

# London Borough of Croydon Pension Fund

A brief guide to LGPS Valuations and Funding  
October 2014

Richard Warden

Fund Actuary

Fellow of the Institute and Faculty of Actuaries

For and on behalf of Hymans Robertson LLP

# Contents

	PAGE
<a href="#">A brief guide to LGPS Valuations and funding</a>	
1 A brief guide to LGPS Valuations and Funding	1
<a href="#">Appendices</a>	
Appendix A – Introduction to discounting	6
Appendix B – Key funding assumptions	7

# 1 A brief guide to LGPS Valuations and Funding

## The Fund

The purpose of the Fund is to provide retirement benefits to its members. It is part of the Local Government Pension Scheme (LGPS) and is a multi-employer defined benefit pension scheme.

### 1 Why do a valuation?

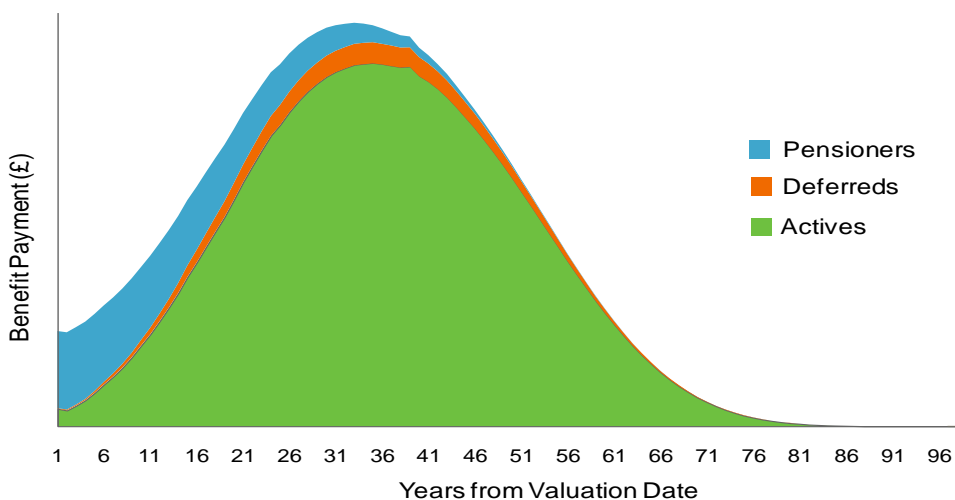
- 1.1 We have to - there is a regulatory requirement to carry out a valuation of the Fund every three years.
- 1.2 To assess the amount of assets against the value of the pension benefits built up to date by members (the liabilities). The relationship between the value of the liabilities and the value of the assets must be regularly assessed and monitored to ensure that the Fund has enough money available to meet all benefits as they fall due.
- 1.3 To determine contribution rates payable by participating employers for the 3 year period following the valuation.
- 1.4 To monitor the experience of the Fund against the assumptions (i.e. assess what has actually happened against what we expected to happen at the previous valuation).

### 2 How do we value the assets?

- 2.1 The Fund's assets arise from the contributions paid by employees and their employers, and the investment returns that they generate.
- 2.2 The way these assets are invested is of fundamental importance to the Fund.
- 2.3 The actual market value of the assets is used for the valuation. This means that the value changes on a daily basis.

### 3 What are the liabilities?

- 3.1 The liabilities at the valuation date are the amount of money that the Fund needs to meet the projected cost of paying benefits to its members. The following chart illustrates the future benefit amounts that are expected to be paid out to members (and their dependants) in a typical LGPS fund based on service earned to the valuation date.



## HYMANS ROBERTSON LLP

- 3.2 There are three membership categories. Employees currently in service (active members), employees who have left employment but not yet retired (deferred members) and employees who have retired and are currently in receipt of their benefits (pensioner members).
- 3.3 The LGPS is a defined benefit scheme which means that the benefits it provides are calculated by a formula. A summary of the main retirement benefits offered by the scheme to active members is given below:

	Pension	Lump Sum
For service prior to April 2008	$1/80 \times \text{salary} \times \text{service}$	$3/80 \times \text{salary} \times \text{service}$
For service from April 2008 to 31 March 2014	$1/60 \times \text{salary} \times \text{service}$	By giving up ('commuting') pension only
For service from April 2014	$1/49 \times \text{salary}$ for each year of service, revalued up to retirement in line with inflation	By giving up ('commuting') pension only

- 3.4 The Fund will also provide dependants' benefits, ill health benefits and early retirement benefits.

