

Trustee Accelerator Programme

Unit Three



DB Scheme Design

Key Features of a DB scheme



Pension defined as a proportion of earnings

Final Salary
CARE



Cost and balance of risk

Members may pay contributions
Bulk of the cost borne by employer
Statutory schemes are unfunded

Design variations

Final
salary

CARE

Hybrid

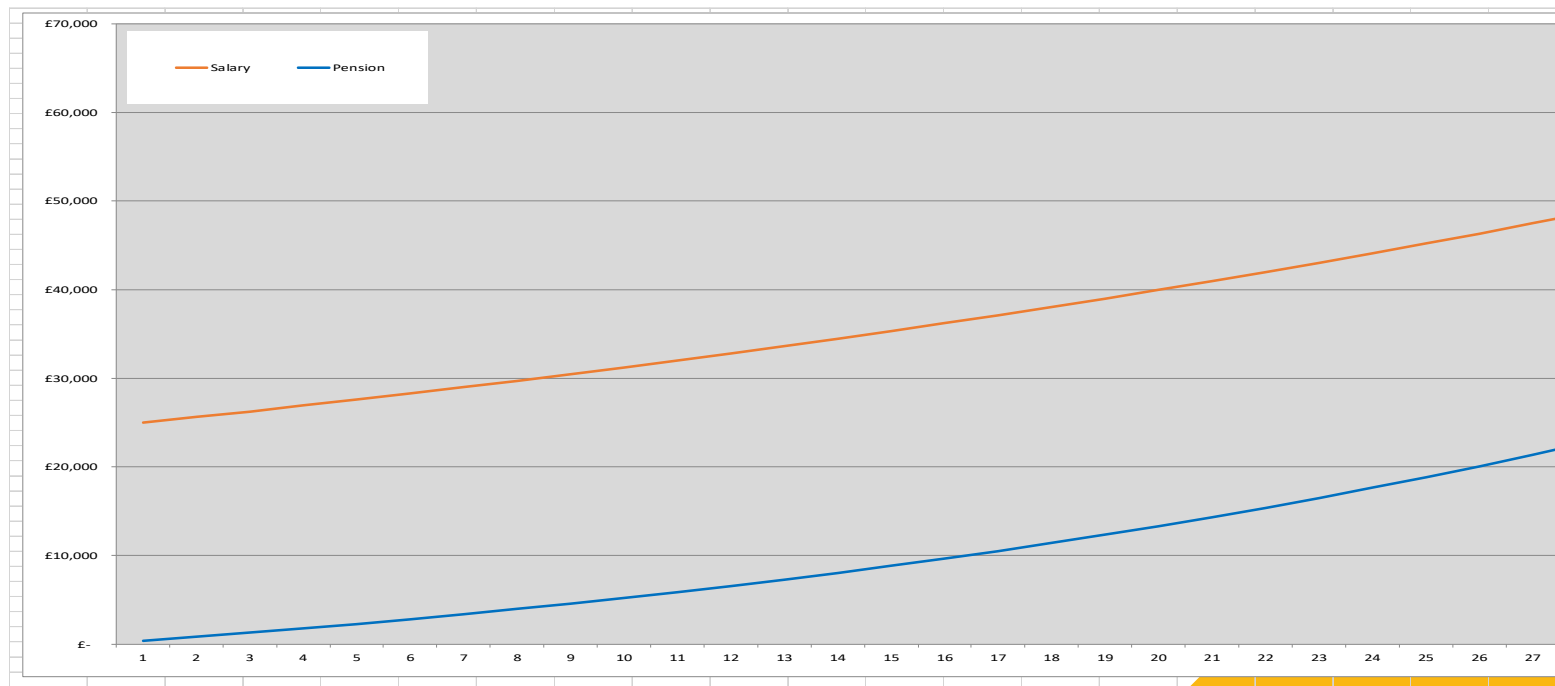
Cash
Balance

Final Salary

N = service, Accrual rate = 1/60, FPS

$$30 / 60 \times £30,000 = £15,000$$

