

# East Sussex Pension Fund

Update on investment strategy

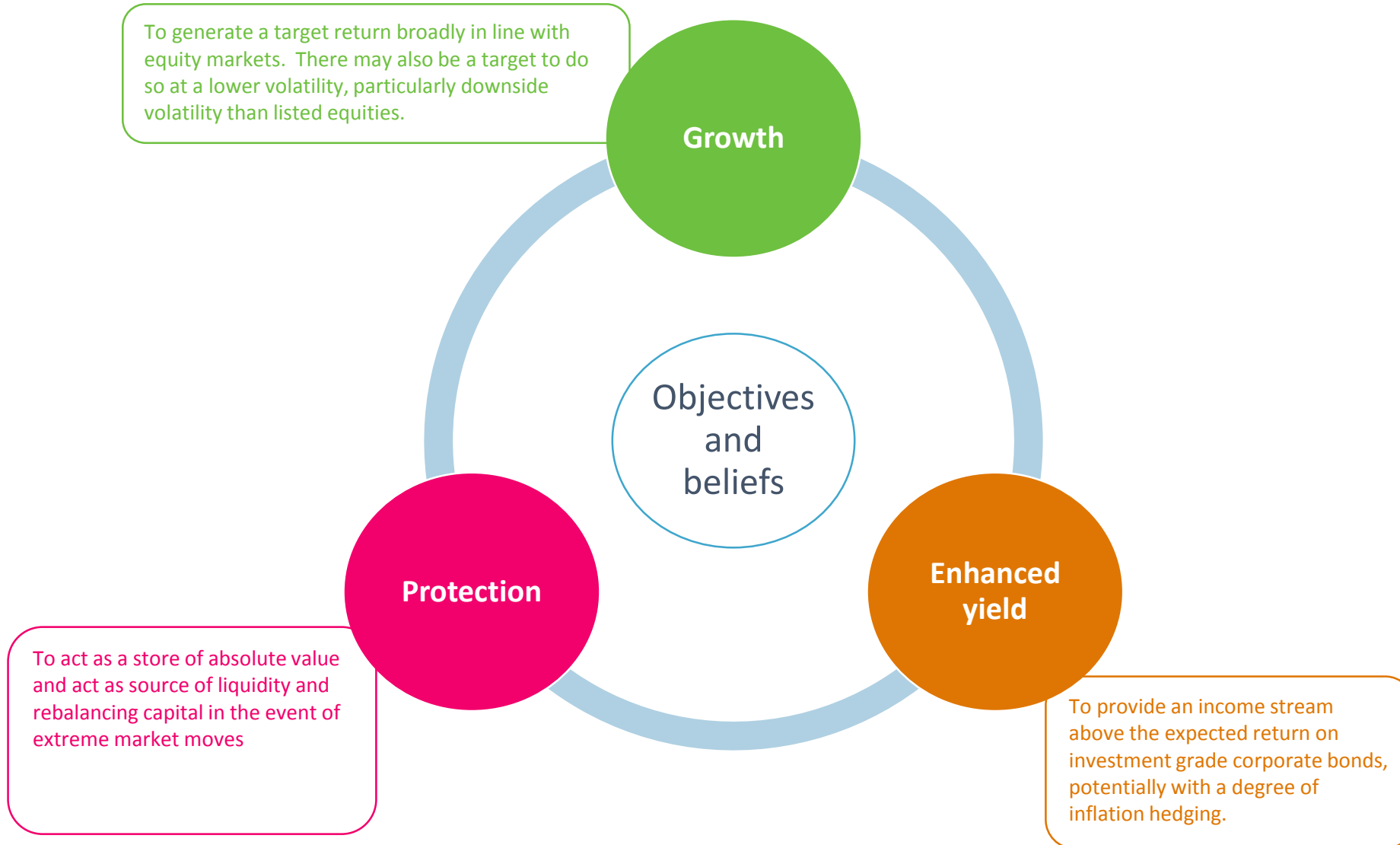
- William Marshall, Partner
- 15 June 2018

# Overview

The aim of this presentation is to

- Act as a scene setter for the annual strategy day on 16 July.
- Help identify key priorities and shape the agenda for the strategy day.

