

**Strathclyde Pension Fund**

**Actuarial Valuation as at 31 March 2002**

**Valuation Report**

Prepared by:

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**March 2003**

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Dear Mr Black

**Actuarial Valuation as at 31 March 2002**

As instructed I have carried out an actuarial valuation of the Strathclyde Pension Fund (“the Fund”) as at 31 March 2002.

The valuation has been carried out in accordance with Regulation 76 of the Local Government Pension Scheme Regulations (Scotland) 1998 (“the Regulations”).

I now have pleasure in presenting my report on the results of the actuarial valuation to Glasgow City Council as administering authority to the Fund. This report has been prepared in accordance with the Actuarial Profession’s Guidance Note 9 as it applies to the Local Government Pension Scheme and current at the date of this report.

My report is set out in the following sections

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## 1. Introduction

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### Purpose of the Valuation

The main purpose of the valuation is to review the financial position of the Fund and to determine the rate at which the employing bodies participating in the Fund should contribute in the future to ensure that the existing assets and future contributions will be sufficient to meet future benefit payments from the Fund.

### Previous Valuation

The previous valuation was carried out as at 31 March 1999 and the results of that valuation were set out in our report dated March 2000.

The results of the previous valuation indicated that the assets of the Fund represented 108% of the accrued liabilities of the Fund. The Common Rate of Contribution was certified as 220% of employees' contributions. At the time of the previous valuation, the common rate of employers' contributions was 170% of employees' contributions. The rise from 1999/2000 to 2001/2002 was phased in over 3 years as shown in the table below.

Financial Year	Employer Contributions	
	% of employees' contributions	% of payroll
1999/2000	170%	9.9%
2000/2001	200%	11.6%
2001/2002	210%	12.2%
2002/2003	220%	12.8%

### Intervaluation Period

The assessed cost of future service benefits was 260% at the previous valuation. Employer contributions paid over the period since that valuation were less than this, which was an agreed plan to reduce the funding level of the Fund at the last valuation.

During the intervaluation period there were a number of amending Regulations issued although there were no significant changes affecting the benefits paid from the Fund.

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With effect from 1 April 1998, new entrants to the Fund have no longer been classified as officer or manual employees and all new employee members contribute at the rate of 6% of pensionable pay. For this valuation, the assumptions for rates of ill health retirements, salary scales etc I have adopted for post-98 entrants are the same as those I have previously adopted (and continued to adopt) for pre-98 officers. I will monitor the actual experience of post-98 entrants separately at future valuations and will modify these assumptions in light of actual experience if appropriate.

## 2. Valuation Process

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### Funding Method

Contributions are paid to the Fund by the employing bodies to provide for the benefits which will become payable to Fund members when they fall due. The funding objectives are to meet the cost of Fund members' benefits whilst they are working and to build up assets to provide adequate security for the benefits as they are earned.

The factors affecting the Fund's finances are constantly changing and so it is necessary for its financial position and the contributions payable to be reviewed, from time to time, by means of an actuarial valuation to check that these objectives are being met.

At this valuation I have, as in the past, adopted an approach which considers separately the benefits in respect of service completed before the valuation date ("past service") and benefits in respect of service expected to be completed after the valuation date ("future service"). This approach enables me to focus on: -

- (a) The *past service funding level* of the Fund. This is the ratio of accumulated assets to liabilities in respect of past service after making allowance for future increases to members pay and pensions in payment. A funding level in excess of 100% indicates a *surplus* of assets over liabilities, a funding level of less than 100% indicates a *deficit*.
- (b) The *future service funding rate* i.e. the level of contributions required from the employing bodies to support the cost of benefits accruing in future.

The method I have adopted at this valuation is known as the "Projected Unit Method". The key feature of this method is that in assessing the future service cost I calculate the contribution rate which meets the cost of benefits accruing in the year after the valuation date. This is the same method adopted at the previous valuation and is an appropriate method for a Fund which is open to new members.

A full description of the valuation methods adopted at this valuation is set out in Appendix A.

## Valuation Data

In my review of the funding position of the Fund I start with the known facts at the valuation date i.e. the benefit structure, the Fund's membership and the accumulated assets.

A summary of the benefits provided by the Fund is set out in Appendix B. A summary of the data used in my valuation calculations is set out in Appendix C.

I have carried out reasonableness checks on the data supplied. In some cases, for example in respect of recent leavers and joiners, I have had to estimate some of the data. In addition, the data includes around 3,000 employee members who are coded to employers who have ceased to exist, as evidenced by the table on page 31. The Fund Administrator is investigating the status of these members, i.e. whether they are still employed by a body participating in the Fund or whether they have become deferred members. For the purpose of the valuation, I have treated these members as employee members as at 31 March 2002. This is a cautious approach and, to the extent to which I have overvalued the past service liabilities in respect of these members, this will provide an additional margin to cushion the effects of post-valuation market falls. The future service contribution rate will be affected only to the extent that these members have a different profile from the remaining employee membership. As it is likely that these members will be older on average than the remaining membership then my approach is likely to overstate rather than understate the true future service contribution rate.

Subject to this, I have no reason to believe that the data is not materially complete and correct.

Finally, I was supplied with Fund accounts for the years from 1 April 1999 to 31 March 2000, 1 April 2000 to 31 March 2001 and 1 April 2001 to 31 March 2002. I have excluded money purchase AVCs from my calculations. I have made an allowance for the current capital value of future expected additional employer contributions in respect of early retirements over the intervaluation period in calculating the value of assets for the purpose of the valuation.

The following table summarises the assets of the Fund as at the valuation date split into the categories of equities, property and bonds/cash.

Asset Class	Market Value at 31 March 2002	
	£(000)	%
Equities	4,584,850	75.9%
Property	542,737	9.0%
Bonds and Cash	911,612	15.1%
<b>TOTAL</b>	<b>6,039,199</b>	<b>100.0%</b>

Further details of the assets held by the Fund are set out in Appendix C.

## **Investment**

The profile of the liabilities of the Fund includes a significant proportion in relation to pensions which are in payment (these accounted for 40% of the liabilities as at 31 March 2002). The other liabilities relate mainly to employee members with salary related benefits. The equity bias of the investments (76% of the assets as at 31 March 2002) means that there is some mis-match of the assets and liabilities. However, an asset-liability modelling exercise is currently being carried out and the Fund benchmark is being reviewed.

### 3. Valuation Assumptions

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I need to make assumptions about the factors affecting the Fund's future finances such as inflation, pay increases, investment returns, rates of mortality, early retirement and staff turnover etc in order to place a value on the liabilities.

Future levels of pay increases will determine the quantum of benefit to be paid in future in respect of employee members as well as affecting the amount of contributions received by the Fund. Once in payment, pension benefits, in excess of Guaranteed Minimum Pensions (“GMPs”) are linked to the Retail Prices Index through increases granted in line with the Pensions (Increase) Act 1971.

The *cost* of providing for benefits, however, depends not only upon the amount but also the *incidence* of benefits paid i.e. at what point in the future benefits come into payment and, in respect of pension benefits, for how long they continue to be paid.

As contributions are being invested now to provide for benefits payable in the future i.e. the benefits are being *prefunded*, then part of the cost of providing the benefits can be met from investment returns achieved by the Fund's assets built up from contributions. The higher the rate of return achieved by the assets the lower the contributions that will be required in future to meet the cost of the benefits.

The assumptions adopted at the valuation can therefore be considered as:

- *demographic* assumptions which generally speaking are used to estimate the likelihood of benefits and contributions being paid; and
- *financial* assumptions which generally speaking are used to estimate the *amount* of benefits and contributions payable and to place a current i.e. *present* value on these benefits and contributions.

#### Valuation Approach

At the previous valuation a market-related approach was adopted. This means that the ongoing funding position and future contribution requirements was assessed by adopting financial assumptions related to market conditions as at the valuation date. As the assets are predominantly invested in equity type investments, to smooth out some of the short-term volatility associated with equity market values we applied a smoothing mechanism which effectively meant that we considered average market conditions in the 12 months leading up to the valuation date.



In order to ensure consistency between the assets and the liabilities the financial assumptions are then derived from the average market yields over the twelve months to the valuation date.

In times of rising equity markets (as was the case at the previous valuation in 1999) this approach will lead to the assets being taken into account at less than their market value. At the last valuation the assets were valued at around 89% of their then market value. Using the same approach for this valuation would result in a slight write-up of assets (to 101% of their market value) as at 31 March 2002. Although the principle of smoothing still holds, given the equity market falls since the valuation date (which are referred to later in this paper), in my view it is inappropriate to take credit for any asset value in excess of the market value for this valuation.

