The Trustee toolkit downloadable

How a DB scheme works

Tutorial one: The basics

By the end of this tutorial you will better understand:

- what a defined benefit scheme is
- how a final salary scheme works
- how a career average revalued earnings scheme works
- the benefits members will receive from a defined benefit scheme
- the trustee's responsibility to value the scheme assets and liabilities
- what the term 'technical provisions' means
- types of assumptions used in valuing the scheme
- the types of assumptions that are known
- the types of assumptions that are unknown
- the importance of choosing prudent assumptions
- what the scheme being in surplus or deficit means
- what a recovery plan is

This tutorial is part of Scenario one.

Glossary

A detailed glossary of technical terms can be downloaded from the Resources tab when you log in at www.trusteetoolkit.com

The Pensions Regulator

What is a DB scheme?

The provision of DB pension benefits involves a promise from an employer to provide an employee (the pension scheme member), or former employee (a deferred pension scheme member), with certain benefits.

The amount of pension the employee will receive (the benefit) is agreed at the outset but the level of employer, and sometimes employee, contributions required to meet the agreed pension is variable and reliant on a number of factors. This is the opposite of a DC scheme where the amount of the contributions are known from the outset but the amount of the pension that will be payable is variable and unknown.

Individual members of a scheme will want to know what benefits they can expect to receive on reaching retirement. This is different for every scheme and will be set down in the scheme rules.

Let's look at two examples.

Company A is an example of a final salary pension scheme. This is the most common form of DB scheme. The benefits earned each year are based on earnings close to the date the employee leaves service, retires or dies.

Company B is an example of a career average revalued earnings (CARE) pension scheme. The benefits earned each year are based on earnings over that year. In order to provide some protection against the impact of inflation, benefits are normally increased from the date they are earned to the date they are paid.

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	Company A	Company B
Normal pension age	Normal pension age is the age at which the pension can start to be drawn without reduction for early payment. In this example scheme it is 65 years.	Normal pension age is the age at which the pension can start to be drawn without reduction for early payment. In this example scheme it is 67 years.
Accrual rate	The accrual rate of this scheme is 1/60th of final salary per annum. For example, if a member's final salary was £20,000 per annum at pension age, they would accrue a pension benefit of 1/60th of £20,000, ie £333.33 per annum for each year of membership of the scheme.	The accrual rate in this scheme is 1/80th, so in a year where the member's annual pensionable salary is £20,000, that member earns a pension of £20,000 x 1/80th, ie £250. In this scheme, the pension earned each year is increased in line with the CPI between the date the pension is earned and the date of retirement. If this increase in CPI over that period is 10%, the pension paid in respect of that year of service with be £275 per annum (£250 + 10% = £275).

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	Company A	Company B
Calculation of pension		The total pension is calculated by adding together the pension amounts earned each year. In this example an employee joins the scheme at age 64 and retires at age 67. The pensionable salary in year one is £20,000, in year two is £21,000 and in year three is £22,000. The increase in CPI between the end of year one and retirement is 8%, and between the end of year two and retirement is 3%. **Worked example** Year one pension: ▸ Pension before indexation is equal to 1/80 x £20,000 = £250pa ▸ Allowance for indexation is equal to £250 x 8% = £20pa ▸ Pension after indexation is equal to £250 + £20 = £270pa Year two pension: ▸ Pension before indexation is equal to 1/80 x £21,000 = £262.50pa ▸ Allowance for indexation is equal to £262.50 x 3% = £7.88pa ▸ Pension after indexation is equal to £262.50 + £7.88 = £270.38pa Year three pension: ▸ Pension before indexation is equal to 1/80 x £22,000 = £275pa ▸ There is no allowance for indexation in this year Total pension: £270 + £270.38 + £275 = £815.38