# Strategic building blocks



# Current investment strategy

	%
Equities	50
Private equity	5.5
Absolute Return	20*
<b>Total Growth</b>	<b>75.5</b>
Property	10
Infrastructure	2*
Private Debt	1*
<b>Total Income</b>	<b>13</b>
I L Gilts	5
Fixed Interest	6.5
<b>Total Protection</b>	<b>11.5</b>

Future increases in infrastructure and private debt targets (to 4% and 3% respectively) currently to be funded from Absolute Return.

# Developments since last Valuation – March 2016

- March 2016 – funding level of 92% (1.8% above gilts)
- Strong returns from stock markets – significant rise in Fund asset value
- Contributions being paid in
  - Primary contribution 17.2%p.a. plus
  - Secondary contributions
- But changes in yields and inflation expectations too

# Estimate of current funding level



Data as at close of business 22 May. Funding level estimated at circa 101%.  
For reliances and limitations, see Appendix.

# Experience since March 2016

Liabilities	£m	Assets	£m
Liability value as at 31 March 2016	3,011.7	Asset value as at 31 March 2016	2,771.4
Cost of benefits accruing	270.4	Contributions paid in	215.8
Benefit payments	(245.9)	Benefit payments	(245.9)
Interest on liabilities	266.6	Expected return on liability-matching assets	247.3
Impact of change in yields & inflation	262.6	Excess return on assets	602.3
Liability value as at 22 May 2018	3,565.4	Asset value as at 22 May 2018	3,590.9

Surplus/(deficit)	£m
Surplus/(deficit) as at 31 March 2016	(240.3)
Contributions (less benefits accruing)	(54.6)
Interest on surplus/(deficit)	(19.3)
Excess return on assets	602.3
Impact of change in yields & inflation	(262.6)
Surplus/(deficit) as at 22 May 2018	25.5

# Fund's objective

- *“main valuation objective is to hold sufficient assets in the Fund to meet the cost of members’ accrued benefits on the target funding basis and to set employer contributions which ensure long-term solvency....” (Fund’s March valuation report)*
- Objectives suggest “success”, however number of questions
  - What is an acceptable target range of contributions that the Fund would be willing to accept over the long-term
  - What level of expected return is needed to have confidence of working within this contribution range? “Steady state”
  - Is this achievable in a risk controlled way?



# Preferred balance can be different for each Fund

**Lower contributions => Higher target returns => More risk**



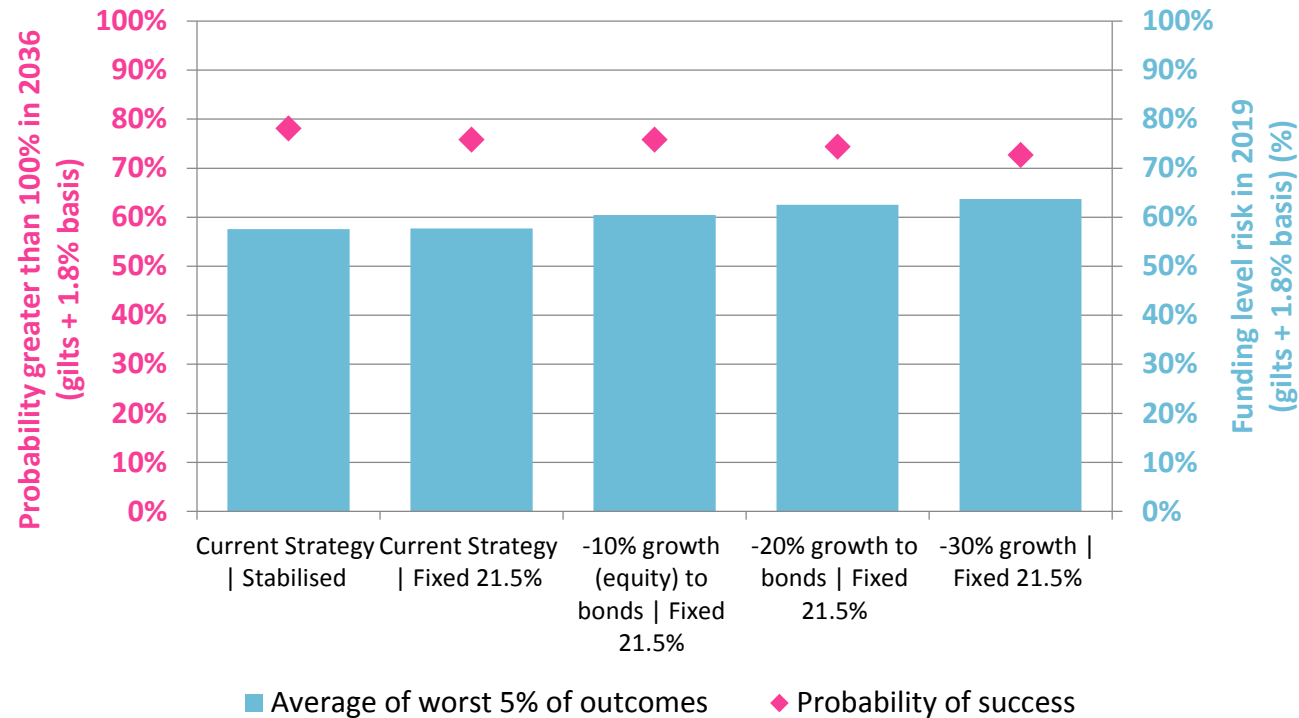
**Higher contributions => Lower target returns => Less risk**