## Financial Assumptions

The key financial assumptions are

- Future levels of price inflation
- Future levels of real pay increases – i.e. over and above price inflation
- The discount rate which is applied to future liabilities to determine their present value.

A full explanation of the derivation of the financial assumptions adopted at this valuation is set out in Appendix E. In summary, the assumptions that I have adopted at this valuation, and a comparison with those adopted at the last valuation, are given in the table below.

Financial Assumptions	Mar 1999		Mar 2002	
	% p.a.	% p.a.	% p.a.	% p.a.
	Nominal	Real	Nominal	Real
Discount Rate:	6.0%	3.2%	6.2%	3.6%
Pay Increases	4.3%	1.5%	4.1%	1.5%
Price Inflation/Pension Increases	2.8%	0.0%	2.6%	0.0%

## Comments on Changes to Assumptions

In nominal terms, the discount rate is slightly higher than the assumption at the 1999 valuation. As gilt yields have actually fallen slightly, this represents a weakening of the basis as I have assumed a higher level of out-performance of the assets over the risk-free rate.

Expectations of future inflation have fallen, so the real return has risen from 3.2% p.a. in excess of price inflation to 3.6% p.a. in excess of price inflation. At the previous valuation it was assumed that earnings growth would be 1.5% p.a. more than price inflation. I have retained this assumption, giving a nominal rate of earnings growth of 4.1% p.a. at this valuation compared to 4.3% p.a. at the last valuation. The change in my assumptions for price inflation and earnings growth is driven by the change in market conditions and does not reflect a change in approach.

Using a higher real discount rate reduces the value placed on the liabilities relative to the last valuation. The fact that I have anticipated a greater part of future expected returns means that the margins in the assumptions are reduced. This needs to be considered when looking at the post valuation events later.

## Demographic Assumptions

### *Mortality*

Mortality investigations over the last few years have concluded that the general population is living longer and that this improvement will continue at a faster rate than seen in the past. My analysis of LGPS pensioner longevity over the course of the last 20 years or so confirms that pensioners are living longer although experience does vary across the country and from Fund to Fund.

I have therefore incorporated revised mortality tables for both existing pensioners and current employee members and deferred benefits members. I have adopted a set of tables known as the PA92 tables (a series of tables derived from underlying mortality from 1991 to 1994 which can be projected to any year in the future).

For current pensioners, employee members and deferred benefits members who will become pensioners at some stage in the future I have used the table known as PA92 c2002 which is the projected mortality to 2002 – i.e. expectations of current mortality. Investigations in other Scottish authorities indicate that current pensioners are dying earlier than this table implies. Accordingly, I have assumed that current pensioners have the rates applicable to individuals one year older and that non-pensioners have some allowance for future improvement by having the rates for lives one year younger.

The table below shows the expectations of life implied by the old and new tables for pensioners retiring at age 60.

	Years		Difference
	1999	2002	%
Non Pensioners:			
Males	19.5	23.5	21%
Females	24.2	26.5	9%
Pensioners:			
Males	19.5	21.7	11%
Females	24.2	24.6	2%

Further details of the demographic assumptions adopted at this valuation are included in Appendix E.

## 4. Intervaluation Experience

The following tables set out, in summary, the actual experience of the Fund during the intervaluation period compared to the assumptions adopted at the previous valuation.

### Financial Experience

	Actual % p.a.	Expected % p.a.	Actual % p.a.	Expected % p.a.
Market Returns	2.5%	-	0.4%	-
Smoothed Returns	6.4%	6.0%	4.4%	3.2%
Pay Increases	2.1%	4.3%	0.1%	1.5%
Pension Increases	2.0%	2.8%	-	-

Note: The smoothed return is the return based on the smoothed value of assets (i.e. 89% of market value at the last valuation and the smoothed market value at this valuation, which was capped at 100% of market value).

The main items of experience were:

- Investment returns (before any smoothing of asset values) averaged around 2.5% p.a. over the period from 1 April 1999 to 31 March 2002, less than 0.5% p.a. in real terms. This was materially less than required under the 1999 valuation basis, leading to an expected reduction in the funding level on a like for like basis of around 10 percentage points. However, this was offset by the release of the write-down of the asset value at the last valuation (this was 11% of the 1999 market value). This takes no account of equity market falls since 31 March 2002.
- Pay increases in respect of those who were members of the Fund throughout the intervaluation period were lower than expected in both nominal and real terms, leading to an improvement in the funding level relative to the last valuation.
- Headline inflation rose by an average of only 2.0% p.a. over the intervaluation period (actual pension increases are slightly higher since September to September RPI is used for increases in the following April), leading to a slight improvement in the funding level relative to the last valuation.

Overall the financial experience of the Fund during the intervaluation period compared to the assumptions adopted at the previous valuation was a marginally positive factor during the intervaluation period.

## Demographic Experience

### *Employee Members*

	Actual	Expected	% Diff
Early Leavers	10,454	14,422	-28%
Deaths	282	453	-38%
Ill Health Retirements	1,490	2,059	-28%
Early Retirements	1,187	-	

The costs of most of the early retirement will be met via additional employers' contributions, the current value of which has been taken into account in the assets so the early retirements do not impact on the funding level. Of the other experience items, early leavers have had the most impact – fewer early leavers than expected has a negative impact on the funding level since if an employee member leaves their deferred pension is linked to price inflation rather than salary growth and I assume positive real salary growth.

As a whole, the impact of membership movements for employee members during the intervaluation period was to reduce the funding level relative to the last valuation.

### *Pensioner Mortality: Cessation of Pensions in Payment*

	Deaths		% Diff
	Actual	Expected	
Ill Health Pensioners	1,676	1,358	23%
Early/Normal Pensioners	3,302	2,844	16%
Dependants	1,610	1,131	42%
<b>Total</b>	<b>6,588</b>	<b>5,333</b>	<b>24%</b>

The number of pensions ceasing during the intervaluation period was higher than the numbers expected, particularly for dependants (this could in part relate to children's pensions ceasing which is expected and hence does not have a financial impact on the Fund). As the incidence of pensioner deaths was among the older pensioners with small average pensions, for whom the average liability is relatively low, the higher than expected deaths had only a small positive impact on the funding level of the Fund.

## 5. Valuation Results

The following table sets out the valuation results for the Fund using the methods and assumptions described earlier in my report. The figures shown in the table exclude the assets and liabilities in respect of money purchase AVCs.

Past Service Liabilities	£m		
Active Members	3,016.1		
Deferred Pensioners	359.4		
Pensioners	2,218.1		
<b>Total</b>	<b>5,593.6</b>		
Assets	6,050.0		
Surplus (Deficit)	456.4		
Funding Level	108%		
Employer Contribution Rates	% of employees' contributions	% of payroll	
Future Service Funding Rate	245%	14.4%	
Past Service Adjustment	(40%)	(2.3%)	
Total Contribution Rate	205%	12.0%	

The past service adjustment assumes that the surplus is spread over a 20 year period, the same period as was used for the 1999 valuation. The future service funding rate includes an allowance for expenses of 10% of employees' contributions, equivalent to 0.6% of payroll.

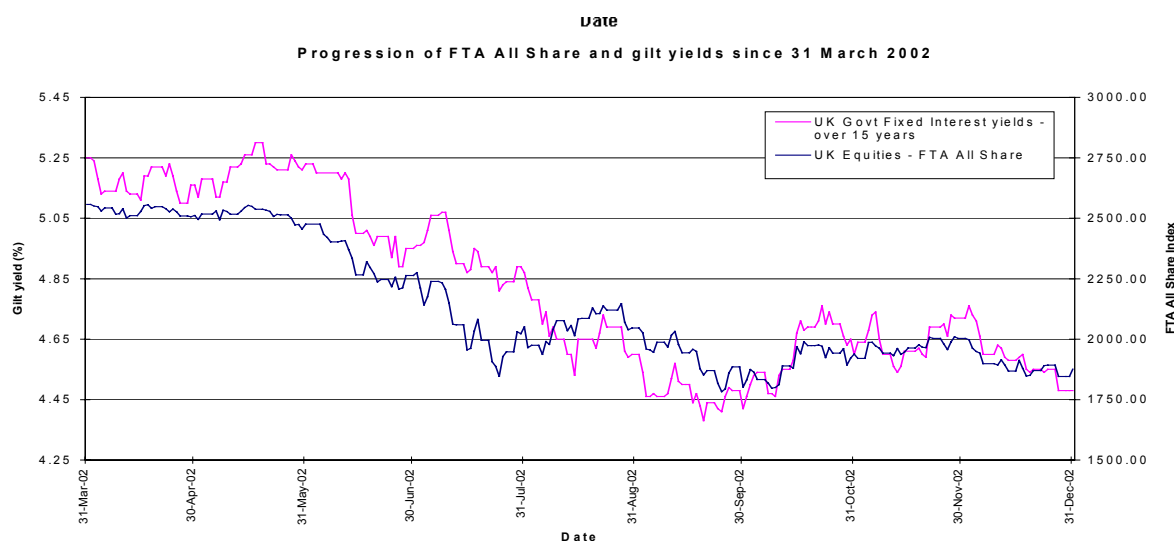
A reconciliation of the past service position is set out in the following table.

