attempted to do so in the following slides.

Recommendations (slide 1 of 2)

Recommendation 1: Reflect the fact that the majority of schemes are now on a steady journey down the maturity path

- We struggled to find data segmented by scheme maturity. As more and more schemes mature it will become increasingly helpful to access data split by maturity and projections of how the maturity mix will develop. We recommend standard measure or measures of maturity are adopted within the industry and that industry datasets (primarily PPF, TPR and actuarial consultancy surveys) are segmented accordingly.
- We also recommend that legislation/regulation should be identified for alteration in key areas so as to more easily accommodate mature schemes running-off on a proportionate expense base. Examples that occur to us (without analysis) include a more straightforward approach for changing benefit structures to promote standardisation across schemes, relaxing hurdles on surplus refunds that might hold sponsors back from increasing the pace of funding and perhaps a Government backed indemnity for trustees who settle liabilities in a reasonable way consistent with industry practice despite uncertainties eg in how to equalise GMPs.

Recommendation 2: Journey plans

- Schemes should develop comprehensive journey plans mapping out the intended run-off approach – this will lead to a multitude of benefits. We believe this is core to any well managed run-off and that there would be advantages of communicating the intended plan to members.
- The framework we set out in this slide book is one approach towards journey plans that could be adopted.

Recommendation 3: Separation

- The current regulatory system does not provide a clear route for separation from a corporate sponsor where the covenant is unlikely to support full benefit delivery. There are varying estimates of how many schemes are in such a position, with as many as 1,000 estimated[1].
- We believe it would be advantageous for there to be a framework for separation albeit we acknowledge that the issues around moral hazard are not trivial. For the schemes that have overly weak covenants, there may be merit in “once and for all” clear out via separation now rather than the current approach of such schemes limping on until a trigger necessitates action.

Recommendation 4: Skills base

- Key industry bodies, including the actuarial profession, should identify what skills base and expertise are needed to efficiently service scheme run-offs and how well matched this is to the present, and close the gap.
- We believe most mature schemes would benefit from a professional trustee eg getting asset allocation right must be difficult for lay trustees given margin for error reduces as schemes mature. Professional trustees leverage experiences with other schemes and understand better their options for advice. We recommend professional trustees should become the norm with an opt out with regulator approval only.

[1] The Greatest Good for the Greatest Number, Pensions Institute, December 2015

Recommendations (slide 2 of 2)

Recommendation 5: Standardised formats / locking down the benefits

- Given that defined benefit pension scheme structures are now largely static (ie not changing) we believe it should be possible to develop industry standard data and benefit structure formats that would allow the vast majority of benefits for the vast majority of schemes to be codified. The benefits of this would be immense and repeatable. For example, more efficient consolidation / outsourcing of services and streamlining activities such as bulk annuity purchase and cashflow driven investment.
- Related to this is our recommendation that schemes should lock down benefit liabilities, via data and benefit audits, sooner rather than later.

Recommendation 6: Expense management

- We note from the DWP’s March 2018 White Paper that DWP will work with TPR and other parties to consider what more could be done to promote greater transparency of costs and charges in defined benefit scheme to help drive efficiencies. We recommend that schemes in run-off should start reserving for their expenses so as to recognise better the true funding position as well as to help support improved management decisions by trustees, such as implementation of longer term service agreements.
- Applying the Working Party’s methodology for expense reserving results in a present value of future expenses across all UK defined benefit schemes of c. £50 billion, a vast amount, a large proportion of which relating to current or future mature schemes.

Recommendation 7: Target end state for mature schemes

- We observe that consolidation is already happening in various forms and we would expect this to continue at pace as schemes mature. To date there has been a working assumption by many that the end target for most pension schemes should be a bulk annuity buyout but the DWP’s March 2018 White Paper now raises the prospect of significant commercial consolidation vehicles as well which may (or may not) look like “superfunds” of the form promoted by the PLSA.
- We believe that some of the advantages of the most complete forms of consolidation (eg superfunds, bulk annuities) would diminish for many schemes if the practices highlighted in this slide book were adopted. However, for other schemes, it would spotlight benefits of consolidation and prompt activity, whether that is utilising outsourcers for selected services, master trusts, bulk annuity buyout or consolidation vehicles.
- We recommend the actuarial profession sponsors research into the various facets to consider when assessing the target end game and options for a mature pension scheme. The DWP’s March 2018 White Paper makes such research very timely given that the DWP intends to consult on the proposed detail of commercial consolidation vehicles later in 2018 with such consolidation options presumably following once legislated (or sooner if “squeezed” within existing regulatory frameworks). Determining the target end game is a key component that drives the journey plan – see Recommendation 2.

Institute and Faculty of Actuaries

Appendices

- Sources and further reading
- ITM analysis
- Expense reserves
- Additional material on overseas pension schemes
- Running faster to keep up example
- Additional material on how to define maturity
- Large versions of charts

Sources and further reading

The Working Party referenced a huge number of papers, reports and other documents in drafting the slide book. We list below the items utilised most, for further reading:

Integrated risk management

- The Pensions Regulator (2015). Integrated Risk Management
- The Finance, Investment & Risk Management Board Working Party (2007). Practical Implementation of Liability Driven Investment. The Finance, Investment & Risk Management Conference of the Actuarial Profession, Dublin

Closed life fund and closed pension schemes

- Campbell A.C., Grimley D.C., Pallister J.K., Stoker A.M., Walton A.R. and Yiasoumi C.A. (2006). Lessons from closure: An analysis and comparison of the issues facing closed life funds and closed pension schemes. Presented to the Institute of Actuaries, 22 May 2006

Funding schemes

- Hitchcox A., Patel C., Ramsey C., Studd E., Ma L., Elliott M. and Keogh T (2017). Integrated risk management for defined benefit pension schemes. Presented to Staple Inn, 20 March 2017
- The Pensions Regulator (2009). Scheme funding and the employer covenant
- The Pensions Regulator (2014). Code 3: Funding defined benefits
- The Pensions Regulator (2017). Annual funding statement

UK defined benefit market analysis

- Hymans Robertson (2016). A better future for DB
- Harrison D. and Blake D. (2015). The Greatest Good for the Greatest Number. The Pensions Institute
- Blake D. and Roy M. (2017). Greatest Good 2. The Pensions Institute
- The Pensions and Lifetime Savings Association (2017). The case for consolidation
- Aon Hewitt (2017). Global Pension Risk Survey 2017: UK Survey Findings

Governance

- The Pensions Regulator (2006). A report on the 2006 Scheme Governance Survey
- The Pensions Regulator (2006). TPR Occupational Pension Scheme Governance Survey
- The Pensions Regulator (2014). A report on the 2014 (eighth) scheme governance survey
- The Pensions Regulator (2015). A report on the 2015 Trustee Landscape Research
- The Pensions Regulator (2015). Trustee Landscape Quantitative Research
- The Pensions Regulator (2016). Further investigations into board dynamics and trustee training
- The Pensions Regulator (2017). Professional Trustee Survey

Investments

- Aon Hewitt (2016). Fiduciary Management Survey
- KPMG (2017). UK Fiduciary Management Survey
- KPMG (2017). No end to growth in sight, The UK LDI Market
- Law Commission (2014). Fiduciary Duties of Investment Intermediaries
- Law Commission (2014). Pension trustees' duties when setting an investment strategy: Guidance from the Law Commission