# Modelling - 2017 Annual Strategy Day

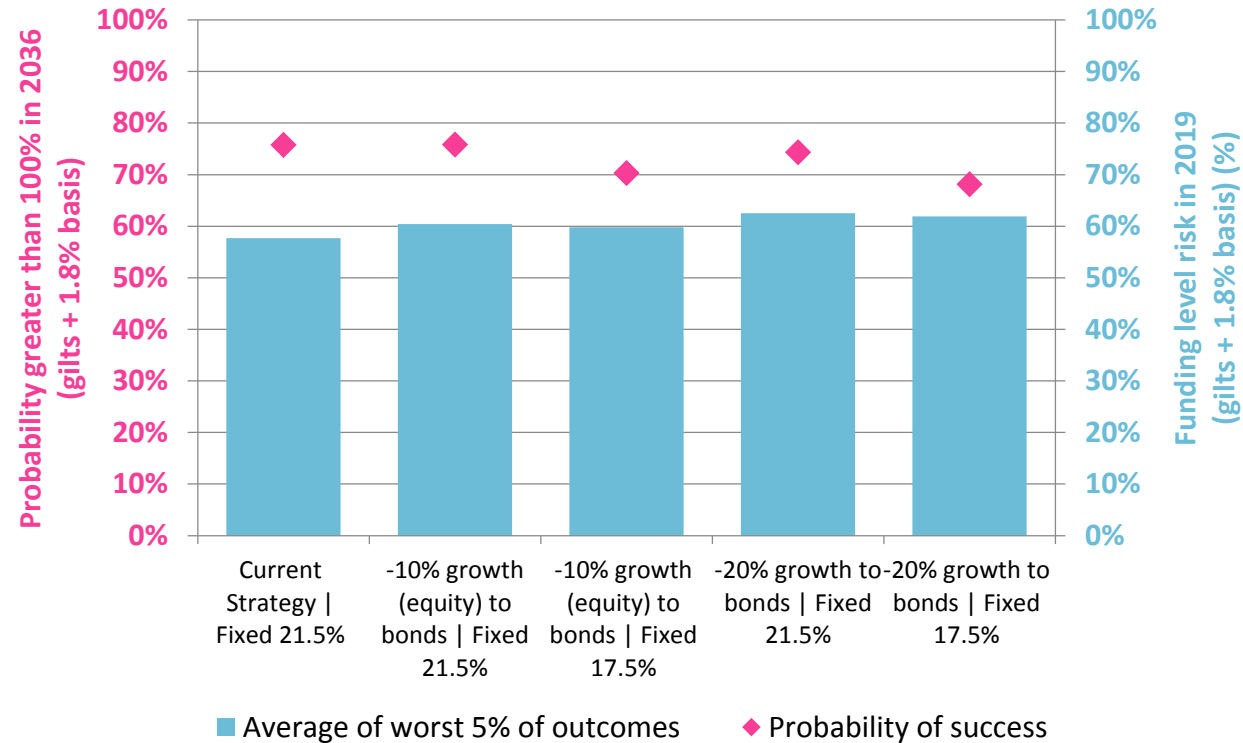
- Carried out with a projection date of 31 March 2017
  - Liability data from March 2016
  - Fund's asset value taken as at March 2017
  - Estimated funding position at March 2017
  - Long term asset returns assumptions calibrated as at March 2017
- Reminder – key metrics
  - Measuring chances of 'success' and risk
  - Varied fixed / target level of contributions (21.5% / 17.5%)
  - Varied investment strategy

# Impact of varying the investment risk



- By moving to lower risk strategies, the chances of reaching full funding in 20 years falls only modestly ... but with a better funding position at the next valuation date under the worst 5% of outcomes.
- **But this assumes no future reductions in contributions.**
- This is because the total level of contributions over the period is very significant in aggregate.