	£m	£m
Surplus/(Deficit) at Previous Valuation		369
Interest on surplus(deficit)	70	
Release of 1999 write down of assets	718	
Market investment returns less than expected	(645)	
Salary increases less than expected	164	
Pension increases less than expected	64	
Contributions less than cost of new benefit accruals	(146)	
Retirement experience	(11)	
Pensioner mortality	15	
Withdrawals	(79)	
Change in mortality assumptions and method	(267)	
Changes in market conditions	325	
Other experience items	(120)	
Surplus(Deficit) at This Valuation		456

## Post Valuation Events

Since the valuation date, equity markets in the UK and overseas have fallen materially, by around 30%. The overall fall in Fund assets will be less due to holding non-equity assets and as at 31 January 2003 I estimate that the typical fund return from 31 March 2002 would have been -20%. In addition, since March 2002, prospective risk-free rates of return from government bonds have fallen as bond prices have increased. The yield on government bonds is currently around 4.5% p.a. and corporate bond yields have also fallen since the valuation date.

The graph below shows the movement of the FTA All share Index and the over 15 year gilt yield since the valuation date.



If markets fail to recover between now and the date of the next valuation then funding levels at the next valuation will be materially worse than shown in this valuation. If current conditions prevailed at the valuation date the funding level would have been around twenty-five percentage points lower (allowing for market falls and a lower discount rate). The effect of smoothing would mitigate this since smoothing means funding levels will avoid the effects of the bottom or top of the markets. Having said that, it also means there would be time lag of around 6 months before the benefit of the recovery in markets would show through in funding levels.



## 6. Comments and Conclusions

The principal conclusions from this valuation are as follows:

- The funding level has remained broadly unchanged since the previous valuation. The fall in the funding level due to the poor market returns since the last valuation and the allowance for longer life expectancy at this valuation has been counter-balanced by the release of the write-down of the assets at the last valuation and the higher real discount rate used to value the liabilities at this valuation.
- The Future Service Funding Requirement has reduced since the previous valuation reflecting the higher real discount rate used for this valuation.
- Since the valuation date there has been a material decline in world stockmarkets which will have had a negative impact of the financial position of the Fund. If markets fail to recover in the short term then the financial position of the Fund will be materially worse at the next valuation. If markets do recover then the financial position of the Fund at the next valuation will largely depend on the timing and level of any recovery.
- In light of the fall in the funding level since the valuation date I recommend that no account be taken of the surplus disclosed at that date. This implies a contribution rate of 245% of employees' contributions compared to the rate of 220% currently being paid. As the Regulations require the common contribution rate to be as stable as possible I recommend stepping the required increase over the period to the next valuation. To allow for the lag in increasing the rates, I recommend increasing the rate paid in 2005/06 to slightly more than 245%, giving the following rates:

Year to	Common Contribution Rate	
	% of employees' contributions	% of payroll
31 March 2004	230%	13.3%
31 March 2005	240%	13.9%
31 March 2006	250%	14.5%

- The certified contribution rates for each employer are set out in my certificate in Appendix F.
- In light of the uncertainty of future financial conditions I would suggest that the financial position of the Fund is monitored by means of interim funding reviews in the period up to the next triennial valuation.

## New employers joining the Fund

Any new small employers or admitted bodies joining the Fund with no previous interest in the Fund should pay the rate paid by existing employers at the date of joining plus the capital costs of any early retirements based on my advice and using methods and factors issued by me from time to time.

Any employing bodies joining the Fund where they have:

- had a previous interest in the Fund, or;
- where the number of active members is significant.

should be referred to me for individual calculation as to the required level of contribution.

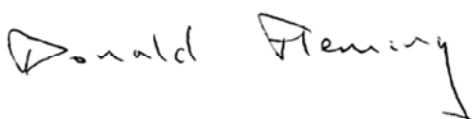
Any employing bodies joining the Fund where there is an expectation of a bulk transfer from outside the Fund should be referred to me but initially should pay the same rate as that payable by existing employers at the date of joining subject to any subsequent adjustment as a result of any bulk transfer payment.

Any employer who ceases to participate in the Fund should be referred to me in accordance with Regulation 77.

I would be pleased to answer any questions arising from this report.

Kind regards

Yours sincerely



**Donald Fleming FFA**



**Ronald S Bowie FFA**

Fellows of the Faculty of Actuaries



## Appendix A – Valuation Method

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### Valuation of Liabilities

Using my assumptions I estimate the payments which will be made from the Fund throughout the future lifetime of existing employee members, deferred benefit members, pensioners and their dependants. I then calculate the amount of money which, if invested now would be sufficient together with the income and growth in the accumulating assets to make these payments in future, using my assumption about future investment returns.

This amount is called “the present value” (or, more simply, “the value”) of members’ benefits. Separate calculations are made in respect of benefits arising in relation to service before the valuation date (“past service”) and for service after the valuation date (“future service”).

#### *Past Service Funding Level*

A comparison is made of the value of the existing assets with the value of benefits in relation to past service (allowing for future pay and pension increases). If there is an excess of assets over past service liabilities then there is a past service surplus. If the converse applies there is a past service deficiency.

#### *Future Service Funding Rate*

The first stage is to calculate the value of benefits earned by existing employee members in the future, by reference to projected pay as at the date of retirement or earlier exit. In the valuation I consider the benefits earned in the year following the valuation date. The value of benefits earned in the year following the valuation date is then expressed as a percentage of employees’ contributions over the same period having first deducted the equivalent contribution paid by the employee members.

The method described above results in a stable, long term contribution rate over time, if the assumptions adopted are borne out in practice and there is a steady flow of new entrants to the Fund. If the admission of new entrants is such that the average age of the membership profile increases then the contribution rate calculated at future valuations would be expected to increase.

#### *Overall Result*

Any past service surplus (or deficiency) can be applied to reduce (or increase) the contribution rate payable by the employing bodies over the period following the valuation date.

#### *Name of Method*

The method described above is known as the Projected Unit Method of valuation.

## **Valuation of Assets**

Assets have been valued at their market value. Where additional contributions to fund previous early retirement costs are due to the Fund at the valuation date I have included these as an asset of the Fund.

## Appendix B - Summary of Benefits

Eligibility	Permanent employees
Member Contributions	Officers            6% of earnings Manual Workers    5% of earnings (6% for post 31/3/98 entrants)
Normal Retirement Age	Age 65 or if earlier and a member before 1 April 1998 age 60 or on attaining 25 years pensionable service.
Early Retirement	Retirement on the grounds of ill-health with enhanced benefits or under other circumstances with possibly reduced benefits may also be allowed.
Pension at Retirement Age	1/80th of pensionable remuneration for each year of pensionable service. Pensionable remuneration is normally the average remuneration in the employee's final year.
Lump Sum at Retirement Age	3/80ths of pensionable remuneration for each year of pensionable service.
Pension Increases	All pensions in payment, deferred pensions and children's pensions other than benefits arising from the payment of additional voluntary contributions are increased annually. That part of pensions which is in excess of the GMP is increased under the Pensions (Increases) Act. That part of the pensions which is GMP increases in accordance with Section 37A of the Pensions Act.
Death in Service Benefits	A lump sum benefit of two times pensionable remuneration at date of death, plus,  A spouse's pension of 1/160th of pensionable remuneration for each year of service that the employee would have been able to reckon if he/she had retired on the grounds of ill health at the date of death. (for widowers benefits, only service from 1988 can count unless the employing authority exercises its discretion to extend this to 1972), plus,  Children's pensions may also be payable.
Death after Retirement Benefits	A spouse's pension equal to one half of the member's pension (but only service from April 1988 can count for widowers' benefits).
Benefits on Leaving Service	Members who leave service are entitled to either a refund of contributions, a preserved pension payable from normal retirement date, or a transfer payment to another scheme or to an insurance company.
The Scheme is contracted out of the State Earnings Related Pension Scheme, (State Second Pension with effect from 6 April 2002)	

## Appendix C - Valuation Data

A summary of the membership records on which my valuation calculations are based is as follows.