The Pension Protection Fund

- Pension Protection Fund (2010). Long-Term Funding Strategy
- Pension Protection Fund (2016). Statement of Investment Principles
- Pension Protection Fund (2016). Long-Term Funding Strategy Update
- Pension Protection Fund (2017). The 2017/18 Levy Policy Statement
- Pension Protection Fund (2017). Annual Report & Accounts 2016/2017

Data and analysis on funding and on the UK defined benefit market

- Pension Protection Fund (2016). The Purple Book
- Pension Protection Fund (2017). The Purple Book
- The Pensions Regulator (2017). Scheme funding statistics
- The Pensions Regulator (2016). Annual funding statement analysis: A review of defined benefit pension schemes with valuation dates between September 2015 and September 2016 (Tranche 11)
- The Pensions Regulator (2017). Scheme funding statistics
- The Pensions Regulator (2017). Scheme funding statistics: Annex
- The Pensions Regulator (2017). Deficit management strategies for schemes with valuations for the period 22 September 2013 to 21 September 2014 ('Tranche 9')

Other

- The Pensions Regulator (2014). A data report on the costs of running DB pension schemes (quantitative survey)
- Hymans Robertson (2017). Risk transfer report
- tpt Retirement Solutions (undated). A complete master trust solution
- Hewitt (undated). Frozen plans: Formulating Strategy and First-Class Execution Across the Board
- Department of Work and Pensions (2018). Protecting Defined Benefit Pension Schemes

ITM analysis for the Working Party (slide 1 of 2)

Sample mature scheme data analysis – Preliminary findings

Darran Blount
April 2017

itm
Solution delivered...

1 Overview

ITM have been asked to conduct a high level analysis of DB scheme data with the aim of establishing any potential correlation between scheme maturity and data readiness for de-risking activity.

The findings set out in this paper provide preliminary results of this analysis based on a small sample of schemes. Further, more in depth investigation, based on a wider sample size can be conducted if required.

This work has been prepared for Costas Yiasoumi of L&G, who is conducting research on behalf of the Institute of Actuaries.

2 Sample and methodology

This preliminary analysis was conducted on a sample of 14 DB schemes. A summary of these schemes, alongside an indication of their maturity and plans for de-risking activity is shown below.

Scheme id	Pensioner & dependant population	Proportion of pensioners & dependants	De-risking plans
1	37,000	42%	Soon
2	6,000	45%	Soon
3	500	32%	Now
4	5,000	58%	Soon
5	800	29%	No plans
6	23,000	64%	Soon
7	18,000	38%	No plans
8	2,000	46%	No plans
9	10,000	27%	No plans
10	10,000	39%	Soon
11	51,000	45%	Soon
12	800	15%	No plans
13	200	96%	Soon
14	6,000	52%	Now

For each of the schemes in the sample, we determined a pensioner data quality 'score' by assessing the presence of the following three common data issues:

- Missing or inconsistent pension element data, such as pre/post 1997 splits.
- Missing or inconsistent GMP benefits.
- Missing spouse contingent benefits.

The calculated 'score' represents the proportion of records where these data items appear to be correctly stored.

ITM analysis for the Working Party (slide 2 of 2)

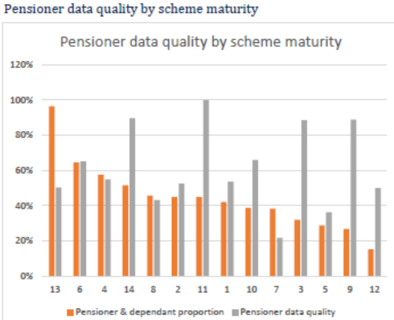
3 Findings

The calculated data quality scores for the sample schemes are shown below.

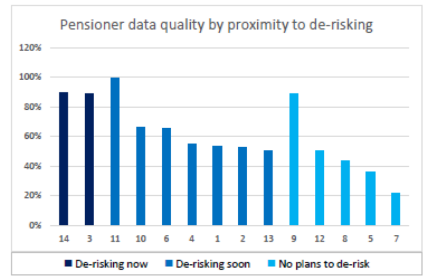
Scheme id	Pensioner data quality score
1	54%
2	53%
3	89%
4	55%
5	36%
6	65%
7	22%
8	43%
9	89%
10	66%
11	100%
12	50%
13	50%
14	90%

These results have been analysed by assessing any potential correlation between data quality and scheme maturity or proximity to de-risking. The findings are presented in the two charts below.

3.1 Pensioner data quality by scheme maturity



3.2 Pensioner data quality by proximity to de-risking



4 Conclusions

Using this initial small sample, it appears that:

- There is no direct clear correlation between scheme maturity, measured as the proportion of pensioner members, and data quality.
- However, there is some evidence to suggest that schemes preparing for de-risking activity are more likely to have taken steps to improve data quality.

These preliminary conclusions could be tested further by extending the scheme sample size. Equally, the basis for determining data quality could be developed further to cover a wider range of tests, including for deferred member records.

ITM are able to perform further analysis if it is felt that it would be useful, and we would be happy to discuss the requirements for such analysis.

Expense reserves – data sources and assumptions used (slide 1 of 2)

(1) Scheme size (number of members)	(2) Assumed mean Technical Provisions	(3) Mean total schemes costs	(4) PV scheme costs using a prudent multiplier of x25 = (3) x 25	(5) Scheme costs of winding up in say 25 years' time	(6) Total scheme costs = (4) + (5)	(7) As a % of current Technical Provisions = (6) / (2)	(8) PV PPF levies over next 25 years as % of technical provisions	(9) Total scheme cost reserve = (7) + (8)	(10) Total cost stated in main body of the slide book	(11) Reduction in Buyout/TP gap if expense reserve added to TPs
12-99	£8m	£52k pa	£1.3m	£0.1m	£1.4m	18%	1%	19%	9 to 14%	28% lower
100-999	£60m	£154k pa	£3.9m	£0.9m	£4.8m	8%	1%	9%	4 to 7%	12% lower
1000-4999	£360m	£547k pa	£13.7m	£3.3m	£17.0m	5%	1%	6%	3 to 4%	8% lower

- Figures in column (2) derived from page 14 of the http://www.pensionprotectionfund.org.uk/Documents/Purple_Book_2016.pdf plus 10% to allow for the difference between TPs and s179 - see table 2.1 of (http://www.thepensionsregulator.gov.uk/docs/scheme-funding-appendix-2016.pdf this is based on Scheme Funding Analysis statistics). It is assumed that the TPR sample schemes are representative.
- For column (3) see table 3.3 of http://www.thepensionsregulator.gov.uk/docs/db-scheme-costs-research-2014.pdf. This is 2012 data but we have not added inflation to date, in the absence of data on the balance between deflationary and inflationary pressures since 2012.
- It would appear from chart 3.3 of the same TPR paper that the lowest expense base schemes have costs around 50% of the mean costs
- The TPR analysis included costs under the headings Administration, Independent trustee, Actuarial, Legal, Covenant, Investment, Other external costs.
- We have assumed (for the sake of an assumption) that the schemes run-off for 25 years and then wind up. We have used a multiplier of x25. This is implicitly a zero real interest rate on the assumption costs will increase in line with the gross discount rate.
- For the figures in column (5) see the winding up expenses assumptions in 5.2a of http://www.pensionprotectionfund.org.uk/DocumentLibrary/Documents/S143%20Assumptions%20Guidance.pdf. Although these rates are meant to be applied to Section 179 liabilities rather than total technical provisions we have applied them to technical provisions – a full scheme wind can be more complex and hence expensive than a Section 179 process. Note that for the purposes of our figures we reduced the TPs by 50% to reflect that the scheme will be smaller in 25 years.

