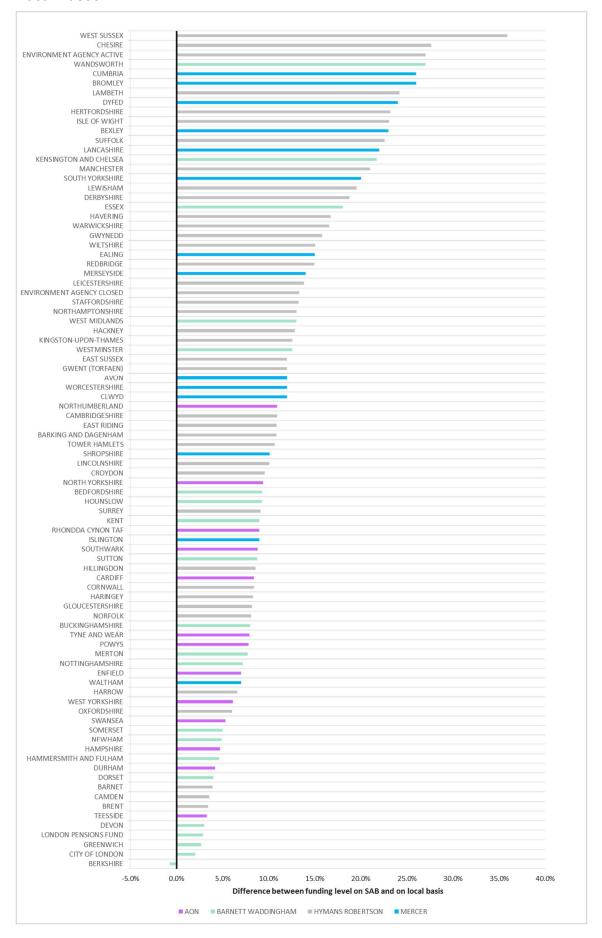
Funding Levels

B.3 Chart B1 shows how the ranking of local funding levels varies when results are restated onto the SAB standardised basis. We might expect the rankings of funding levels when calculated on the local bases to correspond roughly to the rankings of funding levels when calculated on the SAB standard basis. We would therefore expect the lines in Chart B1 joining each fund in the column on the left with itself in the column on the right to be roughly horizontal. However, we see that there is no clear correlation between how funds rank on local bases and how they rank on the SAB standard basis. To choose a typical example, Cheshire is ranked mid-table on the local basis but is towards the top quartile of the table on the SAB standard basis, indicating that their local fund basis is, relatively, more prudent than the other funds. To note we would expect the local funding basis to be prudent. A prudent basis is one where there is a greater than 50% likelihood that the available assets will cover the benefits in respect of accrued service when they fall due if assets are valued equal to liabilities.