### Employee Members

	Number		Pensionable Pay £ (000)		Average £	
	2002	1999	2002	1999	2002	1999
	Male Officers	12,945	15,768	306,463	309,474	23,674
Female Officers	23,968	28,371	402,991	410,487	16,814	14,469
Male Manuals	14,358	17,535	227,840	238,189	15,868	13,584
Female Manuals	4,821	6,753	50,209	66,216	10,415	9,805
Post 98 Males	6,276	-	89,667	-	14,287	
Post 98 Females	15,283	-	181,045	-	11,846	
<b>Total</b>	<b>77,651</b>	<b>68,427</b>	<b>1,258,215</b>	<b>1,024,366</b>	<b>16,203</b>	<b>14,970</b>

### Pensioners

	Number		Annual Pensions £ (000)		Average £	
	2002	1999	2002	1999	2002	1999
	Males	24,326	24,617	113,155	102,590	4,652
Females	21,400	21,098	53,618	47,905	2,506	2,271
Dependants	10,514	10,039	18,804	16,619	1,788	1,655
<b>Total</b>	<b>56,240</b>	<b>55,754</b>	<b>185,577</b>	<b>167,114</b>	<b>3,300</b>	<b>2,997</b>

### Deferred Pensioners

	Number		Annual Pensions £ (000)		Average £	
	2002	1999	2002	1999	2002	1999
	Males	9,914	8,098	19,311	11,734	1,948
Females	9,180	7,654	13,194	8,890	1,437	1,161
<b>Total</b>	<b>19,094</b>	<b>15,752</b>	<b>32,506</b>	<b>20,624</b>	<b>1,702</b>	<b>1,309</b>

### Notes

1. The numbers relate to the number of records and so will include members in receipt of or potentially in receipt of more than one benefit.
2. Annual pensions are funded items only include pension increases up to and including the 2002 PI Order.
3. Pensionable pay is full time equivalent earnings.
4. Pensions for deferred pensioners include increases up to the valuation date.

Details of the assets held at the valuation date and accounts are as follows.

Assets at This Valuation (excluding AVCs)		Market Value at 31 March 2002	
		£(000)	%
UK Equities		3,524,992	58%
UK Fixed Interest Gilts		81,535	1%
UK Corporate Bonds		166,357	3%
UK Index Linked Gilts		182,722	3%
Overseas Equities		1,059,858	18%
Overseas Bonds		152,997	3%
Property		542,737	9%
Cash		100,261	2%
Net Current Assets		227,740	4%
<b>TOTAL</b>		<b>6,039,199</b>	<b>100%</b>

Revenue Accounts	Year to	March-02	March-01	March-00	TOTAL
		£ (000)	£ (000)	£ (000)	£ (000)
EXPENDITURE	Retirement Pensions	180,534	172,972	167,246	520,752
	Retirement Lump Sums	26,169	27,359	26,912	80,440
	Death Benefits	-	-	-	-
	Transfer Values	12,831	10,381	9,669	32,881
	Refunds/CEPs	666	959	726	2,351
	Admin Expenses	2,566	2,229	2,863	7,658
	Investment Expenses	10,834	10,561	7,341	28,736
	Other Expenditure	1,218	-	-	1,218
<b>TOTAL</b>		<b>234,818</b>	<b>224,461</b>	<b>214,757</b>	<b>674,036</b>
INCOME	Employees Ctrns	68,142	63,128	61,943	193,213
	Employers Ctrns	150,756	135,832	108,682	395,270
	Transfer Values	23,658	24,643	30,740	79,041
	Investment Income	138,876	131,874	130,216	400,966
	Other Income	339	324	1,562	2,225
<b>TOTAL</b>		<b>381,771</b>	<b>355,801</b>	<b>333,143</b>	<b>1,070,715</b>
<b>Fund Value</b>					
	Assets at Start of Year	6,048,441	6,618,913	5,590,623	5,590,623
	Cashflow	146,953	131,340	118,386	396,679
	Change in value	(156,195)	(701,812)	909,904	51,897
	Assets at End of Year	6,039,199	6,048,441	6,618,913	6,039,199
<b>Annual Returns</b>					
	Approx Rate of Return	-0.5%	-8.8%	18.5%	2.5%

## Appendix D – Valuation Data Split by Employer

Code	Employer	Number of Members		
		Employee	Deferred Pensioners	Pensioners
	<b>Major Employers</b>			
901	Argyll & Bute Council	2507	319	370
902	East Ayrshire Council	3128	200	526
903	North Ayrshire Council	3638	218	581
904	South Ayrshire Council	3225	173	467
905	West Dunbartonshire Council	3154	190	405
906	East Dunbartonshire Council	2288	203	336
907	City of Glasgow Council	18633	1736	3002
908	North Lanarkshire Council	7917	1154	1208
909	South Lanarkshire Council	7913	544	1258
910	East Renfrewshire Council	2024	126	213
911	Renfrewshire Council	4883	245	843
912	Inverclyde Council	2363	142	448
913	West of Scotland Water Authority	2098	285	653
914	Strathclyde Police Authority	2053	139	221
915	Strathclyde Fire Authority	347	18	65
	<b>Colleges</b>			
57	Annie'sland College	64	16	12
58	South Lanarkshire College	47	5	17
59	Cardonald College	119	22	10
60	Central College of Commerce	47	13	7
61	Glasgow College of Food Technology	50	10	14
62	Glasgow College of Nautical Studies	86	16	13
63	John Wheatley College	48	11	5
64	Langside College	75	13	13
65	North Glasgow College	76	1	21
66	Stow College	64	6	15
67	Glasgow College of Building and Printing	105	17	25
235	University of Edinburgh ( ex Moray House College)	154	43	105
237	University of Glasgow ( ex St Andrew's College )	74	9	46
238	Coatbridge College	73	7	4
239	Motherwell College	104	32	28
240	Bell College of Technology	169	29	12
411	James Watt College	208	24	35
412	Reid Kerr College	120	19	43
511	Clydebank College	96	7	18
512	Cumbernauld College	46	1	7
612	Ayr College	74	8	11
613	Kilmarnock College	102	10	19
	<b>Small Scheduled and Admitted Bodies</b>			
4	Glasgow Society for the Deaf (T/A as Deaf Connections)	31	7	4
5	Glasgow Council for Voluntary Service	24	10	5



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Code	Employer	Number of Members		
		Employee	Deferred Pensioners	Pensioners
8	Notre Dame Child Guidance Clinic	12	3	3
9	The Planning Exchange	20	19	2
10	Craigholme School	10	1	6
13	Scottish Society for the Mentally Handicapped	4	12	12
14	Springboig St Johns School	57	6	18
15	Parkhead Housing Association Ltd	21	6	1
16	Dixon Hall Day Centre for Retired Citizens	1	-	-
18	Alcohol Focus Scotland	2	2	3
19	St Columba's School Limited	9	1	3
21	Employee Counselling Service (formerly Industrial Alcohol Unit)	16	1	1
30	Glasgow Association For Mental Health	97	25	4
31	Renfrew Council on Alcohol	3	-	3
32	Isle of Bute Housing Association	3	2	2
37	Community Central Hall	15	3	2
41	Glasgow Council on Alcoholism	1	1	2
43	Community Enterprise in Strathclyde	21	19	4
44	Social Welfare Commision Bishops Conference of Scotland	1	-	-
45	Glasgow Caledonian University	586	123	91
46	One Plus One Parent Families - Strathclyde	45	6	2
48	The Alpha Project (prev. Cumbernauld Adult Handicapped Society)	9	-	1
50	Glasgow Cultural Enterprises Ltd	56	11	5
51	Scottish Institute of Human Relations	1	1	-
54	Scotwest Credit Union Ltd	3	3	-
55	Scottish Society for the Mentally Handicapped Homes Ltd	1	-	-
68	The Archway Project	2	-	1
69	The Jeely Piece Club, Play it Safe	4	1	-
70	Enable Services Ltd	4	-	2
71	Reidvale Adventure Playground	2	5	-
73	Cambuslang Community Carers	2	-	-
77	Scottish Library & Information Council (SLIC)	1	3	-
78	The Advocacy Project	7	1	1
79	Acre Tenant Management Co-operative	1	-	-
80	Auldhouse Tenant Management Co-operative	1	-	1
83	Garscadden Tenant Management Co-operative	1	-	-
85	Merrylee Tenant Management Co-operative	1	-	-
87	Govanhill Action for Parents	1	2	-
91	Halfway Tenant Management Co-operative	1	-	-
93	Possil/Milton Community Renewal Ltd	4	-	-
94	The Volunteer Centre	6	2	-
95	Easterhouse Citizens Advice Bureau	6	3	-
96	Govan Community Organisation Council	2	1	-
97	East End Partnership Ltd	7	2	-
99	Cambuslang New Opportunities	5	2	-
101	Castlemilk Stress Centre	3	1	-
104	East End Respite Care Group	3	1	-