Expense reserves – data sources and assumptions used (slide 2 of 2)

- Note that the figures in column (5) do not include the expense loadings an insurer would make in its bulk annuity premium. These are additional but we have assumed would be accounted for via the aggregate bulk annuity premium the pension scheme eventually pays rather than as a separate expense line.
- For figures in (8) see chart 6.4 in http://www.pensionprotectionfund.org.uk/DocumentLibrary/Documents/Funding_Strategy_Review_2016.pdf. This suggests mean PPF levy as a % of technical provisions of 4-5bps a year for the next 14 years falling thereafter. Assume aggregate PPF levy over 25 years of 1% of technical provisions. For an actual scheme the levy cost may be much more significant if it has a weak covenant and poor funding. Such schemes are however likely to wind up via some form of PPF compromise within a short period of years.
- Overall, our approach is probably cautious. For example we have not allowed for expenses to reduce as the scheme becomes smaller / general downwards cost trends / scheme transitions into a "care and maintenance" state. Also, c25% of the costs relate to investment expenses, some or all of which should already be netted off in setting the technical provisions discount rate, although practice varies. Countering that however is that additional regulatory requirements on scheme may put upwards pressure on costs, and that some prudence is appropriate given the very long term nature of this risk and the difficulty in modelling it.
- The analysis is focused on a typical scheme at the time of writing rather than focusing on a mature scheme where the horizon may be shorter than 25 years.
- It is also important to note that the TPR expenses survey is limited to costs incurred by the trustees. Whilst this is the appropriate approach for technical provisions, a more holistic view, and in particular a proper reserve in the sponsor accounts for the cost of meeting a legacy liability, should pick up internal management time, sponsor advice costs and in-house support not recharged. These can be very significant, especially at the point of wind-up.
- The attraction of the approach in the table above is simplicity.
- On balance we think the analysis is on the prudent side, so in the main body of this slide book we have stated expense reserve ranges representing 50%-75% of the column (9) numbers above. Those ranges are in column (10) above.
- It is interesting to note that the PPF (see 31 March 2017 PPF actuarial valuation) maintains a reserve of 3.3% to meet the cost of administering benefits and investment expenses which is in line with the bottom of the column (9) range for larger schemes.
- Column (11) demonstrates that trustee decisions on bulk annuity buyout may be skewed if expenses reserves are excluded. The latest TPR scheme funding report[1] sets out the ratio of TPs / Buyout for schemes of different sizes. This ratio averages around 69% or, in other words, a gap of 31%[2]. However, if the mid-point of the expense reserve we have estimated is added to the TPs, this gap reduces by a massive 28% for small schemes (to 21%[3]), by 12% for schemes with 100-4,999 members and by 8% for schemes with 1,000-4,999 members. Hence, allowing for expense reserves in the headline TPs may mean decisions towards an earlier target date for winding up.

[1] See http://www.thepensionsregulator.gov.uk/docs/scheme-funding-appendix-2017.pdf table 2.4a
[2] c. 69% average ratio for schemes of the size covered in the table in the preceding slide
[3] Actual TP/Buyout ratio for this size scheme was 70.4% giving a gap of 29.6%. The gap reduces by 28% to 21.3% allowing for an expense reserve

Running faster to keep up example

- "Running faster" means that as cash outflow increases, the level of deficit contributions required to keep the funding level from falling rises as a % of the technical provisions.
- If a simple single discount rate model is used, it can be shown that to keep the funding level stable contributions must be at least equal to (1-funding level) x benefits:
  - At 80% funding, this means contributions of at least 0.4% of technical provisions if outgo is 2% of technical provisions per annum – not a big ask
  - However at 5% of technical provisions per annum (as might be the case for a mature scheme) it implies a contributions of 1% technical provisions per annum, which is material compared to typical shortfall contributions which would also be paid of 1-2% of technical provisions per annum.
- Of course an increasing funding level is desirable – if a 2% annual funding level increase is desired, then the required contribution is 2.4% of technical provisions for 2% outgo (instead of 0.4%) but 3% of liabilities for 5% outgo, an increase of 25%.
- This effect is magnified in the presence of assumed investment outperformance:
  - Suppose the funding plan relies on the investments outperforming the discount rate by 1% per annum
  - Then to achieve a 2% increase in funding level requires a contribution of 1.6% (2.4% - 1.0% out performance x 80% funded) for 2% outgo, but 2.2% for 5% outgo, an increase of 38% instead of 25%.
- As maturity increases the potential credit from investment outperformance may fall anyway – if the credit falls from 1.0% to 0.5% then in the above example the required contribution rises 25% to 2.0% in the 2% outgo example.
- A common oversight in funding plans for cashflow negative schemes which allow for investment outperformance is to fail to allow for the effect above, which may lead to subsequent failure to meet the funding target.

How do we define mature?

- We all know a mature scheme when we see one … or do we?
- We can all agree on what a super-mature scheme looks like … or can we?
- To facilitate proper discussion on how issues and needs change as a scheme progresses up the maturity path it helps to define a few stages of maturity that can be referenced throughout this slide book.
- There is no right approach, but an approach is better than no approach.

New

Immature

Average maturity

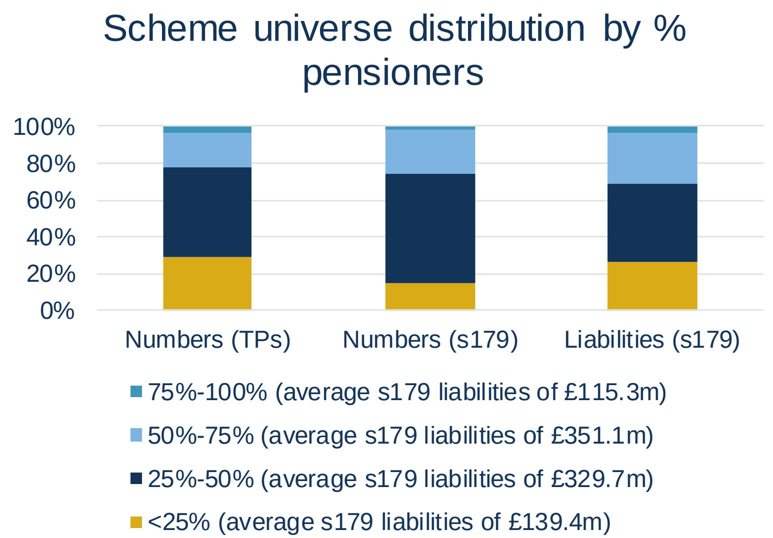
Mature

Super mature

What's the equivalent for a DB pension scheme?

Is % pensioners a suitable marker for maturity?