Chart B1: Standardising Local Valuation Results

	LOCAL BASES	SAB STANDARD B
%	KENSINGTON AND CHELSEA	WEST SUSSEX
%	TEESSIDE	KENSINGTON AND CHELSEA
1%	NORTH YORKSHIRE	BROMLEY
!%	WEST SUSSEX	ENVIRONMENT AGENCY ACTIVE
1%	BROMLEY	WANDSWORTH
1% 1%	EAST RIDING GWYNEDD	DYFED CUMBRIA
%	EAST SUSSEX	CHESIRE
%	TYNE AND WEAR	BEXLEY
%	ENVIRONMENT AGENCY ACTIVE	GWYNEDD
%	WEST YORKSHIRE	NORTH YORKSHIRE
6	LONDON PENSIONS FUND	MANCHESTER
6	DYFED	LANCASHIRE
6	WANDSWORTH	SUFFOLK
6	CAMDEN	HERTFORDSHIRE
6	ENFIELD	EAST RIDING
ó	SOUTHWARK	EAST SUSSEX
5	MERTON	SOUTH YORKSHIRE
ó	TOWER HAMLETS	TEESSIDE
ó	MANCHESTER	ISLE OF WIGHT
ó	GLOUCESTERSHIRE	DERBYSHIRE
5	MERSEYSIDE	ESSEX
	BEXLEY	MERSEYSIDE
	HARINGEY	TYNE AND WEAR
	CAMBRIDGESHIRE	TOWER HAMLETS
	LANCASHIRE	WEST YORKSHIRE
	NORFOLK	STAFFORDSHIRE
	OXFORDSHIRE	SOUTHWARK
	CUMBRIA	WILTSHIRE
Ī	NORTHUMBERLAND	WESTMINSTER
	SOUTH YORKSHIRE	CAMBRIDGESHIRE
	HAMPSHIRE	MERTON
	SUFFOLK	ENFIELD
	WESTMINSTER	GLOUCESTERSHIRE
	STAFFORDSHIRE	NORTHUMBERLAND
	RHONDDA CYNON TAF	LEWISHAM
	HERTFORDSHIRE	WARWICKSHIRE
	KENT	HARINGEY
	CHESIRE	LONDON PENSIONS FUND
	DERBYSHIRE	KINGSTON-UPON-THAMES
	ESSEX	RHONDDA CYNON TAF
	GREENWICH	NORFOLK
	HAMMERSMITH AND FULHAM	KENT
	WILTSHIRE	WEST MIDLANDS
	NEWHAM	LAMBETH
	CARDIFF	CAMDEN
	SURREY	NORTHAMPTONSHIRE
	KINGSTON-UPON-THAMES	AVON
	ISLE OF WIGHT	EALING
	HARROW	HACKNEY
	AVON	OXFORDSHIRE
	BUCKINGHAMSHIRE	SURREY
	SHROPSHIRE	CARDIFF
	WEST MIDLANDS	SHROPSHIRE
	HOUNSLOW	HAMPSHIRE
	DURHAM	HOUNSLOW
	POWYS	CLWYD
	NOTTINGHAMSHIRE	LINCOLNSHIRE
	NORTHAMPTONSHIRE	LEICESTERSHIRE
	LINCOLNSHIRE	WORCESTERSHIRE BUCKINGHAMSHIRE
	HACKNEY WARWICKSHIRE	HAMMERSMITH AND FULHAM
	DORSET	NEWHAM
	SWANSEA	POWYS
٠	CLWYD	HARROW
	DEVON	BARKING AND DAGENHAM
	EALING	NOTTINGHAMSHIRE
	CITY OF LONDON	GREENWICH
	SUTTON	SUTTON
	CORNWALL	REDBRIDGE
	WORCESTERSHIRE	CORNWALL
	LEWISHAM	CROYDON
	BARKING AND DAGENHAM	GWENT (TORFAEN)
	LEICESTERSHIRE	DURHAM
Ť	CROYDON	SWANSEA
	HILLINGDON	DORSET
	GWENT (TORFAEN)	HILLINGDON
	SOMERSET	DEVON
	BARNET	ISLINGTON
		CITY OF LONDON
	ISLINGTON	
		SOMERSET
	ISLINGTON	SOMERSET BARNET
	ISLINGTON REDBRIDGE	
	ISLINGTON REDBRIDGE LAMBETH	BARNET
	ISLINGTON REDBRIDGE LAMBETH BEDFORDSHIRE	BARNET BEDFORDSHIRE
	ISLINGTON REDBRIDGE LAMBETH BEDFORDSHIRE WALTHAM	BARNET BEDFORDSHIRE WALTHAM

Chart B2: Difference Between Funding Level on SAB Standardised Basis and Funding Level on Local Bases



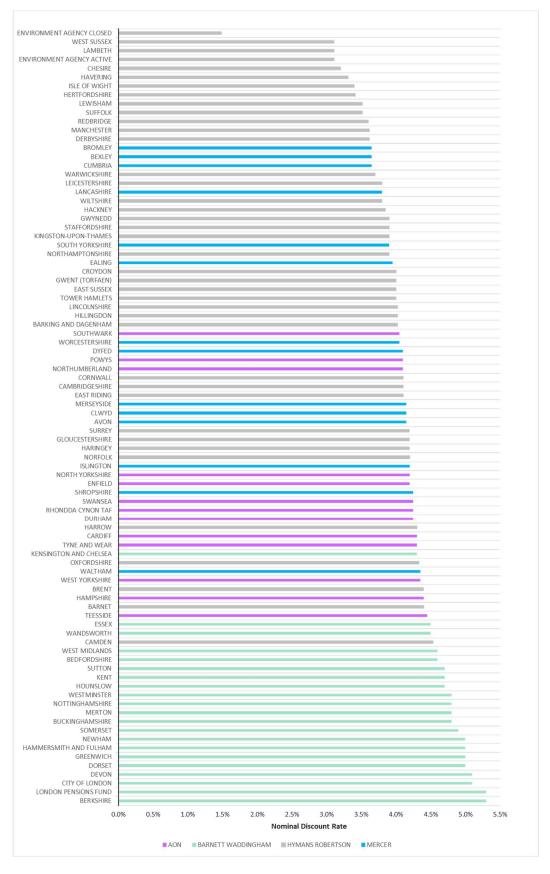
Discount Rates

- B.4 Each firm of actuarial advisors applies their own method for calculating discount rates as shown in the table below.
- B.5 Chart B3 shows the pre-retirement discount rate used to assess past service liability applied in the actuarial valuations for each fund. Note that some funds (advised by Mercers') used different discount rates to assess past service liabilities and future service contribution rates, we consider only the former here.
- B.6 The discount rates set by each fund are likely to be linked to the mix of assets held by the fund, and we would therefore expect to see differences in discount rate from fund to fund.