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Code	Employer	Number of Members		
		Employee	Deferred Pensioners	Pensioners
106	Strathclyde Wing Hong Chinese Elderly Group	2	1	-
111	Greater Easterhouse Women's Aid	6	2	-
113	Bridgeton Calton and Dalmarnock Credit Union	2	1	-
116	Greater Glasgow and Clyde Valley Tourist Board	48	14	-
117	Arden Out of School Project	2	1	-
118	Caledonian Tenant Management Co-operative	1	-	-
119	Carers Development Unit (Easterhouse)	1	1	-
120	East End Community Law Centre	5	3	-
123	Swinton & Invergyre Tenant Management Co-operative	1	-	-
127	Drumchapel Adventure Group	4	-	-
129	Scottish Screen	62	7	-
130	Cuthelton/Lilybank/Newbank Neighbourhood Initiative	2	1	-
132	Govan Initiative	1	-	-
133	Meridian (B.E.M.W.R.I.C.)	4	-	-
136	Scottish Out of School Care Network	6	1	-
137	Kennishead Tenant Management Co-operative	8	-	-
138	Paths For All Partnership	2	1	-
139	Parkhead Youth Project	2	-	-
140	Strathclyde European Partnership Ltd	17	2	-
141	Northwest Economic Network	4	-	-
142	Safe Greater Easterhouse	2	1	-
143	Hills Trust Parents Community Group	1	-	-
144	Caldercuilt/Invershiel Tenant Management Co-operative	1	-	-
145	Spiers Housing Management Co-operative	1	-	-
148	Bute and Cumbrae Tenant Management Co-operative	1	-	-
150	Pollokshields Tenant Management Co-operative	2	-	-
152	Viewfield Tenant Management Co-operative	2	-	-
153	Glasgow Alliance	45	5	-
154	Parkhead Citizens Advice Bureau	6	-	-
155	Linstone Housing Association Ltd	9	-	4
156	Glasgow City Centre Partnership Ltd	2	-	-
158	Argyll & Bute Careers Partnership Ltd	18	1	-
159	The Richmond Fellowship Scotland Ltd	6	-	1
161	Ayr Housing Aid Centre	1	-	-
162	South Ayrshire Energy Agency	4	-	-
163	Castlemilk Youth Complex	1	-	-
164	The Scottish Institute Of Sport	5	1	-
165	Argyll & Bute Local Learning Partnership Ltd	14	-	-
166	Pensioners Action Group East	1	-	-
167	South Ayrshire Homes	5	-	-
168	Developing North Ayrshire Ltd	24	4	8
169	The Financial Fitness Resources Team	7	-	-
170	Coatbridge Citizens Advice Bureau	3	-	-
172	Access North Ayr	24	1	-
173	Cambuslang Outdoor Resource Project	1	-	-
174	Objective 3 Partnership (Scotland) Ltd	12	1	-
175	Ayrshire Careers Partnership Ltd	62	-	1
176	Dunbartonshire & Lomond Careers Service Limited	46	5	5

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Code	Employer	Number of Members		
		Employee	Deferred Pensioners	Pensioners
177	Glasgow Anti Racist Alliance	1	-	-
178	Lanarkshire Community Care Forum	1	-	-
179	Dumbarton District Women's Aid	3	-	-
180	North Ayrshire Leisure Ltd	147	2	5
181	Craigneuk Dev And Support Unit Man Com	3	-	-
182	Community Volunteers Enabling Youth Ltd	5	-	-
184	West Of Scotland College Partnership	5	-	-
185	Glasgow Housing Association	8	-	-
186	Lanarkshire Key Fund Ltd	1	-	-
187	Play Scotland	1	-	-
188	The Village Project St James' (Pollok) Parish Church	1	-	-
189	Ayrshire North Community Housing Organisation Limited	14	-	-
191	Learning And Teaching Scotland	130	3	3
192	East Renfrewshire Council For The Voluntary Sector	3	-	-
193	East Ayrshire Carers Centre	3	-	-
194	Cumbernauld Housing Partnership Ltd	26	2	1
195	Cambuslang Community Resource Unit	3	1	-
196	Childcare First	2	-	-
197	Flourish House	6	1	-
200	Equals Advocacy Partnership Mental Health/Dementia North Lanarkshire	4	-	-
208	Good Sheperd Centre (Dalbeth & St Euphrasia's)	41	5	6
210	Glasgow School of Art	105	38	61
211	University of Strathclyde	1215	415	632
214	Joint Colleges Of Education	26	153	390
215	Scottish Sports Council T/A Sports Scotland	154	97	33
217	Kenmure St Mary's Boys' School	84	17	27
218	Scottish Environmental & Outdoor Centres Assoc Ltd	13	6	22
219	Royal Scottish Academy of Music & Drama	79	27	21
221	Geilsland School Beith. For Church of Scotland	37	8	10
222	Queen's College	7	17	38
223	St Philip's Approved School	51	2	15
225	Lanarkshire Housing Association Ltd	16	1	4
227	SACRO	99	25	6
229	New Lanark Conservation and Civic Trust	1	1	-
230	Voluntary Association For Mental Welfare	47	9	8
231	Lanarkshire Association For Mental Health	36	4	-
232	Jordanhill School	23	2	7
234	GTC for Scotland	26	4	8
241	The Time Capsule Monklands Trust	5	-	1
242	Scottish Further Education Unit	20	11	1
245	Utheo Limited	15	3	-
246	Hamilton Furniture Initiative	2	-	-
247	Scottish Qualifications Authority	453	48	32
248	Town Centre Initiatives Ltd	3	-	-
250	University Of Aberdeen (ex Northern College - Aberdeen Campus Staff Only)	134	1	-

Strathclyde Pension Fund  
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Code	Employer	Number of Members		
		Employee	Deferred Pensioners	Pensioners
251	University Of Dundee (ex Northern College - Dundee Campus Staff Only)	55	-	-
253	Scottish Enterprise (Careers Scotland)	11	1	-
255	Hansel Alliance	34	-	-
258	Govan Law Centre	3	-	-
260	Youth Connections	1	-	-
262	Huthesons' Educational Trust	9	-	-
405	University of Paisley	603	186	224
407	Kibble School	119	17	26
409	Caladh House	2	-	-
410	Paisley Partnership Regeneration Company	25	5	1
415	Larkfield Ladybird Pre-5 Centre	15	-	-
420	Cora Foundation	5	-	-
421	Tannahill Centre Limited	1	-	-
422	Renfrewshire Carers Centre	7	-	-
423	Renfrew Careers Partnership Limited	97	6	5
424	Paisley Partnership Limited	2	-	-
509	Scottish Centre for Children with Motor Imparements	25	4	2
514	Alternatives - West Dumbartonshire Community Drug Services	6	1	-
609	Scottish Maritime Museum Trust	9	1	-
610	Dalmellington & District Conservation Trust	1	-	1
614	Kilmarnock New Start Project	11	-	-
615	Three Towns Community & Voluntary Organisations Council	1	-	-
616	Befriending and Respite Services	5	-	-
617	Three Towns Family Respite Care Association	4	-	1
622	Youth Information and Resource Project	1	1	-
624	Hansel Foundation	2	3	2
625	Ayrshire and Arran Tourist Board	20	5	-
626	Irvine Housing Association	36	4	-
708	The Argyll & Island Enterprise Company	19	4	1
711	Home-Start Mid Argyll Jura Islay & Kintyre	2	-	-
801	SPTE	642	323	1993
	<b>Former Employing Bodies with No Contributing Members</b>			
3	Central Scotland Water Development Board	-	3	27
6	The Guild of Aid	-	-	1
7	Mugdock Children's Home	-	1	-
11	Scottish Council for Educational Technology	-	85	44
12	Scottish Epilepsy Association	-	-	3
17	The West of Scotland School Company Ltd	-	-	4
20	Glasgow Volunteer Bureau	-	-	-
22	Consortium for the Relief of the Adult Single Parent	-	-	-
23	Glasgow Western St Andrews Youth Club	-	-	-
24	Easterhouse Project Trust	-	-	-
25	Enterprise Youth Volunteer Bureau	-	-	1
26	Pre-school Playgroups Association	-	-	-