- TPR uses the % of pensioner technical provisions as its maturity measure in its annual scheme funding analysis and report.
- There are significant numbers (29%) of schemes with less than 25% pensioner liability
  - These are on average materially smaller however
  - May be due to preference of small schemes to buy annuities for pensioners which are then excluded from data
- Median scheme is less than 50% pensioners, which would not generally be regarded as highly mature.
- 22% of schemes have passed the 50% pensioner mark but only 4% have reached 75% and they are significantly smaller than average.
- % pensioner measures are highly assumption reliant – eg see difference between TP and s179 data.



Eg the dark blue in the first column represents the proportion of schemes for which pensioner TP's are 25-50% of total TPs

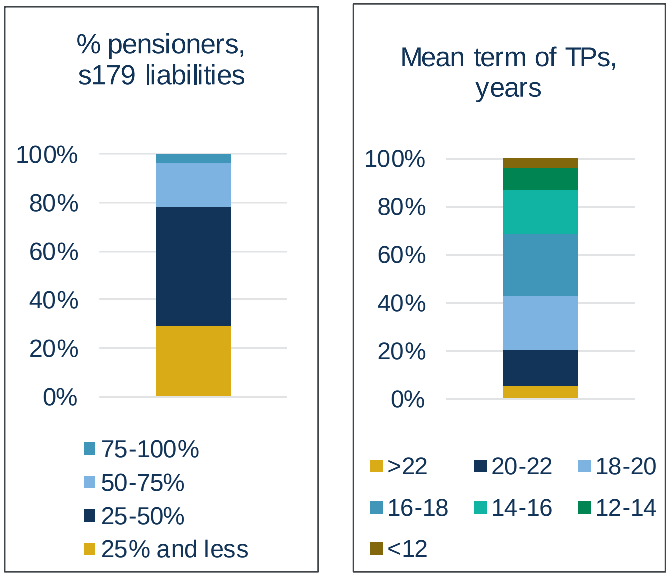
Although % pensioners is a proxy for maturity it does not capture the relative age of members. Two schemes, each with 100% pensioners, may have very different maturities

[1] Source, for s179 figures PPF Purple Book 2016 and for TP figures TPR Scheme Funding Statistics June 2017

Duration - a fuller definition of maturity?

- Percentage of pensioners is a typical start point but it does not capture important issues.
- TPR has started (in Annual Funding Statement Analysis 2016) to focus on the more sophisticated metric of mean term.
- This will be correlated to % pensioners but also captures:
  - Non-pensioner average age is likely to be increasing so the duration of this group is expected to fall
  - Pensioner durations can very significantly. For example compare a scheme from a legacy blue collar industry with many older pensioners with a white collar scheme with lots of early retirees

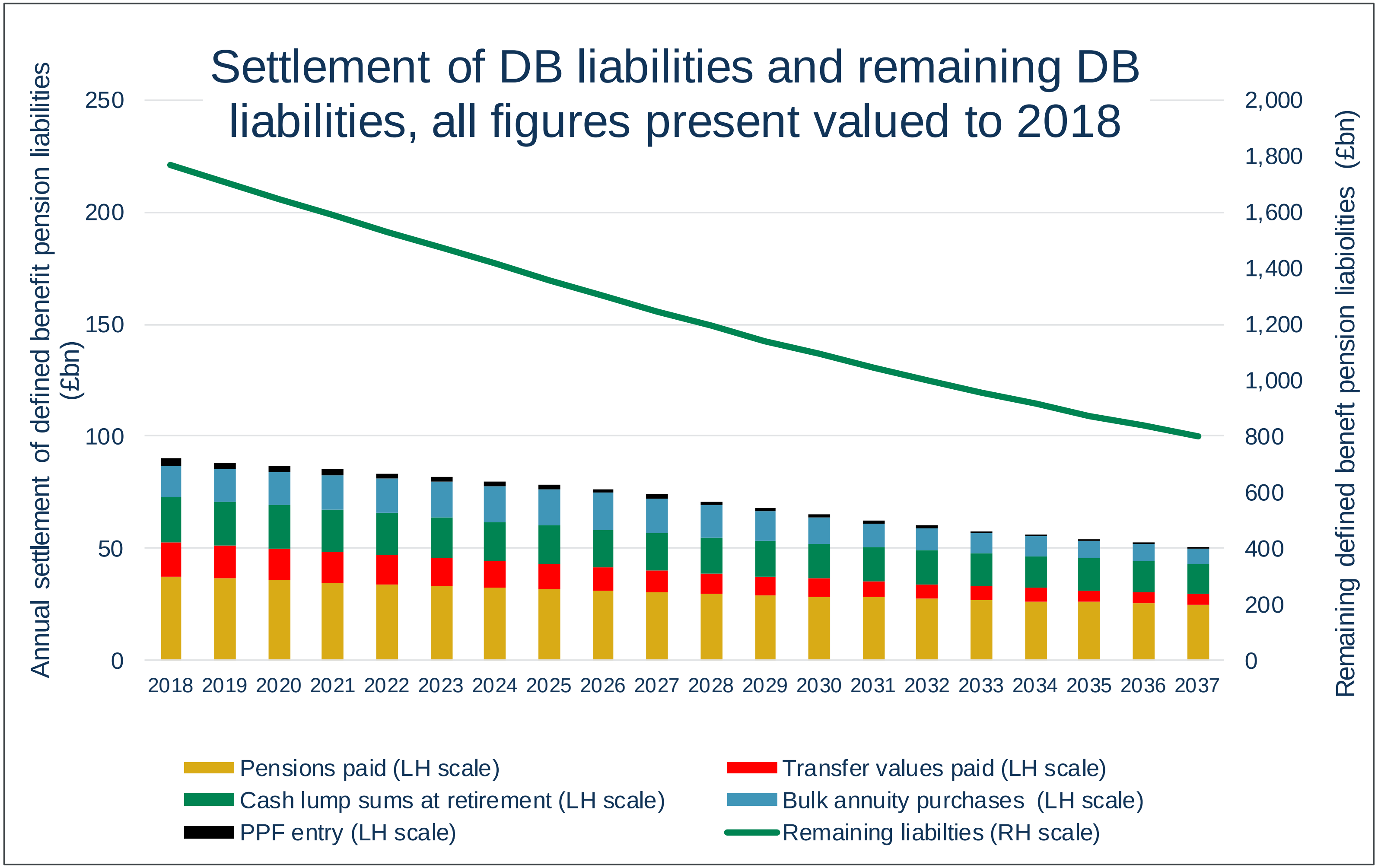
Scheme universe distribution by maturity (number of schemes)



Duration is not perfect – for example it is impacted by indexation and discount rate. However it is usually readily available and captures extra information to % pensioners