Final Salary Accrual



Career Average Revalued Earnings

Reflect Earnings over whole period of membership

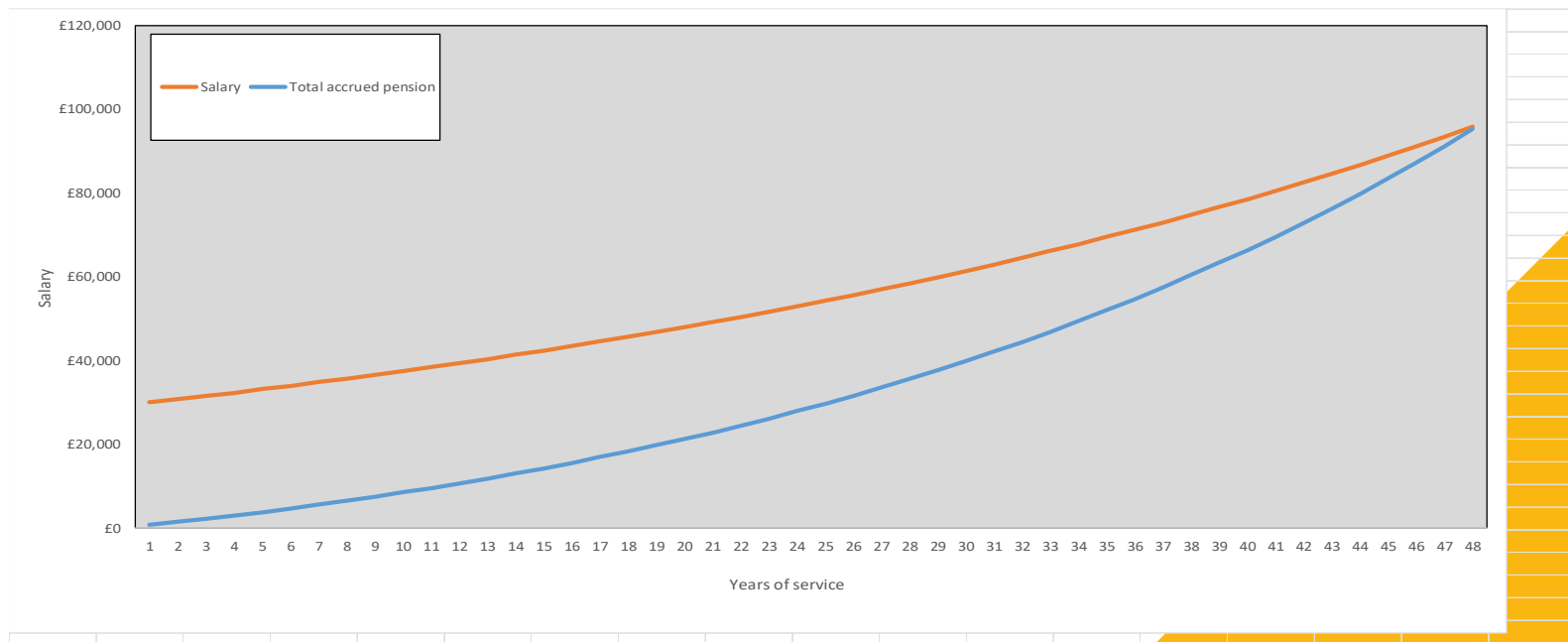
Replaced Final Salary in the Public Sector

ALPHA Pension Scheme

Annual Accrual

Service	Salary	Pension Accrued to 31 March	Revalued total	Total accrued pension
Year 1	£30,000	£696	£0	£696
Year 2	£30,750	£713	£710	£1,423
Year 3	£31,519	£731	£1,451	£2,182
Year 4	£32,307	£750	£2,226	£2,976
Year 5	£33,115	£768	£3,036	£3,804

