Subject SA4

CMP Upgrade 2022/23

CMP Upgrade

This CMP Upgrade lists the changes to the Syllabus, Core Reading and the ActEd material since last year that might realistically affect your chance of success in the exam. It is produced so that you can manually amend your 2022 CMP to make it suitable for study for the 2023 exams. It includes replacement pages and additional pages where appropriate.

Alternatively, you can buy a full set of up-to-date Course Notes / CMP at a significantly reduced price if you have previously bought the full-price Course Notes / CMP in this subject. Please see our 2023 *Student Brochure* for more details.

We only accept the current version of assignments for marking, *ie* those published for the sessions leading to the 2023 exams. If you wish to submit your script for marking but only have an old version, then you can order the current assignments free of charge if you have purchased the same assignments in the same subject in a previous year, and have purchased marking for the 2023 session.

This CMP Upgrade contains:

- all significant changes to the Syllabus and Core Reading
- additional changes to the ActEd Course Notes and Assignments that will make them suitable for study for the 2023 exams.

 © IFE: 2023 Examinations

0 Changes to the Syllabus

This section contains all the ***non-trivial*** changes to the Syllabus Objectives.

The following text has been added after the detailed syllabus objectives in Section 1.2 of the Study Guide:

Assessment

The assessment of this subject will consist of one examination. The candidate will be asked to apply actuarial practice and concepts to problems in the pensions and employee benefit environment and to integrate analysis, evaluation and interpretation of results in order to draw conclusions. A number of questions will be set with varying marks, in line with the above syllabus topic weightings and skill levels.

The duration of this examination is three hours and twenty minutes and is timed and online.

Please read the latest version of the IFoA Examinations Handbook and IFoA Examination Regulations on the IFoA website before sitting any IFoA examination.

1 Changes to the Core Reading and ActEd text

This section contains all the ***non-trivial*** changes to the Core Reading and ActEd text.

Study Guide

The end of Section 1.4 of the Study Guide now reads:

The Specialist Advanced examinations are in the form of 3¼-hour* examinations.

* The online exams include an additional 5 minutes (*ie* 3 hours 20 minutes in total) for students to download and print the question paper.

Multiple other changes have been made to the Study Guide. The version for the 2023 exams can be downloaded from https://acted.co.uk/paper_study_guide.html

Chapter 1

Section 3.2 onwards

Various updates and additions have been made to the Core Reading, replacement pages are attached.

Chapter 2

Page 4

The final paragraph now reads:

The initial minimum contribution requirements were low at a combined 2% of earnings between minimum and maximum thresholds, of which at least 1% must be paid by employers, but increased to 5% from April 2018, and 8% from April 2019 of which at least 3% must be paid by employers. There are also proposals to extend auto-enrolment to younger employees, although it will remain voluntary for the self-employed and non-workers.

Page 7

Material about the Pensions Act 2021 has been added to the end of Section 1.1. An additional page is attached

Page 25

The UK example has been updated and now reads:

The IFoA has produced guidance on managing conflicts of interest, accessible via the following link:

https://actuaries.org.uk/standards/conflicts-of-interest/

TPR has also issued guidance on this issue which you may find useful to read:

https://www.thepensionsregulator.gov.uk/en/trustees/governing-the-scheme/conflicts-of-interest

 © IFE: 2023 Examinations

Chapter 4

Page 7

The list of scheme changes that require consultation has been updated and now reads:

The following types of changes require consultation:

- **Increasing the scheme's normal retirement age.**
- **Closing the scheme to future accrual.**
- **Closing the scheme to new members.**
- **Removing the employer's liability to contribute to the scheme.**
- **Increasing employee contributions (or, in the case of non-contributory schemes, introducing employee contributions).**
- **Changing from** defined **benefits to pure defined contribution.**
- **Reducing, or changing the basis for determining, the accrual rate in a DB scheme.**
- **Changing the calculations of pensionable earnings.**
- **Reducing the rates at which pensions increase or other benefits revalue.**

Note that the legislation only requires the employer to consult with the members, not obtain their consent to the proposed amendments.

Page 28

APS P1 has been updated and the ActEd text at the top of the page has been updated to note that it is now Paragraph 3 of Appendix 1 of APS P1 that sets out the events that could affect the financing or solvency of a scheme.

Chapter 5

Sections 4 and 5

The Core Reading about APS P1 and the non-mandatory resource material from the IFoA has been updated, replacement pages are attached.

Chapter 8

Section 2

Core Reading and ActEd text has been added to the UK example in Section 2.2 and a new section on early and late retirement has been added. This has been numbered Section 2.4 and the existing Section 2.4 and later sections have been renumbered. Replacement pages for Section 2 are attached.

Pages 37 and 38

The duplicate of the subsection 'Early retirement benefits' has been deleted.

Chapter 9

Sections 1-3

There have been significant additions and other changes to the Core Reading and ActEd text in these sections. Replacement pages are attached together with replacement pages for the chapter summary.

Chapter 11

Pages 18 and 19

Much of the final paragraph of Core Reading on page 18 has been deleted, so that it now reads:

A recovery plan must include the date by when the shortfall is expected to be eliminated.

The paragraph of ActEd text at the top of page 19 has also been deleted.

Chapter 14

Section 8

The Core Reading and ActEd text in this section has been updated. Replacement pages are attached together with replacement pages for the chapter summary.

Chapter 16

Section 3.1

The bond yield plus risk premium method is no longer categorised in the Core Reading as a replicating portfolio approach, so the ActEd text on page 16 now reads:

Market-related approaches use a market value of assets and set a market discount rate in order to calculate a market value of the liabilities and contribution requirements.

The approaches discussed below are:

- asset-based discount rate
- replicating portfolio, mark to market, or market consistent
- bond yields plus risk premium.

All the assumptions used in market-related approaches are market-related. So for example, the price inflation assumption may be derived as the difference between the yields on appropriate portfolios of fixed-interest and index-linked government bonds. Trustees may also consider policy statements by the State or a national bank when setting an assumption for future price inflation.

Assumptions are discussed in Chapter 18.

Page 18

The heading entitled 'Replicating portfolio' has been changed to read 'Replicating Portfolio, Mark to Market, or Market Consistent' and some text has been deleted so that the first three paragraphs now read:

Using a 'replicating portfolio' involves taking the fair (*ie* market) value of the liabilities as the market value of the portfolio of assets which most closely replicates the duration and risk characteristics of the liabilities.

This method aims to place a value on the liabilities, consistent with the market value of the assets, by taking the market value of a portfolio of assets that matches as closely as possible the scheme's liabilities. Thus these assets are used as a proxy for the liabilities.

For the liabilities there is an implicit assumption that a set of bonds can be found that could be used to replicate each type of benefit (*ie* pensions with fixed increases, pensions with inflation linked increases, deferred pensions, *etc*.).

Page 26

The bullet points in the summary now read:

Market-related approaches use a market value of assets and determine a market interest rate to discount the liabilities. The approaches are:

- asset-based discount rate
- mark to market, replicating portfolio or market consistent
- bond yields plus risk premium.

Chapter 18

Page 27

The Core Reading and ActEd text under the heading 'Mortality projections in the UK' has been updated, replacement pages are attached.

Page 33

The heading 'Example: Early retirement' has been moved up four paragraphs and the final three paragraphs of Core Reading on this page (which are duplicates of Core Reading immediately above) have been deleted.

Page 49

The first paragraph under the heading '*Discount rate (i)*' now reads:

There are several methods to determine the discount rate for the liabilities in a market-related valuation. An asset-based discount rate could be used, or a mark to market or bond yields plus risk premium approach. [½]

Chapter 21

Section 1.4

This section has been rewritten, replacement pages are attached.

Page 14

The first two paragraphs of ActEd text under the heading 'Gains and Losses' have been replaced with the following:

As a minimum, the amount of gains and losses to be recognised is calculated using the 'corridor' approach, whereby only cumulative gains or losses which are greater than this corridor have to be amortised immediately. The corridor is based on 10% of the greater of the projected benefit obligation and scheme assets at the beginning of the accounting period. Any gains or losses which are not amortised are carried forward to subsequent calculations.

Additional gains or loss can be recognised if this is considered appropriate.

Section 4.1

The first two paragraphs of ActEd text have been replaced with the following:

FRS 102 is the principal UK accounting standard under UK GAAP. Although a reduced disclosure framework, specified in FRS 101, can be applied by some companies and this is discussed in Section 4.8 below.

Many companies listed on a stock exchange within the EU or the UK have to account for the cost of employee benefits in their group consolidated accounts using IAS 19. Other stand-alone UK companies and individual companies within a UK group can account for employee benefits using UK GAAP or IAS 19.

Section 4.8

The final sentence of this section has been deleted.

Sections 5.1 to 5.7

A new paragraph of Core Reading has replaced the ActEd text in Section 5.1 and new material on plan events has been inserted as Section 5.5 with subsequent sections renumbered. Replacement pages are attached

Chapter 26

Section 2

The fourth and sixth bullets are now Core Reading.

 © IFE: 2023 Examinations

Glossary

The ActEd text under the Cash balance scheme definition now reads:

A cash balance scheme provides a defined cash sum at retirement.

The minimum cash sum may be determined at retirement based on a defined formula which, for example, could be based on a fixed accrual rate of each year's pensionable salary or linked to the age / service of a member.

The cash sum is used to provide retirement benefits. Pension benefits may be secured by purchasing an annuity with an insurance company, and if so the pension payable will depend on annuity rates at retirement.

The definition of Environmental, Social and Governance (ESG) has been updated and now reads:

Environmental, social and governance (ESG) factors

An investment strategy taking into account ESG factors, such as climate change, which may be driven by ethical principles.

See *Responsible Investment* and *Social Impact Investing*.

The definition of sponsor covenant has been updated and now reads:

Sponsor covenant

Sponsor covenant can be defined as the combination of the ability and the willingness of the sponsor to pay (or the ability of the trustees to require the sponsor to pay) sufficient contributions to ensure that the scheme's benefits can be paid as they fall due.

2 Changes to the X Assignments

Assignment X5

Question X5.2 (iii)

The words 'final salary' have been inserted in the question so that it reads:

Explain why the agreed transfer payment for a bulk transfer between occupational final salary pension schemes is usually larger than the sum of the individual transfer values that the transferring members would have been entitled to as early leavers. [4]

 © IFE: 2023 Examinations

3 Other tuition services

In addition to the CMP you might find the following services helpful with your study.

3.1 Study material

We also offer the following study material in Subject SA4:

- Flashcards
- ASET (ActEd Solutions with Exam Technique) and Mini-ASET
- Mock Exam and AMP (Additional Mock Pack).

For further details on ActEd's study materials, please refer to the 2023 *Student Brochure*, which is available from the ActEd website at **ActEd.co.uk**.

3.2 Tutorials

We offer the following (face-to-face and/or online) tutorials in Subject SA4:

- a set of Regular Tutorials (lasting a total of three days)
- a Block Tutorial (lasting three full days).

For further details on ActEd's tutorials, please refer to our latest *Tuition Bulletin*, which is available from the ActEd website at **ActEd.co.uk**.

3.3 Marking

You can have your attempts at any of our assignments or mock exams marked by ActEd. When marking your scripts, we aim to provide specific advice to improve your chances of success in the exam and to return your scripts as quickly as possible.

For further details on ActEd's marking services, please refer to the 2023 *Student Brochure*, which is available from the ActEd website at **ActEd.co.uk**.

3.4 Feedback on the study material

ActEd is always pleased to receive feedback from students about any aspect of our study programmes. Please let us know if you have any specific comments (*eg* about certain sections of the notes or particular questions) or general suggestions about how we can improve the study material. We will incorporate as many of your suggestions as we can when we update the course material each year.

If you have any comments on this course, please send them by email to **SA4@bpp.com**.

3 Bibliography

3.1 Required reading

The required reading forms part of Core Reading for Subject SA4, consisting of the Core Reading for Subject SP4 and key professional guidance.

The following papers, whilst not included in this document, form part of Core Reading. It is therefore important that they are read.

Core Reading: Subject SP4; The Institute and Faculty of Actuaries

Financial Reporting Council (FRC)

Framework for FRC technical actuarial standards

Technical Actuarial Standard 100: Principles for Technical Actuarial Work

Technical Actuarial Standard 300: Pensions

Glossary of defined terms used in FRC technical actuarial standards

Professional Guidance for Actuaries

APS P1: Duties and responsibilities of members undertaking work in relation to pension schemes

APS X1: Applying Standards to Actuarial Work

APS X2: Review of Actuarial Work

TASs are available on the FRC website (https://frc.org.uk) and professional guidance is available on the Institute and Faculty of Actuaries' website via:

https://www.actuaries.org.uk/upholding-standards/standards-and-guidance.

The Core Reading has been produced by the Institute and Faculty of Actuaries. The purpose of the Core Reading is to ensure that tutors, candidates and examiners understand the requirements of the syllabus for the qualification examinations for Fellowship of the Institute and Faculty of Actuaries.

The examinations require candidates to demonstrate their understanding of the concepts given in the syllabus and described in the Core Reading; this will be based on the legislation, professional guidance *etc* which are in force when the Core Reading is published, *ie* on 31 May in the year preceding the examinations. Examiners will have this Core Reading when setting the papers. In preparing for examinations candidates are advised to work through past examination questions and may find additional tuition helpful. The Core Reading will be updated each year to reflect changes in the syllabus and current practice, and in the interest of clarity.

At the time of writing (Spring 2022) the full effect of the Covid-19 pandemic on both the global economy and financial markets will not be known for some time. This version of the Core Reading does not attempt to address these areas.

Please read the IFoA Examinations Handbook and IFoA Examinations Regulations before sitting any IFoA examination. For the 2023 exams, these will be updated and published in the weeks leading up to each exam session, and will be available under the Qualify menu on the IFoA website: actuaries.org.uk/qualify

© IFE: 2023 Examinations

3.2 Further reading

The items included as further reading help to boost and broaden your knowledge of pensions. Many of the documents are related to UK pensions topics. If you do not have time to read all the papers in detail, try to read some executive summaries, introductions or concluding sections to give you at least a flavour and some of the salient points of each paper.

Access to electronic versions of papers in journals and publications such as the British Actuarial Journal (BAJ) and Annals of Actuarial Science is available on the Institute & Faculty of Actuaries website via: https://www.actuaries.org.uk/learn-and-develop/research-and-knowledge.

These journals and publications are now available via https://actuaries.org.uk/thought-leadership

You may be asked to log in, using your normal website login, to access some items. In case of difficulty in accessing any item, contact the libraries (e-mail: libraries@actuaries.org.uk).

The following list of suggested reading for Subject SA4 has been drawn up. Students will find it useful to consult some of the material to obtain a different viewpoint when studying a particular topic. However, students are not expected to have read all of the items on the list for their chosen subject. Equally students may use other sources of information to enhance their wider understanding, such as:

- **The financial and trade press, including The Actuary magazine.**
- **Bulletins and other publications from consultancies and insurers and other providers of benefits.**
- **Information on the websites of other bodies such as The Pensions Regulator.**
- **Other papers from the Institute and Faculty of Actuaries and SIAS.**
- **Continuous Mortality Investigation bulletins.**
- **Presentations made at recent Pensions Conferences or other events.**
- **Pensions related presentations made at recent cross-practice conventions or for other practice areas (*eg* Life, Risk, Investment).**
- **Pensions seminars arranged by the Institute and Faculty of Actuaries.**
- **Other recommended references on the Pensions practice area of the Institute and Faculty of Actuaries' website.**

Staple Inn Actuarial Society (SIAS) papers can be located at:

http://sias.org.uk/resources/papers/

These papers can now be found at https://sias.org.uk/resources/

Many of these sources of information are available on the appropriate website, *ie*:

- The Actuary magazine's website is www.theactuary.com
- the CMI area of the IFoA's website is:

  www.actuaries.org.uk/learn-and-develop/continuous-mortality-investigation
- the pensions practice area of the IFoA's website is:

  www.actuaries.org.uk/practice-areas/pensions.

