

HEALTH WEALTH CAREER

# ACTUARIAL VALUATIONS AND UNDERSTANDING LIABILITIES

25 SEPTEMBER 2015

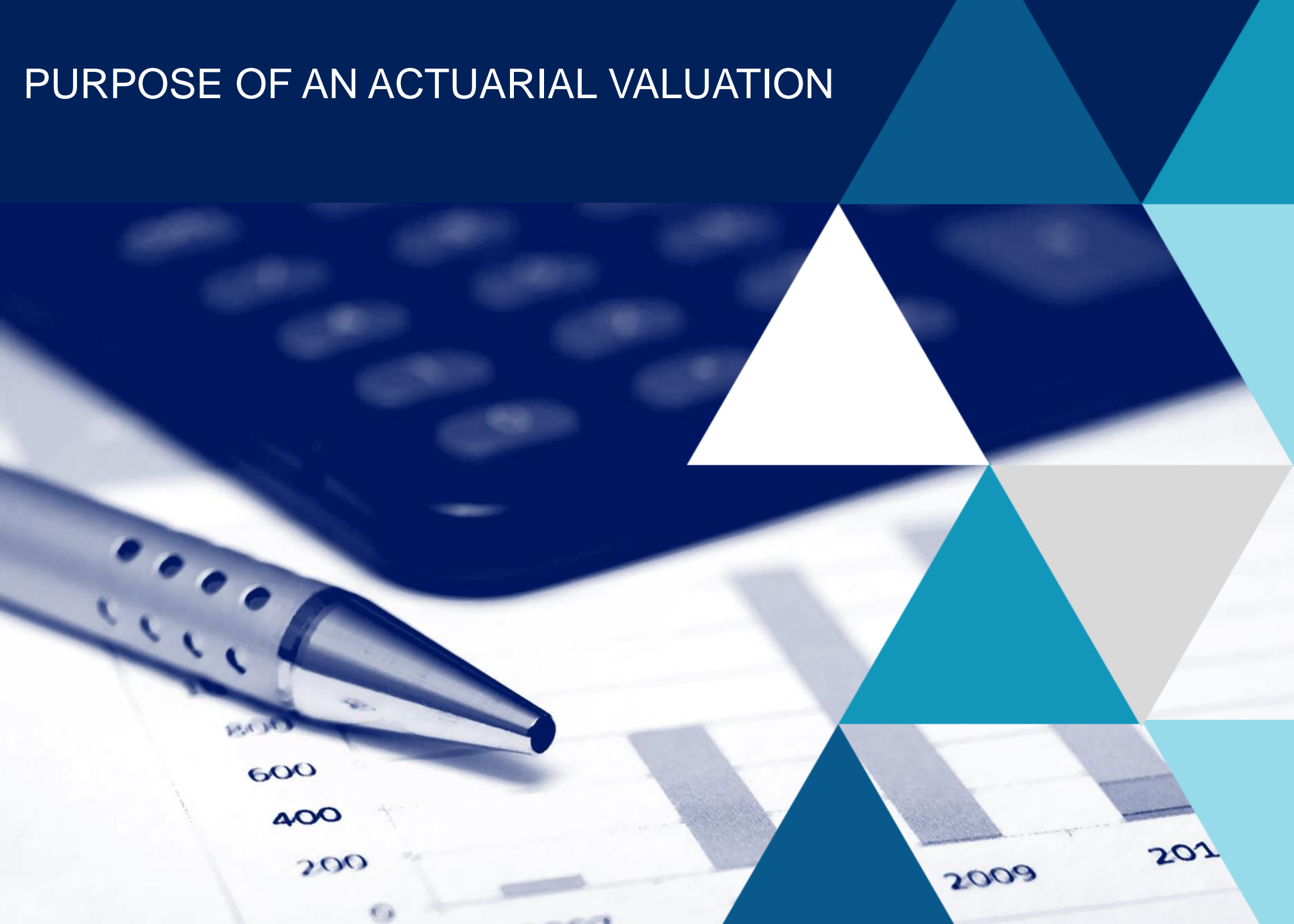
# AGENDA

Purpose of an Actuarial Valuation

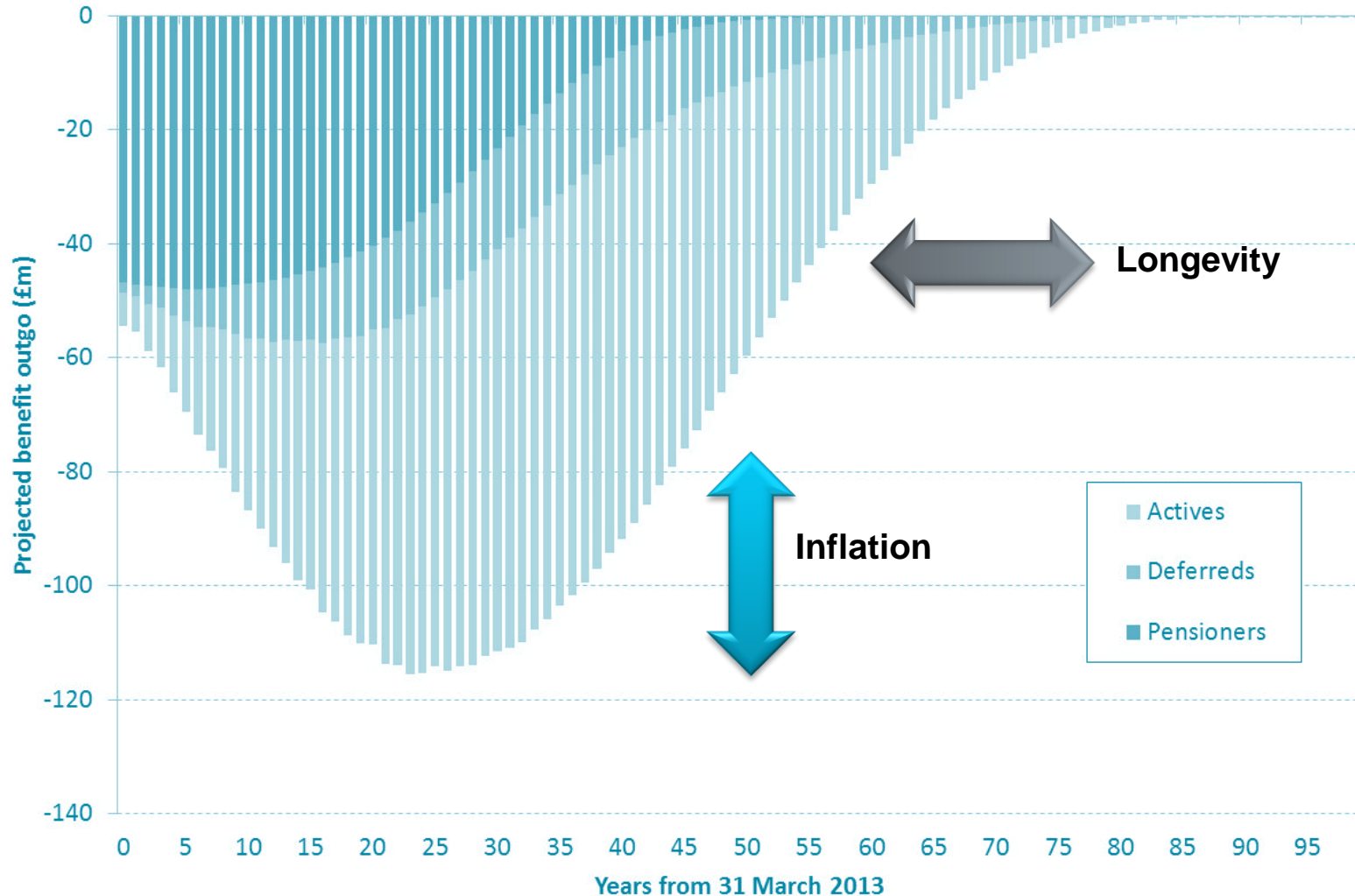
Assumptions and Liability calculations

Funding Strategy and Contribution Requirements