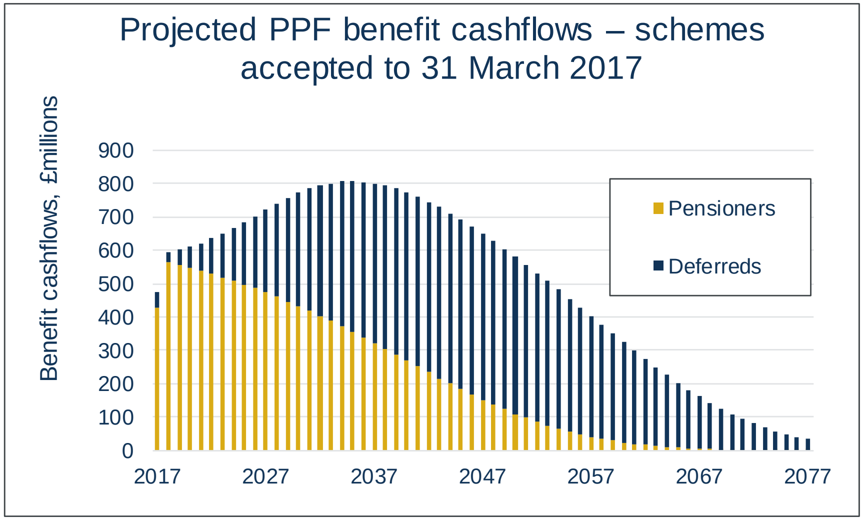
Chart sources: PPF Purple Book 2016 and TPR Annual Funding Statement Analysis 2016
Note: “Duration” can be defined in different ways. Where we use duration in this slide book we are generally referring to the concept of a weighted term based measure, unless a specific definition is specified.

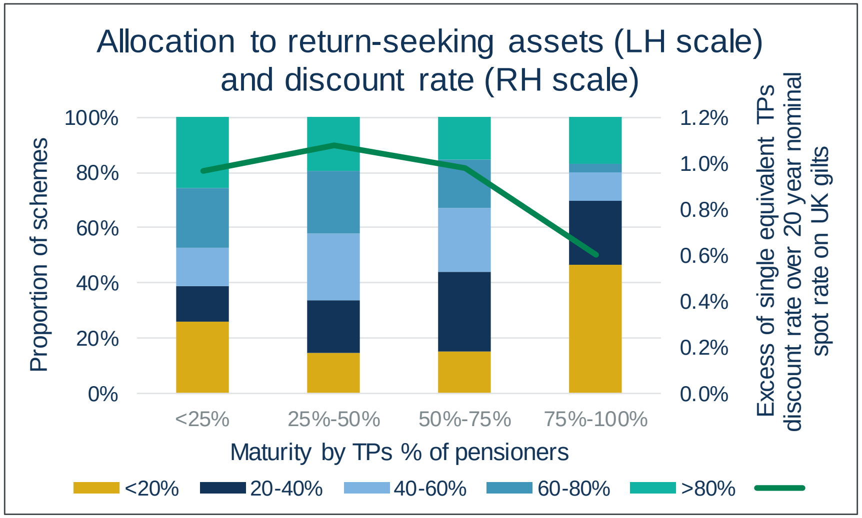
Large versions of charts – slide 16

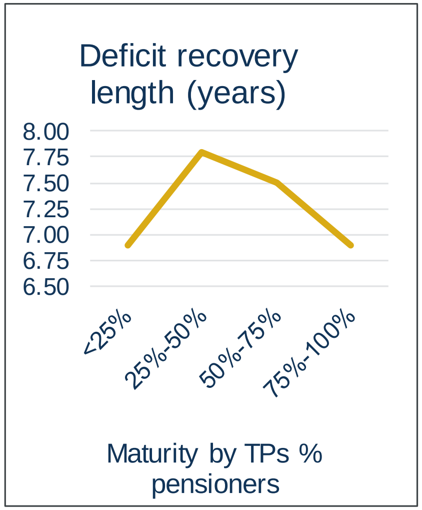


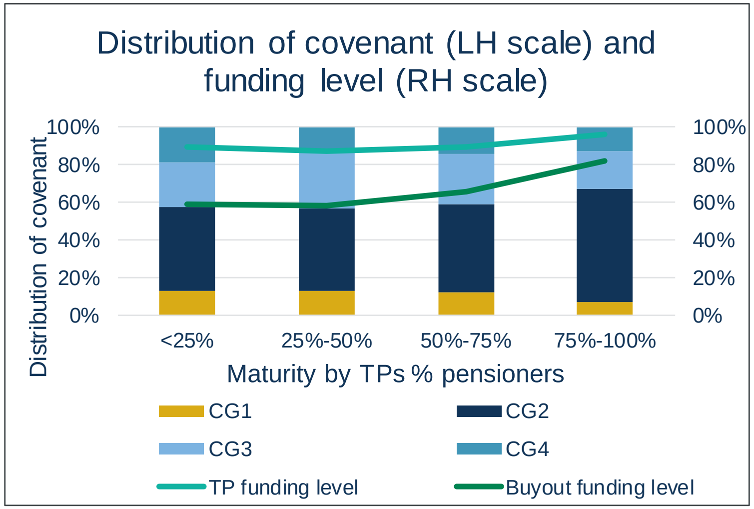
See main body of the slide book for chart references and sources