Accrual over working life



Asset Classes

Asset Types

Real

- equities
- Property
- Index-linked gilts

Monetary

- gilts
- cash

Equities

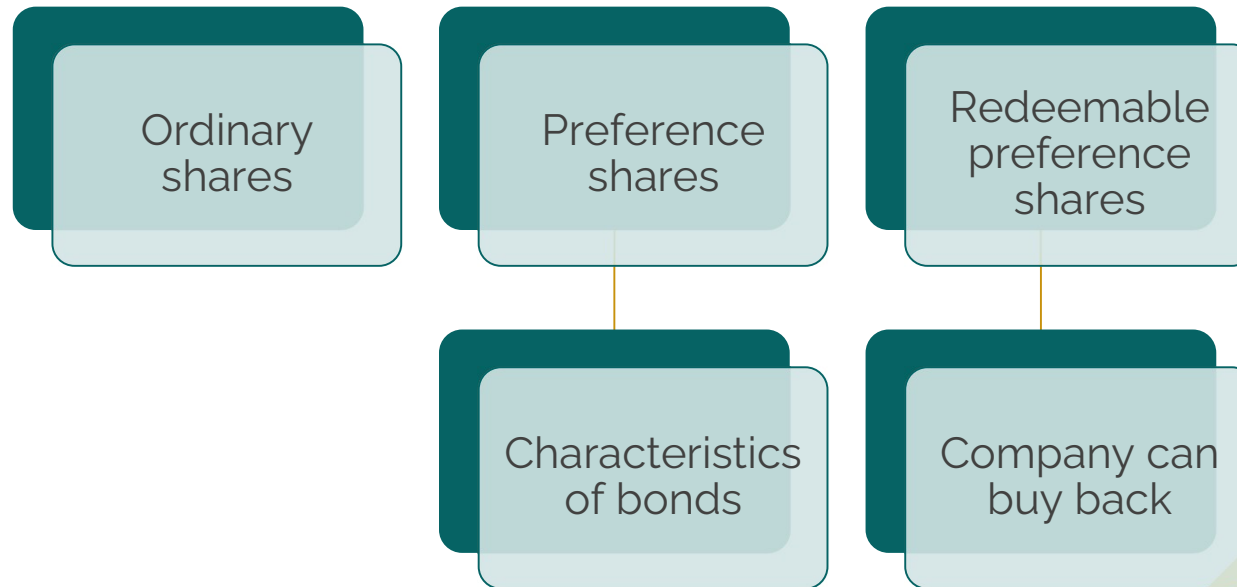
Longer-term investment

Short-term volatility

Outperform salary inflation

Match for active liabilities

Types of Share



Bonds

Not as
volatile as
equities

Match for
non-active
liabilities

Bond types

Governments

- UK Gilts (inc index-linked)

Corporate bonds

- Investment Grade

Characteristics of a bond

Issuer borrows money

No voting rights

Capital returned on redemption

Biannual payments ('coupons')

Bond value

Interest rates

Inflation

Economic outlook

Credit environment

Supply and demand

Bond yields

Nominal yield

- Income as a proportion of nominal value

Income yield

- Income as a proportion of market value

Redemption yield

- Income generated plus capital gain/loss if bond is held to maturity

Duration

Time for coupon payments to repay the cost of the bond

Calculate impact of interest rate changes on bond price

Interest rates and bond prices move in opposite directions

Duration



Index-Linked Gilts

Since 1981

Yields linked to inflation

Important now schemes must provide index-linked benefits

Equities

Ordinary shares

- Right to vote
- dividends

Preference shares

- Paid before other shareholders
- Not normally a right to vote
- Fixed rate dividend
- Characteristics more typical of bonds

Primary Equity Market

Offer for
subscription

- Shares issued directly to the public

Offer for sale

- Process managed by broker

Placing

- Shares placed with limited number of institutional investors

Introduction

- Existing shares brought to market

Rights issue

- Additional shares offered to existing investors

“Tell Sid...”