**Strathclyde Pension Fund**  
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Code	Employer	Number of Members		
		Employee	Deferred Pensioners	Pensioners
27	Park Residents Organisation	-	-	-
28	Reidvale Community Works Management Committee	-	-	-
29	Franciscan Sisters of the Imaculate Conception	-	-	-
33	Community Action - Renton	-	-	-
34	Social Work Services Group	-	-	2
35	Scottish Council for Single Parents	-	-	-
36	Strathclyde Community Relations Council	-	-	-
38	Clyde Valley Tourist Association	-	-	-
39	Glasgow University Settlement	-	-	-
40	Six Circle Group	-	-	1
42	Greater Glasgow Area Tourist Board	-	14	2
47	Scottish Consultative Council on the Curriculum	-	14	21
49	Yoker Youth Library	-	-	-
52	Scottish Film Council	-	12	7
53	Glasgow Film Theatre	-	-	-
56	Glasgow Council of Tenants Association	-	-	-
72	Temple Elderly Community Care Service	-	-	-
74	Laurel Park School Company Ltd	-	3	1
75	Carnwadric & Kennishead Pre 5 Unit	-	3	-
76	Glasgow East End Community Carers	-	1	-
81	Balgrayhill Tenant Management Co-operative	-	1	-
82	Cathkin Braes Tenant Management Co-operative	-	-	-
84	Hartlaw Chirnside Tenant Management Co-operative	-	-	-
86	Wellshot/Silverbanks Tenant Management Co-operative	-	-	-
88	Maryhill Joint Women's Action Group	-	1	-
89	Haghill Furniture Recycling Project	-	2	-
92	Carnwadric Day Care Centre T/A Rainbow Care Centre	-	-	-
98	Gorbals Umbrella Group	-	1	-
100	Drumchapel Sitter Service	-	3	-
102	Ruchill Drop in Centre for Young People	-	1	-
103	The Community Safety Shop Management Group	-	-	-
105	Stonedye Residents Association	-	2	-
107	Women's Support Project (Women's Safety Centre)	-	1	-
108	Govanhill Self Help Initiative Project	-	-	-
109	Counselling Information and Training for Youth	-	-	-
110	Support the Partners and Families of Prisoners	-	1	-
114	Westwood Centre Project	-	-	-
115	Glasgow 1999 Festival Company Limited	-	-	-
121	P.O.I.N.T.S.	-	-	-
122	Springwell Tenant Management Co-operative	-	-	-
124	St Francis Day Unit	-	-	-
125	Larkfield Centre Management Committee	-	-	-
126	Castlemilk Environment Trust	-	-	-
128	Safer Milton	-	1	-
131	East Pollokshields After School Care Service	-	1	-
134	Realise	-	-	-
135	Safe Gorbals Project	-	-	-
146	Summerston Housing Management Co-operative	-	-	-
147	Braidfauld Tenant Management Co-operative	-	-	-

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Code	Employer	Number of Members		
		Employee	Deferred Pensioners	Pensioners
149	Hickbrook Tenant Management Co-operative	-	-	-
151	Whiterose Tenant Management Co-operative	-	-	-
160	Strathclyde Credit Union Development Agency	-	-	-
171	West Of Scotland Community Relations Council	-	-	-
183	East Dunbartonshire Town Centre Management Ltd	-	-	-
190	Banner Tenant Management Co-operative	-	-	-
199	Burns National Heritage Park Joint Board	-	-	-
207	Clyde River Purification Board	-	14	33
209	East Kilbride Development Corporation	12	148	367
212	Scottish Vocational Education Council	-	43	28
216	Loaingdale School Company	-	2	9
220	Scot Cert Of Education Exam Board	-	17	50
224	Trinity Church	-	-	-
226	Scottish Crime Squad	-	-	-
228	Clyde Valley Tourist Association	-	2	1
233	Craigie College	-	1	8
236	Northern College	-	61	54
243	Summerlee Heritage Trust	-	6	4
244	Greenspace Action	-	-	-
249	Inverclyde Leisure	-	-	1
259	The Inter-Play Organisation	-	-	-
406	Langlands Park School	-	-	3
408	Gleniffer Home	-	-	1
413	St James Tenant Management Co-operative	-	-	-
414	Moorpark Youth Centre	-	3	-
416	Barrhead Women's Centre	-	-	-
419	Johnstone Resource Centre for Elderly and Disabled	-	-	1
507	St Andrews School	-	2	4
508	Cumbernauld Development Corporation	6	173	370
510	Dumbarton Council on Alcohol	-	-	-
515	The Veterans Project	-	1	-
606	Irvine Development Corporation	1	83	158
607	Arran Tourist Organisation	-	1	2
608	Malin Housing Association	-	-	1
611	Ayrshire Tourist Board	-	2	-
618	Three Towns Forum on Disability	-	1	-
619	Ayr Town Centre Management Initiative	-	1	-
620	Befriend a Child Project	-	1	-
621	Child Watch North Ayr	-	1	-
627	Comcare Kilmarnock	-	-	-
703	Rothesay Harbour Trust	-	-	-
704	Rothesay Tourist Organisation	-	1	-
705	Dunoon Tourist Organisation	-	1	2
707	Oban & Mull Tourist Organisation	-	4	2
710	Bute & Cowal Tourist Board	-	1	-
802	SBL	-	-	-
999	Other	-	227	480
	<b>Former Local Authorities (Pre 1996)</b>			
1	Strathclyde Regional Council	411	2522	14259
2	City of Glasgow District Council	365	2389	7077

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Code	Employer	Number of Members		
		Employee	Deferred Pensioners	Pensioners
202	East Kilbride District Council	31	103	274
203	Hamilton District Council	76	176	560
204	Clydesdale District	23	67	242
205	Monklands District Council	77	189	607
206	Motherwell District Council	132	248	871
402	Eastwood District Council	14	54	156
403	Inverclyde District Council	47	218	560
404	Renfrew District Council	118	341	1293
502	Bearsden & Milngavie District Council	6	70	157
503	Clydebank District Council	6	97	457
504	Cumbernauld & Kilsyth District Council	9	72	232
505	Dumbarton District Council	20	153	501
506	Strathkelvin District Council	20	148	377
602	Cumnock & Doon District Council	7	104	244
603	Cunninghame District Council	88	206	672
604	Kilmarnock & Loudoun District Council	18	144	446
605	Kyle & Carrick District Council	16	185	760
702	Argyll & Bute District Council	35	132	341
201	Lanark Sub - Region	698	961	3699
401	Renfrew Sub - Region	433	599	2108
501	Dumbarton Sub - Region	73	421	1453
601	Ayr Sub - Region	235	584	1924
701	Argyll Sub - Region	50	147	392
898	Police	2	-	45
899	Fire	3	-	10
900	ex - Dumfries & Galloway	1	1	-

\* As these bodies no longer exist they should not have any employee members. Where there are employee members shown, the Fund Administrator is investigating the status of these members, i.e. whether they are active or deferred and if they are active, by whom they are currently employed.

## Appendix E – Actuarial Assumptions

### Financial Assumptions

In a market-related valuation the financial assumptions are derived from market indicators. The principal financial assumptions adopted in the valuation are as follows:

#### *Price Inflation*

I have derived the market's expectation of inflation by considering the difference in yields available from index-linked gilts and fixed-interest gilts as at the valuation date.