The following may be of interest for students who wish to read further on this Subject, but it should be noted that this list is not exhaustive:

- **Good governance for pension schemes. Thornton, P.; Fleming, D. Cambridge University Press, 2011. 322 pages. ISBN: 9780521761611**
- **Detailed guidance for trustees. The Pensions Regulator.**

  https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance
- **Code of Practice 03: Funding Defined Benefits. The Pensions Regulator**

  http://www.thepensionsregulator.gov.uk/codes/code-funding-defined-benefits.aspx

  This code can now be found at:

  https://www.thepensionsregulator.gov.uk/en/document-library/codes-of-practice/code-3-funding-defined-benefits-
- **DB Investment Guidance. The Pensions Regulator**

  http://www.thepensionsregulator.gov.uk/guidance/db-investment.aspx

  This guidance can now be found at:

  https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance/funding-and-investment-detailed-guidance/db-investment
- **DC Investment Guidance. The Pensions Regulator**

  http://www.thepensionsregulator.gov.uk/trustees/investment-management-in-your-dc-scheme.aspx

  This guidance can now be found at:

  https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance/funding-and-investment-detailed-guidance/investment-guide-for-dc-pension-schemes-

3.3 Resources

On the Curriculum pages of the IFoA website, candidates will find a list of suggested additional resources for this subject that complement the IFoA Core Reading. All titles are hyperlinked to their source publication or the IFoA Library. Where the resource is available through the IFoA Library, members, students and affiliates can 'Request' from the IFoA Library Service, subject to availability.

We recommend you read through the syllabus for this subject, located in the Study Guide. The syllabus objectives have a useful cross-reference to the relevant chapter to support your exam preparation.

3.4 References

The chapters of the Course Notes provide the references used to produce the Core Reading material on the topics covered in each chapter and might be useful in providing further insight to these topics, although the papers are not directly examinable.

For completeness a list of all references used in the production of the Core Reading is given below.

The following were consulted in the production of this Core Reading.

- **Core Reading: Subject SP4, The Institute and Faculty of Actuaries**
- **Fleming, D., and Thornton, P., Good governance for pension schemes. Cambridge University Press, 2011. 322 pages. ISBN: 9780521761611**
- **McGill, Brown, Haley & Schieber, Fundamentals of Private Pensions, (2010), 9th Ed. Oxford University Press.**
- **Pensions Pocket Book, (2013), Rev. Ed., Economic and Financial Publishing Limited in association with Aon Hewitt**
- **Pensions Terminology – A Glossary for Pension Schemes, The Pensions Management Institute/ Pensions Research Accountants Group (PRAG), 9th Ed.**
- **The Pensions Regulator (TPR)**

  http://www.thepensionsregulator.gov.uk

  TPR's website can now be found at https://www.thepensionsregulator.gov.uk

  https://www.thepensionsregulator.gov.uk/en/trustees/investment-and-db-scheme-funding/integrated-risk-management

  Guidance for Trustees and Code of Practice: https://trusteetoolkit.thepensionsregulator.gov.uk/

  Glossary – Trustee Toolkit (The Pensions Regulator)

  https://trusteetoolkit.thepensionsregulator.gov.uk
- **Code of Practice 03: Funding Defined Benefits. The Pensions Regulator**

  http://www.thepensionsregulator.gov.uk/codes/code-funding-defined-benefits.aspx

  This code can now be found at:

  https://www.thepensionsregulator.gov.uk/en/document-library/codes-of-practice/code-3-funding-defined-benefits-
- **DB Investment Guidance. The Pensions Regulator**

  http://www.thepensionsregulator.gov.uk/guidance/db-investment.aspx

  This guidance can now be found at:

  https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance/funding-and-investment-detailed-guidance/db-investment
- **DC Investment Guidance. The Pensions Regulator**

  http://www.thepensionsregulator.gov.uk/trustees/investment-management-in-your-dc-scheme.aspx

  This guidance can now be found at:

  https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance/funding-and-investment-detailed-guidance/investment-guide-for-dc-pension-schemes-

- **Incentive exercises code of practice:**

  https://www.thepensionsregulator.gov.uk/en/document-library/regulatory-guidance/incentive-exercises

  This code of practice can now be found at:

  https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance/administration-detailed-guidance/incentive-exercises

- **Risk Alert on Climate Change, IFoA website: https://www.actuaries.org.uk/system/files/field/document/Risk%20Alert%20-%20Climate%20Change%20FINAL.pdf**

- **IFoA resource material on 'conflict of interest': https://actuaries.org.uk/standards/conflicts-of-interest/**

- **The Actuaries Code, IFoA website: https://actuaries.org.uk/standards/standards-and-guidance/the-actuaries-code**

- **Financial Reporting Council (FRC) website: https://www.frc.org.uk/**

  Framework for FRC technical actuarial standards

  Technical Actuarial Standard 100: Principles for Technical Actuarial Work

  Technical Actuarial Standard 300: Pensions

  Glossary of defined terms used in FRC technical actuarial standards

- **Professional Guidance for Actuaries**

  APS P1: Duties and responsibilities of members undertaking work in relation to pension schemes

  APS X1: Applying Standards to Actuarial Work

  APS X2: Review of Actuarial Work

3.5 Accreditation

The Institute and Faculty of Actuaries would like to thank the numerous people who have helped in the development of the current and previous versions of Core Reading.

Those particularly involved in the current version for this subject were Richard Akroyd, Gresham Arnold (ActEd), Sally Calder (IFoA, Education Actuary), Chris Collins, Graeme Foster, Simon Hubbard, Justine Peggs (ActEd), Danny Quant, Ian Rogers (Module Lead, SP4 and SA4 exams), Richard Smith, Stuart Underwood (ActEd) and Debbie Webb.

All study material produced by ActEd is copyright and is sold for the exclusive use of the purchaser. The copyright is owned by Institute and Faculty Education Limited, a subsidiary of the Institute and Faculty of Actuaries.

Unless prior authority is granted by ActEd, you may not hire out, lend, give out, sell, store or transmit electronically or photocopy any part of the study material.

You must take care of your study material to ensure that it is not used or copied by anybody else.

Legal action will be taken if these terms are infringed. In addition, we may seek to take disciplinary action through the profession or through your employer.

These conditions remain in force after you have finished using the course.

Legislation will often:

- **Limit the extent of tax advantages.**
- **Attempt to ensure security for benefit promises made.**
- **Require individuals to be provided with minimum information relating to their benefit provision.**
- **Restrict the overall benefits that can be provided.**

These issues are discussed in more detail in the next two chapters of the course which cover taxation and security.

UK examples

For example, in the UK, government departments and various other organisations set up by government oversee the regulation of benefit schemes and related services.

For example, in the UK the Finance Act 2004 and the Pensions Act 2004 were introduced because of the:

- **need to better protect employees' pensions**
- **desire to simplify HMRC rules for pension schemes**
- **requirement to transpose the EU Pensions directive into UK law.**

The Pension Schemes Act 2021 is another example of UK legislation.

The Pension Schemes Act 2021 was enacted in February 2021. Some of its provisions have come into law, including the introduction of:

- **new criminal offences and civil penalties applicable to some key stakeholders**
- **stronger powers for TPR**
- **new reporting requirements on some areas of corporate activity**
- **new restrictions on the right to request a statutory transfer**
- **requirements to identify, assess, manage and report climate-related risks and opportunities.**

The reporting requirements regarding corporate activity require sponsoring employers to notify TPR when they decide in principle to undertake certain corporate transactions, for example selling a material part of a sponsor's business or assets.

The restrictions on the right to request a statutory transfer are intended to reduce the chance of members becoming victims of fraudsters. These criminals try to persuade members to transfer the value of their benefits to an arrangement recommended by them. Members who do this can lose their entire transfer value.

The following provisions are outstanding as at the time of writing (Spring 2022):

- **changes to the funding and investment regime for defined benefit pension schemes**
- **the delivery of a pensions dashboard.**

The pensions dashboard is intended to enable citizens to view information about all their pension arrangements through a single portal.

All study material produced by ActEd is copyright and is sold for the exclusive use of the purchaser. The copyright is owned by Institute and Faculty Education Limited, a subsidiary of the Institute and Faculty of Actuaries.

Unless prior authority is granted by ActEd, you may not hire out, lend, give out, sell, store or transmit electronically or photocopy any part of the study material.

You must take care of your study material to ensure that it is not used or copied by anybody else.

Legal action will be taken if these terms are infringed. In addition, we may seek to take disciplinary action through the profession or through your employer.

These conditions remain in force after you have finished using the course.

3 The Actuaries' Code for IFoA members

The Actuaries' Code sets out six core principles (integrity, competence and care, impartiality, compliance, speaking up and communication) which actuaries are expected to observe in their professional lives, and which must be complied with in both the spirit and the letter.

The content of the Actuaries' Code should be known and applied by all members (students and actuaries) of the IFoA.

The Actuaries' Code is a short document which can be found on the Institute and Faculty of Actuaries' website at the time of writing (May 2022) at:

https://actuaries.org.uk/standards/standards-and-guidance/the-actuaries-code

4 Actuarial Profession Standards for IFoA members

The following APSs are relevant to pensions actuaries:

- **APS P1 – Duties and Responsibilities of Members Undertaking Work in Relation to Pension Schemes**

  The current version of this standard came into effect on 1 April 2022. It is a mandatory standard and contains ethical material and builds on the Actuaries' Code.

- **APS X1 – Applying Standards to Actuarial Work**

  The current version of this standard came into force on 19 March 2019 and is mandatory.

- **APS X2 – Review of Actuarial Work**

  This standard is mandatory and came into force on 1 July 2015.

- **APS X3 – The Actuary as an Expert in Legal Proceedings**

  The current version of this standard came into force on 20 April 2018.

APS P1, APS X1 and APS X2 form part of the Core Reading so you are expected to have detailed knowledge of these standards. All these standards can be found at the time of writing (May 2022) on the IFoA's website within the professional standards directory, at:

https://actuaries.org.uk/standards/standards-and-guidance/professional-standards-directory

4.1 APS P1 – Duties and Responsibilities of Members Undertaking Work in Relation to Pension Schemes

The purpose of APS P1 is to set out specific ethical requirements that apply to certain members operating in the pensions area of practice.

APS P1 sets out the matters that should normally be covered in a written agreement between a Scheme Actuary (or Equivalent Scheme Actuary) and the Trustees, including requiring the trustees to:

- **allow the Scheme Actuary to liaise with other advisers to the Trustees;**
- **notify the Scheme Actuary of specified events which could be of material significance to the financing or solvency of the scheme;**
- **provide the Scheme Actuary with any whistleblowing reports made to The Pensions Regulator (TPR);**
- **advise the Scheme Actuary of any communication with TPR which is relevant to the financing or solvency of the scheme; and**
- **allow the Scheme Actuary access to scheme documentation and Trustees' minutes.**

 © IFE: 2023 Examinations

APS P1 also sets out other responsibilities of Scheme Actuaries (or Equivalent Scheme Actuaries or Other Actuarial Advisers) to take appropriate action and inform the Trustees (and, if appropriate any third party adviser or service provider to the Trustees):

- **on becoming aware of any significant matter which could have an impact on the security of members' benefits and/or financing of the scheme, or which might lead to the need for further advice;**
- **if they have material concerns about the way the Trustees are fulfilling their duties and responsibilities, or about actions being taken by any third party adviser or service provider to the Trustees;**
- **when giving an actuarial certificate, of any matters the Trustees should bear in mind before taking any actions associated with that certificate; and**
- **of any work being undertaken for the Employer and the potential for conflicts of interest.**

4.2 APS X1 – Applying Standards to Actuarial Work

This APS provides actuaries with a framework and approach for clarifying which standards to apply to their work.

It clarifies that all members, regardless of where they are located or whether the work is being carried out in the UK or elsewhere, must apply the Actuaries' Code and relevant APSs.

It also sets out principles for members to follow in identifying and applying appropriate standards to their work. This is likely to be of particular relevance for those members working in geographically complex situations or where there are competing standards that might apply to their work.

4.3 APS X2 – Review of Actuarial Work

APS X2 relates to the need to consider the extent to which review (including independent peer review) is required for any 'actuarial work', *ie* work undertaken by a member in their capacity as a person with actuarial skills on which the intended recipient of that work is entitled to rely.

Some of the key features of APS X2 are as follows:

- **The requirements apply to all members, regardless of practice area.**
- **The requirements are principles based.**
- **There will be two types of review – peer review and independent peer review.**
- **Members must use professional judgement to consider whether a review is required and whether it needs to be independent. Members will therefore need to decide whether a review is appropriate and proportionate, for example, whether the work is particularly complex or of a significant financial consequence.**
- **For an independent peer review, the reviewer must not have** been **involved in the piece of work. However the reviewer may be employed by the same firm.**
- **The review must take place when it is still capable of influencing the conclusions and outputs of the work. Therefore a review of work already delivered, sometimes known as a 'cold review', is not suitable for this purpose.**

4.4 APS X3 – The Actuary as an Expert in Legal Proceedings

APS X3 came into force with effect from 1 January 2015 and was updated with effect from 20 April 2018. Its purpose is to provide guidance to actuaries who have been approached to act as an Expert Witness and/or Expert Advisor for the purpose of legal proceedings. This usually means criminal and civil proceedings but may also encompass regulatory or discipline proceedings. The guide focuses on UK proceedings but members involved in such work outside the UK are expected to apply the principles.

Provisions of the standard include:

- **Members must be familiar with the rules that apply to the proceedings and jurisdiction in which they are instructed.**
- **Before accepting the instruction, the member must be clear as to its exact nature, for example, whether the role is as an Expert Advisor or an Expert Witness.**
- **Where appropriate, instructions should be received in writing.**
- **Members should ensure that advice is independent and objective (and can reasonably be seen to do so) and they should not act if they cannot ensure this is the case.**
- **Remuneration should not be dependent on the outcome of the hearing, for example, ‘no win, no fee’ arrangements are prohibited.**

The latest version of APS X3 includes a new Section 6, concerning interpretation and application of the standard, together with some new definitions.

 © IFE: 2023 Examinations

5 Non-mandatory resource material from the IFoA

As noted earlier, the IFoA also produces other non-mandatory resource material which is intended to provide helpful guidance for its members.

These include:

- ***Speaking Up: A Guide for Members* and *Whistleblowing: A Guide for Employers of Actuaries***

  These leaflets are intended to help all actuaries (and their employers) understand their whistleblowing obligations, both professionally and legally, and to alleviate concerns that they may have about such responsibilities.

- ***Conflicts of Interest: A Guide for Members***

  This leaflet builds on the provisions of the Actuaries' Code in relation to conflicts of interest and sets out views on good practice regarding such conflicts and how they might be managed.