# Varying investment risk with lower contributions

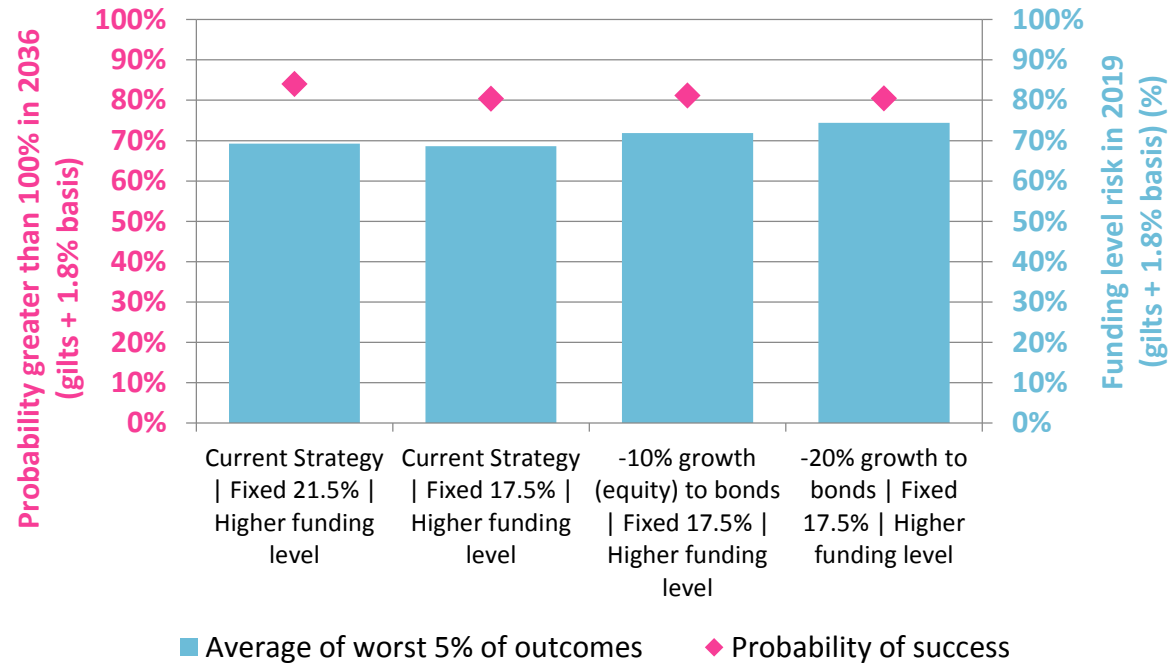


- If we assume, for example, a lower fixed target level of contributions (of 17.5% p.a.), the impact of any de-risking is greater.
- Chances of achieving the objective are reduced; improvements in downside risk are very modest.

# Conclusions – Summer 2017

- Maintaining the current level of contributions (for the 20 year projection period) would allow for reductions of 20% or so in growth assets – whilst still maintaining a high chance of meeting the objective.
- However, on the basis that a lower level of contributions is likely to be preferred in the medium / long term, there was no strong case for any de-risking in the short term.
- Any de-risking should be very modest.
  - Planned changes to private debt / infrastructure / absolute return allocations