Large versions of charts – slides 28, 33 and 36



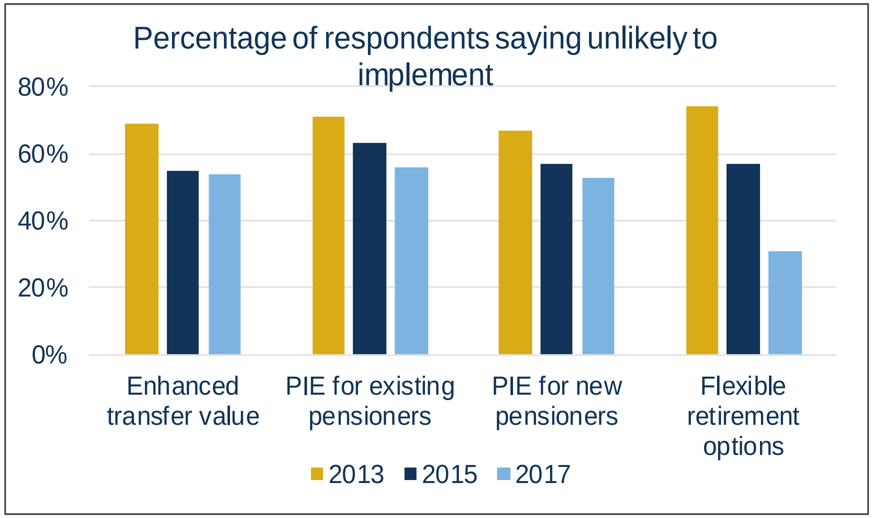


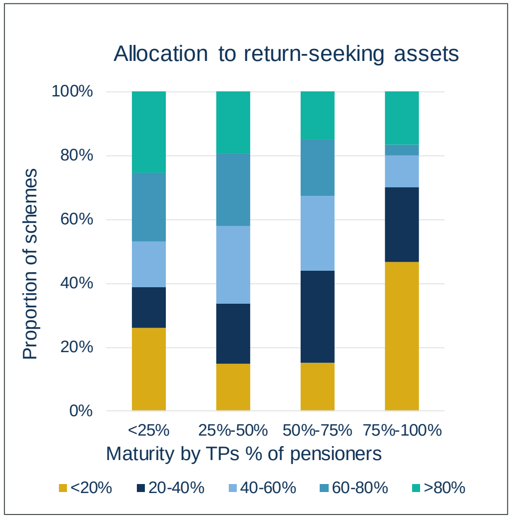


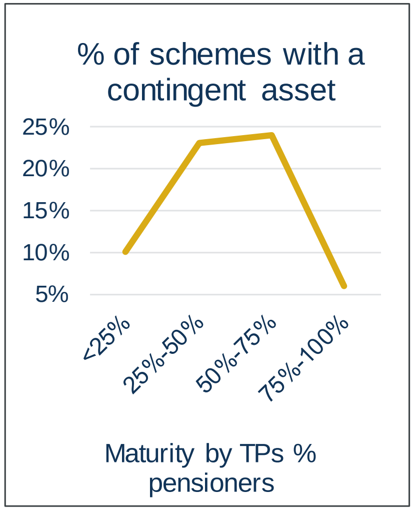


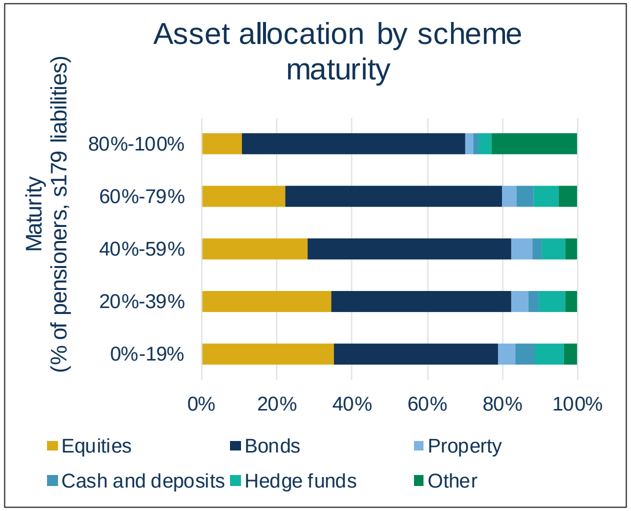
See main body of the slide book for chart references and sources