At the time of writing (May 2022), this resource material can be found on the IFoA's website within the upholding standards area, at:

https://actuaries.org.uk/standards/standards-and-guidance/non-mandatory-guidance

- ***Risk Alert on Climate-Related Risks (IFOA, 2017a)***

  This risk alert, issued on 12 May 2017, states that: 'Actuaries should ensure that they understand, and are clear in communicating, the extent to which they have taken account of climate-related risks in any relevant decisions, calculations or advice.'

At the time of writing (May 2022), this resource material can be found on the IFoA's website within the upholding standards area, at:

https://actuaries.org.uk/standards/risk-alerts

6 Actuarial Quality Framework in the UK

The Financial Reporting Council has developed an Actuarial Quality Framework which is designed to support effective communication between actuaries, their principal clients and employers such as senior management and members of governing and review bodies, other professionals such as lawyers and accountants, end-users and their representatives, policymakers and regulators.

The Framework is intended to be complementary to other regulations affecting actuaries and those who rely on their work.

It aims to promote the following drivers of actuarial quality:

- **Methods – reliability and usefulness of actuarial methods.**
- **Communication – communication of actuarial information and advice.**
- **Actuaries – technical skills of actuaries and ethics and professionalism of actuaries.**
- **Environment – working environment for actuaries and other factors outside the control of actuaries.**

Detailed knowledge of the Actuarial Quality Framework is not required for the examinations, but the full document can be found by using the search facility on: https://www.frc.org.uk.

 © IFE: 2023 Examinations

Employment status

Temporary employees may not be offered membership of a pension scheme. This would significantly increase the administration due to the short service expected among temporary employees.

Question

Outline the advantages and disadvantages of:

- minimum company service, and
- minimum age

forming part of the eligibility conditions for scheme membership.

Solution

The advantages and disadvantages of minimum company service are:

+ less administration for the employer
+ more efficient targeting of resources, *ie* to reward loyalty
– may be unattractive to potential employees and demotivate recent joiners
– could mean those in most need have no protection, *eg* young employee with family.

The advantages and disadvantages of minimum age are:

as above, plus

+ can be set to tie in with retirement age so overprovision is avoided, *ie* maximum scheme service restricted to forty years.
– may be perceived to be unfair and discriminates members by age.

 © IFE: 2023 Examinations

2 Retirement benefits

2.1 Normal Retirement Age (NRA)

A retirement age (which may be known as the Normal Retirement Age or NRA) used in the design of benefits will be set after consideration of the following factors:

- **State Pension Age (SPA) of the country** – to NRA is often set equal to SPA, because retirement benefits from the State commence at this time, and it is a retirement age that employees commonly plan for
- **legal retirement age in the employees' contracts of employment**
- **retirement ages adopted by other employers in the same industry** (competition is a factor in setting the NRA
- **type of employment** (NRA may be a function of the industry in which the employer operates**)**
- the type of member – for example senior executives often expect a lower NRA in a DB scheme as a form of enhancement to their benefits; in some countries this may breach anti-discrimination legislation.
- **whether the employer wishes to encourage employees to leave employment**
- **the ages at which employees may wish to retire**
- **the lower the retirement age, the shorter the period over which benefits accrue or funds accumulate, and hence the greater the risk of inadequate provision** (unless there is a faster accrual of benefits or higher contribution rate to compensate)
- **the lower the retirement age, the longer the period of payment, and hence the greater the cost** in a DB scheme
- in a DC scheme, the lower the retirement age:
  - the lower the likely fund, leading to a lower benefit for the member
  - the higher the likely cost of purchasing an annuity (if desired); again leading to a lower benefit for the member.

2.2 Form of benefits at NRA

Benefits at NRA can be paid as a pension and/or a lump sum. The pension can be subject to guaranteed or discretionary increases in payment.

In offering a lump sum benefit and setting the terms for provision, the sponsor should also consider whether it is meeting the aims of the benefit provision. Although it may not meet the objective of providing financial protection in retirement it is valued by members.

An employer's objective might be to provide protection by meeting the needs of employees in retirement. This might involve targeting a pension that meets a certain net replacement ratio. Tax-free cash can be spent very quickly, perhaps on non-essential items, at the expense of financial security in retirement. Pension may therefore be a more appropriate benefit form.

The form of the benefits from a DB scheme is often prescribed. The form of the pension benefits from a DC scheme is often determined by the member but may be restricted to those options made available, *eg* rather than allowing members to choose *any* level of pension increases, the scheme might offer a choice of a level or inflation-linked pension.

However, members of both types of schemes may opt to transfer their benefits out of the scheme in order to access a wider range of options.

UK example

In the UK, HMRC allows pension schemes to provide a lump sum to members at retirement, and most members take advantage of this option. A lump sum of 25% of the benefit value is tax-free if the scheme is a UK registered scheme.

In some DB schemes a lump sum is paid in addition to a pension benefit. This design is particularly prevalent in the public sector. However, most DB schemes in the private sector define the standard benefit as a pension and allow members to commute (or exchange) part of the pension for a lump sum.

In practice almost all members of UK pension schemes take up the cash option as it is paid free of tax. If the commutation is not on actuarially equivalent terms, then the difference in costs will need to be accounted for by the sponsor when planning provision and by the trustees when managing that provision.

There is a risk of selection against the scheme by members choosing the more expensive option given their circumstances (*eg* health status). It would be prudent to factor this into any decisions about funding the scheme.

In practice, commutation terms in the UK are not usually generous, and members taking up the option result in an expected saving to the scheme.

For example if the commutation factors are calculated using best estimate or more optimistic assumptions, then whenever a member takes a lump sum there will be a funding gain to the scheme, assuming a prudent funding basis has been used. Historically, in the UK, trustees tended to take a prudent approach when financing the scheme by ignoring these expected savings. Any profit from commutation would emerge as an item of surplus at the next valuation.

The option to commute pension for cash is discussed further in the next chapter.

2.3 Level of benefits at NRA

DC schemes

The level of benefits from a DC scheme depends on the contributions paid, the return on these and how, and on what terms, the fund is converted to benefits.

The benefits from a DC scheme are simply the accumulated fund (after allowing for any amount to be taken as cash). Subject to any legislative constraints, this can then been used to purchase an annuity, or for income drawdown.

The employer may provide the option for the member to buy a pension within the scheme. However, the scheme would then take on the post-retirement risks.

DB pension schemes

The benefits from a DB pension scheme can be expressed as a function of:

- **an individual's earnings (Pensionable Earnings);**
- **an individual's period of scheme membership or employment (Pensionable Service); and**
- **a factor to set the level of the benefit relative to the above (Accrual Rate).**

The pension from a final salary scheme is expressed as:

Pension = Accrual Rate × Final Pensionable Earnings × Pensionable Service

UK example

Previously, the most common accrual rate in the UK was 1/60th. This provides a target pension of 2/3rds of Final Pensionable Earnings after a 40-year career.

The pension from a career *average* scheme may similarly be expressed as:

Pension = Accrual Rate × Average Pensionable Earnings × Pensionable Service

Previous years' earnings may be revalued – this is a Career Average Revalued Earnings (CARE) scheme.

Where the accrual rate is the same as for a final salary scheme, this would usually result in a lower pension, as earnings increases **usually exceed the rate at which earnings are revalued (usually in line with price inflation). If the same level of provision is to be targeted this can be remedied either by the use of a greater accrual rate or the revaluation of the earnings used in calculating the average.**

Lump sum benefits, whether they are in addition to a pension or in exchange for a pension, can also be expressed in a similar manner.

Cash Balance schemes

Under these schemes, the benefit at retirement is a targeted cash sum. The cash sum will depend on pensionable service and salary, perhaps based on member and employer contributions with an investment guarantee. The guarantee might take the form of a fixed percentage or a return linked to an index such as in the UK **RPI or National Earnings.**

The fund at retirement will then be applied to provide benefits in the same manner as under a DC scheme.

2.4 Early or late retirement

DB pension schemes

Subject to any legislative restrictions, members leaving employment before NRA may be offered an immediate pension as an alternative to a deferred pension or a transfer value.

The consent of the trustees and/or the employer may be required before such an early retirement pension may be paid.

Many schemes offer members the option of late retirement. The trust deed and rules will set out the benefits to be offered. Typically, either:

- **the member can continue to accrue benefits or**
- **the pension is calculated at NRA and then increased over the period from NRA until eventual retirement.**

Alternatively, the member may be able to take their pension immediately at NRA.

DC pension schemes

Benefits on early or late retirement are generally those provided by the accumulated account.

The younger the retirement age the smaller the expected accumulated fund and the higher the expected annuity costs. Thus the member is likely to be able to achieve a lower annual income.

We will now consider many of the key components that determine the size of benefits at NRA under schemes with defined benefit elements:

- pensionable service
- pensionable earnings
- final pensionable earnings
- accrual rate
- integration with State benefits.

2.5 Pensionable service

This is only used for DB schemes and is commonly the period during which an individual was an active member of the scheme. However, where a scheme is set up and no previous provision existed, or where employees were not eligible to join the scheme on commencing employment, consideration may be given to extending the definition to the period of employment.

Pensionable service could also differ from the period of membership if additional service has been credited as the result of a transfer payment being received from another occupational pension scheme (either on an individual basis or as a result of a merger or acquisition).

2.6 Pensionable earnings

The following considerations therefore need to be made when defining pensionable earnings:

Fluctuating elements of pay

Earnings such as commission, overtime or shift payments may fluctuate considerably. In the case of a final salary scheme if such earnings are included in the definition of pensionable earnings**, any reduction in such earnings shortly before retirement would therefore result in benefits lower than might have been expected. Similarly, any rise in such earnings may result in benefits greater than expected and hence higher than expected costs for the sponsor.**

 © IFE: 2023 Examinations

The same problem would not exist to the same extent with a revalued career average scheme or a DC scheme. For these schemes a change in earnings shortly before retirement will not affect pension already built up in previous years**.**

Basic pay is more predictable and stable. However, it may only form a small part of pay for some people, and so the benefit may be low in comparison to an individual's pre-retirement income and may provide inadequate financial provision.

Excluding fluctuating elements of earnings altogether could mean a significant drop in the net replacement ratio as these elements may be a large part of pay for some people. This can be overcome in a DB scheme by choosing a high accrual rate and applying it to basic salary only. However, even this approach will lead to inequalities if fluctuating pay is substantial only for a proportion of the active scheme membership.

An extension of this may be to exclude the fluctuating earnings and encourage employees to pay additional voluntary contributions (AVCs) in respect of their fluctuating earnings in order to maintain a net replacement ratio that is consistent with their total earnings.

Question

Describe the two main disadvantages of including overtime in the definition of pensionable earnings for a final salary scheme.

Solution

Overtime may be irregular, which means that pensionable earnings would be volatile. This problem can be reduced by averaging over a long period, although this brings with it the problem of using out-of-date earnings.

Overtime may show a tendency to drop close to NRA. This can mean that employee contributions throughout a working life are based on a larger amount than the value of pensionable earnings at retirement used to calculate benefits, which could be perceived by members as being very unfair.

Alternatively some employees may select against the employer by maximising overtime, and hence pensionable salary, close to retirement.

Benefits in kind

Benefits in kind are items of remuneration not paid in cash but on which an employee pays tax, *eg* company car, private medical insurance.

If pensionable earnings exclude benefits in kind, the benefit design may not provide the target net replacement ratio if it is based on total earnings.

Integration with State benefits and other deductibles

If the aim is to target an overall level of benefit some account could be taken of other sources of income. In particular, it may be considered appropriate to make allowance for State pension benefits when setting the level of scheme pension *eg* by putting in place an offset within the definition of pensionable earnings as shown in the question below. This is an approximate way of reducing the scheme pension by the amount of expected State pension. However, pensionable earnings may increase more quickly than if an offset is not used.

Integration with State benefits is discussed further below.

Time period used in defining pensionable earnings

Pensionable earnings could be defined as at a particular date, *eg* the scheme anniversary date; or over a period of time, *eg* the previous 12 months; or 'from time to time', *ie* reviewed continuously.

Question

Outline the problems that might occur if basic salary and pensionable earnings are reviewed at different dates for a final salary scheme.

Solution

An employee who receives a pay rise shortly after the annual date on which the pensionable earnings figure has been set and then retires shortly before the next such date, will receive a pension based on a level of earnings that is almost a full year out of date. However, the effect of this could be removed or significantly reduced if the scheme grants full annual pension increases on the same day as the pensionable earnings are fixed.

At the opposite end of the scale it could be viewed as a problem to the scheme if an employee receives a pay rise shortly before the date on which pensionable earnings are set and then proceeds to retire shortly after this increase.

For a DB scheme it may be administratively difficult to determine pensionable earnings (where they include fluctuating earnings) over a 12-month period to the date of retirement. It may be easier to define pensionable earnings as earnings over a tax year or perhaps a company accounting year, as the figures may be more readily available.

Similarly, where basic salary is required as part of the definition, it may be suitable to use the annual rate of basic salary as at a fixed review date, for example, 1 January or 6 April.

This date is often chosen as the same date on which the *company* grants pay awards for administrative simplicity. However, this is not always the case, particularly where a company has different pay award dates for different groups of employees or reviews pay more often than annually.

The date may also be chosen to tie in with the scheme year for the *scheme's* accounts.

2.7 Final pensionable earnings

Final pensionable earnings define how the earnings will be averaged / computed for the benefit calculation in a final salary **DB scheme.**

It is common to average pensionable earnings over the final one, two or three years. The longer the averaging period, the closer the benefit becomes to being a career average benefit rather than a final salary benefit. Therefore the same considerations in relation to the revaluation of earnings apply.

Sometimes, volatile components of earnings (*eg* bonus) are averaged over a longer period than basic salary. For example, a scheme may define final pensionable earnings as the final year's basic salary plus the average over the last three years of fluctuating pay.

Assuming earnings increase each year (and if there is any revaluation of earlier years' earnings this is at a rate lower than earnings increases), the longer the averaging period the lower the final pensionable earnings and hence the cheaper the cost of the scheme.

Summary

The definitions of pensionable earnings and final pensionable earnings for a final salary scheme, are significant elements of the scheme design as they significantly affect the amount of benefit and so the cost of the benefit. For example, the following items will all be important:

- whether bonuses, overtime and benefits in kind are included in the definition of pensionable salary
- whether there is a State benefit offset in the definition of pensionable salary
- the averaging period in the definition of final pensionable salary.

Question

In their final year before normal retirement, two people (A and B) had earned a basic salary of £25,000 *pa* with overtime averaging £3,000 *pa*. Their salaries had grown over the last five years at 2% *pa*. They were each provided with a company car with a value of £10,000. At the point of retirement, the State benefit was £9,600 *pa*.

Person A was in a pension scheme in which final pensionable earnings was based on the average basic salary over the last five years before retirement with an offset equal to the current State benefit.

Person B was in a pension scheme in which final pensionable earnings was based on total earnings in the year before retirement, including overtime and the value of a company car.

Calculate the final pensionable earnings for both people and comment on your answer.

Solution

Person A $\frac{1}{5}\times\left(25{,}000+\frac{25{,}000}{1.02}+\ldots+\frac{25{,}000}{1.02^4}\right)-1\times 9{,}600=14{,}439$

Person B 25,000 + 3,000 + 10,000 = 38,000

If the two schemes have the same accrual rate, Person A's pension would be less than half Person B's pension. This example illustrates how important the definitions of pensionable earnings and final pensionable earnings can be in determining the amount of the benefit.