# Higher funding level – 100/105%

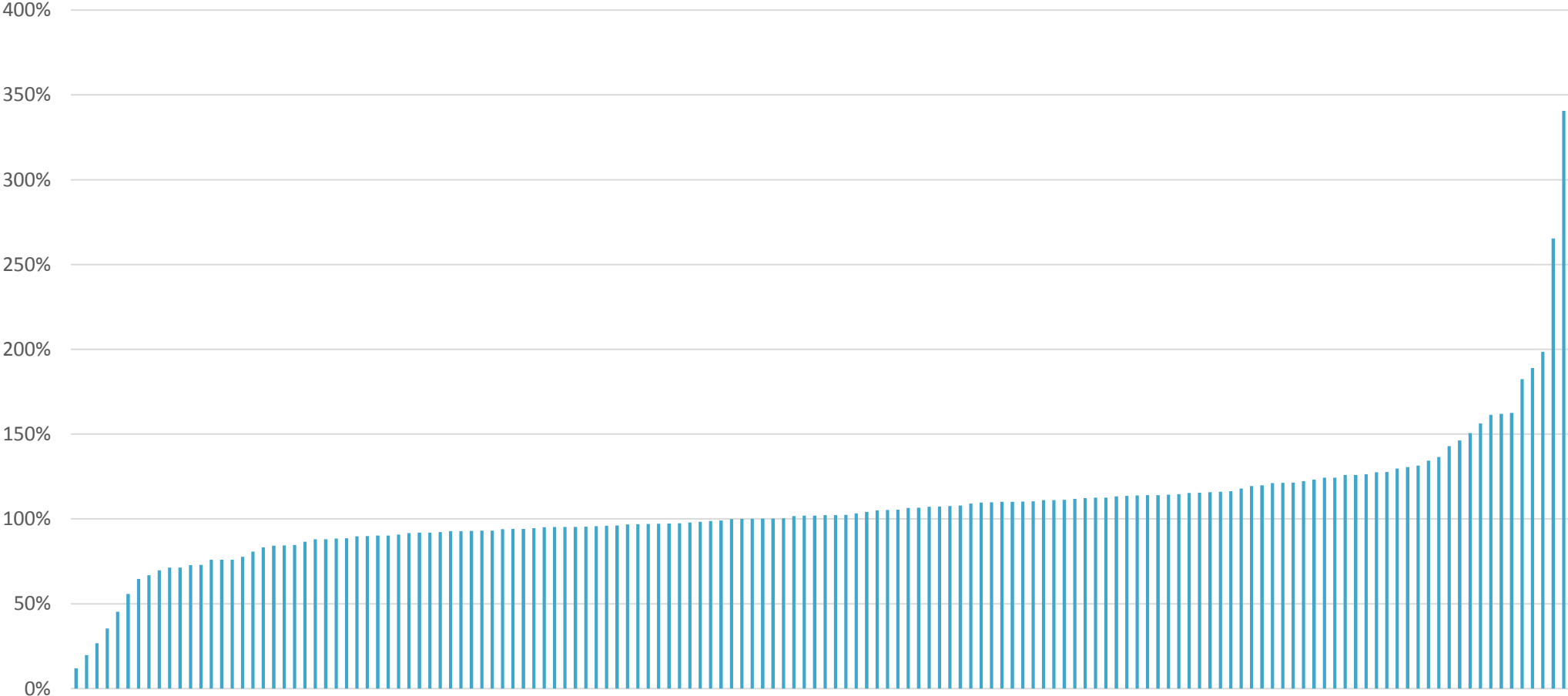


- The scope for de-risking would be greater - the Fund has a material improvement in chances of success.
- The Committee could then consider targeting a lower level of contributions in future in addition to carrying out a degree of de-risking
- Liaison with the Actuary will be necessary.

# Issues to consider

- Next actuarial valuation due at March 2019 – contributions fixed until that date
- Should we return to setting funding level triggers for reducing risk?
- What might the Fund's long term target be for a 'steady state' position?
- What combination of investment strategy and contributions represents the preferred balance for the Committee?
- How would any reduction in risk be implemented within the Fund's asset allocation?
- Is there any immediate action?
- Are there any employer implications of de-risking?

# Range of funding levels across employers



At 31 March 2016, ignores outliers



# Appendix



# Funding level update - reliances and limitations



- The update is addressed to the East Sussex Pension Fund in their capacity as the Administering Authority and is provided to assist in monitoring certain funding and investment metrics. It should not be used for any other purpose. It should not be released or otherwise disclosed to any third party except as required by law or with our prior written consent, in which case it should be released in its entirety. Decisions should not be taken based on the information herein without written advice from your consultant. Neither I nor Hymans Robertson LLP accept any liability to any other party unless we have expressly accepted such liability in writing.
- The method and assumptions used to calculate the updated funding position are consistent with those disclosed in the documents associated with the last formal actuarial valuation, although the financial assumptions have been updated to reflect known changes in market conditions. The calculations contain approximations and the accuracy of this type of funding update declines with time from the valuation; differences between the position shown in this report and the position which a new valuation would show can be significant. It is not possible to assess its accuracy without carrying out a full actuarial valuation. This update complies with Technical Actuarial Standard 100.