#### 4 How are the liabilities valued?

- 4.1 The precise cost to the Fund of providing benefits is not known in advance. Thus we must set assumptions to attempt to value this cost. The key assumptions used are:
- 4.1.1 Discount rate - This is also known as the rate of investment return and it affects how much we need to hold now to meet future benefit payments. A higher discount rate means we have to set aside less now, and vice versa. A simple example of how discounting works is shown in **Appendix A**.
- 4.1.2 Salary increases – the rate at which salaries will increase in future.
- 4.1.3 Pension Increases – the rate at which pensions paid will increase in future and the rate at which post April 2014 benefits will increase during the period before retirement. Increases in the LGPS depend on price inflation as measured by the Consumer Prices Index (CPI).
- 4.1.4 Longevity/mortality – affects how long the benefit payments will be paid. Recent studies suggest that the life expectancy of employees is increasing which puts upwards pressure on the value of liabilities.
- 4.1.5 Commutation – the extent to which pension is given up for an additional lump sum.
- Details of the key assumptions applied in the Croydon Pension Fund are shown in **Appendix B**.
- 4.2 The valuation of the liabilities must be regularly updated to reflect the degree to which actual experience has been in line with these assumptions.
- 4.3 Liabilities are calculated separately for active, deferred and pensioner members, and then combined to arrive at a total value for valuation purposes.

## 5 What is the funding level?

- 5.1 The funding level is equal to the value of assets divided by the value of liabilities.
- 5.2 If this funding level is less than 100% then a deficit will exist, i.e. the value of liabilities is greater than the value of assets.
- 5.3 If this funding level is greater than 100% then the employer is in surplus.

## 6 How are deficits recovered?

- 6.1 If a deficit exists then additional deficit contributions will be paid to address this. These deficit payments will be affected by the length of time over which the deficit is being recovered (the longer the period, the lower the payment). This is known as the deficit recovery period. The length of this period is set by Croydon Council (as administering authority) after taking into account the financial strength of the employer and the expected period of participation in the Fund.
- 6.2 This additional deficit contribution can be expressed as an annual monetary amount or as a percentage of salaries. The Fund's standard approach is to express the deficit contribution as an annual monetary amount.
- 6.3 The deficit is an ever-changing amount that can reduce or increase due to a number of factors including:
  - 6.3.1 The actual experience of the Fund versus expected experience (e.g. number of actual deaths, ill health retirements, level of salary/pension increases against what we expected).
  - 6.3.2 Assets not behaving as expected.
- 6.4 Although the deficit can change on a daily basis, the contributions are usually only revised once every three years at the formal valuation.
- 6.5 The Funding Strategy Statement (FSS) includes details of the deficit recovery strategy.
- 6.6 If the employer is in surplus, then no additional contributions will have to be paid.

## 7 What about the funding levels of individual employers?

- 7.1 Each individual employer (or pooled group of employers) will have its own funding level. This is to comply with the "no cross subsidy" principle outlined in the Funding Strategy Statement.
- 7.2 This means that each employer will have a 'notional' share of the assets and liabilities of the whole Fund and that the funding level for each employer will be tracked at each valuation.
- 7.3 The funding level for each employer will reflect the specific characteristics of that employer e.g. membership specifics such as average age, or how the employer's actual 'experience' compares against assumptions (see next section below).
- 7.4 The contributions set for each employer at the valuation will reflect the funding level for that employer at the valuation date.

## 8 What can affect the funding level?

- 8.1 The funding level will be affected by a change in any of the valuation assumptions and by changes in investment market conditions.
- 8.2 Another factor contributing to a change in the funding level is the 'experience' of each employer over the period between valuations. This 'experience' will differ from employer to employer and may have a positive or negative effect on the funding level.

## HYMANS ROBERTSON LLP

- 8.3 The effect of 'experience' is usually more pronounced for smaller employers than larger employers. This is because of averaging effects over a larger membership.
- 8.4 Some examples of 'experience' include:
- 8.4.1 Salary/pension increases – the amount by which actual salary and pension increases awarded differ from that assumed at the valuation. If actual increases are higher than expected then a deficit will arise and vice versa.
- 8.4.2 Longevity – if a member dies shortly after retiring it is likely that a surplus will arise as the member's pension was paid for a shorter period than anticipated. The size of the surplus would depend on the member's age at death and also on whether a dependant's pension is payable. Conversely a member or dependant who lives for a very long time will create deficit in the Fund.
- 8.4.3 Ill health retirements – ill health benefits are usually enhanced and paid earlier than anticipated, leading to a deficit (in the absence of any ill health liability insurance). However the size of any deficit will depend on the actual cost of the ill health retirement versus the expected cost built into the valuation assumption.