2.8 The accrual / accumulation of benefits

DB pension schemes

In a DB scheme, the larger the accrual rate, the larger the pension and hence the associated cost (all other things being equal).

DC pension schemes

The accumulation of benefits in a DC scheme depends upon the contribution rates (member and sponsor) and the contribution structure (*eg* age-related, matching *etc)*.

The total contribution rate to a DC scheme is likely to be based on factors such as affordability and competitiveness.

However, schemes sponsors or individuals may wish to take advice on the projected level of benefits for particular contributions, or a level of contributions to target a desired level of benefits. It is important that such advice makes clear the uncertainties attaching to the projections of the target benefits. The effects of future investment returns and inflation, and the likely absence of guarantees, together with the systemic risks posed by climate change, point to the need to review the position regularly, particularly if the client's circumstances change materially.

An individual saving in a DC arrangement will often not want to contribute a stable percentage of salary towards a personal pension. There may be many other considerations, perhaps due to the individual's other commitments or to tax considerations. Another factor which may influence the pace of funding is the charging structure applied to the contributions and the funds. This may favour large single contributions or perhaps more stable contributions.

2.9 Integration with State benefits

The sponsor may wish to target a total benefit inclusive of State benefits. This may be done in a number of different ways:

1. **Determine the target benefit ignoring the existence of the State benefits and define the scheme benefit as the target less the benefits that will be provided by the State.**

   This is administratively complex in relation to the State additional pension and is dependent on the individuals' contributions to State pensions before and after membership of the scheme.

   Schemes are unlikely to adopt this approach as the administration is likely to be complicated. For example, different deductions need to be applied to each member's target benefit because the amount of State benefit an individual receives may depend on individual factors, such as the number of years' qualifying service they have. The scheme is also vulnerable to changes in State benefits.

   Any deduction for State benefits is more likely to follow method 3 below.

2. **As 1 except deduct a proxy for the State benefit that accrues during membership of the scheme.**

3. **Apply a deduction to the pensionable earnings definition.**

   For example, a deduction relating to a proportion or multiple of the State pension may be applied.

4. **Reduce the accrual rate in an attempt to reflect the benefits provided by the State.**

   How effective this is will depend on how the member's salary compares to the State pension. For higher earners, the impact of the reduction on the total benefits (*ie* those provided by the State plus the occupational scheme) will be greater (assuming the State benefits are not earnings-related, or if they are there is a cap on earnings)**.**

5. **A more complex combination of the above approaches.**

Question

State which of the above methods does not leave the scheme automatically exposed to changes in State benefits.

Solution

Method 4.

1 Setting option terms: key factors to consider

Terms need to be set when converting one type of benefit to another such as when commuting pension to cash.

With options there is a risk of selection. This can be guarded against by setting eligibility criteria for the option or by setting terms that intentionally favour one option over another.

With guarantees, there is a risk that the guarantee will apply and so the costs will be greater than would otherwise have been the case.

In general when setting the terms for options or guarantees, a cautious approach is taken. However, care needs to be taken in determining the adjustment to the assumptions that will produce caution. A cautious valuation basis will not automatically produce cautious terms for an option or a guarantee.

For example, a low post-retirement mortality rate may be a cautious assumption within a funding basis but it would be generous when used to calculate the terms on which commutation for cash is available (*ie* if we assume people live longer, then we give *more* cash away for every £1 of pension).

Trustees and sponsors need to be aware of the risks and the potential for higher costs. The sponsor may consider redesigning the scheme if the risks are too great. The trustees will also need to decide how to allow for the risks in funding the scheme. For example, with options, it could be assumed that most or all members will take the most beneficial terms, whilst for a guarantee, it is necessary to make an assumption as to the extent to which the guarantee will take effect.

Actuaries can help trustees and sponsors by quantifying the potential risks and identifying ways in which selection (and its resultant cost) can be minimised. This can result in a trade-off between the often-conflicting objectives of simplicity of scheme design, flexibility of choice for the members and cost and risk management.

The main factors to take into account when setting appropriate terms for member options are:

- **the provisions in the benefit scheme's documentation**
- **the relative value of the option compared to the expected cost of providing the 'regular' benefit**

  Consideration should be given to using a best-estimate basis such that the value of the option and the expected cost of providing the alternative benefit are equal.
- **whether to evaluate the option on a market related basis or some other basis**

  The factors may be fixed or change with market conditions.
- **the scheme's investment strategy**

  For example, this may influence the discount rate used in the factors.

 © IFE: 2023 Examinations

- **the security of remaining benefits once the option has been exercised and of remaining beneficiaries following the option being exercised**

  Option terms may be chosen such that they do not impact on the security of remaining members' benefits. If the DB scheme is poorly funded this may mean using penal terms *ie* such that the value of the option is less than the cost of providing the alternative benefit.

- **fairness to other beneficiaries**
- **regulatory and legal requirements.**

The objectives of key stakeholders is also relevant for options such as incentive exercises.

An incentive exercise is an invitation or inducement provided to a member to change the form of their accrued defined benefit rights. Incentive exercises are defined as one-off options that can be considered, for example, in order for the employer to facilitate de-risking of a DB pension scheme, and are not part of the usual design of a pension scheme.

Examples of possible incentive exercises are enhanced transfer values, full commutation exercises, pension increase exchanges and total pension Increase exchanges.

Question

Define an enhanced transfer value, full commutation exercise, pension increase exchange and total pension Increase exchange.

Solution

An enhanced transfer value (ETV) is an option offered to non-pensioners to encourage them to transfer out of a pension scheme. Enhancements are usually in the form of an uplift to the transfer value. The cost of any enhancement is usually met by the scheme sponsor.

A full commutation exercise is the act of making current and/or future pensioners with eligible (*ie* trivial) pensions aware of their rights to exchange their pension for a lump sum, thus removing their liability from the scheme.

A pension increase exchange (PIE) is an option offered to members whereby they exchange their entitlement to future non-statutory pension increases for a one-off uplift to their pension.

A total pension increase exchange (TPIE) is an option offered to members of DB schemes to transfer their benefits to a DC arrangement at the point of retirement.

It may be that options are set at higher than the 'best estimate' (or median) value if there is a party who wishes to encourage members to take a particular option.

Question

Explain why a sponsor may wish to encourage members to take a particular option.

Solution

A sponsor may wish to encourage members to take an option if this reduces the cost and/or risk within the scheme.

The cost may reduce if the option terms are more penal than those calculated on a best estimate basis. In addition, contribution requirements may reduce if the option terms are more penal than those calculated on the funding basis. Similarly, the buy-out position may improve if the option terms are more penal than those calculated on the buy-out basis.

The risk may be extinguished if the option:

- removes member liabilities, *eg* transfer values, commuting pension for cash;
- converts member liabilities, *eg* a PIE exercise may remove inflation risk if a pension linked to price inflation is exchanged for a flat pension.

Scheme documentation or legislation may require schemes to take certain approaches when setting the member options in line with the above.

Examples of potential approaches for DB schemes to determining the terms for the options and placing a value on them for funding purposes are given below.

Whilst the factors to take into account when setting member options are generally quite consistent, the consent requirements can generally be grouped into three types: before retirement, at retirement and after retirement.

The next three sections of this chapter are structured using the grouping above and include examples of potential approaches to setting option terms.

 © IFE: 2023 Examinations

2 Options available before retirement

The benefits members are generally entitled to before retirement are as follows:

- **death benefits such as lump sums or pensions payable to dependants**
- **transfers to alternative pension schemes**
- **transfers into the scheme**
- **refunds**
- **ill-health benefits**
- **incentive exercise options mentioned above**
- **pensions sharing on divorce.**

2.1 Death benefits

In a DC pension scheme, death before retirement benefits may depend on the value of any fund at the date of death, although these may be underpinned by any defined benefit guarantees. There may be an option to choose the DB guarantee or purchase additional DB death benefits.

Death before retirement benefits may be prescribed in the scheme documentation in a DB pension scheme. There may be an option to choose or purchase additional death benefits.

Some schemes also offer members the option to choose the level of death in service benefits that suits their lifestyle. With such schemes, care is needed to ensure that a member choosing to increase death benefits is not doing so due to extra knowledge about their own risk of death (which is an example of selection risk)**. The opportunities to change the level of provision may therefore be linked to significant lifestyle events, such as marriage or childbirth** in order to mitigate against this risk**.**

2.2 Transfer values

DB pension schemes

As an alternative to deferred benefits, a deferred pensioner may have the right to transfer the actuarial value of the deferred benefits to another pension arrangement (a transfer value). Similarly, an active member, on opting out of a DB scheme, may have the right to transfer the actuarial value of the benefits to another pension arrangement.

Question

State the strength of the assumptions typically used to calculate the TV.

Solution

The transfer value may equal the actuarial value of the benefits given up on a best-estimate basis.

Calculating transfer values: UK example

Transfer values paid out should be no less than the expected cost within the scheme of providing the deferred benefits calculated on a best estimate basis (referred to as the cash equivalent).

Transfer values should be calculated having regard to the investment strategy of the scheme *ie* **market rates of return on equities, government bonds or other assets, as appropriate.**

Trustees of UK occupational pension schemes have the legal responsibility for setting the basis for transfer values, having taken appropriate actuarial advice.

In theory, a yield curve approach could be used and the discount rate could be changed daily. In practice, a single discount rate may be used, or there may be different rates pre- and post-retirement and rather than changing the discount rate daily, it is often only changed when it moves out of a band.

Pension increases that are promised in the scheme's rules should be allowed for. Transfer values may include an allowance for discretionary post-retirement pension increases depending on their likelihood.

The trustees should not sanction an allowance for a low level of discretionary pension increases in the transfer value if they fully expect higher increases to be paid to members who choose not to transfer their deferred benefits.

Allowance may be made for the cost of calculating the transfer value. Expenses are also saved if a transfer value is paid out. A common approach in the UK is to ignore both aspects of expenses in the calculation.

If the scheme is underfunded, paying a full transfer value can further reduce the funding level for the remaining members. Poorly funded schemes may reduce transfer values below the expected cost of providing the benefits in full, to protect the remaining members of the scheme.

Whether the payment of a transfer value will further reduce the funding level depends on the existing funding level and how the transfer value paid compares with the funding reserve extinguished.

TPR has provided guidance on the calculation of transfer values, which can be found at:

https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance/administration-detailed-guidance/transfer-values

DC pension schemes

Members of DC schemes may also be able to transfer their benefits with the transfer value equivalent to the accumulated fund, possibly less expenses and disinvestment costs.

 © IFE: 2023 Examinations

2.3 Transfers into the scheme

If a member is permitted to bring a transfer value into a scheme from another pension arrangement, various types of benefit can be offered by the new scheme.

These benefit types are discussed below.

Money purchase benefit

If legislation permits, the transfer value may either be invested with a fund manager, building society, or directly within the fund. The member is then entitled to whatever benefits can be provided by the transfer value, *ie* **a DC format.**

For a DC scheme, this approach, with the transfer value invested directly within the fund is very likely.

DB schemes can either provide a money purchase benefit, or one of the following:

Fixed additional pension

A fixed additional pension may be granted in return for the transfer value received.

For administration simplicity, the pension payable will often have the same attaching benefits as the normal scheme pension *ie* spouse's pensions, pension increases etc.

Rather than being strictly fixed in nature, it may be simpler administratively to express the benefit as a deferred pension with the usual revaluation that applies.

Added years

Additional years of pensionable service may be granted in return for the transfer value received.

For administration simplicity, the pension payable will often have the same attaching benefits as the normal scheme pension *ie* spouse's pensions, pension increases etc.

Refuse to accept: UK example

In the UK, schemes are not obliged to accept transfers of pension rights from previous arrangements and most DB schemes, concerned about the added risk and administrative workload of dealing with transfer values received, refuse to accept them.

2.4 Refunds

As an alternative to a transfer value members may be entitled to a refund of contributions. The refund may be restricted to member contributions only and may include interest.

If the refund reflects only the members own contributions it may represent poor value for money. This may therefore only be offered in lieu of trivial benefits such as those available to short-service members.

2.5 Ill-health benefits

As discussed in the last chapter a further form of financial protection that may be provided through an occupational pension scheme is against loss of income due to an incapacity to continue to work.

The sick employee may choose to retire if they are eligible to receive ill-health early retirement benefits from the scheme. This benefit is more likely to be available from DB pension schemes and is discussed as an 'at retirement' benefit in the next section.

Alternatively, the scheme may provide no specific ill-health benefits with protection being provided instead through an income continuation arrangement provided by the company. This is often insured with a life office, in which case it is known as Income Protection (IP). This benefit is more likely to be available to members of DC pension schemes and was discussed in the last chapter.

2.6 Enhanced transfer values

An enhanced transfer value (ETV) offered as an option ordinarily available before retirement would not be defined as an incentive exercise. ETVs, offered as incentive exercises, are discussed later in the course.

ETVs may be offered to non-pensioner members of a defined benefit scheme as an alternative to buying out their benefits with an insurance company when a scheme is to about to wind up. Which option is beneficial to each member depends on a number of factors, including the level of the enhancement and the member's personal circumstances. For example, single members may benefit from the ETV option as they may be able to use all the funds to provide benefits for themselves only.

The trustees are likely to be concerned about offering such options and whether they are in members' interests.

Question

Outline the issues that may concern the trustees with regard to a transfer value (TV) or ETV from a DB arrangement to a DC arrangement.

Solution

Members may not understand the risks involved and how the benefits may differ before and after the transfer. This lack of understanding may lead members to give up the longevity protection inherent in DB pension provision, which may be valuable, particularly if the member lives longer than expected.

Dependants may be affected but not involved in the decision about whether to take the TV or ETV.

The terms may not be fair.

2.7 Pensions sharing on divorce

A member's pension is an asset that may be considered in a divorce settlement.

Pension sharing

Pension sharing represents a clean break. In order to share the pension, the value is established possibly using a cash equivalent transfer value basis. It is then split between the two parties.

There may be rules which allow pensions sharing on divorce (although this may not be compulsory). The parties concerned will need to decide the amount of pension to be shared.

All occupational and personal pension rights will be subject to pensions sharing apart from survivor's pensions payable as a result of a previous marriage.

The sharing of pension rights will result in a pension debit being set up against the member's benefits. This is a reduction to the member's benefits, and so represents a clean break.

The ex-spouse is given their share of the established value to take elsewhere or may be given the option to use the established value to secure a benefit in the original scheme:

- **If the scheme allows it a corresponding pension credit will be set up with the scheme for the ex-spouse. This will be treated in a similar manner to a deferred pension. However, a new category of membership will need to be established for such individuals.**
- **The ex-spouse can take a cash equivalent of the pension credit to another arrangement. Schemes may not be obliged to retain the ex-spouse's benefits with the scheme as a pension credit. In such cases a cash equivalent will be payable. In cases where the ex-spouse does not nominate one, the scheme trustees will need to identify a suitable arrangement to receive the transfer value in respect of a pension credit.**

Earmarking

Earmarking is an alternative to pension sharing where some of the member's pension is diverted and earmarked for payment to the ex-spouse. Under the 'earmarking' system, the ex-spouse cannot take a cash equivalent out of the scheme and will only receive the diverted element of the pension for as long as the member remains alive and in receipt of the remainder.