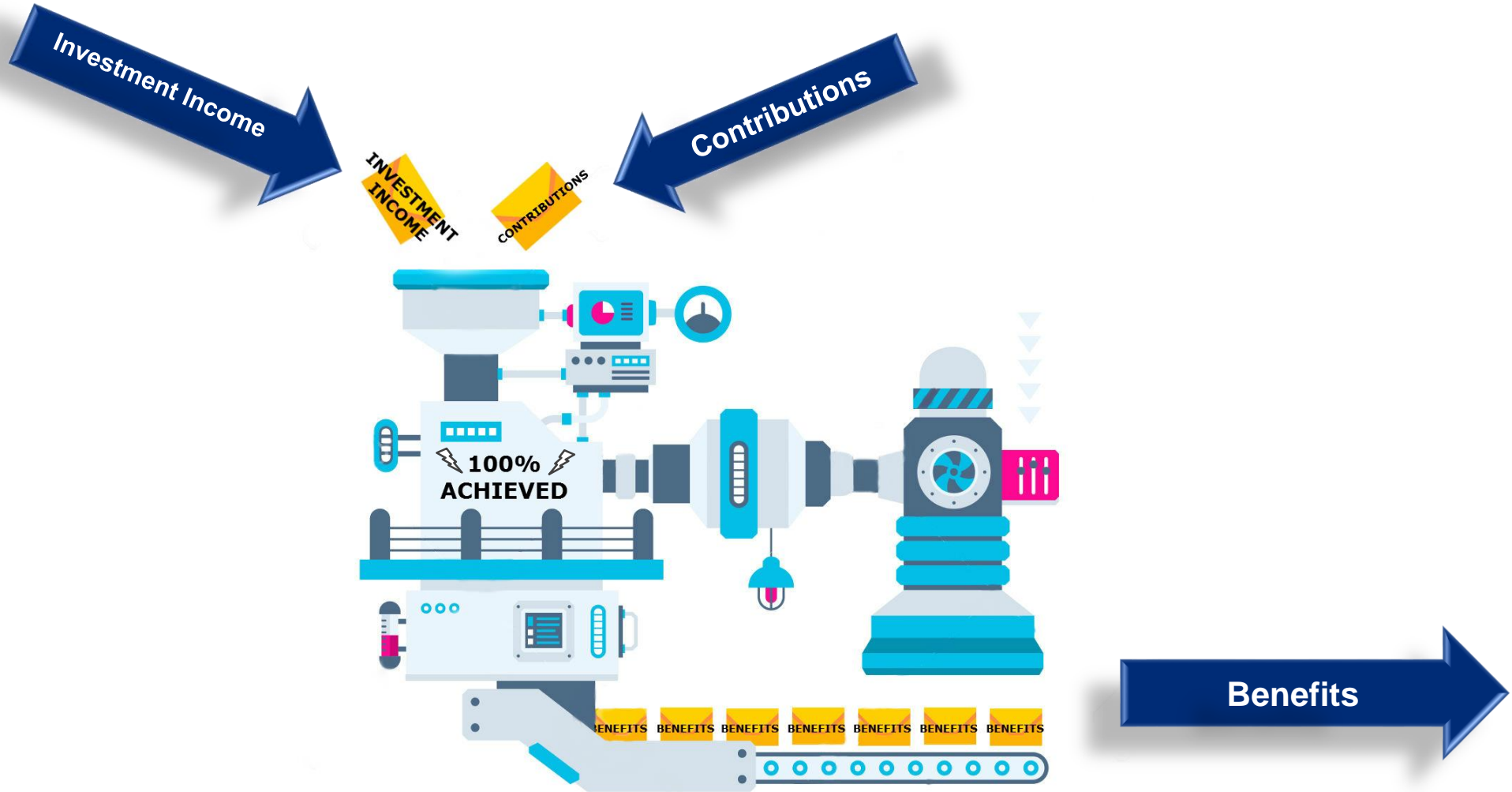
# PURPOSE OF AN ACTUARIAL VALUATION



# PURPOSE OF AN ACTUARIAL VALUATION FUNDING – IT IS ALL ABOUT BENEFIT CASHFLOWS



# PURPOSE OF AN ACTUARIAL VALUATION DEFINED BENEFIT PENSION SCHEME



# PURPOSE OF AN ACTUARIAL VALUATION

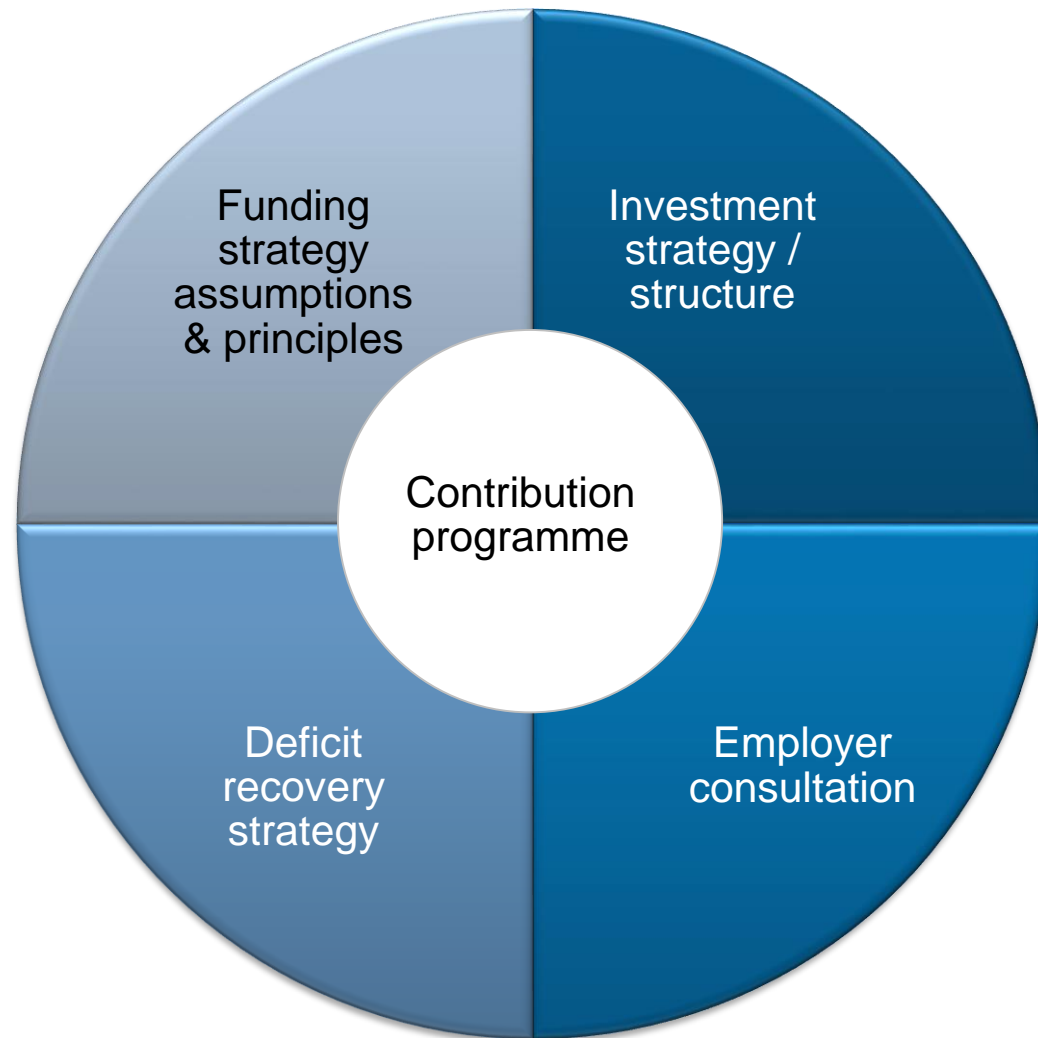
## WHY DO A VALUATION?