Large versions of charts – slides 39, 42, 45 and 48

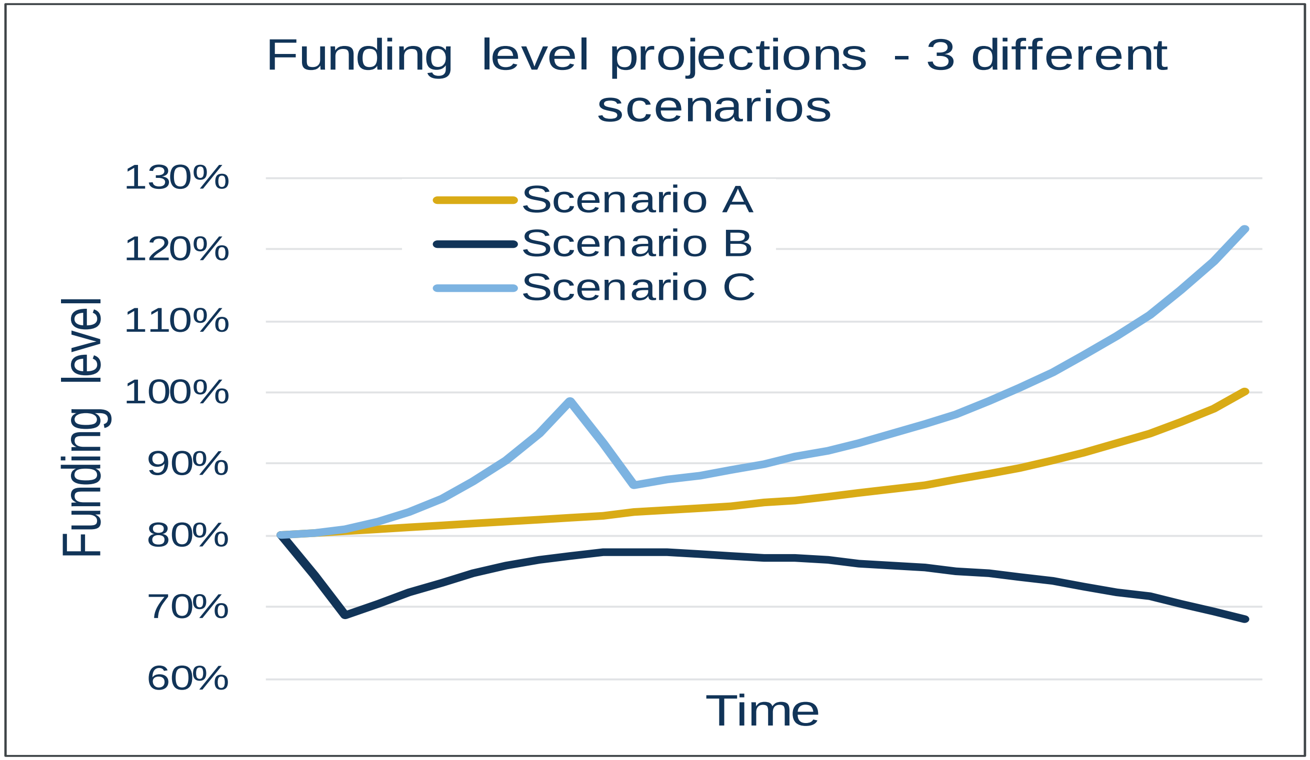








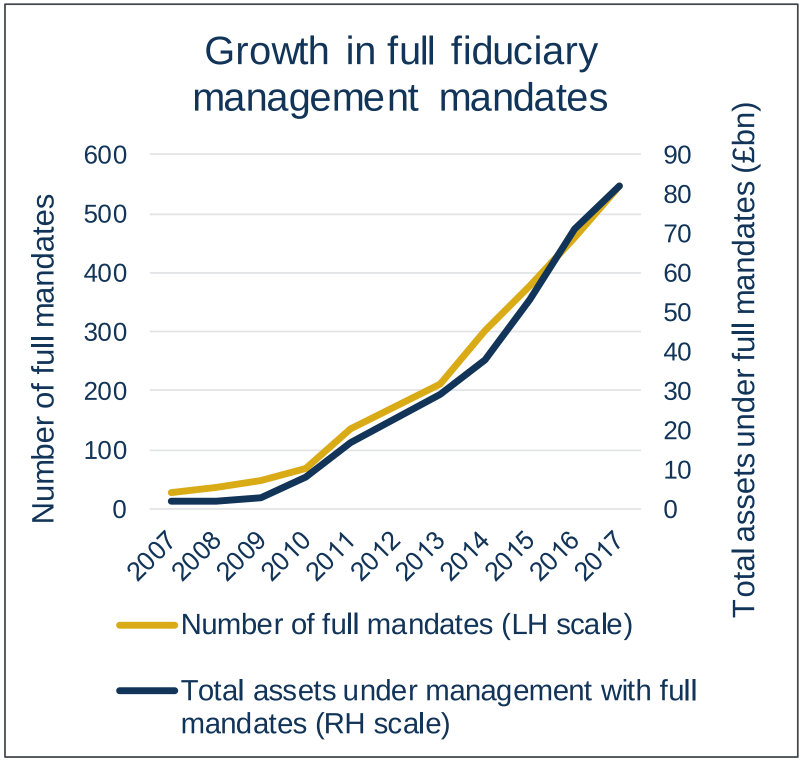
Large versions of charts – slide 48

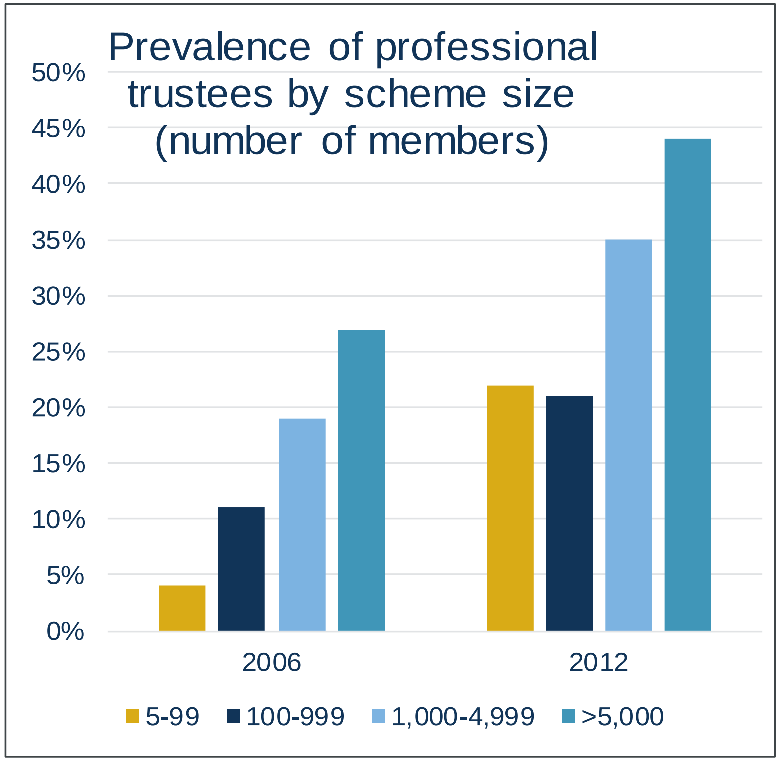


Scenario A: No market volatility. Asset return = assumptions made for each year in recovery plan
Scenario B: During first 3rd of recovery plan asset returns negative in early years then higher in following years. For the last 2/3rds of the recover plan period asset return = assumptions made
Scenario C: During first 3rd of recovery plan asset returns higher than assumed in early years but then lower in following years. For the last 2/3rds of the recover period asset return = assumptions made