**9 How are contribution rates calculated?**

- 9.1 Contribution rates are set at each valuation for all the employers in the Fund based on the individual funding position of each employer (or group of employers) at the valuation date.
- 9.2 If the employer is in deficit, the contribution rate is made up of two parts: the future service rate and the past service deficit repayment. If the employer is in surplus, the contribution only consists of the future service rate. The rate may be reduced depending on the size of the surplus.
- 9.3 Future Service Rate (used for employers open to new members): This is the estimated cost of new benefits that will be earned by existing employee members over the year following the valuation date. It allows for expected future pay and pension increases. This amount is expressed as a percentage of the members' pensionable pay over the year following the valuation date. For the resulting rate to be stable over time it requires a stable membership profile, as well as unchanged assumptions.
- 9.4 Future Service Rate (used for employers closed to new members): This is the estimated cost of new benefits that will be earned by existing employee members over their expected future working life allowing for expected future pay and pension increases. This amount is expressed as a percentage of the members' pensionable salaries over their expected future working life. All things being equal, the closed future service rate will usually exceed the open future service rate.
- 9.5 Deficit repayments: If a past service deficit has been calculated, this is the additional contribution required over the agreed deficit spread period to return the funding level to 100%.
- 9.6 Finally, an allowance for administration expenses will be added to the contribution rate.

---

HYMANS ROBERTSON LLP

## 10 Reliances and Limitations

This document has been commissioned by Croydon Council in its capacity as Administering Authority to the London Borough of Croydon Pension Fund ("the Fund"). It has been prepared by Hymans Robertson LLP to provide an introduction to funding in the LGPS.

It should not be released or otherwise disclosed to any third party without our prior consent, in which case it should be released in its entirety. Hymans Robertson LLP accepts no liability to any other party unless we have expressly accepted such liability.

The following actuarial technical standards are applicable to this paper: TAS R - Reporting.

Prepared by:



Richard Warden

Fund Actuary

For and on behalf of Hymans Robertson LLP

October 2014

## Appendix A – Introduction to discounting

### Example

If we have £100 to invest in a bank offering an interest rate of 7% per year then we will end up with £107 at the end of the year. This is shown in the table below:

Amount invested today	Interest rate per year	Amount 1 year later
£100	7%	£107

Discounting is very similar except we do this the other way round.

So if we need £100 in 1 year's time, how much do we need to invest today assuming the same 7% interest rate? The answer is £93. However if instead we knew that the interest rate offered by the bank was only 3% then we would need to invest £97 today to arrive at £100 by the end of the year. This is shown in the table below:

Amount needed in 1 year	Interest rate per year	Amount needed today
£100	7%	£93
£100	3%	£97

This implies that a lower interest rate means a higher amount is needed now to get the same amount in the future and vice versa.

This concept can be extended and applied to pension schemes. Using a set of assumptions, the actuary can work out the expected timing and level of future benefits promised to members. These benefits can then be 'discounted' to a current date to arrive at the value of the liabilities. In a pension scheme, the interest rate mentioned in the example above is usually referred to as the "discount rate" and represents the long term investment return that the scheme expects to earn on its assets.



## Appendix B – Key funding assumptions

The key assumptions used in the valuation of the London Borough of Croydon Pension Fund's benefits can be split into two types – financial and demographic. How each of the main assumptions was derived at the 2013 valuation is outlined below. The assumptions are reviewed every three years and so could be subject to change at the 2016 valuation.

### Financial

- Discount rate – the discount rate for funding purposes is based on market returns on UK Government fixed interest bonds (gilts) plus an asset outperformance assumption (AOA). At the 2013 valuation the AOA was 2.0% pa. Gilts are used as a basis for the discount rate as they provide a guaranteed stream of income and maturity proceeds that can be used to meet pension payments. However, the Fund does not fully invest in gilts. As a result, an AOA is added to reflect potentially higher expected returns on the other (riskier) investments, such as shares and property, which the Fund actually holds.
- Retail Price inflation –based on the market's long term view of Retail Price Inflation (RPI) which can be calculated from the difference between the returns available on fixed interest and index linked gilts.
- Pension increases –assumed to be in line with Consumer Price Inflation (CPI). This is taken to be RPI less 0.8% pa, due to expectations that CPI will be lower on average than RPI over the longer term.
- Salary Increases – assumed to be RPI in the long term.

### Demographic

- Longevity – this is the most financially significant demographic assumption. The Fund is a member of Club Vita which provides a bespoke set of life expectancies curves that are specifically tailored to fit the membership profile, taking into factors such as affluence, lifestyle and occupation. An allowance is also made for future improvements in longevity based on trends and statistics from longevity studies.