	Company A	Company B
Pensionable service	Pensionable service is limited to 40 years in this scheme, ie a member can accrue a maximum of 40 years worth of pension benefit.	
Maximum pension	The maximum pension in this scheme is 40/60ths or 2/3 of final salary. For example, a member having worked for 40 years whose annual salary was £20,000 on retirement would have accrued a pension of 40/60 x £20,000, ie £13,333 per annum.	Members may exchange part of their pension for a tax free lump sum. In this scheme the maximum pension which may be exchanged is 25% of the entitlement. The amount of cash lump sum provided is calculated by the actuary, using a table of conversion factors based on age.
Maximum pension commencement lump sum	Members may exchange part of their pension for a tax free lump sum. In this scheme the maximum pension which may be exchanged is 25% of the entitlement. The amount of cash lump sum provided is calculated by the actuary, using a table of conversion factors based on age.	
Pension increase	In this scheme, the pension increases during payment are in line with the Consumer Prices Index (CPI), capped at 2.5% per annum. The amount of pension received by the member would increase annually by the CPI measure of inflation, subject to a maximum increase of 2.5% per annum.	In this scheme the pension increase during payment is in line with the Retail Prices Index (RPI), capped at 5% per annum. The amount of pension received by the member would increase annually in line with the RPI measure of inflation, subject to a maximum increase of 5% per annum.
Spouse's pension	The spouse's pension in this scheme is 50% of the member's pension entitlement. Should the member die leaving a spouse or civil partner, that person would receive half of the member's annual pension, ignoring any exchange of pension for a cash lump sum. In this example, if the member dies before any pension increases had been provided, their spouse/ civil partner would receive £6,667 per annum.	The spouse's pension in this scheme is 66%. Should the member die leaving a spouse or civil partner, that person would receive 66% of the member's annual pension.

	Company A	Company B
Lump sum death benefit	In this scheme, if the member were to die before retirement a lump sum death benefit is payable of three times salary. For example if a member earning £20,000 per annum dies before retirement, a payment of £60,000 would be paid to their beneficiaries.	In this scheme, if the member were to die before retirement a lump sum death benefit is payable of two times salary. For example if a member earning £20,000 per annum dies before retirement, a payment of £40,000 would be paid to their beneficiaries.
Member contribution	During their periods of active scheme membership (ie while their benefits are accruing) members are normally required to make annual contributions to the scheme. In this scheme the contributions are at the rate of 6% of salary.	During their periods of active scheme membership of the scheme (ie while their benefits are accruing) members are normally required to make annual contributions to the scheme. In this scheme the contributions are at a rate of 5% of salary.

The valuation process

At least every three years the trustees must produce a report, called an actuarial valuation, to measure both the value of the assets in the fund and to determine whether they are enough to pay pensions as and when they are due to be paid. The trustees of the scheme may have the power to call for a valuation at any time, for example, if there is a material change in the employer covenant.

Calculating the contributions required to provide the benefits

If a DB scheme is open (ie there are current employees who are still accruing benefits, known as 'active members') both the employer and the active members make contributions to the scheme. Those contributions are invested in various assets within a fund which accumulates over time. The scheme should always aim to have a big enough fund to pay the benefits which have already been earned (past service benefits) when they fall due. In order to calculate the required fund size it is necessary to estimate the benefits that will be payable.

How benefits are assessed

The benefits a member will receive are defined in the scheme rules. However, the actuary cannot predict detailed information about the future of individual members (eg how long they will work for the company, what they will earn or how long they will live).

Part of the actuary's job is to recommend assumptions about those matters for the membership as a whole and to agree them with the trustees.

Examples of these assumptions are that members will:

- work for X years with the company
- receive future salary increases which will average Y% per annum
- live for Z years after accessing their benefits

The actuary's view of the values of X, Y and Z will change over time in the light of experience and statistical analysis. This is one reason why the calculations have to be repeated regularly.

What do we know for sure?

Here are some questions that the actuary can answer precisely because they are in the scheme rules:

- At what age can members draw their accrued benefits without reduction for early payment (the normal pension age)?
- Over how many years can they build up full benefits?
- What counts as pensionable salary, eg are bonuses or commission included?
- What death benefits are provided if a member dies in service or when receiving pension benefits?

The actuary can also answer these questions about individual members:

- What is the member's date of birth?
- How much is their current salary?
- How long have they worked for the company?

What do we have to assume?

Here are some questions that the actuary cannot answer precisely. They concern demographic factors and the answers will have to be assumed:

- How long members will work for the employer?
- How long will they receive pension benefits?
- How many will take their benefits early or late (including ill health)?
- How many will take a tax free lump sum?

These questions concern financial factors and again the answers have to be assumed:

- How much will salaries increase in future?
- If pension benefit increases are inflation linked, how big will those increases be?

If an increase in contributions is required (especially to meet the costs of providing accrued rights) it will generally be the employer who has to meet the costs. This is because the employee's contributions are nearly always fixed in the scheme rules.

Who pays what?

When the actuary has completed the calculations they can determine how much needs to be paid into the scheme. If an increase in contributions is required it will be the employer who has to meet the cost. This is because employees' contributions are nearly always fixed in the scheme rules.

Measuring the liabilities

There are a number of measures of liability that the actuary can calculate. Technical provisions is the most important but there are others explained here.