3 Options available at retirement

The benefits members are generally entitled to at retirement are as follows:

- **pension/cash lump sum at normal retirement date**
- **pension/cash lump sum before normal retirement date**
- **pension/cash lump sum after normal retirement date**
- **full commutation of benefits**
- **ill-health benefits**
- **at retirement incentive exercise options mentioned above.**

When setting a retirement age within the scheme, employers should be aware that this age may only be needed as part of the benefit design (*eg* to determine what counts as 'early' or 'late' retirement). It is possible (and common) to allow members to retire earlier or later than this age.

In considering the terms relating to early or late retirement, it is important for the employer to consider whether the members should be given this right or whether each member would need the consent of the employer and/or the trustees. Consent is discussed later.

DC pension schemes

NRA is less important under a DC scheme than a DB scheme**, since benefits at exit are generally those provided by the accumulated account.**

Generally, there are no cost or security issues for trustees and/or the employer, as the benefits are just those that can be secured by the accumulated pot at retirement.

However, from a member's perspective, the younger the retirement age, the smaller the size of the account (due to fewer years' contributions and less opportunity for investment growth) and higher annuity costs, or longer period over which to operate drawdown. Taken together these factors further reduce the annual pension that the member is able to secure.

The first three options are discussed below when considering:

- the choice between taking pension benefits or lump sum benefits at retirement
- the ability to early or late retire and the terms available.

3.1 Pension versus lump sum benefits at retirement

DB pension schemes – commutation of pension for cash

Members may be able to choose whether to commute (*ie* exchange) some pension at retirement for a cash lump sum.

The residual pension after commutation will be calculated as:

$$\text{Full pension} - \frac{\text{Tax-free cash sum}}{\text{Commutation factor}}$$

Question

Outline the main arguments for and against permitting a member to take a lump sum at retirement from a DB pension scheme.

Solution

The main arguments for and against permitting lump sums to be taken from a DB pension scheme are:

+ It is popular with employees due to its flexibility and freedom from tax.

+ The lump sum is not generally required to be equal to the actuarial value of the benefits given up on a best-estimate basis (as is the case for transfer values in the UK) and so cost savings may be possible

- Lump sums may be spent on items other than pension provision, which may mean that the objective of protecting people in retirement is not met

- Discretionary pension increases may be forfeited unless they are allowed for in the commutation factor or calculated assuming no pension was commuted.

Setting commutation factors

Commutation factors will normally be based on the value of an annuity, taking account of the rate of pension increases, and may vary by age (commutation factors are generally exempt under the age discrimination regulations) to reflect the value of the pension given up.

The assumptions may again be based on the funding basis or a more realistic basis. Here, the strength of the basis depends only on the post-retirement assumptions. Often, realistic assumptions, giving low factors relative to the funding basis, can be adopted without having an effect on the take-up of the options.

The allowance to be made for discretionary pension increases often warrants careful consideration. To take full account of such increases might be overgenerous to those commuting pension for a lump sum, whereas to ignore discretionary increases altogether could be regarded as too mean. One possible solution is to make a partial allowance in the commutation factors. Another approach is to make no allowance for increases in the commutation factors, but to base future discretionary increases on the original level of pension before commutation.

Just as for early retirement factors, the theoretically calculated commutation factors will often be ‘smoothed’ in arriving at a suitable table for use.

Early retirement factors are described later in this chapter. It is likely that in practice the factors will be rounded and smoothed for simplicity of administration and communication.

Commutation factors are sometimes specified in a scheme’s rules.

UK example

In the UK, HMRC limits restrict the amount of pension which can be exchanged for cash, free of tax. Additional cash can be taken but would be subject to taxation.

A lump sum of 25% of the benefit value is tax-free if the scheme is a UK registered scheme.

Trustees and / or sponsors often have the power to determine the commutation factors.

Normally in the UK, commutation factors do not vary with market conditions, although they will be reviewed regularly. In theory, commutation factors which vary with market conditions may appear more satisfactory, since there will be no scope for selection against the scheme. However, in practice in the UK, there is generally little evidence of selection, since the large majority of members retiring tend to take the maximum cash whatever the prevailing market conditions.

Fixed factors will also allow members to more easily predict their benefit options when planning for retirement.

Often, realistic assumptions, giving low factors relative to the funding basis, can be adopted without having an effect on the take-up of the commutation option.

In the UK, this may be due to the tax advantages to the members of taking this option.

Commutation in serious ill-health

A scheme may provide for full commutation of a member's pension, at the time it comes into payment, if the member is retiring in exceptional circumstances of serious ill-health. This means that the member's expectation of life is very short, measured in months rather than years. The main consideration to take into account in determining suitable factors for total commutation is whether the commutation terms should recognise the shorter expectation of life (subject to any guarantee period).

DB pension schemes - commutation for additional dependants' pensions

Some pension schemes allow members the option at retirement to surrender part of their own pension in exchange for additional contingent pension for their spouse or chosen dependant on death after retirement. If the spouse or dependant dies before the member, the benefit of the exchange is usually lost. In practice, this option is not often exercised.

Setting factors

The considerations here are very similar to those for commutation for cash**. The difference is that the member's pension is being exchanged for dependants' pensions rather than a lump sum. Hence, the caution built into the factors again depends on the post-retirement assumptions, most importantly the relationship between the mortality of the member and the dependants.**

Question

Explain why, when calculating factors for commutation for additional dependant's pension, the post-retirement pension increase assumption is less significant than when calculating factors to commute pension for cash.

Solution

The factor is a ratio of two annuities and any allowance for post-retirement increases will probably affect both annuities.

There are theoretical grounds for assuming higher mortality rates for members who exercise this option, since it will be attractive to members who are not in good health.

To limit the risk of selection, the following measures might be taken:

- **Imposition of a limit on the amount of a member's pension which can be surrendered.**
- **The option terms could assume that members exercising the option suffer high mortality.**
- **The option could be subject to satisfactory evidence of the member's good health, for example a brief medical questionnaire.**
- **The availability of the option may be restricted to the period just prior to retirement, or in prescribed circumstances after retirement, for example on remarriage.**

If a table of factors is prepared for converting a member's pension into additional contingent dependants' pensions, it may be smoothed in the same way as for commutation, early-retirement and late-retirement factors.

It is likely that the actual age and gender will be used to guard against anti-selection by members with young dependants and by male to female surrender of pension.

In practice, a table is not prepared if the calculation is infrequent and needs to reflect the actual age differences between the member and dependants and their gender.

UK example

Selection is rarely a major problem in the UK because the option is exercised so infrequently.

DC pension schemes

In practice, the scheme's administrator will often advise the retiring member of the maximum tax-free cash permitted. An annuity could be purchased with the remaining fund, or it could be taken as cash (subject to tax).

The form of the pension benefits from a DC scheme is often determined by the member but may be restricted to those options made available, *eg* rather than allowing members to choose *any* level of pension increases, the scheme might offer a choice of a level or inflation-linked pension.

For DC schemes the reverse (to the cash commutation option under a DB scheme) **essentially happens where a lump sum is converted into pension.**

Death in retirement benefits are dependent on the form of any annuity purchased at retirement and the value of any fund remaining at the date of death.

The level and nature (*eg* flat, fixed, index-linked, combination) of pension increases from DC provision usually depend on the annuity the member chooses to buy at retirement. The higher the expected pension increases, the lower the initial pension amount purchased from a given DC fund.

3.2 Early retirement

DB pension schemes

Pensions are generally available to people who wish to retire before NRA, although often members need the consent of the employer and / or the trustees to receive a pension before NRA and the accrued pension is usually reduced to reflect the longer period over which it is expected to be paid.

When reviewing early retirement terms, it is important to consider two separate issues:

- consent, and
- the early retirement factor that may be applied to the accrued DB pension.

Question

Outline a reason why trustee consent may be required. Outline a reason why employer consent may be required.

Solution

For a DB scheme, a requirement to obtain the consent of the trustees enables the trustees to consider whether the granting of an early retirement benefit would adversely affect the security of benefits for other members.

A requirement to obtain the consent of the employer enables the employer to consider manpower planning issues.

Setting factors

The terms offered on early retirement from a DB scheme are normally expressed as:

accrued pension × early retirement factor

In the case of members retiring directly from active membership the accrued pension will be calculated in the normal manner in relation to the accrual rate, pensionable service and pensionable salary.

For members who previously left and have an entitlement to a deferred pension, the accrued pension and the early retirement factor must together allow for the revaluation of the deferred pension from leaving to NRA.

The early retirement factor is included to take account of the fact that the pension comes into payment earlier than expected, and will therefore be paid for longer. The reduction factor varies according to the method used to calculate the early retirement benefit.

 © IFE: 2023 Examinations

There are two distinct approaches to determining early retirement benefits for active members:

1. **Actuarial equivalent of leaving service benefits:**

   This treats the member taking early retirement as if they are a member who withdraws then wishes to receive a pension immediately. Instead of providing a deferred pension, a lower immediate pension equal in value to the alternative deferred pension is given. This is also the approach commonly used to determine the early retirement pension for members with a deferred pension.

2. **Actuarial equivalent of accrued benefits:**

   The idea behind this method is that if a member retires with a benefit equal in value to the valuation reserve, no strain or surplus emerges in the valuation.

In practice, these concepts of actuarial equivalence are often applied much more loosely, with a flat rate reduction applied to the accrued pension for each year before NRA.

A broad approximation that may be used is, say, a 4% *pa* simple reduction for each year before NRA, *eg* the early retirement factor applied to the accrued pension in respect of someone retiring at age 60 would be 0.8 if the NRA was 65.

An alternative is to calculate the reduction compounded rather than simple, *eg* a 4% *pa* compound reduction would result in a more generous early retirement factor of $0.96^5 = 0.815$ at age 60 (assuming NRA 65) compared with the first approach.

A more complicated approach, but perhaps more accurate in terms of actuarial equivalence, is a sliding scale such as a 4% *pa* simple reduction for the first three years early plus 3% *pa* simple for the next three years plus 2% *pa* simple thereafter. An example of this would be an early retirement factor of 0.77 applied to the accrued pension at age 58 for a member whose NRA is 65.

Question

Calculate the early retirement pension under each of the following conditions for a member, currently aged 56, who joined the scheme at age 33 and whose current final pensionable earnings are £30,000. NRA is 65 and the accrual rate is 1/60th.

(i) Accrued pension with no reduction.

(ii) Prospective pension with no reduction.

(iii) Accrued pension reduced for early payment. Early retirement reduction is 5% *pa* simple for the first 5 years early plus 3% *pa* simple for the period that is more than 5 years early.

(iv) Accrued pension reduced for early payment. Early retirement reduction is 4% *pa* compound.

Solution

(i) $\frac{23}{60} \times 30{,}000 = 11{,}500$

(ii) $\frac{32}{60} \times 30{,}000 = 16{,}000$

(iii) $11{,}500 \times \{1 - (5 \times 0.05 + 4 \times 0.03)\} = 7{,}245$

(iv) $11{,}500 \times 0.96^9 = 7{,}964$

The actuarial equivalent early retirement pension may be structured as a pension plus a bridging pension payable until the State pension comes into payment.

The bridging pension smooths out the pensioner's annual income. In particular, it avoids a scenario where the pensioner's income is low until they reach State Pension Age and then suddenly increases significantly due to receipt of the State pension.

Calculating early retirement factors for active members – assumptions and methodology

The assumptions and procedures in calculating early retirement benefits are very much led by the approach chosen:

- **An accurate 'actuarial equivalent of accrued benefits' approach may be taken. The early retirement factors could be calculated on an individual basis or a 'smoothed' table of factors. Simple factors, stepped simple factors or compound factors could be used. The early retirement factor should reflect the loss of the net investment return over salary growth for a final salary scheme and that the pension is paid for longer.**

  If early retirement pensions are calculated on the basis of actuarial equivalence with the accrued benefits, then the appropriate basis may be the funding basis or a more realistic basis. Whichever approach is taken, it is important to note the strength of the individual assumptions that are of most relevance to the calculations.

  The key assumptions to determine the early retirement factors are pre- and post-retirement discount rates, rates of salary and pension increases and pre- and post-retirement mortality rates.

- **If an accurate 'actuarial equivalent of leaving service benefits' approach is used, the approach used will be similar to that for transfer values paid out. Again, a simple approach may be taken.**

  If they (the factors) **are based on the principle of equivalence with leaving service benefits, then the transfer value basis is relevant because the member may be able to take the transfer value to a money purchase arrangement and retire immediately.**

  A member planning to retire early may compare the pension they would receive on retiring early in the scheme with the pension they would receive if they took a transfer value to a defined contribution arrangement and purchased an immediate annuity.

 © IFE: 2023 Examinations

Calculating early retirement factors for active members – other considerations

The member is exercising an option. If the early retirement terms are poor, the member can decide to wait until NRA, or can leave with a deferred pension or transfer value.

The trustees will often have to exercise discretion (generally on advice from the actuary to the scheme) in deciding on early retirement reductions. The general requirements that they consider the interests of all beneficiaries can make these decisions difficult. The trust deed should be consulted and any guidance it gives should be followed.

Legislation may also constrain the factors that are used.

If the early retirement terms are generous, *ie* they give a pension with a higher value than the actuarial equivalent, then it is common for the consent of the trustees and/or the employer to be required. This provides greater control over costs and can also reduce the risk of selection.

In funding for early retirement, for prudence **allowance is often made for members retiring at the earliest age at which they may do so on beneficial terms and without obtaining consent. If consent is rarely withheld, allowance may be made for retirement at an earlier age.**

UK example

UK legislation requires the value of the immediate pension to be no less than the value of the alternative deferred benefits.

Early retirement from deferred status

This early retirement offer may also be extended to those members reaching a certain age (**age 55** in the UK) **who left employment at an earlier age.**

This refers to deferred pensioners who wish to early retire. In the UK such members cannot early retire before age 55 but there may be more flexibility in other countries.

The consent of the employer is less likely to be required on early retirement from deferred pensioner status as manpower planning is not an issue. The consent of the trustees may be required if the terms are generous.

Similar considerations apply in determining the terms offered on early retirement from deferred status as for early retirement from active status. The same formula is used, *ie* accrued pension × early retirement factor.

For members who previously left and have an entitlement to a deferred pension the accrued pension and the early retirement factor must together allow for any revaluation of the deferred pension from leaving to NRA.

For example, the reduction factors may be expressed as:

- a larger reduction applied to the deferred pension revalued up to NRA, or
- a lower reduction applied to the deferred pension revalued up to the actual date of retirement.

3.3 Late retirement

Some members want to work beyond their NRA. If they are allowed to continue working, depending on the Scheme Rules, they may have various options with regard to their pension.

The considerations in relation to late retirement are usually less complex and rarely, if ever, involve significant additional costs.

DC pension schemes

Subject to legislation, employer contributions may cease at NRA or may continue for a period, perhaps up to late retirement age. Members may be able to continue to contribute. Benefits on late retirement are generally those provided by the accumulated account.

The older the retirement age the larger the expected accumulated fund (if further contributions are paid and there is investment growth) and the lower the expected annuity costs. Thus the member is likely to be able to achieve a higher annual income.

DB pension schemes

There are three distinct approaches to determining late retirement benefits for active members:

1. **They may be able to take their pension immediately at NRA.**
2. **They may be able to continue in the pension scheme as normal with accrual of extra benefits.**

   Member contributions will usually continue and the normal calculations can be performed at the eventual retirement date.
3. **They may be able to defer receipt of the scheme pension, but not remain as accruing members of the pension scheme.**

   At the eventual retirement date, the DB scheme pension will be actuarially increased to allow for the delay in payment.