Table B2: Discount Rate Methodology

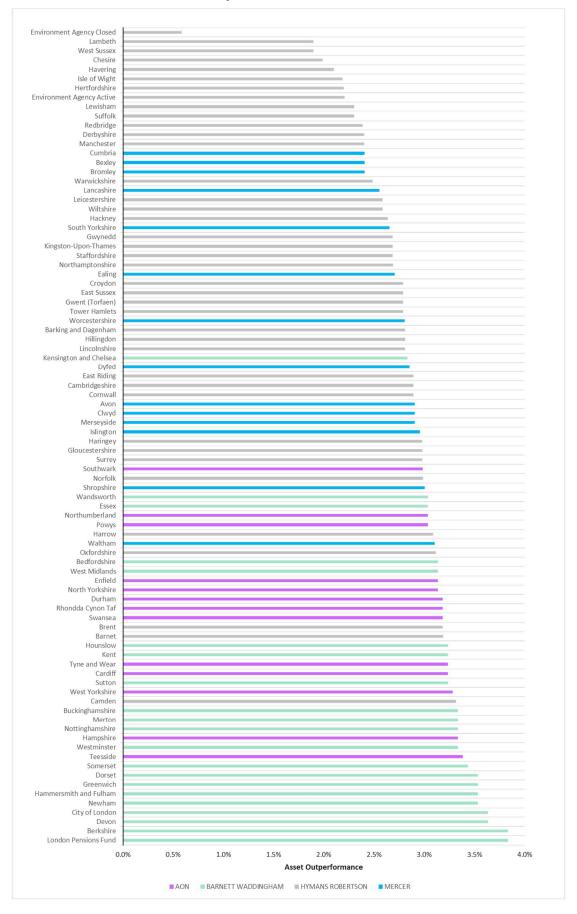
Fund	Discount rate methodology
London Borough of Enfield Pension Fund (Aon)	Stochastic modelling
London Borough of Sutton Pension Fund (Barnett Waddingham)	Weighted average expected return on long term asset classes
Derbyshire Pension Fund (Hymans Robertson)	Stochastic modelling
Lancashire County Pension Fund (Mercer)	Stochastic modelling

Chart B3: Pre - retirement Discount Rates



- B.7 We assess implied asset outperformance as discount rate less risk free rate less RPI, where the risk free rate is taken to be the real 20 year Bank of England spot rate as at 31 March 2019 (-2.14%). Chart B4 shows the assumed asset out performance ("AOA") over and above the risk free rate, where AOA is calculated as the fund's nominal discount rate ("DR") net of:
 - > The RFR the real 20 year Bank of England spot rate as at 31 March 2019
 - > Assumed CPI as assumed by the fund in their 2019 actuarial valuation
 - > The excess of assumed RPI inflation over assumed CPI inflation ("RPI- CPI") as assumed by the fund in their 2019 actuarial valuation i.e. AOA = DR RFR RPI. (Chart B4 shows the implied rate of asset outperformance for each fund.)
- B.8 The implied asset outperformance shows less variation than in 2016. This may suggest some improvement in consistency in the assumption that in previous years. However, there is still a notable trend for funds advised by Aon and Barnett Waddingham to have higher levels of asset outperformance, whilst those advised by Hymans Robertson show lower levels of asset outperformance.

Chart B4: Assumed Asset Outperformance within Discount Rate



Demographic assumptions

- B.9 Commutation assumptions (the extent to which members on average exchange pension in favour of a tax free cash benefit) are set as the percentage of the maximum commutable amount that a member is assumed to take on retirement. Chart B5 shows the assumed percentages for both pre 2008 and post 2008 pensions, which may be set separately.
- B.10 Other things being equal, it is more prudent to assume a lower rate of commutation, because the cost of providing a pension benefit is higher than the commutation factor. In addition, cash was provided as of right in the LGPS prior to 2008 whereas for benefits accrued after that date, cash was available only by commutation of pension.
- B.11 The chart shows that the funds advised by Barnett Waddingham assume that members commute 50% of the maximum allowable cash amount. The majority of funds advised by Mercer assume that members take 80% of the maximum allowable cash amount. There is more variation in the commutation assumptions made by funds advised by Aon and Hymans Robertson. However, there is a noticeable cluster of funds assuming members commute 50% of the maximum allowable for pre 2008 pensions and 75% for post 2008 for Hymans Robertson clients.
- B.12 If it is the case that firms of actuarial advisors find that there is insufficient data to make assumptions on a fund by fund basis, then it would be reasonable for them to make the assumption based on scheme wide data. However, each advisor only has access to the data from the funds that it advises, and therefore can only base their assumptions on the data from those funds. Another firm of actuarial advisors has access to the data for a different collection of funds and therefore might draw a different conclusion as to what the scheme wide average commutation rate is.
- B.13 We encourage further discussions on how assumptions are derived based on local circumstances in valuation reports.

Chart B5: Commutation Assumptions for Pre and Post 2008 Pensions