At the previous and current valuation dates the smoothed yields and implied inflation rates were as follows:

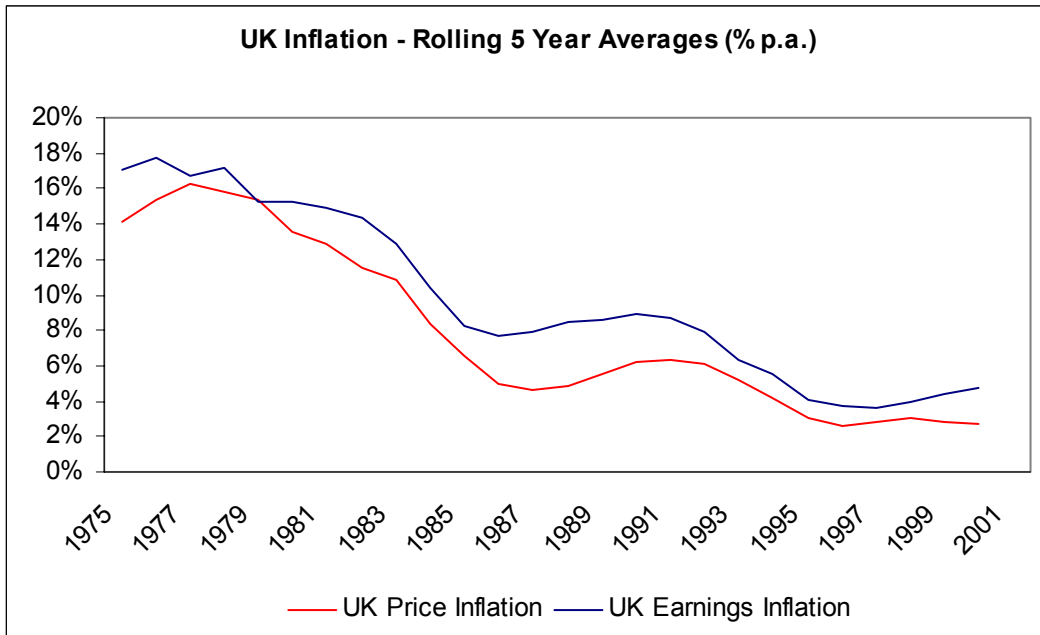
Yields Smoothed Over Year to:	Mar 1999 % p.a.	Mar 2002 % p.a.
Conventional gilt yields	5.1%	4.9%
Index Linked gilt yields	2.4%	2.3%
<i>Implying:</i>		
Future price inflation	2.8%	2.6%
Risk-free return (nominal)	5.1%	4.9%
Risk-free return (real)	2.4%	2.3%

#### *Pay Increases*

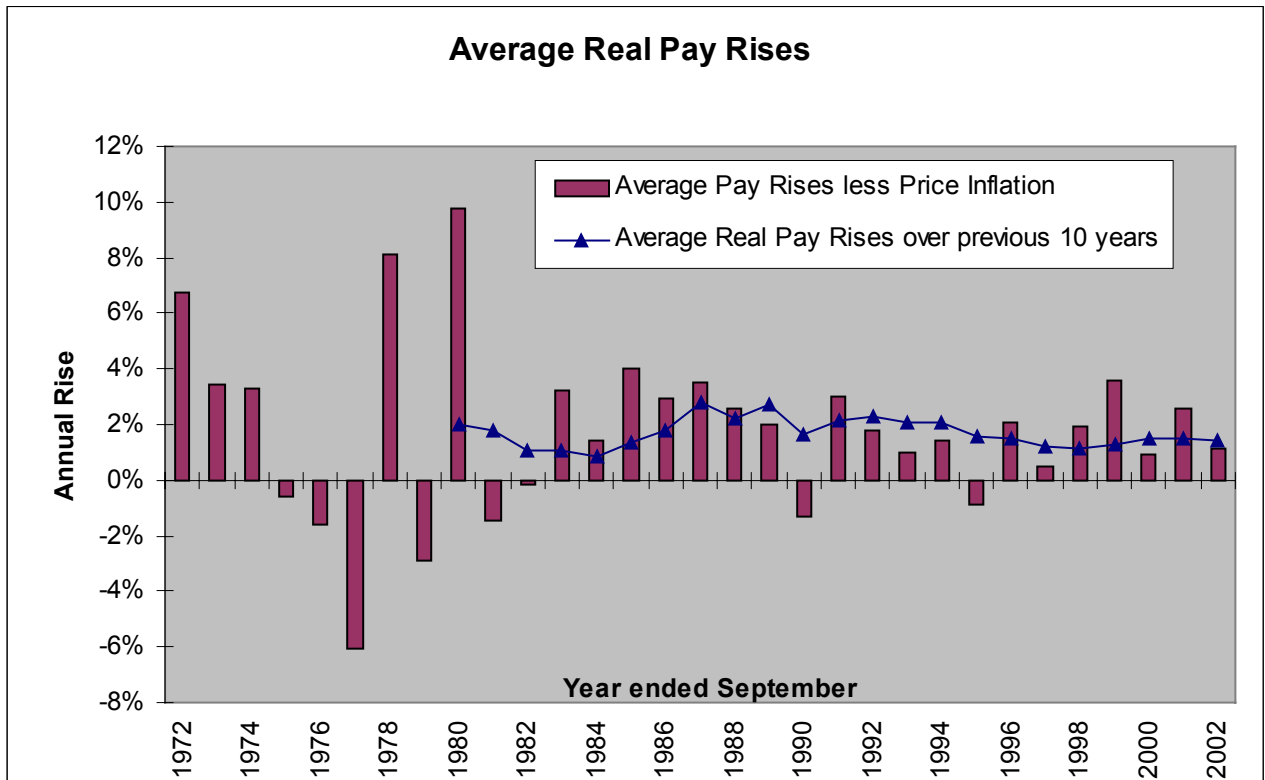
Having determined my assumption about future levels of price inflation, the next stage is to assess future levels of pay increases *relative to price inflation*.

Historically there is a strong correlation between pay and price inflation as shown in the following chart.





The trend has been that real pay increases have been around 1% to 3% per annum although in recent times there has been a downward trend as actual levels of price inflation have reduced as shown in the next chart.



For this valuation I have retained the same assumption for real pay inflation as was used at the last valuation, i.e. real pay growth of 1.5% p.a. This gives a nominal rate of pay inflation of 4.1% p.a. for this valuation.

### ***Discount Rate/Investment Returns***

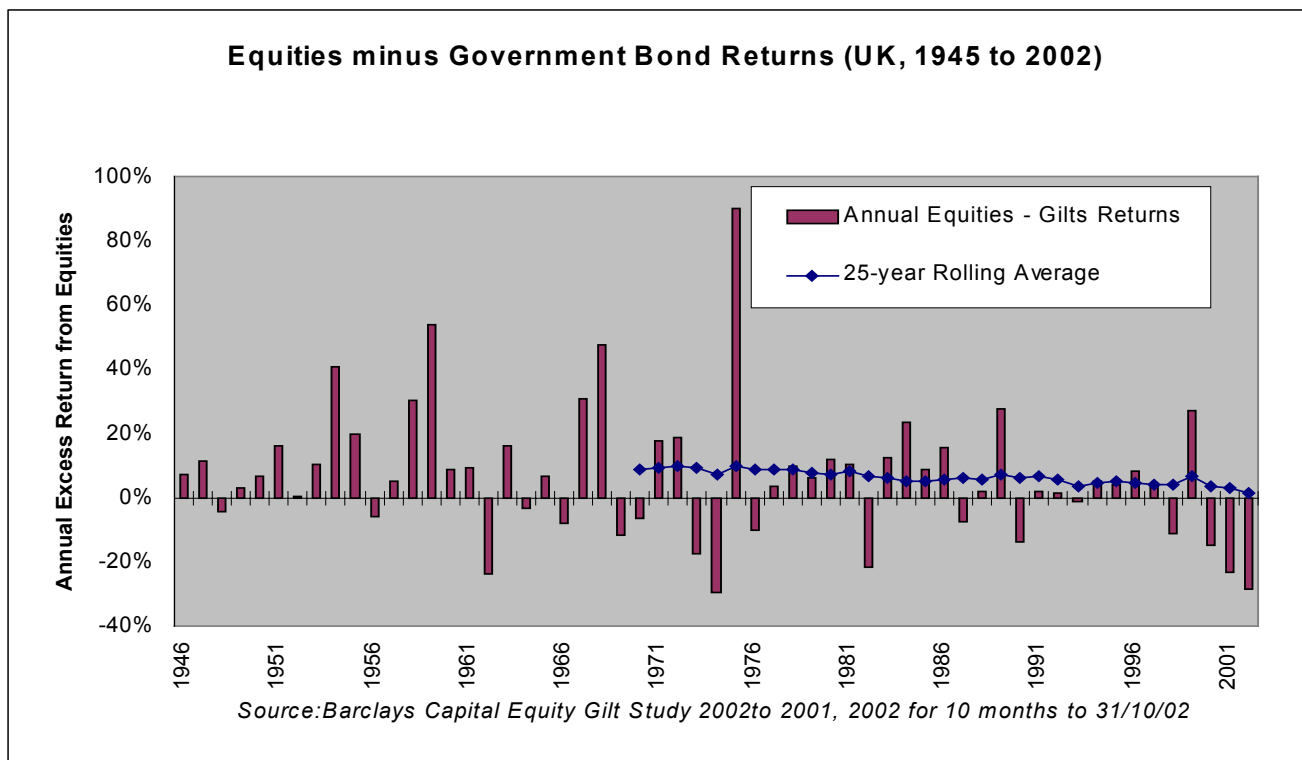
To determine the value of the Fund's liabilities the future expected cashflows are discounted to a current value using a discount rate. For this valuation, as for the last valuation, the discount rate has been derived as the expected return on assets.