Primary and Secondary Market

Primary market

- New shares

Secondary market

- Existing shares

Equity Analysis

Return on
invested capital

• $\text{Profits} / \text{capital}$

PE ratio

• $\text{Share price} / \text{earnings per share}$

Dividend yield

• $\text{Dividend per share} / \text{share price}$

Price to book
ratio

• $\text{Share price} / \text{net book value}$

Property

Direct investment

- Only for large schemes

Property Companies

- Performance reflects property market

REITs

- Since 2007
- Allows exposure to residential property

Types of Commercial Property

Retail

Offices

Industrial

Attractions vs Risks



Cash

Short-term liabilities

Maintain liquidity

Unit Trusts vs Investment Trusts

Unit trust / ICVC

- Open-ended
- units

Investment trust

- Closed-ended
- shares

Absolute vs Relative Return



Absolute

Defined annual rate of return



Relative

Return compared with benchmark

Risk and Return

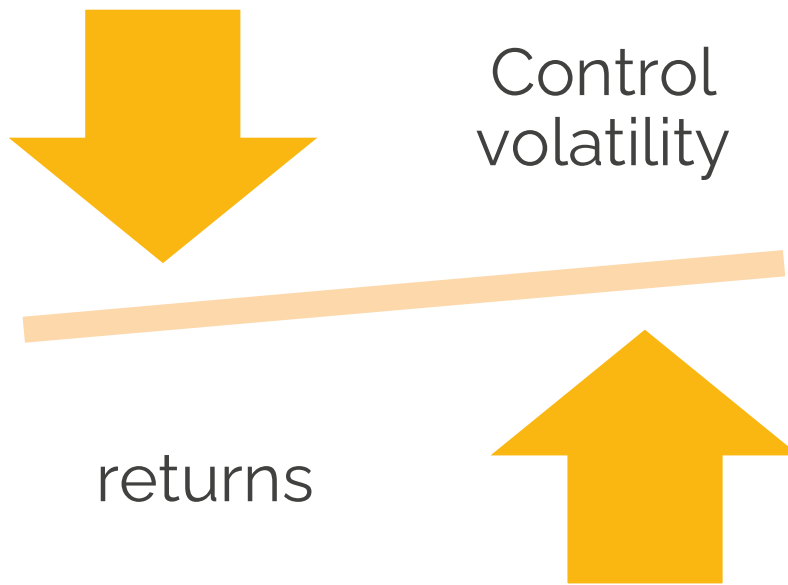
Statement of Investment Principles

Pensions Act 1995

Sets out trustees' policies on

- the investments to be held by the scheme
- the balance between different investments
- risks – including how they are to be measured and managed
- the expected return on investments
- the realisation of investments
- financially material considerations over the appropriate time horizon of investments, and how they are taken into account in investment decisions
- the extent to which non-financial matters are taken into account in investment decisions
- how the trustees exercise rights, including voting rights, attached to investments
- undertaking engagement activities in respect of investments, including, but not limited to the methods set out in legislation
- any arrangement with the asset manager

Risk v Return: the trade-off



Factors to consider

Appetite for risk

Maturity

Funding level

- Deficit

Covenant

TPR supervision

Handout

Overseas investment



Pros

- Diversification
- Overseas members



Cons

- Currency risk
- Withholding taxes

Other asset types

With Profits

Contributions paid into a single fund

Fund managed on a common basis

Asset mix can vary

Returns used to fund bonuses

Bonuses smooth performance variations

Private Equity

Investment in

- New companies
- Struggling companies

Sold on when profitable

Derivatives

Futures / forwards

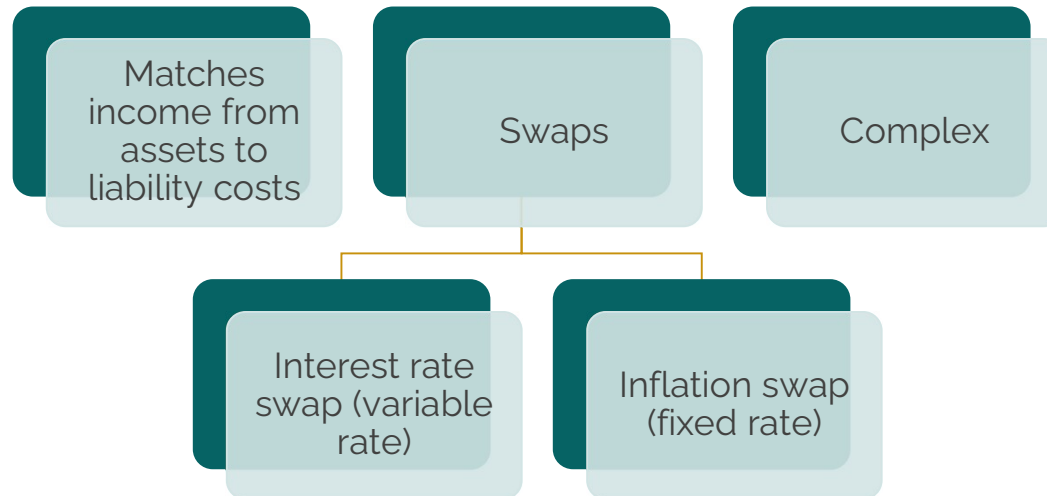
Options

- Call
- Put

Swaps

Contracts for difference

Liability Driven Investment



Handout

Actuarial Valuations

Two actuarial methods

Projected Unit Credit

- For schemes still open to accrual
- Distinction between PS and FS benefits

Attained Age

- For closed schemes

Actuarial Assumptions



Financial

- Price inflation
- Salary growth
- Pension increases
- Investment returns



Demographic

- Withdrawal from service
- Death in Service
- Early retirement
- Promotional salary scale
- Mortality in retirement