   The option of deferring the scheme pension may be appropriate for someone who does not need to receive the pension immediately.

Determining the actuarial increase to allow for late retirement

The idea behind an actuarial increase is usually equivalence to the normal retirement benefits. As for early retirement, this may be on the funding basis or on a more realistic basis. If there is a desire to make the late retirement option slightly less valuable, it is important to note which assumptions are important in determining the factors and the adjustments that make the factors cautious.

As with early retirement pensions, a less sophisticated approach is often used.

In many schemes, members taking late retirement are less common than members taking early retirement or withdrawing, although this may change in the future. In schemes with high NRAs, late retirement may be rare. The treatment of late retirements therefore has simplicity as a major objective.

The member is exercising an option. If the late retirement terms are poor, the member can decide to take the normal pension. Some schemes may permit the member to take their pension while continuing in employment with the employer.

The trustees will often have to exercise discretion (generally on advice from the actuary to the scheme) in deciding on late retirement increases. As with early retirements, the general requirement that they consider the interests of all beneficiaries can make these decisions difficult. Again, the precise wording of the trust deed should be consulted and followed.

Legislation may also constrain the factors that are used.

Determining the best approach for a member

It is worth noting that actuarial equivalence gives rise to relatively rapid increases in late retirement pensions. For people with long service, it may be that an actuarial increase to their normal pension (and no further accrual) is more valuable than the extra service and salary increases of continued membership of the scheme.

Question

Assume that an interest rate of 2% *pa* is used for the purposes of calculating actuarially equivalent late retirement increases and that annuity rates decrease at approximately 3% *pa* around NRA.

(i) Show that the rate of late retirement increase is just over 5% *pa*.

(ii) Kim has 38 years' service and intends to work for one year beyond her normal retirement age. Kim expects pensionable salary growth of 1% over the year. The scheme is non-contributory. If offered the choice, should Kim choose to defer receipt of the pension, or continue to accrue service?

(iii) Andreas is a member of the same scheme, has 18 years' service and also intends to retire one year late. Andreas expects pensionable salary growth of 4% over the year. Should Andreas choose to defer receipt of the pension, or continue to accrue service?

Solution

(i) Call the annuity value at NRA, a. As the annuity decreases by about 3% *pa* at each age around NRA, the annuity value n years later would be $a \times 0.97^n$.

The appropriate equation of value on late retirement n years after NRA is therefore:

$$LRP \times (a \times 0.97^n) = (NP \times a) \times 1.02^n$$

where:

- LRP is the pension on late retirement
- NP is the pension at NRA

hence,

$$LRP = NP \times \frac{a \times 1.02^n}{a \times 0.97^n} > \text{NP} \times 1.05^n$$

(ii) Probably prefer to defer receipt than continue to accrue.

If Kim continues to accrue, the scheme pension is expected to grow by $\frac{39}{38} \times 1.01 = 1.037$

If Kim defers the pension, the late retirement increase is just over 5%.

(iii) Almost certainly prefer to continue to accrue than defer receipt.

If accrual continues, the scheme pension is expected to grow by $\frac{19}{18} \times 1.04 = 1.098$

If Andreas defers the pension, the late retirement increase is only just over 5%.

Other things to consider for parts (ii) and (iii) include any member contributions which need to be paid, the possibility of death and the benefits that will be paid in this case, the volatility of salary growth and the possibility of actually starting to receive pension.

In practice, schemes may offer a combination of approaches, such as:

- the higher of continued pension accrual up to date of payment, and pension at NRA increased up to date of payment
- pension at NRA increased up to date of payment, plus pension accrual in respect of service from NRA.

Both of these examples are designed to protect the value of benefits earned up to NRA for those members whose earnings do not rise as expected, or even fall, after NRA.

3.4 Ill-health benefits

DC pension schemes

Where Income Protection is not available, benefits on ill-health early retirement are generally those provided by the accumulated fund. Such benefits may not be sufficient as the younger the retirement age the smaller the expected accumulated fund. However this may be mitigated by the lower expected annuity costs if health status is taken into account.

DB pension schemes

Ill-health early retirement benefits may be prescribed in the scheme documentation and subject to certain eligibility criteria. This was discussed in detail in the last chapter.

The accrual rate and NRA may have been set to give a particular level of target pension. If someone retires before NRA they will miss this target. This may be corrected on ill-health early retirement from active service by granting notional extra service. Notional service is less likely to be granted on ill-health early retirement from deferred status

 © IFE: 2023 Examinations

Question

Suggest why notional service is less likely to be granted on ill-health early retirement from deferred status

Solution

The sponsor is less likely to have an ongoing relationship with a deferred pensioner and therefore not likely to augment benefits.

3.5 Incentive exercise type options at retirement

There are three options which may be ordinarily available on retirement which would be defined as incentive exercises if they were one-off offers. These are:

1. A total pension increase exchange

   An option offered to members of DB schemes to transfer their benefits to a DC arrangement at the point of retirement. The option can be offered to members currently eligible to retire and to non-pensioners as an option to exercise in the future.

2. A pension increase exchange

   An option offered to members whereby they exchange their entitlement to future non-statutory pension increases for a one-off uplift to their pension.

3. Full commutation of benefits

   A full commutation exercise is where pension benefits are exchanged for a lump sum.

A total pension increase exchange

This is effectively a transfer value at retirement from a DB pension scheme to a DC pension scheme. This may enable the member to take advantage of the benefit flexibilities which may be available at retirement from a DC pension scheme.

A pension increase exchange (PIE)

Although this is defined as an option offered to members whereby they exchange their entitlement to future non-statutory pension increases for a one-off uplift to their pension other alternatives can be considered.

Some pension schemes may allow members the option at retirement to convert their own pension with the stated level of pension increases to:

- a higher initial pension with a lower expected level of pension increases
- a lower initial pension with a higher expected level of pension increases
- change the type of pension increases, for example fixed increases to index-linked increases.

The pension increases provided in each case may be subject to statutory minimum requirements *eg* in the UK, DB scheme pensions currently accruing will be required to increase in payment at the increase in the Consumer Prices Index subject to a maximum of 2.5% *pa*.

Question

Explain how risk may be reduced if an increasing pension is converted to a higher initial non-increasing pension.

Solution

If members take a higher initial pension which does not increase, the employer may be able to reduce its exposure to risk since:

- a level pension may be easier to match than a pension with increases, which may not easily be matched with traditional assets
- a level pension may be easier and cheaper to insure than a pension with increases
- if pensions are level, future longevity improvements will have less impact on the scheme. This is because the increasing pension is expected to overtake the level pension.

Full commutation of benefits

A full commutation exercise is where pension benefits are exchanged for a lump sum, thus removing the liability from the scheme. As above the conversion factors will normally be based on the value of an annuity (reflecting both the member's and any contingent dependants' pensions), taking account of the rate of pension increases, and may vary by age and possibly gender to reflect the value of the pension given up.

UK example

Full commutation is permitted in the UK where the pension is trivial or the member is in serious ill-health.

All study material produced by ActEd is copyright and is sold for the exclusive use of the purchaser. The copyright is owned by Institute and Faculty Education Limited, a subsidiary of the Institute and Faculty of Actuaries.

Unless prior authority is granted by ActEd, you may not hire out, lend, give out, sell, store or transmit electronically or photocopy any part of the study material.

You must take care of your study material to ensure that it is not used or copied by anybody else.

Legal action will be taken if these terms are infringed. In addition, we may seek to take disciplinary action through the profession or through your employer.

These conditions remain in force after you have finished using the course.

Chapter 9 Summary

Much of this chapter relates to options within DB provision as members of DC schemes have more flexibility to take their benefits in the form they wish.

Option terms

When setting appropriate terms for member options the factors to be considered include:

- the objectives of key stakeholders
- the risk of selection by members
- whether a cautious approach is required
- the provisions in the benefit scheme's documentation, regulatory and legal requirements
- whether to evaluate the option on a market-related basis or another basis
- the relative value of the option compared to the expected cost of providing the 'regular' benefit
- the security or remaining benefits once the option has been exercised and of remaining beneficiaries following the option being exercised
- fairness to other beneficiaries.

Benefits available before retirement

Some schemes offer members the option to choose the level of death in service benefits that suits their lifestyle. The opportunities to change the level of provision may be linked to significant lifestyle events, such as marriage or childbirth.

A non-pensioner member may have the right to transfer the actuarial value of the benefits to another pension arrangement. An enhanced transfer value may be available in certain circumstances.

Various types of benefit can be offered by the receiving scheme on transferring in; such as a DC account, a fixed pension or added years of service.

Members may be entitled to a refund of contributions on exit. These contributions may be restricted to member contributions only and may include interest.

Protection against ill-health may be provided through an Income Protection arrangement.

A member's pension is an asset that may be considered in a divorce settlement using pensions sharing or earmarking.

 © IFE: 2023 Examinations

Benefits available at retirement

Some DB schemes provide the standard benefit as a pension and allow members to commute part of the pension for a lump sum.

An early retirement pension may be available to members with the accrued pension being reduced to reflect the longer period over which it is expected to be paid.

A late retirement pension may be available to members which may allow for continued accrual or be actuarially increased for late payment.

Ill-health early retirement benefits may be prescribed in the scheme documentation subject to certain eligibility criteria.

A transfer value at retirement from a DB pension scheme to a DC pension scheme may be ordinarily available. This may enable the member to take advantage of the benefit flexibilities which may be available at retirement from a DC pension scheme.

A pension increase exchange (PIE) may be ordinarily available where members convert their own pension to a different pension with a different level of pension increases.

A full commutation exercise may be ordinarily available where pension benefits are exchanged for a lump sum, thus removing the liability from the scheme.

Benefits available after retirement

If income drawdown is chosen there will be post-retirement options available to a DC scheme member.

A PIE exercise may be offered to DB scheme pensioners whereby they exchange their current pension for an alternative pension with different pension increase entitlements.

Consent

If consent from the employer is required, this enables the employer to consider the effect on employment planning of the individual's choice and any extra pension costs that are incurred due to the choice.

If consent from the trustees is required, this enables the trustees to consider whether granting a benefit for one member or group of members would adversely affect the security of benefits for other members.

Climate change

As noted above, climate change is a particular concern of policymakers and financial regulators. Concerns about these systemic risks has catalysed various initiatives around the world.

EU example

For example, the European Insurance and Occupational Pensions Authority (EIOPA) includes climate change in its stress tests for pension schemes from 2019.

7.5 Social impact investing

Social impact investing focuses on investing in companies and projects that manufacture goods and services designed to have an explicit positive impact on society, while ensuring investors received a fair return on their capital contribution.

An example of ESG investing, but not necessarily social impact investing, might be investing in a restaurant which sources its food and staff from within its general locality. An example of social impact investing might be investing in a restaurant which aims to rehabilitate ex-offenders through teaching the relevant skills to enable them to find employment within their kitchen or elsewhere.

UK example

A pension scheme may be social impact investing by holding assets in a company which partners with, or employs the graduates of, the Clink Charity. The Clink Charity works to reduce reoffending by providing training for prisoners in several of its restaurants.

 © IFE: 2023 Examinations

8 Investment Governance – UK examples

8.1 The Pensions Regulator’s DB investment guidance for trustees

On 30 March 2017 the Pensions Regulator issued guidance on DB investment aimed at trustees of occupational pension schemes, which will also be of interest to advisers and sponsors. This guidance was last updated in September 2019.

TPR suggests that this guidance should be consulted after reading its Code of Practice 3: Funding defined benefits.

Trustees of some schemes, for example those with fewer than 100 members, wholly-insured schemes or small self-administered schemes, are subject to different requirements.

At the time of writing (May 2022), this guidance can be found at:

https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance/funding-and-investment-detailed-guidance/db-investment

It contains examples of approaches and factors to consider when investing scheme assets to fund defined benefits. The Pensions Regulator expects trustees to have suitably documented investment arrangements that are appropriate for their scheme’s circumstances, including their level of complexity.

The guidance has seven sections which are summarised in checklist format below.

The seven sections are:

1. Overview
2. DB investment governance
3. Investing to fund DB
4. Matching DB assets
5. DB growth assets
6. Implement a DB investment strategy
7. Monitoring DB investments

ActEd text has been added below most of the checklist items to summarise some key conclusions. However, TPR’s guidance contains a detailed discussion and therefore, we recommend that you read this as well as the text below.

Section 1: Overview

The guidance is for trustees and advisers running schemes that offer defined benefits.

Section 2: DB investment governance

Section 2 concerns understanding the duties of the trustees and how an appropriate governance structure for the scheme's investments can be set up.

- **the trustee board's role in investment governance**

  Trustees can delegate certain tasks and decisions but they bear ultimate responsibility for the investment strategy.

- **investment decisions and the statement of investment principles (SIP)**

  Trustees of schemes with more than 100 members must prepare a SIP and review it regularly.

- **collaborative working with the employer**

  Legislation requires trustees to consult the scheme's sponsor when preparing or revising the SIP.

- **working with the investment advisers**

  Legislation requires trustees to obtain investment advice in certain situations, but the seeking of investment advice should be considered in other situations.

- **clear roles and responsibilities**

  It is important that all parties are clear about their roles, responsibilities and terms of reference.

- **fiduciary management**

  Fiduciary management involves significant delegation of investment powers, but the trustees retain ultimate responsibility for the investment strategy.

- **investment stewardship**

  Stewardship involves responsible allocation of capital and monitoring of the assets. Trustees often delegate some stewardship activities to their investment managers.

Section 3: Investing to fund defined benefits

Section 3 describes the issues for consideration by the trustees in order to formulate, refine and revise their investment strategy.

- **investment beliefs**

  The trustees may wish to develop and maintain a set of investment beliefs to help to provide a framework for investment decision-making.

- **sustainability**

  When making investment decisions it is important to consider ESG issues and potential risks to investments over an appropriate time horizon.

- **financially material and non-financial factors**

  The trustees should consider financially material factors when making investment decisions. It may be reasonable to also consider some non-financial factors.

- **members' views**

  When making investment decisions, the trustees may wish to consider any views that are expressed by members.

- **setting an appropriate investment strategy**

  An appropriate investment strategy balances risk and return over time.

- **implementation**

  Factors such as the costs of implementing a strategy should be considered.

- **impact investment and patient capital**

  Trustees should consider the suitability of new investment concepts and strategies as markets develop. Impact investment (also known as social and / or environmental impact investment) and patient capital (the provision of long-term finance to firms that have long-term growth potential) are two developing concepts.

- **journey planning**

  Trustees should consider how the scheme's investment strategy should evolve over time.

- **understanding investment risks**

  The trustees should understand, quantify, document and monitor the risks of the investment strategy and the impact these risks may have on the scheme achieving its objectives. The trustees should mitigate and manage risks where appropriate.

- **using models to assist in setting the investment strategy**

  Models can be used to identify and quantify risk and assess the likelihood of the scheme achieving its objectives. The use of models should be proportionate to the complexity of the risks.

Section 4: Matching DB assets

Section 4 describes how to use matching assets to manage investment risk relative to the scheme liabilities.

- **using matching assets**

  Investing in matching assets can help to manage investment risk relative to the liabilities.

- **understanding the risks of the matching assets**

  Investing in matching assets can introduce some risks, *eg* liquidity or concentration risks.

- **diversification**

  The scheme's assets must be properly diversified.

- **Governance**

  The trustees must have appropriate governance arrangements in place.