Has the Fund got enough assets to cover expected benefits built up to date



How much will the Employers have to pay to for benefits earned in the future?

# PURPOSE OF AN ACTUARIAL VALUATION REVIEW OF CONTRIBUTION PROGRAMME



# PURPOSE OF AN ACTUARIAL VALUATION

## WHAT ABOUT FRS17 / IAS19?

Funding basis is not to be confused with Financial Reporting Standard 17 (FRS17)/International Accounting Standard 19 (IAS19) Assessment

Solely required to adhere to accounting disclosure requirements. Performed annually and disclosed in an Employer's accounts.

Assessed using a "prescribed" set of assumptions, which differ from those used in the actuarial valuation.

Does not impact on the Employer's contribution requirements.



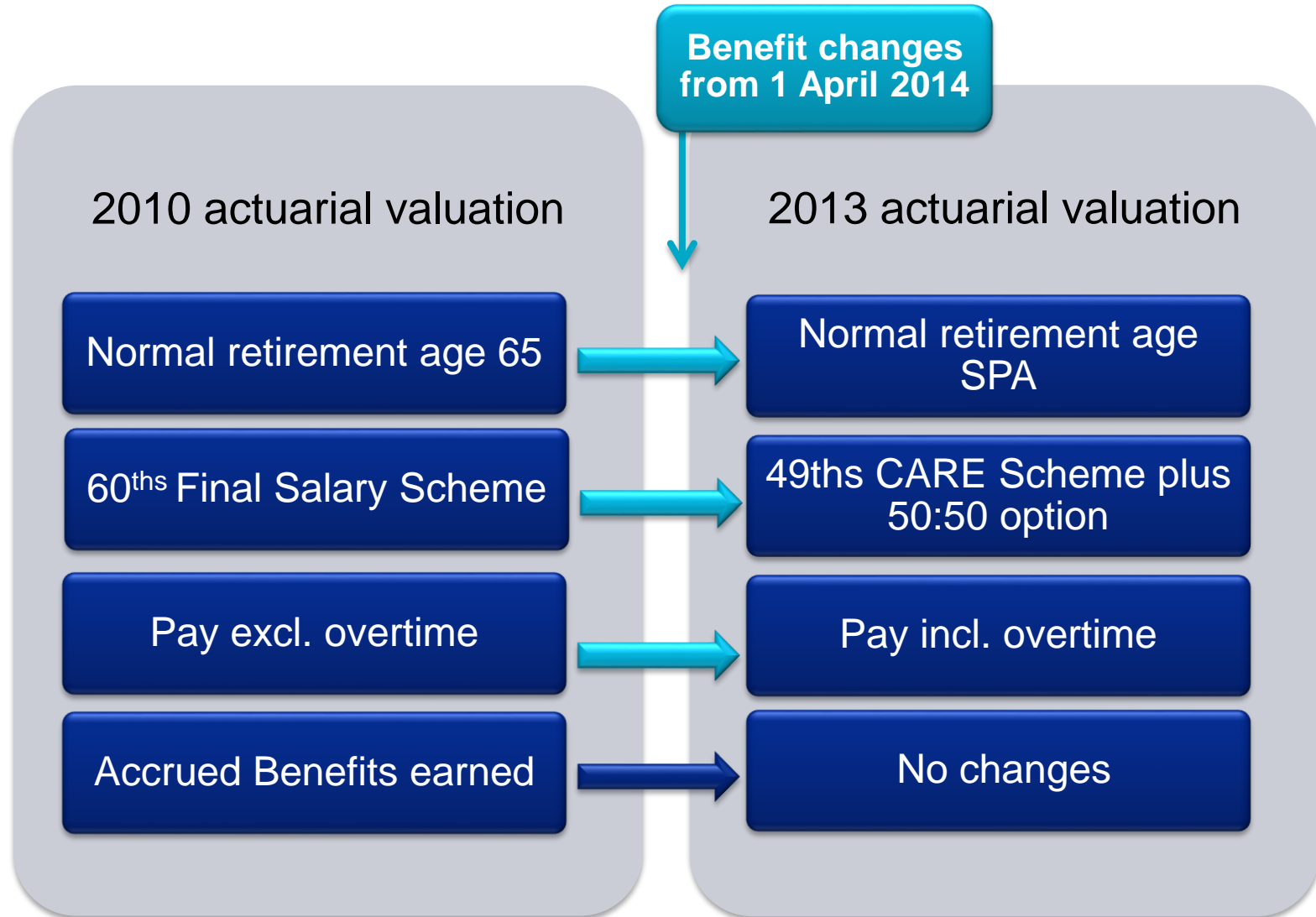


# ASSUMPTIONS AND LIABILITY CALCULATIONS



# ASSUMPTIONS AND LIABILITY CALCULATIONS

## BENEFITS BEING VALUED



# ASSUMPTIONS AND LIABILITY CALCULATIONS

## PAST SERVICE BENEFITS



## FUTURE SERVICE BENEFITS

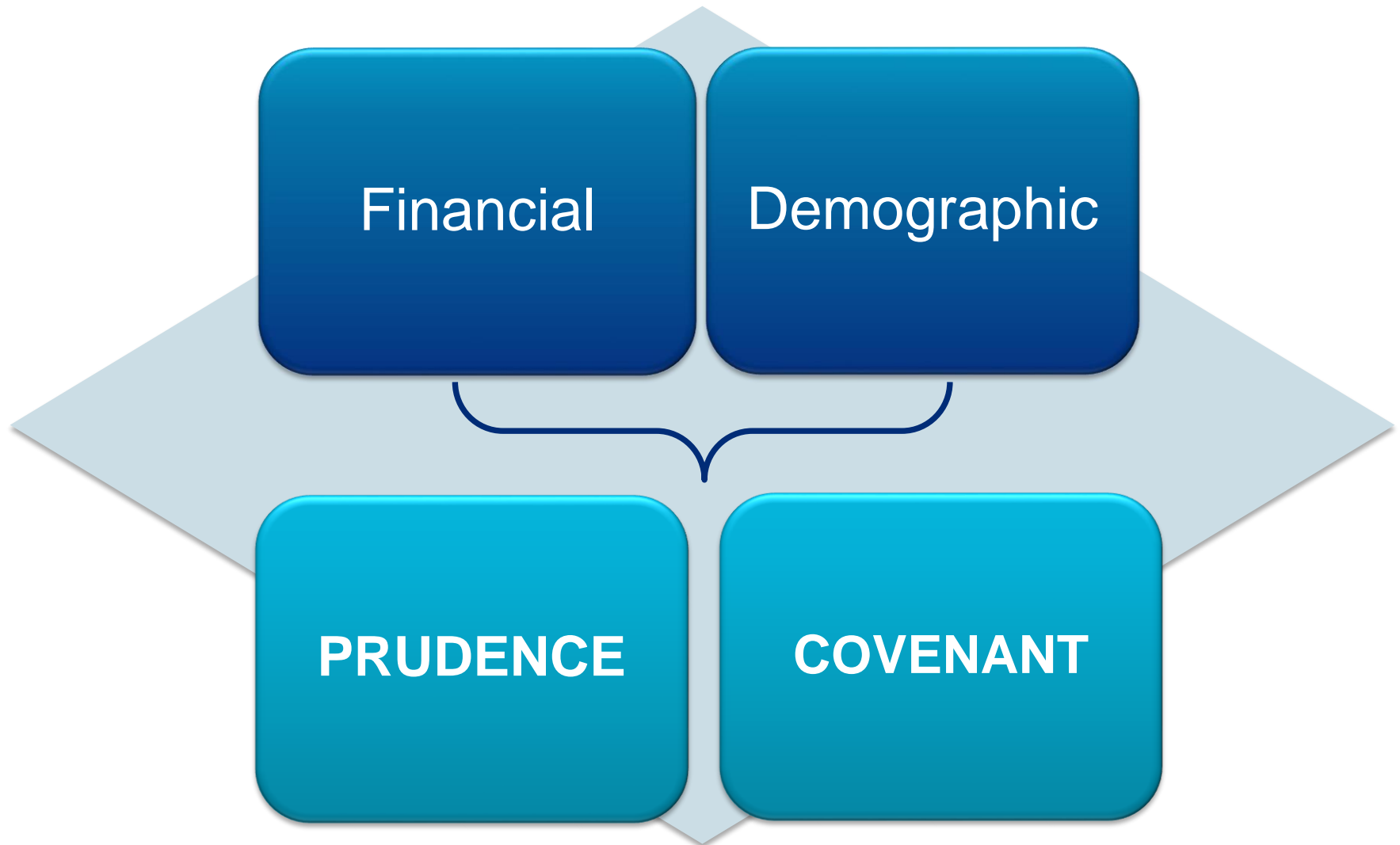


**Contribution impact**  
**Deficit spread over agreed "Recovery Period"**

**Contribution impact**  
**Cost of 1 year's service**  
**"Future service contribution rate"**

# ASSUMPTIONS AND LIABILITY CALCULATIONS


## PRUDENCE



# ASSUMPTIONS AND LIABILITY CALCULATIONS DIFFERENT POINTS OF VIEW?



THE FUTURE?  
WHY WORRY  
ABOUT THE  
FUTURE?

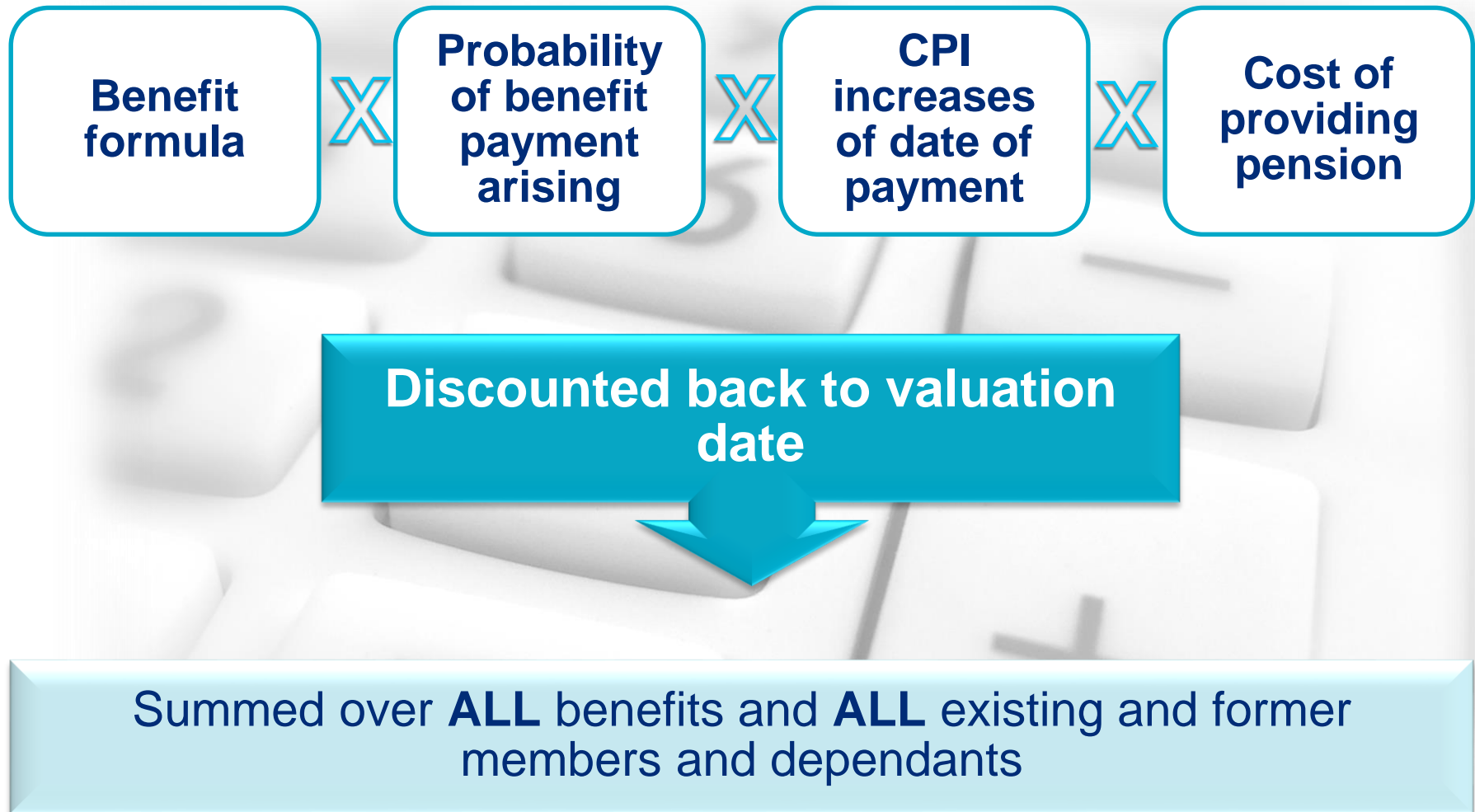


THE SKY IS  
FALLING DOWN,  
THE SKY IS  
FALLING DOWN!