Price inflation

Important that the relative values of FAs is accurately assumed

Determined from difference between yields on fixed interest and index-linked gilts at valuation date

Salary growth

Salary growth outstrips price inflation

Typical difference 1%

Type of industry may be relevant

Pension increases

Benefit structure relevant

- Full indexation (public sector)
- Fixed rate
- Discretionary increases
- LPI (note changes to cap and adoption of CPI)

Future return on investments

'Least risk' rate

- Returns on gilts

Equity risk premium

- 'Gilts plus'

Withdrawals

Higher now than historically

Impact of revaluation

Death in Service

Difficult to
assess for
small schemes

Benefits
typically
insured

Mortality

Exact age	Male			Female		
	Death probability ^a	Number of lives ^b	Life expectancy	Death probability ^a	Number of lives ^b	Life expectancy
0	0.006081	100,000	76.23	0.005046	100,000	81.28
1	0.000425	99,392	75.69	0.000349	99,495	80.69
2	0.000260	99,350	74.73	0.000212	99,461	79.72
3	0.000194	99,324	73.75	0.000166	99,440	78.74
4	0.000154	99,305	72.76	0.000137	99,423	77.75
40	0.002581	95,324	38.75	0.001423	97,532	42.76
41	0.002697	95,078	37.84	0.001502	97,394	41.83
42	0.002828	94,821	36.95	0.001596	97,247	40.89
43	0.002976	94,553	36.05	0.001709	97,092	39.95
44	0.003145	94,272	35.16	0.001840	96,926	39.02
45	0.003339	93,975	34.26	0.001988	96,748	38.09
46	0.003566	93,661	33.38	0.002152	96,556	37.17
47	0.003831	93,327	32.50	0.002332	96,348	36.24
48	0.004142	92,970	31.62	0.002528	96,123	35.33
49	0.004498	92,585	30.75	0.002744	95,880	34.42

ER / IHER

ER

(Early Retirement)

- Can be ignored if cost is actuarially neutral

IHER

(Ill Health Early Retirement)

- Benefits typically generous
- Post retirement mortality assumption higher

Post retirement mortality



Critically important



'golden cohort'



Impact on cost

Present value

$$£1,000 / 1.10 = £909.10$$

Two years?

$$£1,000 / 1.10^2 = £826.45$$

Exercise

How much would you need to set aside now to have £1,000 at the end of the term?