# Asset liability modelling - reliances, limitations and additional details (1)

## Cash flows

In projecting forward the evolution of the Scheme, we have used estimated cash flows generated using our actuarial valuation system, based on information provided as part of the 2016 actuarial valuation of the scheme. Full details are set out in our original modelling work in relation to agreeing the contribution strategy. Please note that all reliances and limitations that applied to that report apply here too.

Cash flows have been generated in line with the scheme rules.

We have estimated future service benefit cash flows and projected salary roll for new entrants after the valuation date such that payroll remains constant in real terms (i.e. full replacement). There is a distribution of new entrants introduced at ages between 25 and 65, and the average age of the new entrants is assumed to be 40 years. All new entrants are assumed to join and then leave service at SPA, which is a much simplified set of assumptions compared with the modelling of existing members. The base mortality table used for the new entrants is an average of mortality across the LGPS and is not client specific, which is another simplification compared to the modelling of existing members. Nonetheless, we believe that these assumptions are reasonable for the purposes of the modelling given the highly significant uncertainty associated with the level of new entrants.

There are a number of different types of increases applied before and after retirement to benefits payable from the Scheme. We have made some simplifying assumptions when modelling the various types of increases.

**As with all modelling, the results are dependent on the model itself, the calibration of the model and the various approximations and estimations used. These processes involve an element of subjectivity. No inferences should be drawn from the modelling results other than those confirmed by us in writing.**

# Reliances, limitations and additional details (2)

## Asset Liability Model

In the modelling we have assumed that the Fund will undergo valuations every three years and a contribution rate will be set that will come into force one year after the simulated valuation date. For 'stabilised' contributions, the rate at which the contribution changes is capped and floored. There is no guarantee that such capping or flooring will be appropriate in future; this assumption has been made so as to illustrate the likely impact of practical steps that may be taken to limit changes in contribution rates over time. We have assumed that the Actuary to the Fund will make his or her calculations using broadly the same methodology as that currently used, but note that this is a source of uncertainty that we have not attempted to measure in the model other than where noted specifically.

Except where stated, we do not allow for any variation in actual experience away from the demographic assumptions underlying the cash flows. Variations in demographic assumptions (and experience relative to those assumptions) can result in significant changes to the funding level and contribution rates. We allow for variations in inflation (RPI or CPI as appropriate), inflation expectations (RPI or CPI as appropriate), interest rates, yield curves and asset class returns. Cash flows into and out of the Scheme are projected forward in annual increments and are assumed to occur in the middle of each Scheme year. Investment strategies are assumed to be rebalanced annually.

Unless stated otherwise, we have assumed that all contributions are made and not varied throughout the period of projection irrespective of the funding position. In practice the contributions are likely to vary especially if the funding level changes significantly.

Investment strategy is also likely to change with significant changes in funding level, but unless stated otherwise we have not considered the impact of this in order to focus on the high level investment strategy decision.

In allowing for the simulated economic scenarios, we have used suitable approximations for updating the projected cash flows. The nature of the approximations is such that the major financial and investment risks can be broadly quantified. However, a more detailed analysis is required to understand fully the implications and appropriate implementation of a very low risk or 'cash flow matched' strategy.

We would emphasise that the returns that could be achieved by investing in any of the asset classes will depend on the exact timing of any investment/disinvestment. In addition, there will be costs associated with buying or selling these assets. The model implicitly assumes that all returns are net of costs and that investment/disinvestment and rebalancing are achieved without market impact and without any attempt to 'time' entry or exit.

# Reliances, limitations and additional details (3)

## Economic Scenario Service

The distributions of outcomes depend significantly on the Economic Scenario Service (ESS), our (proprietary) stochastic asset model. This type of model is known as an economic scenario generator and uses probability distributions to project a range of possible outcomes for the future behaviour of asset returns and economic variables. Some of the parameters of the model are dependent on the current state of financial markets and are updated each month (for example, the current level of equity market volatility) while other more subjective parameters do not change with different calibrations of the model.