Technical provisions

To calculate the level of assets required to meet the benefits promised to members, the trustees and the scheme actuary must consider all the pensions that will be paid in the future and work out what value of assets today will be needed to pay them.

This present-day liability is known as the technical provisions and relies upon a number of assumptions, including the rate used to discount the benefit liabilities.

Buy-out (also known as 'Section 75')

This is the cost estimated by the scheme actuary of buying annuities from an insurance company for each of the scheme members.

PPF (also known as 'Section 179')

This is the level of assets required to provide all of the members with benefits equal to those provided by the Pension Protection Fund (PPF). In this calculation the assumptions used are prescribed by the PPF.

Accounting

These are the pension scheme liability figures shown annually in the employer's accounts. In this calculation the assumptions used to calculate the pension scheme's liabilities are prescribed by the accounting rules FRS17 and IAS19.

Reaching agreement

So how do the trustees and employer reach agreement on the assumptions made to produce the technical provisions?

Assumptions

Quite a large number of assumptions have to be made. For each one, there is generally an acceptable range of possibilities, and the trustees have a duty to act prudently, selecting the one which they consider to be the most appropriate for the scheme taking into account both its circumstances and those of the employer.

The willing support of a 'healthy' employer is crucial to members receiving the full benefits they have been promised. The strength of the employer covenant must be considered when the trustees are deciding how prudent the assumptions should be.

> You will learn more about this in the Tutorial: 'Employer covenant'.

Less prudent assumptions

If the trustees decide to choose less prudent assumptions, for example shorter life expectancy and lower salary increases, this may result in a smaller overall figure for the liabilities.

This can help the employer by reducing the contributions it is required to make in the short-term and may be appropriate as trustees seek a reasonable balance between the need to pay promised benefits and minimising any adverse impact on an employer's sustainable growth.

However, this can increase the risk of the scheme having insufficient funds to meet the benefits promised to members and may not always be consistent with the legal requirement to act prudently.

Investment strategy

Many employers will encourage trustees to invest heavily in equities in the expectation that, over the long term, the returns achieved will be higher than if the scheme is invested in gilts (which commonly make lower returns but are generally expected to be less volatile).

This expectation may be correct, but because the price of equities can go down as well as up, it is possible that, at the time of the next valuation, the value of the investments may be less than anticipated and higher contributions might be required.

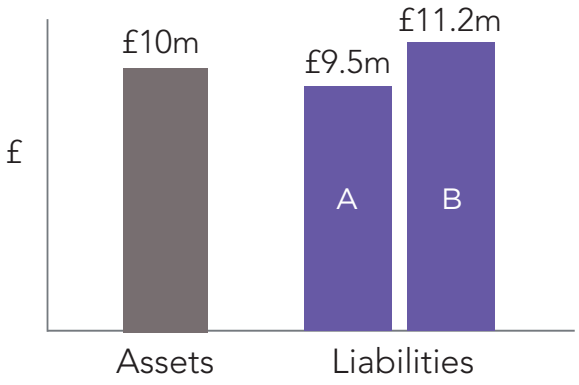
If the trustees decide to assume more investment risk, they must be comfortable that the employer is financially strong enough to be able to address a range of likely adverse outcomes over an appropriate period, as well as servicing the existing schedule of contributions.

Investment strategy impact on valuation assumptions

Not only does the investment strategy impact on the value of the scheme's assets, it also impacts on the assumed investment return used to discount the scheme's future liabilities to a figure in today's money.

Some of the benefits provided by the scheme will not be paid for a considerable time and so the size of the discount rate can have a huge impact on the value of the scheme's liabilities. The trustees need to ensure that the discount rate is chosen prudently and reflects any future anticipated changes in investment strategy.

Possible outcomes



A. Surplus

If, once all the assumptions are agreed and the valuation calculations have been performed there is a surplus (an excess in the fund's assets compared to the technical provisions), the employer may be able to take a contribution holiday if the right conditions are met.

Because there are different ways of measuring a pension scheme's liabilities it may be in surplus on one measure whilst being in deficit on another. It is not uncommon, for example, for a scheme to be in surplus on the 'accounting' basis and in deficit on the 'buy-out' basis.

B. Deficit

If there is a deficit (a shortfall in the assets compared to the technical provisions, known as the 'ongoing funding', 'Part 3' or 'scheme specific funding ' deficit) the employer will be required to make additional contributions to make up this deficit.

These will be in addition to any contributions the employer and active members make for the continued accrual of benefits by active members. The additional 'deficit repair' contributions will be set out in the recovery plan. You'll learn more about this in the Module: 'DB recovery plans, contributions and funding principles'.

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