- **liability driven investment** (LDI)

  LDI involves the use of derivatives to match the liabilities more closely, but can introduce additional risks, *eg* obligation to meet margin or collateral requirements.

Section 5: Growth assets

Section 5 describes the use of growth assets to generate investment returns relative to the scheme liabilities.

- **understanding growth assets**

  Trustees should ensure that they understand how growth assets are expected to generate returns and the risks of investing in such assets.

- **diversification**

  Legislation requires assets to be sufficiently diversified. Trustees should consider the extent to which the scheme's assets would be affected by factors that would also adversely impact the strength of the sponsor covenant.

- **governance**

  The trustees should have appropriate governance arrangements for the scheme's growth assets.

- **multi-asset funds**

  Before investing in a multi-asset fund, the trustees should ensure that they understand the factors that will drive returns and how risks are managed and mitigated.

Section 6: Implement a DB investment strategy

Section 6 concerns implementing the investment strategy.

- **implementation considerations**

  Implementation considerations include operational risks, the security of scheme assets, asset transitions, liquidity and collateral management.

- **operational risk**

  Trustees should have a strategy and adequate internal controls in place to manage and mitigate operational risks, such as those arising from the operations of custodians.

- **operational due diligence**

  The trustees should conduct due diligence to assess third parties' awareness of their operational risks and the controls they have in place and whether, for example, the trustees need to put in place additional mitigations.

- **understanding the security of the assets**

  The trustees should ensure that the scheme's assets are held securely. They need to understand the custody arrangements and the level of protection offered through legislation, regulation and any compensation schemes.

 © IFE: 2023 Examinations

- **negotiating additional protections**

  The trustees may be able to negotiate with a potential fund manager to obtain additional protection for the scheme's assets.

- **fund documentation**

  The trustees should review fund managers' documentation.

- **asset transitions**

  The trustees need to be aware of the risks and costs of asset transitions and ensure appropriate mitigations are in place.

- **collateral management**

  Derivatives have margin or collateral requirements, which can introduce liquidity and operational risks that need to be managed appropriately.

Section 7: Monitoring

Section 7 concerns identifying and communicating the information required to effectively monitor the scheme's investments and funding level.

- **monitoring principles**

  Assets, sponsor covenant and the scheme's funding level should be monitored and the results considered together. Monitoring should be prioritised, timely and actionable.

- **monitoring information**

  The trustees should identify the information they need to monitor the scheme effectively.

- **presenting information**

  The balance between summary and detail should be appropriate to the purpose and end user. Information should be presented in an easily digestible form, *eg* using graphs or graphics.

- **monitoring dashboard: management information and indicators**

  A dashboard (an overview of key statistics that need to be monitored) can help to build high-level understanding and highlight key risks. However it needs to be focussed, *ie* each statistic should convey useful, actionable information for a reasonable cost.

- **monitoring investment strategy**

  The trustees should monitor the performance of the investment strategy against their long-term objectives.

- **monitoring investment managers**

  The trustees should monitor the performance of the scheme's investment managers. They should focus on the mandates that represent the greatest risk to the scheme.

8.2 A guide to DC investment governance

In July 2016 The Pensions Regulator published a guide to investment governance to be read alongside Code of Practice 13: Governance and administration of occupational defined contribution trust-based schemes providing money purchase benefits. This guidance was last updated in October 2021.

At the time of writing (May 2022), the guidance can be found at:

https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance/funding-and-investment-detailed-guidance/investment-guide-for-dc-pension-schemes-

This is one of six guides to support trustee boards of DC schemes in meeting the standards set out in Code of Practice 13. The other guides concern the trustee board, scheme management skills, administration, value for members and communicating and reporting. The guides aim to provide practical information, examples of approaches which could be taken and factors to consider.

The purpose of the guide is to ensure trustees have the right investment governance arrangements in place, involving the right advisers and investment strategies to provide pension scheme members the best chance of achieving a good outcome.

A brief summary of the guide is below:

ActEd text has been added below most of the Core Reading bullet points to summarise some key conclusions. However, TPR's guide contains a detailed discussion and therefore we recommend that you read this as well as the text below.

The trustee board's role in investment governance

The trustee board retains ultimate responsibility for a scheme's investments. Certain tasks and decisions can be delegated, but the trustee board retains effective control, gives direction and intervenes when problems are identified.

- **working with investment advisers**

  It is the trustees' responsibility to decide when to use advisers.

- **investment delegation structures**

  The governance structure should balance speed of action with checks and balances.

- **clear roles and responsibilities**

  The roles, responsibilities and terms of reference of all parties should be clearly defined.

Investment decisions and the statement of investment principles (SIP)

The SIP sets out the scheme's investment strategy, including investment objectives and policies.

- **sustainability**

  When making investment decisions, it is important to consider ESG factors and risks to investments over an appropriate time horizon.

- **financial and non-financial factors**

  The trustees should consider financially material factors when making investment decisions. It may be reasonable to also consider some non-financial factors.

- **members' views**

  When making investment decisions, the trustees may wish to consider any views that are expressed by members.

Monitoring investment governance

Trustees should regularly assess the effectiveness of their investment decision making and governance processes.

- **reviewing the trustees' performance**

  A range of issues should be considered when reviewing the trustees' performance, for example whether sufficient advice and knowledge is available.

- **investment beliefs**

  The trustees may wish to develop and maintain a set of investment beliefs to help to provide a framework for investment decision-making.

- **stewardship**

  Stewardship involves responsible allocation of capital and monitoring of the assets. Trustees often delegate some stewardship activities to their investment managers.

- **setting objectives and strategies**

  When setting objectives and strategies, the trustees should consider how members' needs may vary over time.

- **implementing the objective**

  When deciding how to achieve an objective, factors such as cost, risk, flexibility, other services and transition issues should be considered.

Designing investment arrangements (including default arrangements)

Question

List some member characteristics that will drive their investment options.

Solution

Member characteristics include:

- age and number of years until each member expects to retire
- importance of pension in relation to overall wealth
- attitude to risk
- expected salary increases (members may want their fund to increase at least in line with their salary so as to maintain their standard of living on retirement).

- **understanding the membership**

  The trustees need to understand the current and likely future needs of the membership in order to design appropriate investment arrangements.
- **interpreting the data**

  Data analysis should be proportionate and meet governance requirements.
- **available market options**

  Schemes, particularly those with limited resources, may wish to make use of 'off the shelf' products.
- **unregulated investments**

  Unregulated investments are not subject to the same controls, restrictions, regulatory oversight and protections as regulated investments. Before investing, trustees should ensure they fully understand any such investment and seek advice.
- **implementation costs**

  When designing a new investment strategy, trustees should take account of implementation costs.
- **implementation governance**

  When designing a new investment strategy, trustees should take account of initial and ongoing governance requirements and costs.
- **implementation report**

  Many trustee boards will need to produce a report documenting how they have followed and acted upon the SIP and the details of any review of the SIP.
- **asset liquidity and dealing frequency**

  The trustees should consider the needs of their members for liquid assets. For example, daily dealing may not be necessary.
- **allowing for the future**

  The trustee should consider the resilience of the investment arrangements to future changes in, for example, membership, investment markets and the employer.

 © IFE: 2023 Examinations

- **bespoke arrangements**

  Before implementing a bespoke arrangement, the trustees should document their strategy and objectives and how they can be achieved using the arrangement.

- **additional fund options**

  The number of funds made available to members will be influenced by a range of factors including the views of the employer, the governance budget and the needs of the membership.

- **fund selection**

  When selecting funds, trustees should consider a range of factors including the objective of each fund; the costs, charges and risks; the provider and platform; members' needs.

Strategy and performance monitoring and review

The circumstances when the trustees must review their SIP, default strategy and performance of the default arrangement are described. For example, significant changes to the demographic of the membership should usually lead to a review.

- **monitoring**

  Monitoring is most effective when it is prioritised, conducted regularly and identifies any issues requiring action.

- **fund and strategy performance**

  Trustees should regularly review the long-term performance of individual funds.

- **monitoring investment managers**

  Trustees should monitor the performance of the investment managers.

- **fund documentation**

  The trustees should review fund managers' documentation and, if appropriate, negotiate additional protection.

- **member notice**

  Members should be notified in good time before any fund transfer so that they can switch to a different fund if they wish.

Market developments

Market developments may help trustees to meet scheme investment objectives or manage investment risks more effectively. However, costs of changing funds can be significant.

- **fiduciary management**

  Fiduciary management of a DC scheme's investment strategy is a developing area. When appointing a fiduciary manager, regulation may require trustees to undertake a competitive tender process.

- **impact investment and patient capital**

  Trustees should consider the suitability of new investment concepts and strategies as markets develop. Impact investment (also known as social and / or environmental impact investment) and patient capital (the provision of long-term finance to firms that have long-term growth potential) are two developing concepts.

- **smoothing of performance fees**

  Some funds charge a fee that is dependent on performance and this may breach regulations that set a cap on fees that can be charged to members' funds. At the time of writing (May 2022), the UK Government has been consulting on how to resolve this issue by smoothing such fees.

- **security of assets**

  The trustees should seek to determine the level of protection that different scheme assets have in the event of loss due to fraud, malfeasance or other adverse events. It is best practice to communicate the conclusions to members.

- **negotiating additional protections**

  The trustees may be able to negotiate with a potential fund manager or scheme administrator to obtain additional protection for the scheme's assets.

 © IFE: 2023 Examinations

The chapter summary starts on the next page so that you can keep all the chapter summaries together for revision purposes.

Chapter 14 Summary

Fundamental principles

The basic principles of pension fund investment are to:

- minimise the risk of failing to meet the liabilities of the pension scheme
- maximise the investment return within an acceptable level of risk.

Any investment strategy should consider matching the nature, term, currency and certainty of the assets and liabilities. However, a mismatched strategy may be followed to reduced costs, if higher returns are anticipated by such a strategy, and the risk is acceptable, for example if the sponsor covenant is strong.

Choosing and monitoring investments

The trustees set out overall guidance, restrictions and explanation in terms of the scheme's investment strategy.

This often involves setting a benchmark, or strategic investment norm, plus operating bands around the benchmark.

It is important to review and monitor investment performance, being aware of any limiting effects on performance of restrictions or constraints placed on investment managers.

The scheme's circumstances

When considering the investment strategy for a scheme, the issues that need to be considered include: liability profile; funding position; size of the scheme; expected cashflow; strength of sponsor covenant; attitude to risk of the trustees and the sponsor.

The status of the scheme will influence these circumstances. For example, a new scheme with no past service is likely to have a very different liability profile, size and cashflow position to, say, a mature scheme that is closed to accrual. The funding position, sponsor covenant and attitude to risk may also differ significantly.

Risk and reward

Equities were traditionally considered a highly suitable asset holding for salary-related liabilities, since they were expected to give the greatest long-term return and could be expected to provide a real return in the long term. However, there is no guarantee that equities will perform well in the future, or that equity return will be closely correlated to salary inflation, even in the medium to long-term. The trustees should consider the consequences of underperformance.

A portfolio with a substantial proportion of bonds may be considered in order to more closely match the liabilities and reduce risk.

When you consider the possibility of a scheme winding up, the conflict between maximising expected return and minimising risk is more prominent.

Investment in overseas assets may improve diversification but introduces currency risk

DC and hybrid schemes

Members might choose to take their benefits from a DC or hybrid scheme in a number of ways, for example by purchasing an annuity, taking a cash lump sum or using income drawdown. Each option suggests a different investment approach close to and in retirement.

Environmental, Social and Governance considerations

Environmental issues include climate change, resource depletion, waste, deforestation and pollution.

Social issues include human rights, modern slavery, child labour, working conditions and employee relations.

Governance issues include bribery and corruption, executive pay, board diversity and structure, political lobbying and donations and tax strategy.

The key risks of climate change are:

- physical risks – arising from the effects of a changing climate
- transition risks – arising from the shift away from fossil fuels
- liability risks – relating to potential compensation payments to third parties because they have suffered loss or damage from the effects of climate change.

Social impact investing focuses on investing in companies and projects that manufacture goods and services designed to have an explicit positive impact on society, while ensuring investors received a fair return on their capital contribution.

UK investment governance

TPR has issued guidance on DB investment and DC investment governance. The main sections of the guidance are listed below.

DB schemes	DC schemes
Overview	The trustee board's role in investment governance
DB investment governance	Investment decisions and the SIP
Investing to fund defined benefits	Monitoring investment governance
Matching DB assets	Designing investment arrangements (including default arrangements)
Growth assets	Strategy and performance monitoring and review
Implement a DB investment strategy	Market developments
Monitoring	

Stochastic approaches to projecting mortality

Stochastic approaches can also be used.

It is expected that actuaries will continue to illustrate the uncertainty in future mortality by using a range of different projections. This could include the use of stochastic approaches.

This means that a range of future possible scenarios can be allowed for, regardless of how small the probability of any particular scenario arising may be.

Mortality projections in the UK

The CMI has also undertaken significant research into possible methods of projecting mortality.

Mortality during 2020 and 2021 was higher than previous years, due to the coronavirus pandemic. CMI will therefore not be placing any weight on data in respect of these years when projecting future mortality rates. More information can be found at:

https://www.actuaries.org.uk/mortality-improvements-and-cmi-2021-frequently-asked-questions-faqs

At the time of writing (May 2022), the latest projection model released is CMI Mortality Projections Model, CMI_2021. The Frequently Asked Questions (FAQ) page that accompanies this model describes the following key findings:

- Standardised mortality rates in England & Wales were, on average, 5% lower in 2021 than in 2020. Both years had significantly higher mortality than before the coronavirus pandemic.
- This sustained increase in mortality is unusual and therefore, CMI_2021 will place no weight on the data for 2020 or 2021 when projecting mortality rates
- CMI_2021 produces cohort life expectancies at age 65 that are about two weeks lower for both males and females than in the previous version of the CMI Model, CMI_2020.
- Over the period 2001-2020, people aged between 65 and 89 living in less-deprived areas of England & Wales have experienced mortality improvements nearly 1% a year higher than those living in more-deprived areas.

The CMI has published a library of mortality projections, including two methods of stochastic mortality projections: the Lee-Carter method and the P-spline method.

Each has its own advantages and disadvantages, mostly relating to the way historic data is used – and the weighting placed on more recent experience. Knowledge of these methods, or the more recent Cairns Blake Dowd model, is not required for Subject SA4.

For those interested, considerable information on these methods can be found in CMI Working Papers 3, 15 and 25. However, a brief summary of the methods is given below.

The Lee-Carter method is a bilinear model (*ie* a model with two variables such that if one is held constant, the results vary linearly with the other) with age and calendar year as variables. It is a simple, much-studied model and can be used to generate scenarios using the same techniques as are already used in asset-liability models. Lee-Carter models generally use a time series approach to model the change in overall mortality.

P-spline models are examples of regression models. The P-spline method can be defined in many dimensions to fit, for example, a surface of rates of mortality over the (x,t) plane where x could be age and t could be calendar year or year of birth. It can automatically allow for parameter uncertainty and easily incorporate cohort effects.

The Cairns Blake Dowd model is a two-factor stochastic model for the development of the mortality curve through time for individuals over age 60. The first factor affects mortality-rate dynamics at all ages in the same way, whereas the second factor affects mortality-rate dynamics at higher ages much more than at lower ages.