Key subjective assumptions are the average excess equity return over the risk free asset (tending to approximately 3% p.a. as the investment horizon is increased), the volatility of equity returns (approximately 18% p.a. over the long term) and the level and volatility of yields, credit spreads, inflation and expected (breakeven) inflation, which affect the projected value placed on the liabilities and bond returns. The market for CPI linked instruments is not well developed and our model for expected CPI in particular may be subject to additional model uncertainty as a consequence. The output of the model is also affected by other more subtle effects, such as the correlations between economic and financial variables.

Our expectation (i.e. the average outcome) is that long term real interest rates will gradually rise from their current low levels. Higher long-term yields in the future will mean a lower value placed on liabilities and therefore our median projection will show, all other things being equal, an improvement in the current funding position (because of the mismatch between assets and liabilities). The mean reversion in yields also affects expected bond returns.

While the model allows for the possibility of scenarios that would be extreme by historical standards, including very significant downturns in equity markets, large systemic and structural dislocations are not captured by the model. Such events are unknowable in effect, magnitude and nature, meaning that the most extreme possibilities are not necessarily captured within the distributions of results.

Given the context of this modelling, we have not undertaken any sensitivity analysis to assess how different the results might be with alternative calibrations of the economic scenario generator.

We would be happy to provide fuller information about the scenario generator, and the sensitivities of the results to some of the parameters, on request.

# Reliances, limitations and additional details (4)

## Expected Rate of Returns and Volatilities

The following figures have been calculated using 5,000 simulations of the Economic Scenario Service, calibrated using market data as at 31 March 2017. All returns are shown net of fees. Percentiles refer to percentiles of the 5,000 simulations and are the annualised total returns over 5, 10 and 20 years, except for the yields which refer to the (simulated) yields in force at that time horizon.

	Annualised total returns												Inflation	17 year real yield	17 year yield
	Index Linked Gilts (short dated)	Corporate Bonds (short dated)	UK Equity	Overseas Equity	Private Equity	Property	Diversified Growth Fund	Infrastructure Equity	High yield debt	Senior loans	Absolute return fund (near 0 duration)				
5 years	16th %ile	-1.3%	-0.2%	-4.5%	-6.4%	-7.3%	-4.3%	-2.8%	-6.2%	0.1%	1.3%	1.0%	1.5%	-2.3%	1.1%
	50th %ile	0.3%	1.2%	3.6%	3.4%	4.5%	1.4%	2.5%	2.5%	2.9%	3.9%	2.2%	2.9%	-1.4%	2.4%
	84th %ile	2.1%	2.5%	12.4%	13.7%	17.8%	8.0%	8.3%	11.8%	5.1%	5.8%	3.3%	4.4%	-0.5%	4.0%
10 years	16th %ile	-0.6%	0.7%	-1.4%	-2.7%	-3.1%	-2.2%	-0.5%	-3.0%	1.5%	2.2%	1.5%	1.7%	-1.9%	1.4%
	50th %ile	0.9%	2.0%	4.6%	4.3%	5.6%	2.4%	3.3%	3.3%	3.5%	4.2%	2.8%	3.0%	-0.7%	3.0%
	84th %ile	2.5%	3.1%	10.9%	11.8%	14.9%	7.3%	7.3%	10.2%	5.2%	6.2%	4.3%	4.6%	0.5%	5.1%
20 years	16th %ile	0.3%	1.9%	1.3%	0.1%	0.4%	0.0%	1.5%	-0.2%	3.0%	3.5%	2.5%	1.9%	-0.8%	2.1%
	50th %ile	1.8%	3.3%	5.9%	5.5%	6.8%	3.7%	4.5%	4.6%	4.8%	5.5%	4.1%	3.1%	0.8%	4.0%
	84th %ile	3.7%	4.9%	10.6%	11.2%	13.7%	7.6%	7.6%	9.8%	6.6%	7.6%	6.0%	4.6%	2.3%	6.3%
	Volatility (Disp) (1 yr)	4%	4%	16%	18%	29%	14%	12%	20%	7%	6%	3%	1%		

The current calibration of the model indicates that a period of outward yield movement is expected. For example, over the next 20 years our model expects the 17 year maturity annualised real (nominal) interest rate to rise from -1.7% (1.7%) to 0.8% (4.0%).