**FUTURE**

# ASSUMPTIONS AND LIABILITY CALCULATIONS

## BASIC PRINCIPLES



# ASSUMPTIONS AND LIABILITY CALCULATIONS

## CHANGING THE ASSUMPTIONS

Actual cost of benefits will not be known until after all benefits paid

Assumptions estimate this cost, but do not change the actual cost

Changing assumptions  
↓  
Changes the estimate

# ASSUMPTIONS AND LIABILITY CALCULATIONS

## FINANCIAL / OTHER ASSUMPTIONS





# ASSUMPTIONS AND LIABILITY CALCULATIONS

## DISCOUNT RATE – WHAT DOES IT ACTUALLY MEAN?



Discounting is the same but the other way round



Lower interest (discount) rate means higher sum needed now to get same amount in the future

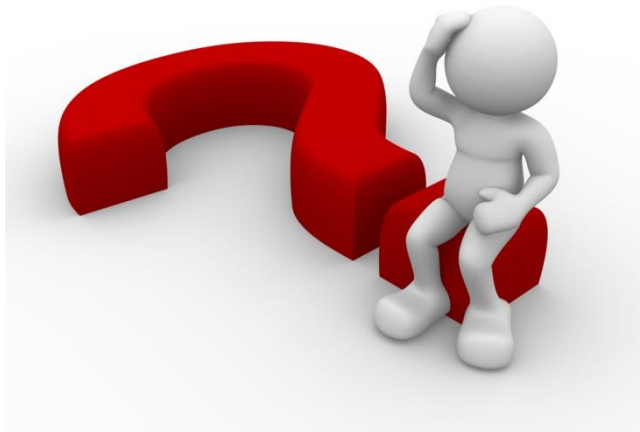
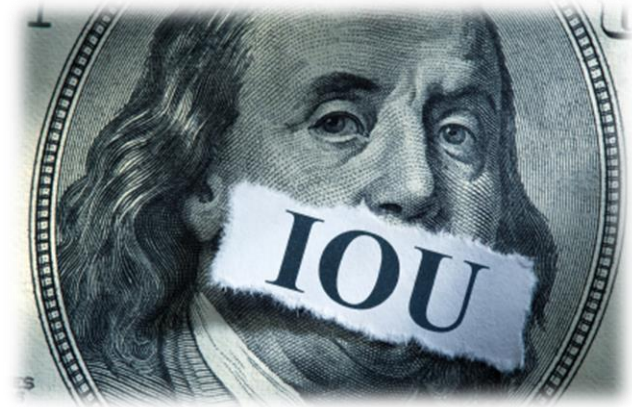
# ASSUMPTIONS AND LIABILITY CALCULATIONS AN EXAMPLE- DISCOUNT RATE

## *Promise:*

“IOU £100 in ten years time”

## *Plan:*

“I will put aside enough money to meet my promise”



## *Questions:*

“How much?”

“Where do I invest it?”

*They depend on each other*

# ASSUMPTIONS AND LIABILITY CALCULATIONS

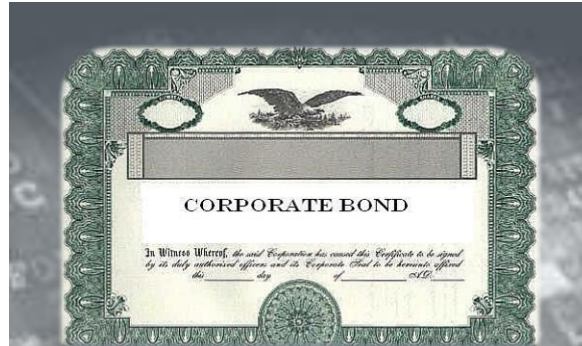
## AN EXAMPLE- DISCOUNT RATE

THREE SAVINGS SCHEMES ARE OFFERED:-



**SCHEME 1  
UNDER THE  
MATTRESS**

**Place £100 under  
the mattress and it  
will still be £100 in  
ten years' time.**



**SCHEME 2  
BOND**

**Returning your  
money plus 40%  
interest in ten  
years' time**




**SCHEME 3  
INVESTMENT  
MARKETS**

**Returning:**

- Money plus 100%  
with 50% chance**
- Money plus 60%  
with 30% chance**
- Money less 20%  
with 20% chance**


# ASSUMPTIONS AND LIABILITY CALCULATIONS AN EXAMPLE- DISCOUNT RATE

THE EXPECTED RETURN OF THE THREE OPTIONS:-



**SCHEME 1  
UNDER THE  
MATTRESS**

**0%**



**SCHEME 2  
BOND**

**40%**



**SCHEME 3  
INVESTMENT  
MARKETS**


Probability	50%	30%	20%
Return	+100%	+60%	-20%
Expected return	+50%	+18%	-4%

**64%**

# ASSUMPTIONS AND LIABILITY CALCULATIONS


## AN EXAMPLE- DISCOUNT RATE

HOW MUCH DO YOU INVEST NOW?



SCHEME 1  
UNDER THE  
MATTRESS

£100



SCHEME 2  
BOND

£71.42



SCHEME 3  
INVESTMENT  
MARKETS

Expected  
return: £60.98?

# ASSUMPTIONS AND LIABILITY CALCULATIONS

## INFLATION RATE



### Comments

- **Market RPI inflation** : derived from **Government Bond nominal and real yields based on Scheme cashflows**
- **Combined effect might lead to difference of 0.7% - 1.2% below market implied RPI.**

## ASSUMPTIONS AND LIABILITY CALCULATIONS DISCOUNT RATE/ASSET RETURN – ALTERNATIVE APPROACH



### Comments

- **CPI Inflation:** As per earlier slide
- **Gilts:** Currently yielding less than inflation, due to demand
- **Other assets (property / equities):** Expected to return above inflation
- **Total expected real return:** Could be around 2% to 3% above CPI, depending on assets held