UK example

Most UK schemes now use suitably adjusted SAPS tables with allowance for future improvements in line with the CMI Mortality Projection model, typically using the Core Parameters and a long-term rate of improvement in the range 1–2% *pa*.

Mortality advice in the UK

Low real discount rates (*ie* net of pension increases) and the increasing use of liability cashflows in the design of investment strategies have made it more important than ever for UK pension actuaries to provide high quality mortality advice.

Longevity in the UK has improved over the last 30 to 40 years. This, combined with low real discount rates (*ie* net of pension increases) and increasing use of liability cashflows in the design of investment strategies has led to increased attention being paid to mortality projections and longevity risk for pension schemes. This reflects the increased significance of the mortality assumption.

Regulations and professional guidance in the UK

In the UK, The Pensions Regulator has published guidance to trustees on setting mortality assumptions under the scheme funding regulations.

Under the SFO regulations introduced by the Pensions Act 2004, the assumptions adopted for actuarial valuations are ultimately the trustees' decision, albeit they are required to take advice on them from the Scheme Actuary and, in most cases, to agree them with the scheme sponsor.

1.3 Disclosures within the accounts related to employee benefits

It is important that pension liabilities are disclosed to users of accounts in a manner that enables them to make informed judgements about those companies.

The statement of profit or loss will show an estimate of the cost to the company of the employee benefits that have accrued over the period.

On the balance sheet we are likely to find either:

- a net pension liability (an estimate of the money the company 'owes' to the pension scheme, perhaps to eliminate a deficit in the scheme)
- a net pension asset (an estimate of the money the company may be able to 'reclaim' from the pension scheme, perhaps through a contribution holiday), although this may be set to zero depending on the circumstances and accounting standard.

Possible disclosure requirements that may be needed are:

- **elements of the basis used**
- **actuarial method used**
- **value of** any **liabilities accruing over the year**
- **increase in the past service liabilities at the start of the year**
- **investment return achieved on the assets over the year**
- **surplus (or deficit) over the year**
- **change in the surplus (or deficit) over the year and**
- **pension cost over the year in respect of any directors.**

The notes to the accounts are likely to provide:

- additional information about the accounting disclosures
- relevant information about the pension scheme.
- details of directors' remuneration, including their pension benefits.

 © IFE: 2023 Examinations

1.4 Accounting standards

Accounting standards are prepared by various accounting bodies to advise actuaries and auditors on how to treat pension liabilities in company accounts.

The main accounting standards covering pension schemes are:

- **FRS 102 (UK)**
- **IAS 19 (international)**
- **ASC 715 (USA).**

Although differing in their detailed provisions, all have the basic aims of:

- **recognising the realistic costs of accruing benefits**
- **avoiding distortions resulting from fluctuations in the flow of contributions from the employer to the pension scheme**
- **providing consistency in the accounting treatment from year to year (although not necessarily from company to company)**
- **disclosing appropriate information.**

IAS 19 is the international accounting standard that prescribes how to account for all types of employee benefits except share-based payments under the International Financial Reporting Standards (IFRS) framework.

The European Union (EU) and the UK have both adopted IFRS, including IAS 19. As at 1 January 2021, UK-adopted IFRS was identical to EU-adopted IFRS, but this may change in the future.

Generally Accepted Accounting Practice in the UK (UK GAAP) is the body of accounting standards published by the UK's Financial Reporting Council (FRC). These include FRS 101 and FRS 102.

FRS 102 is the principal UK accounting standard in the UK's financial reporting regime. A reduced disclosure framework, specified in FRS 101, can be applied by some companies accounting under UK GAAP.

Many companies listed on a stock exchange within the EU or the UK have to account for the cost of employee benefits in their group consolidated accounts using IAS 19. Other UK companies can account for employee benefits using UK GAAP or IAS 19.

In general, the standards need only be followed if the cost of employee benefits is 'material' in the context of the company's accounts as a whole. It is usually the company and auditor that determine materiality. For companies where the costs are not significant, and for DC schemes, it is usually acceptable to use the employer contributions actually paid.

Further detail on accounting standards and practice for benefit arrangements is covered in the following sections.

There are further accounting standards that deal with post-retirement medical benefits and non-standard pension costs. These are not, however, covered by the syllabus for Subject SA4.

5 IAS 19

5.1 Introduction

The current international practice standards are set out in International Accounting Standard 19 (IAS 19). A revised IAS 19 was issued in June 2011, being applicable to accounting years beginning from 1 January 2013.

International Accounting Standard 19 (IAS19) is an attempt to produce a standard approach to accounting disclosures throughout the world and in particular in the many countries with no specific standard of their own. The emphasis in this is towards the balance sheet and it specifies that a market based Projected Unit actuarial method is adopted.

5.2 The pension cost

The elements of the pension cost under IAS 19 are calculated using much the same method as FRS 102.

The pension costs should be calculated as:

service cost

+/– interest on the net liability / asset

+/– re-measurement effects.

The first two elements *ie* **service cost and net interest are recognised in the profit and loss account (P&L).** The third element *ie* **the re-measurement effects are recognised in 'Other Comprehensive Income'.**

The service cost is equal to:

current service cost

+/– past service cost / credit (including changes to the DBO due to curtailments)

+/– the effects of settlements.

The interest on the net liability / asset is calculated in a similar way as for FRS 102 being equal to:

interest cost on the liabilities

less interest income assumed on the assets using the assumed discount rate.

These re-measurement effects consist of the gains or losses arising from:

- **changes in the assumptions used to measure the DBO**
- **differences between the actual and assumed experience in the scheme**
- **differences between the actual return on the scheme assets and the interest income assumed using the assumed discount rate**
- **changes in the asset ceiling not included in the interest cost,** *ie* the present value of the sum of refunds of surplus to which the sponsor has an unconditional right and reductions in future contributions**.**

 © IFE: 2023 Examinations

5.3 Valuation of assets and liabilities

Assets are measured at fair value at the balance sheet date. Auditors now require this to be bid value rather than mid-market value (based on wording in other international accounting standards).

The liabilities are calculated using the Projected Unit method.

There is no guidance under IAS 19 on the treatment of risk benefits.

One possible method is the 'attribution' method (as used under ASC 715) whereby benefits that are not service related are allocated in proportion to the ratio of completed years of service to either the vesting period or, if the benefit is unvested, total projected years of service.

However, other methods such as the insurance cost approach adopted by FRS 102 are equally acceptable.

5.4 Assumptions

As for FRS 102 the assumptions are the responsibility of the directors. The involvement of a qualified actuary is encouraged but not required.

The assumptions should be unbiased and mutually compatible and overall should result in the entity's best estimate of the future cash flows from the scheme.

Financial assumptions should reflect market conditions at the balance sheet date.

The discount rate used to value the liabilities should be determined by reference to market yields at the balance sheet date on high quality corporate bonds of consistent term and currency or, if there is no deep market in such bonds, the market yields on government bonds.

Allowance should be made for discretionary benefit increases if there is a constructive obligation to award them.

5.5 Plan events

In February 2018, the International Accounting Standards Board issued Plan Amendment, Curtailment or Settlement (Amendments to IAS 19), which clarifies the accounting when a plan amendment, curtailment or settlement occurs for reporting periods which begin on or after 1 January 2019.

As a result, IAS 19 requires a company to update its assumptions and remeasure its net defined benefit liability or asset, current service cost and net interest on the net defined benefit liability or asset for the remainder of the reporting period after the plan event.

Suppose that, for example, a company's accounting year ran from 1 January to 31 December and a plan event such as a curtailment occurred on 1 October. When performing pension cost calculations the year should be split into two periods; 1 January to 30 September (valued using assumptions as at 1 January), then following the plan events on 1 October, the period of 1 October to 31 December (valued using assumptions as at 1 October). Figures from the two periods may then be combined to obtain figures for the whole year.

Previously, although the impact of the plan event would be measured at the date it occurred, it was not necessary to remeasure (with the use of updated assumptions) **for the remainder of the reporting period after the plan event.**

5.6 Actuarial gains and losses

Under IAS 19, all gains and losses are to be recognised immediately outside the profit and loss account, under 'Other Comprehensive Income' (OCI).

These gains and losses are the re-measurement effects (discussed above) as a result of:

- the impact of any changes in the assumptions in valuing the liabilities
- the difference between the expected value of the liabilities and the actual value due to experience differing from that assumed
- the difference between the expected value of the assets (calculated using the discount rate to determine the expected return on the assets) and the actual value due to experience differing from that assumed
- any changes in the asset ceiling not included in the interest cost.

This method is analogous to the recognition of gains and losses through the OCI under FRS 102 where gains and losses are recognised immediately and not through the profit and loss account.

5.7 Balance sheet

The amount recognised as a liability in the balance sheet should be calculated as:

The present value of the defined benefit obligation (DBO)

less the fair value of the scheme assets.

If the result is negative, *ie* an asset, then it should be limited to the 'asset ceiling' which is defined as the present value of the economic benefits in the form of refunds from the scheme (more specifically, refunds to which the sponsor has an unconditional right) **or reductions in future contributions.**

In practice, the calculation of the asset to be shown on the balance sheet can be very complicated. For example:

- it may be difficult to determine the extent to which an employer has an unconditional right to a refund of surplus
- arguably, even if the scheme is in surplus on an accounting basis, a reduction in future contributions may not be available if these funds are needed to meet past service liabilities under any statutory funding requirements.

International Financial Reporting Interpretations Committee (IFRIC) 14

This relates to the asset ceiling that may be allowed for within accounting disclosures, and a requirement on employers to reflect in the balance sheet value any future minimum contributions that must be made to a pension scheme.

 © IFE: 2023 Examinations

Legislation in some countries requires employers to make minimum funding payments toward their DB pension scheme. IFRIC 14 sets out the principles that should be applied when calculating the asset ceiling in jurisdictions with such minimum funding requirements. Under IFRIC 14, refunds or reductions in contributions should be calculated at the maximum amount that is consistent with the terms and conditions of the scheme and any statutory requirements in the jurisdiction of the scheme.

5.8 Summary of disclosures

The disclosures required under IAS 19 include the following:

- ***Objectives*: an explanation of the characteristics and risks associated with DB schemes …**

  … and how the characteristics of the scheme may affect the amount, timing and uncertainty of the company's cashflows.

- ***Characteristics*: a description of the scheme benefits and any risks the scheme poses to the company …**

  … in particular unusual risks or concentrations of risk.

- ***Benefit obligation*: a reconciliation of the opening and closing balance of the scheme's liabilities.**

- ***Scheme assets*: a reconciliation of the opening and closing balance of the scheme's assets and any asset / liability matching strategies …**

  … and detail of any self-investment included in the fair value of assets.

- ***Pension cost*: the pension cost recognised in the profit and loss accounts consisting of:**
  - **current service cost**
  - **interest on net liability / asset and**
  - **re-measurement effects.**

- ***Cashflows*: expected employer contributions over the coming year …**

  … together with a description of the funding arrangements …

  … and the weighted average duration of the scheme.

- ***Assumptions*: the significant assumptions used …**

  … the sensitivity of the value of the liabilities to changes in these assumptions …

  … together with commentary on the methods used in the sensitivity analysis.

- ***Multiple plans*: disclosures for plans with materially different risk characteristics should be separate rather than combined.**

At the time of writing (May 2022), we are awaiting the outcome of a consultation regarding disclosure requirements that was recently conducted by the International Accounting Standards Board.

5.9 Example

In this section, we show by way of a worked example the figures that might appear in a company's accounts relating to pension costs under IAS 19. The worked example is intended to illustrate some broad principles of the calculations; different organisations may take different approaches, depending on, for example, their interpretation of the accounting standard. In practice figures would probably be rounded and some detail may be ignored due to materiality.

If the calculations are completed at the year end, actual information (not estimated calculations) can be used, such as known employee contributions and benefit payments.

You will gain the most benefit from this example if you attempt the calculations yourself.

You will notice that these figures are the same as those calculated in the previous example when reporting under FRS 102 as we have assumed the same assumptions can be used for IAS 19 in this instance and that fair value of assets is the same as the bid value. However the presentation of the results does differ.

Summary of results

The calculations in the previous example showed that, using the FRS 102 methodology and assumptions:

Current service cost (CSC):	£0.81*m*
Interest cost:	£1.06*m*
Interest income on plan assets:	£1.6*m*
Net interest on net defined liability:	–£0.54*m*

Plan introductions, benefit changes, curtailments and settlements are nil

The table below shows the value of the liabilities on the FRS 102 basis and the fair value of the assets at 1 January X and 1 January X+1:

	Value at 1 January X	Value at 1 January X+1
Fair value of assets	£40.0*m*	£35.0*m*
Value of liabilities	£26.9*m*	£32.0*m*

Employer and employee contributions totalled £1*m* $(0.25\times £4m)$ during year X.

Additional information

During the year X actual benefit outgo was as expected, *ie* £1.0*m.*

Calculation of the pension cost recognised in P&L account for year X

The pension cost which passes through the profit and loss account for year X is:

CSC	£	0.81*m*
Interest cost on net liability / asset	£	(0.54)*m*
Past service cost	£	0.00*m*
Gains/losses from settlements/curtailments	£	0.00*m*
Pension cost	£	0.27*m*

Calculation of the balance sheet item at 31 December X

The expected value of the defined benefit obligation at the year-end is:

Value of obligation at 1/1/X	£	26.90*m*
Value of accruing benefits (CSC + employee contributions of £0.2*m*)	£	1.01*m*
Interest on liabilities	£	1.06*m*
Past service cost	£	0.00*m*
Benefits paid	£	(1.00*m*)
Expected value of the obligation at 31/12/X	£	27.97*m*

The actual value of the obligation is £32.0*m*. Therefore, there is an actuarial loss on the obligation of £4.03*m* (= £32*m* – £27.97*m*).

The expected value of the assets at the year-end is:

Value of the assets at 1/1/X	£	40.00*m*
Interest on the assets	£	1.60*m*
Contributions received	£	1.00*m*
Benefits paid	£	(1.00*m*)
Expected value of the assets at 31/12/X	£	41.60*m*

The actual value of the assets is £35*m*. Therefore, there is an actuarial loss on the assets of £6.6*m* (£35.0*m* – £41.6*m*) .

Therefore, overall there is an actuarial loss of £10.63*m* (= £4.03*m* + £6.6*m*) during year X and this will be recognised through the OCI.

The pension liability shown in the balance sheet at 31 December X will be:

Value of obligation	£ 32.0*m*
Value of assets	£ (35.0*m*)
Asset recognised in the balance sheet at the year-end	£ 3.0*m*

Question

Reconcile this obligation recognised in the balance sheet at the end of the year with that recognised a year ago.

Solution

The pension liability shown in the balance sheet at 31 December each year is:

	X –1 (£*m*)	X (£*m*)
Value of obligation	26.9	32.0
Value of assets	(40.0)	(35.0)
Asset recognised in the balance sheet at the year-end	13.1	3.0

Movement during year X:	£*m*
employer contributions paid into the scheme $(0.2 \times £4m)$	0.80
pension cost through profit and loss account	(0.27)
pension cost through OCI	(10.63)
	(10.10)

The asset recognised in the balance sheet at the year-end = Asset recognised in the balance sheet at the beginning of the year adjusted for movements during year X.

Thus the asset recognised in the balance sheet at the year-end = £13.1*m* - £10.1*m* = £3*m*

 © IFE: 2023 Examinations

The chapter summary starts on the next page so that you can keep all the chapter summaries together for revision purposes.