Term is $6\frac{1}{2}$ years

Interest rate is 3.5%

Valuation report



Valuation results



Data summary



Scheme history
since last valuation



Risks arising from
scheme's current
financial position



Situation on wind
up



Projected funding
level as at next
valuation

Recommended contribution rate



Employer covenant

Insolvency risk



Deficit size

Absolute value

Relative to sponsor size



Any provisions in Trust Deed and Rules



TPR Code of Practice



Accounting Standards FRS 100, 101, 102 or IAS 19R



Alternative funding sources

Discontinuance

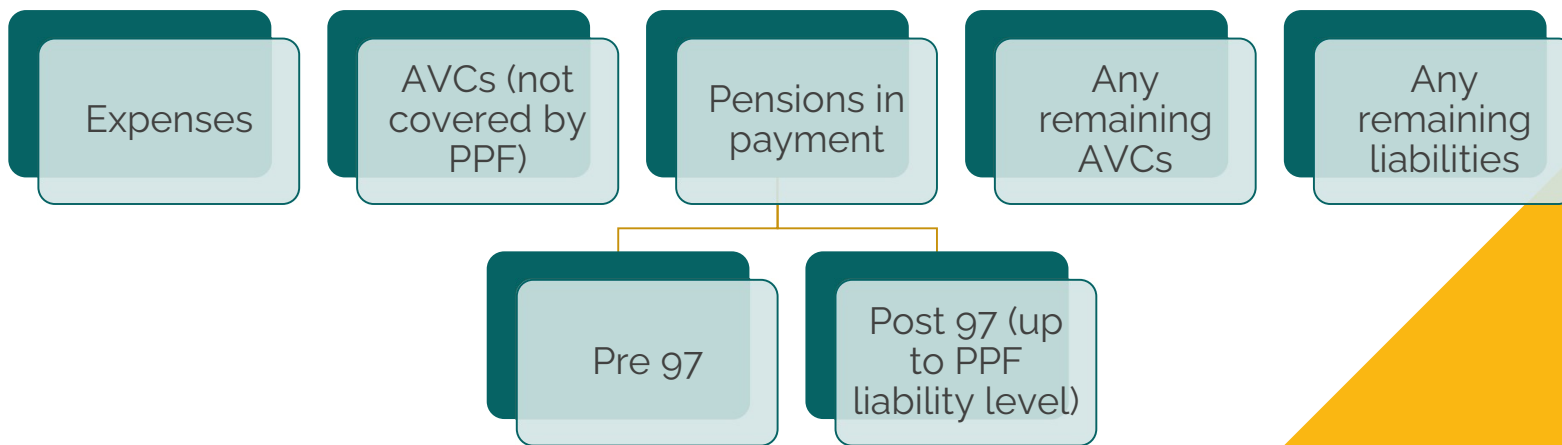
Closure

- To new entrants
- To further accrual

Wind up

- Immediate annuities (pensioners)
- Deferred annuities (all other members)

Priority of liabilities



Statutory Funding Objective (SFO): Trustees must:

Triennial valuation

Prepare Statement of Funding Principles

Prepare SoC (certified by Scheme Actuary)

Prepare Recovery Plan

Submit Recovery Plan and SoC to TPR

Prepare annual Summary Funding Statement

Statement of Funding Principles

Prepared within 15 months of valuation

- Trustees' policy on achieving SFO
- Methods and assumptions used
- Period over which deficit will be eliminated
- Information in OPS (Scheme Funding) regs 2005/3377

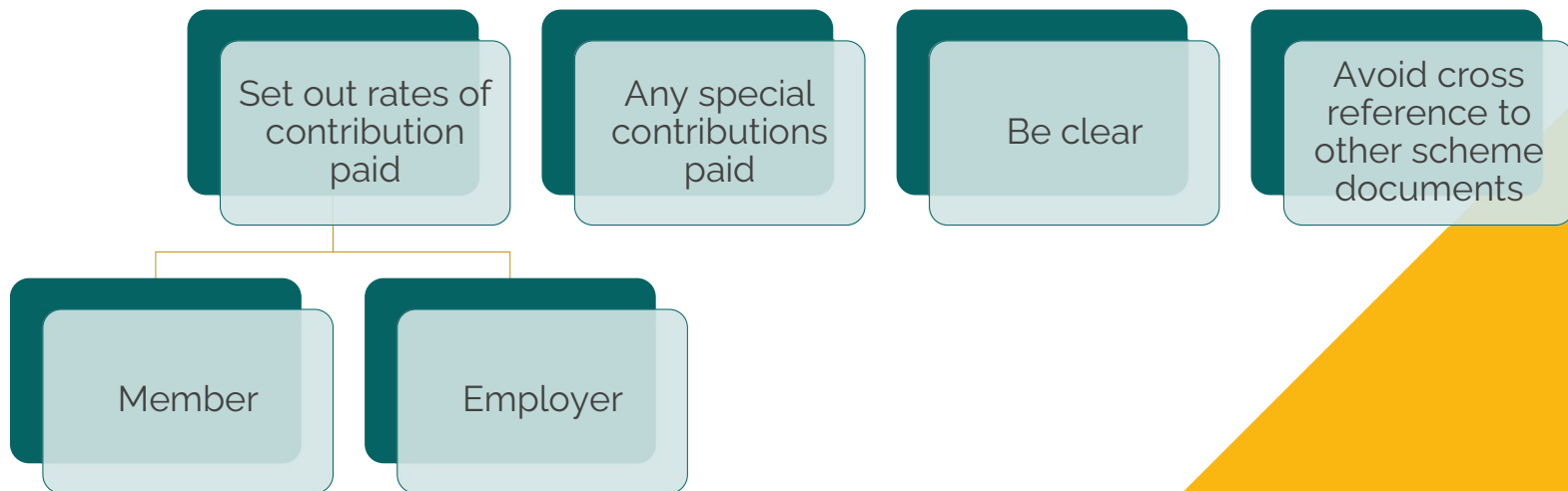
Recovery Plan

Employer's
business plan

Scheme
membership
profile

Scheme position
were employer
to become
insolvent

Schedule of contributions



Thank you