# ASSUMPTIONS AND LIABILITY CALCULATIONS

## DEMOGRAPHIC ASSUMPTIONS

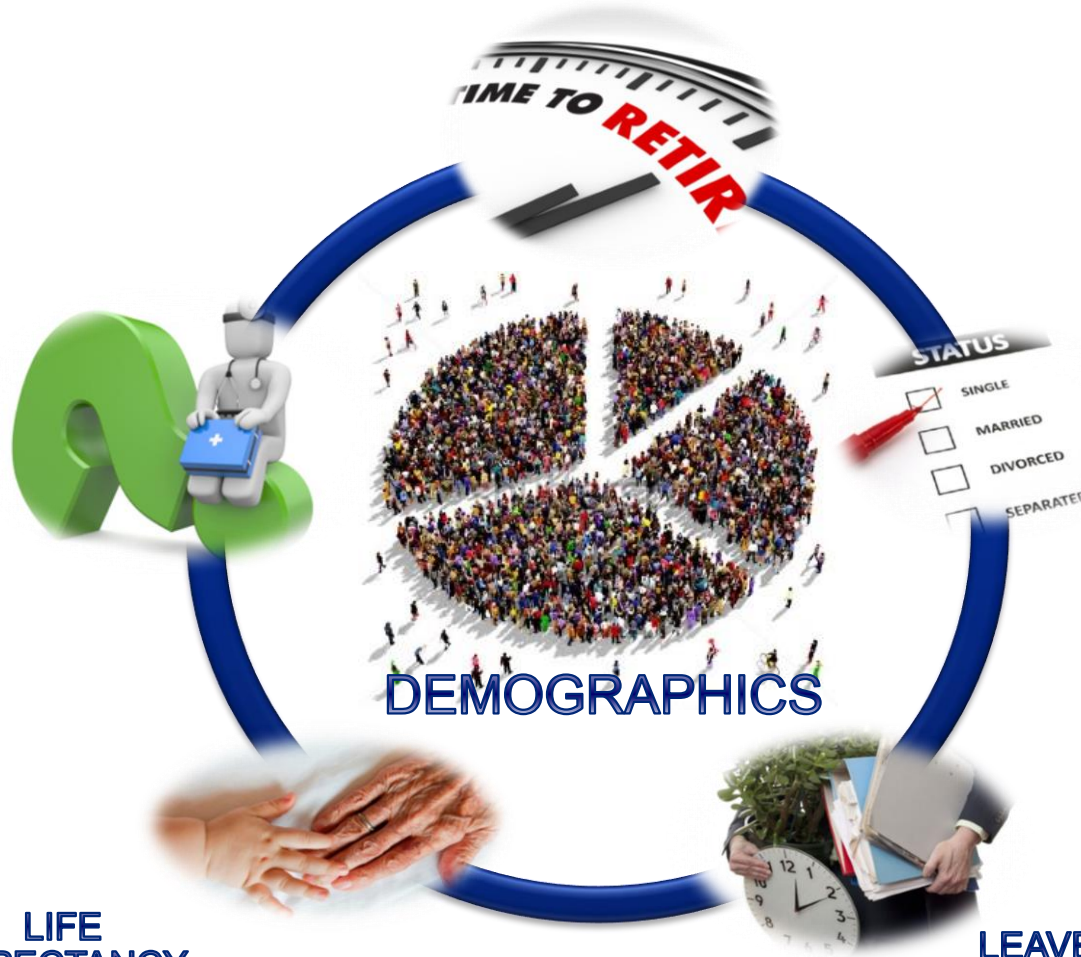
NORMAL / EARLY  
RETIREMENT

ILL-HEALTH  
RETIREMENT

MARITAL  
STATUS

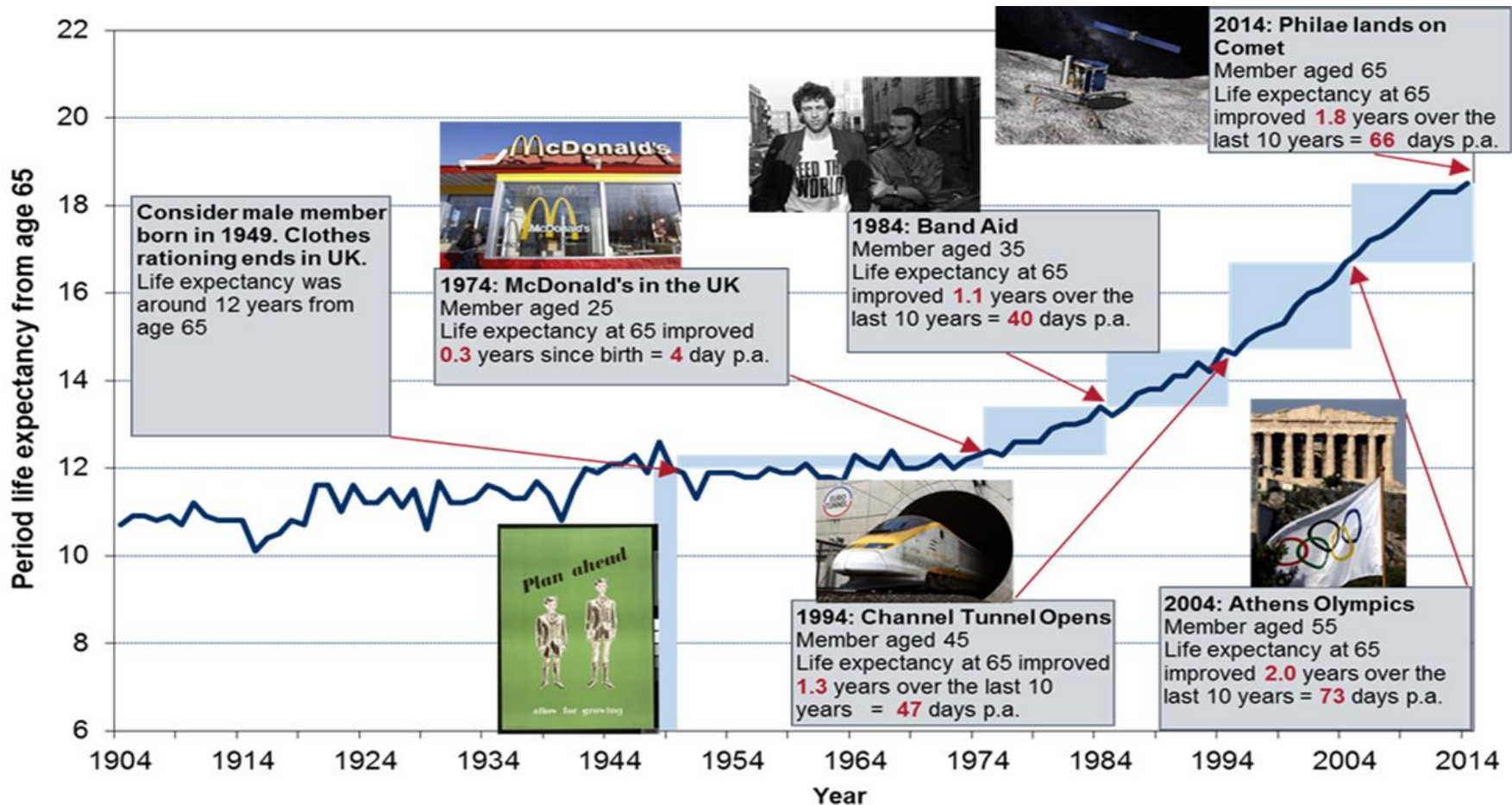
LIFE  
EXPECTANCY

LEAVERS



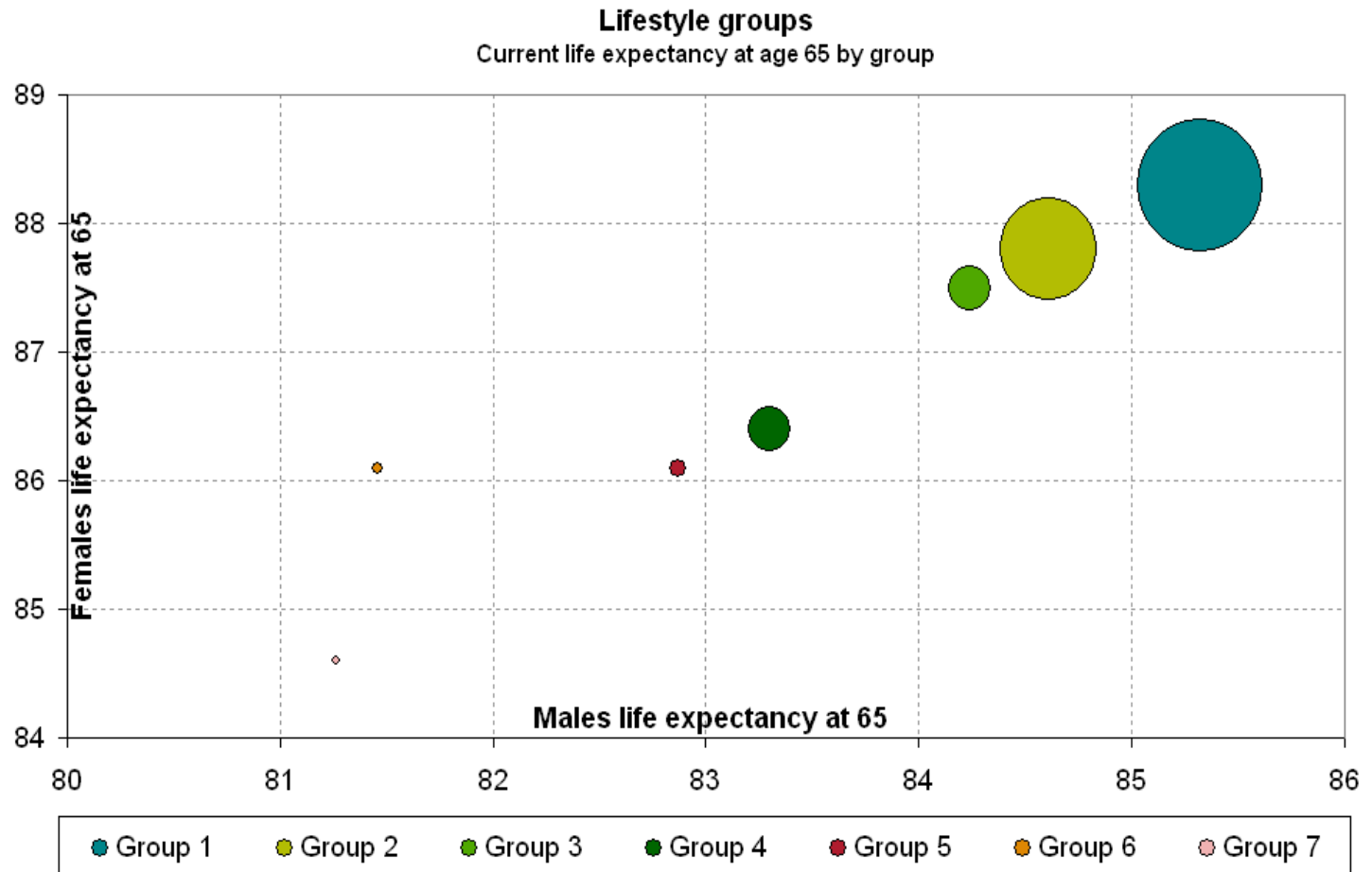


# PEOPLE ARE LIVING LONGER PAST IMPROVEMENTS (MALES AGE 65)



# ASSUMPTIONS AND LIABILITY CALCULATIONS

## MORTALITY – FUND SPECIFIC POSTCODE ANALYSIS



There are around 1.8 million distinct postcodes in use in the United Kingdom, resulting in an average of around 15 houses per postcode.

# ASSUMPTIONS AND LIABILITY CALCULATIONS

## SENSITIVITY OF LIABILITY VALUE TO ASSUMPTION CHANGES

1% p.a. **increase** in assumption

Approximate Impact on **total** Fund liability value

Starting liability £10million

Discount rate / investment return



20%

-£2.0million

Salary Increases



5%

+£0.5million

Price Inflation (i.e. Pension Increases)



18%

+£1.8million

1 year increase in life expectancy



2-3%

+£0.25million

**NET EFFECT IS KEY**

# FUNDING STRATEGY AND CONTRIBUTION REQUIREMENTS



What is the  
Funding  
Strategy?

Reg. 62(6)(b) “The actuary must have regard ..... to the desirability of maintaining as nearly a *constant common rate* as possible”.

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Reg. 62(6)(d) “The actuary must have regard to the requirement to..... to *secure the solvency of the Fund* and the *long term cost efficiency*\* of the Scheme...”

\* New from 2016 valuation

# FUNDING STRATEGY AND CONTRIBUTION REQUIREMENTS REQUIREMENTS AND OBJECTIVES



## DCLG

“Support regulatory requirement to maintain **constant** employer contribution rates”