See main body of the slide book for chart references and sources

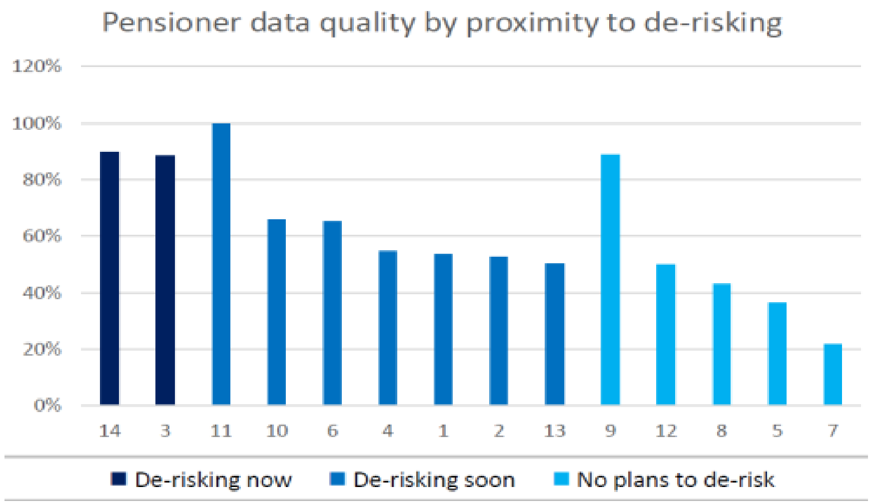
Large versions of charts – slide 51

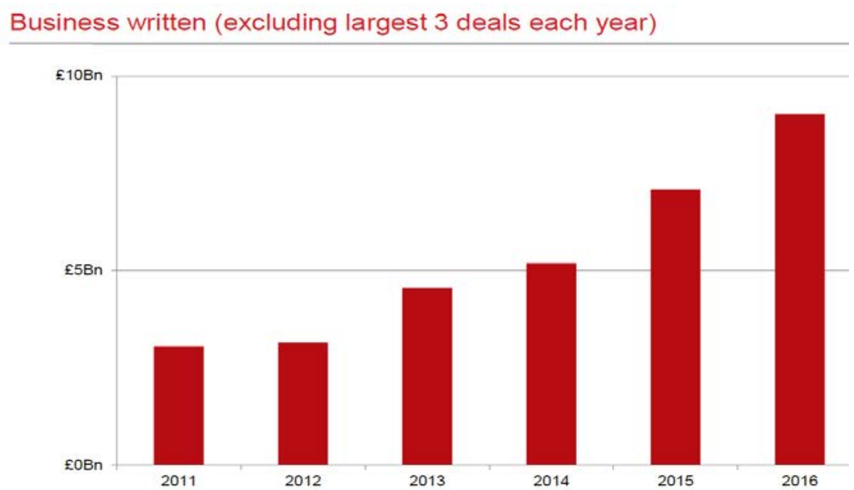


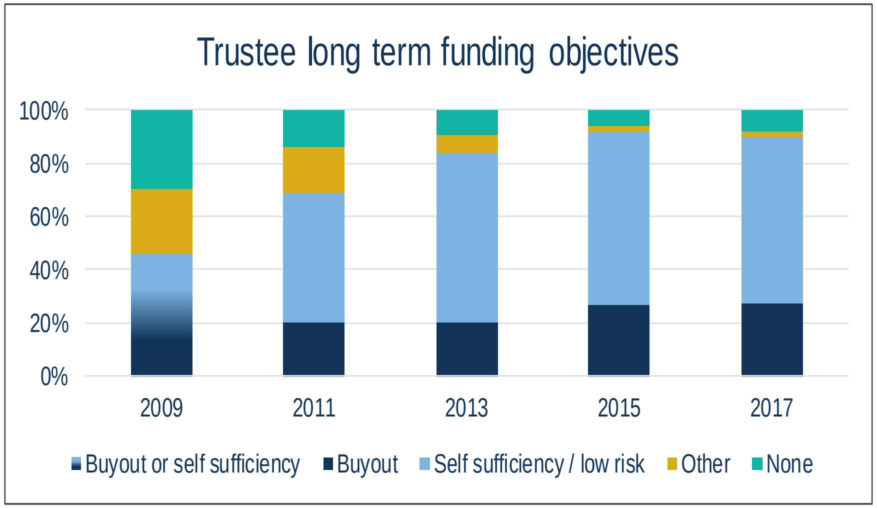


See main body of the slide book for chart references and sources

Large versions of charts – slides 54, 57 and 60

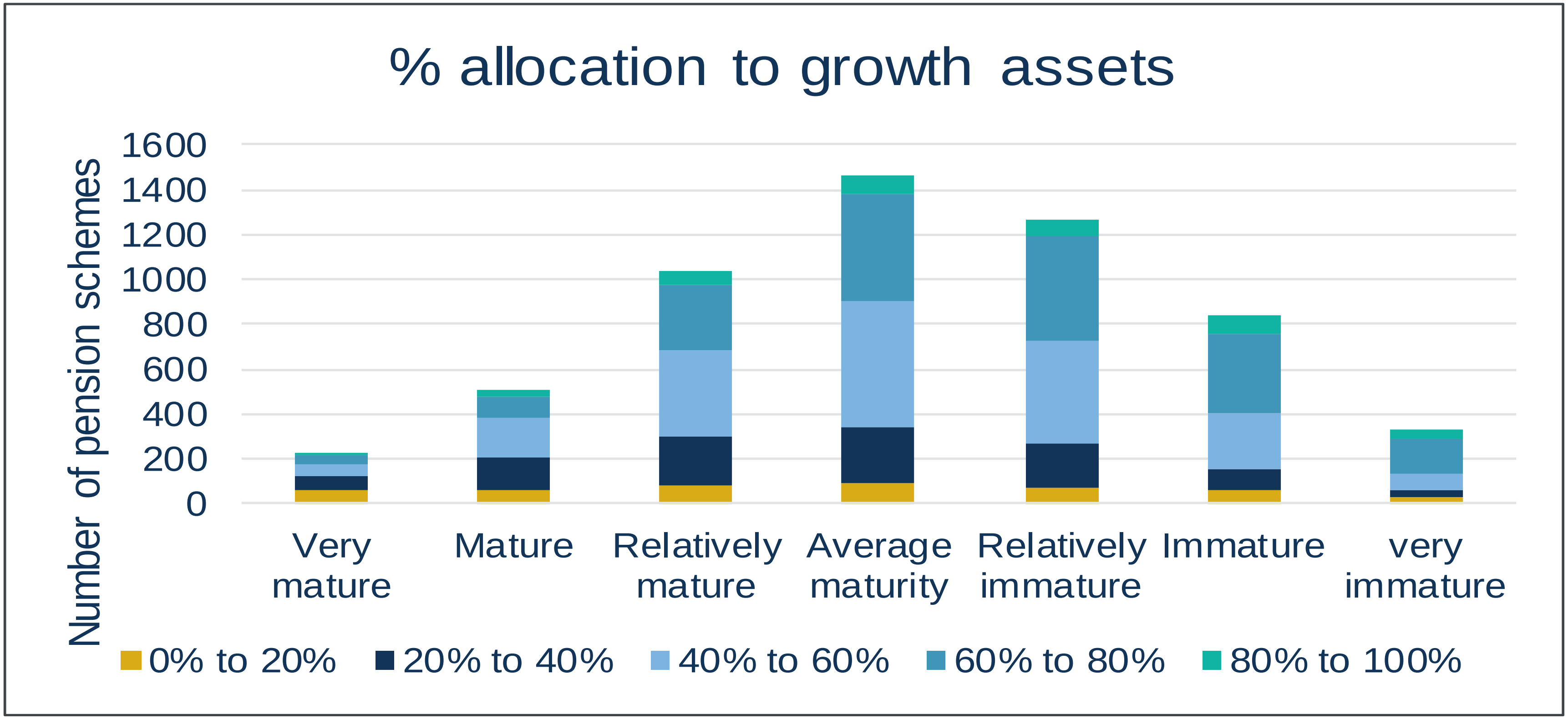






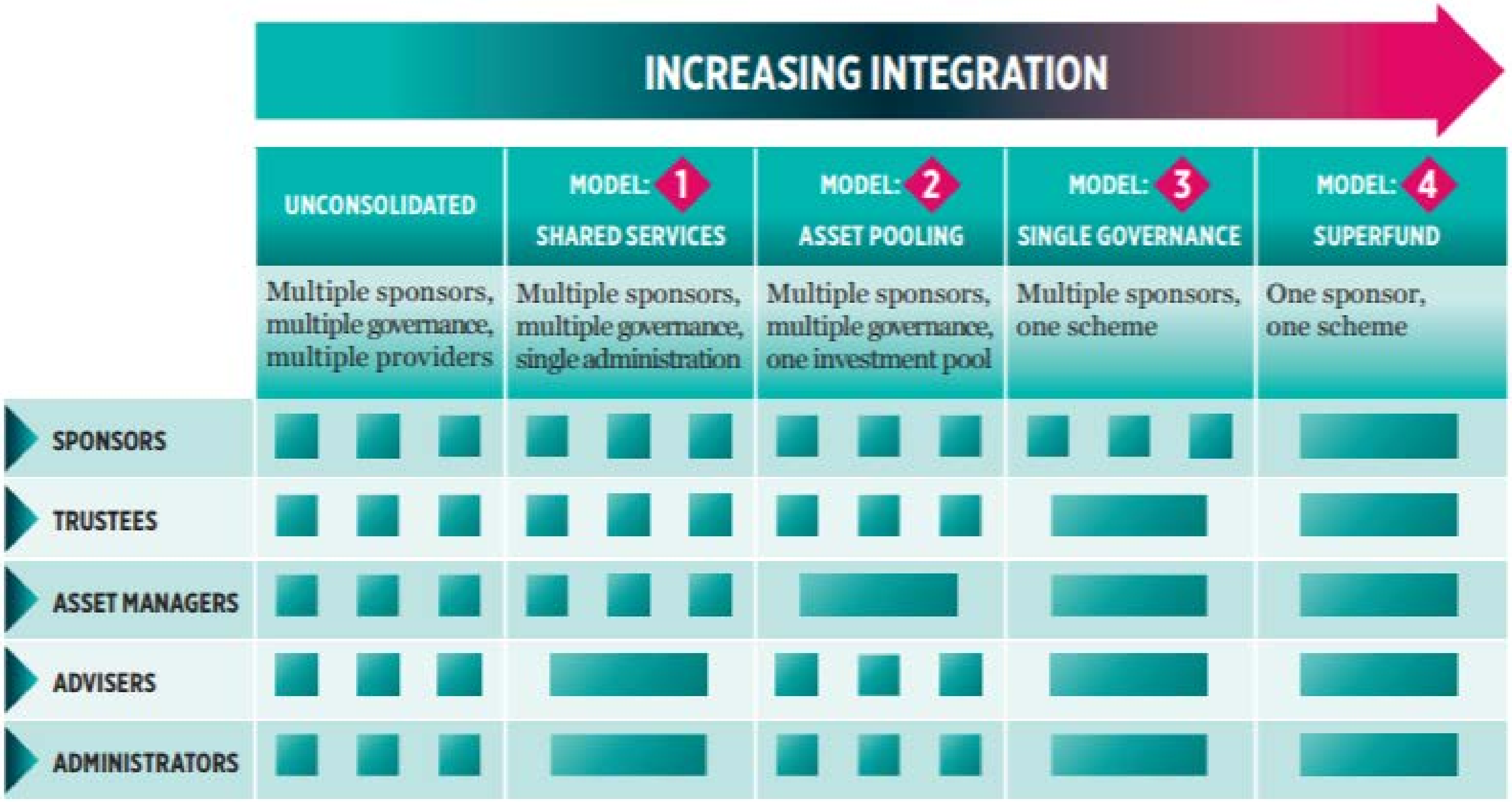
See main body of the slide book for chart references and sources

Large versions of charts – slide 73



See main body of the slide book for chart references and sources

Large versions of charts – slide 87



See main body of the slide book for chart references and sources