Encourage administering authorities to take a **prudent** longer-term view of their liabilities”

Clear and transparent strategy to meet employers’ pension liabilities

- Support **stability** in contribution rates *as far as possible*
- **Prudent** approach in funding the liabilities



## Purpose of the FSS

# FUNDING STRATEGY AND CONTRIBUTION REQUIREMENTS EMPLOYER CONSULTATION

**All Fund employers should be consulted.**

**Process for consultation will be decided by the Administering Authority.**

**Consideration must be given to employers' views.**

***But .....***

**Ultimate responsibility rests with the Administering Authority.**

# FUNDING STRATEGY AND CONTRIBUTION REQUIREMENTS ISSUES TO BE ADDRESSED IN FSS

- ✓ Time horizon for funding plan
- ✓ Link between funding strategy and investment
- ✓ Fund and Employer Policies
- ✓ Risks to the funding strategy
- ✓ Monitoring and review of the strategy
- ✓ Financial standing of employers and impact on funding assumptions





# FUNDING STRATEGY AND CONTRIBUTION REQUIREMENTS DIFFERENT EMPLOYERS IN THE FUND

## SCHEDULED BODIES

Councils,  
Universities, Colleges  
Fire / Police Authorities, etc

## ADMITTED BODIES

Outsourcing contractors  
Charitable bodies  
Housing associations, etc



EMPLOYERS HAVE  
DIFFERENT  
CHARACTERISTICS AND  
OBJECTIVES

# INDIVIDUAL EMPLOYERS

## KEY DRIVERS OF CONTRIBUTION REQUIREMENTS AND RISK PROFILES

### COUNCILS

- Affordability vs. Financial Health of Fund
- Long term tax raising bodies

### COLLEGES / UNIVERSITIES

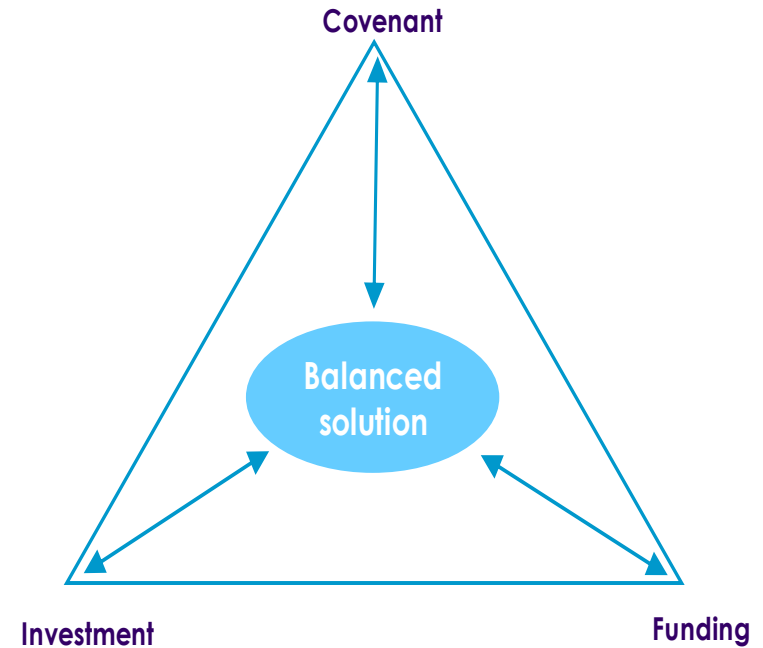
- Level of risk to the Fund? Income falling? Funding security?

### TRANSFEREE ADMISSION BODIES

- Participation length?
- Councils retain long term risks so interested party

### OTHER BODIES

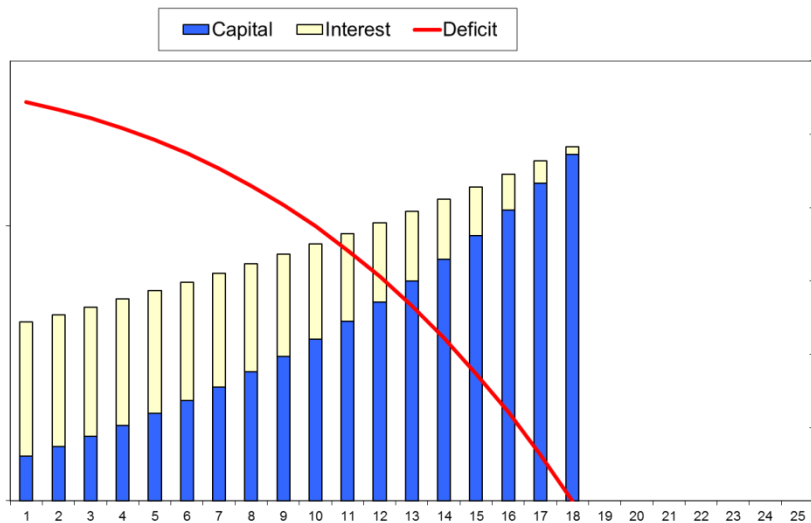
- Risk profile can be very diverse and sustainability concerns.
- Improved security backing liabilities will allow more flexibility



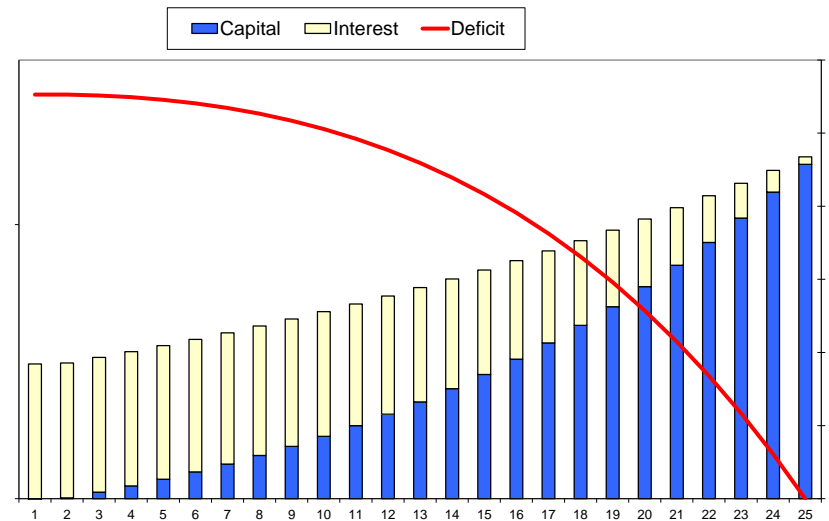
# FUNDING STRATEGY AND CONTRIBUTION REQUIREMENTS

## RECOVERY PERIOD

### 18 years



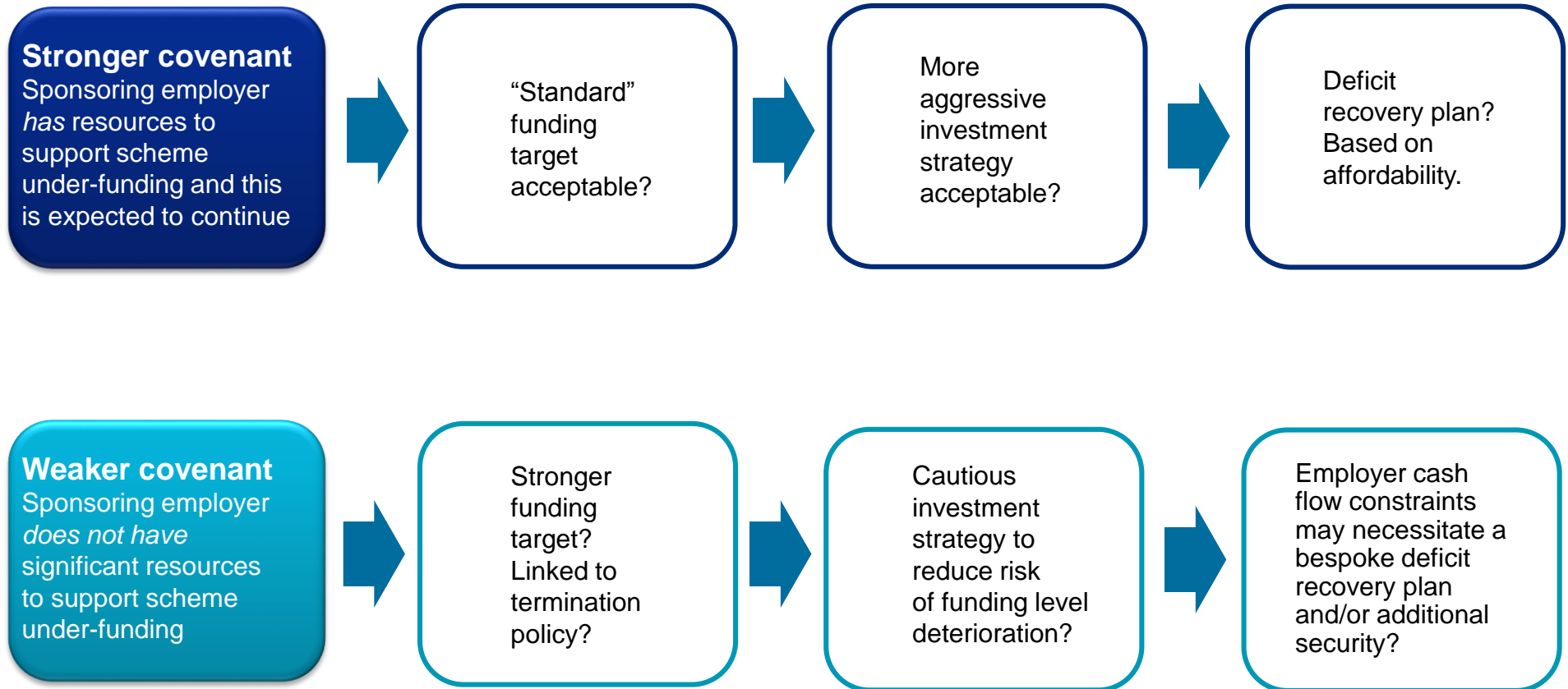
### 25 years



**A key aspect of determining a deficit recover strategy is the recovery period. The longer the recovery period the more debt “interest” is payable.**

# FUNDING STRATEGY AND CONTRIBUTION REQUIREMENTS

## EMPLOYER COVENANT - IMPLICATIONS FOR FUNDING AND INVESTMENT STRATEGY



AND FINALLY...



**MAKE**  **MERCER**  
**TOMORROW,**  
**TODAY**

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