In a market-related valuation it is necessary to assess future average levels of investment returns in current market conditions. I have derived the discount rate as the expected return underlying a typical long-term investment strategy of 75% in equity type investments and 25% in bonds and cash.

Redemption yields from gilts and bonds give an indication of the market's expectations of long term interest rates and so some indication about future "risk free" rates of return. In the recent past the Government's finances have been such that there have been few new gilt issues. The gilt market has therefore reduced in size. However, a number of financial institutions including insurance companies are required to hold certain levels of gilts for solvency purposes. Demand for gilts has therefore outstripped supply, particularly at the longer end of the market which has contributed to an increase in price and a corresponding reduction in future yields.

The shortage of gilt supply has been partly addressed by a steady increase in the supply of corporate bonds. Within the UK the amount of corporate bonds in issue now exceeds the amount of gilts. As corporate bond yields are usually higher than gilt yields, I propose to make some allowance for this. I propose a margin of 0.5% to represent a "typical" institutional grade corporate bond. Assuming approximately 60% of the overall bond portfolio is corporate bonds and 40% gilts, this gives an overall return on bonds of 5.2% p.a.

There is however no comparable market indicator to derive the market's expected future return from investing in equities at any particular point in time. It is generally accepted however that the expected future return from investing in equities over the longer term should exceed that available from investing in bonds to compensate for the extra risk. This extra expected return is often referred to as the equity risk premium. By comparing yields from bonds and equities it is possible to derive the equity risk premium. As seen from the next chart, since 1945 the return on equities has exceeded the return on government bonds in many years – but not all. In three of the last four years, equities have underperformed bonds, and this continued in 2002.



Longer term trends can be looked at by averaging the returns over the period. If the average returns over successive 25 year periods are considered, a gradual decline in the outperformance of equities relative to bonds is seen, from around 9% p.a. more than bonds in the 35 years to 1970 to under 3% more than bonds in the 25 years to 2001. Given the further falls in equities in 2002, most of which have occurred after 31 March 2002, a further fall in the 25 year average for 2002 would be expected, perhaps to as low as 1% more than bonds.

For the purposes of the 2002 valuation I propose to assume that, over the long-term, the fund's equity component will deliver a return of 1.6% per annum more in nominal terms than the risk-free rate of return on gilts.

Assuming a notional overall portfolio of 75% equities and 25% bonds products a discount rate of 6.2% as shown in the table below.

Financial Assumptions	Mar 1999		Mar 2002	
	% p.a. Nominal	% p.a. Real	% p.a. Nominal	% p.a. Real
Anticipated extra long-term return from:				
<i>Equities</i>	1.10%		1.60%	
<i>Corporate Bonds</i>	0.00%		0.5%	
Overall anticipated long term return from:				
<i>Equities</i>	6.2%		6.5%	
<i>Bonds and gilts</i>	5.1%		5.2%	
Discount Rate:	6.0%	3.2%	6.2%	3.6%
Pay Increases	4.3%	4.3%	4.1%	1.5%
Price Inflation/Pension Increases	2.8%	2.8%	2.6%	0.0%

**Pension Increases**

Pension increases in April are based on the RPI to the year to the preceding September. The rise in headline RPI for September 2002 was 1.7% and this is expected to become the rate of increase to pensions in payment and deferred pensions in April 2003. In valuing the accrued liabilities for pensioners and deferred pensioners I have anticipated the actual 1.7% rise in April 2003, reverting to the long term assumed rise of 2.6% p.a. in April 2004 and thereafter.

**Demographic Assumptions**

The assumptions I have adopted are based on my analysis of the incidence of retirement, and withdrawal of our Local Government client funds. The mortality assumptions are based on published mortality tables. Other than allowing for longer life expectancy in retirement I have retained the same demographic assumptions as used in the last valuation. Sample rates are shown in the following tables:

Age	Incidence per 1000 active members per annum						Promotional Salary Scales	
	Male Officers & Post 98 Males			Female Officers and Post 98 Females			Male Officers & Post 98 Males	Female Officers & Post 98 Females
	Death	Ill Health Retirement	Withdrawal (Ultimate)	Death	Ill Health Retirement	Withdrawal (Ultimate)		
20	0.5	-	150	0.2	-	156	112	107
25	0.5	-	101	0.2	0.6	162	170	141
30	0.6	0.6	62	0.3	1.0	138	214	162
35	0.7	0.8	42	0.5	2.0	95	244	182
40	1.2	1.4	31	0.8	2.6	64	269	205
45	2.0	3.2	24	1.3	4.2	49	296	228
50	3.2	8.8	18	1.9	8.2	39	324	252
55	5.0	18.0	13	2.5	21.6	32	324	252
60	9.0	36.0	-	3.2	-	-	324	252

Strathclyde Pension Fund  
Actuarial Valuation as at 31 March 2002  
Valuation Report

Age	Incidence per 1000 active members per annum						Promotional Salary Scales	
	Male Manuals			Female Manuals			Male Manuals	Female Manuals
	Death	Ill Health Retirement	Withdrawal (Ultimate)	Death	Ill Health Retirement	Withdrawal (Ultimate)		
20	0.9	-	153	0.2	-	247	103	103
25	1.0	3.2	119	0.2	2.6	244	116	117
30	1.1	5.2	90	0.3	3.6	193	127	126
35	1.2	7.8	70	0.5	5.2	140	135	133
40	1.7	10.8	56	0.8	7.2	106	142	140
45	2.9	15.6	42	1.4	9.2	81	145	143
50	5.3	22.8	28	2.2	13.6	60	146	145
55	7.8	36.8	20	2.0	25.6	47	146	145
60	11.0	70.0	-	4.4	-	-	146	145

Other Assumptions	
Age Retirements	It is assumed that active members will retire at age 60 or when they would satisfy the <i>Rule of 85</i> if later subject to no later than age 65.
Pensioner Mortality	Current Pensioners - PA92 c2002 +1 year
	Prospective Pensioners - PA92 c2002 - 1 year
	Ill Health Retirement - As above with + 4 years
Proportions Married (including a loading for dependants benefits)	90% of members will be married and entitled to a spouse's pension
Wife/Husband Age Difference	Husbands are assumed to be 3 years older than their wives

## Appendix F - Rates and Adjustments Certificate

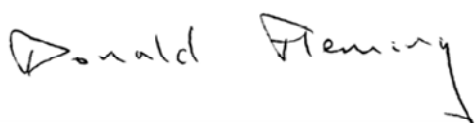
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Glasgow City Council  
Finance Department  
City Chambers  
Glasgow G2 1DU

Dear Sir

1. On your instruction, I have carried out an actuarial valuation of the Strathclyde Pension Fund ("the Fund") as at 31 March 2002.
2. In accordance with Regulation 76 of the Local Government Pension Scheme (Scotland) Regulations 1998 I have made an assessment of the contributions which should be paid to the Pension Fund by the employing authorities as from 1 April 2003 in order to maintain the solvency of the Fund.
3. The required contribution rates are set out in the attached statement.

Yours faithfully



Fellow of the Faculty of Actuaries

Hymans Robertson  
221 West George Street  
GLASGOW  
G2 2ND

## STATEMENT TO THE RATES AND ADJUSTMENTS CERTIFICATE

The Common Rate of Contribution payable by each employing authority under Regulation 76 for the period 1 April 2003 to 31 March 2006 are set out in the table below:

Year to	Common Contribution Rate	
	% of employees' contributions	% of payroll
31 March 2004	230%	13.3%
31 March 2005	240%	13.9%
31 March 2006	250%	14.5%

Individual Adjustments under Regulation 76 for the period 1 April 2003 to 31 March 2006 resulting in Minimum Total Contribution Rates expressed as a percentage of payroll and percentage of employees' contributions are as set out below. These rates are exclusive of any additional amounts required to meet the costs of early retirements:

Employer	Minimum Total Contribution Rates for year ending		
	31 March 2004	31 March 2005	31 March 2006
Major Employers	230%	240%	250%
Colleges	230%	240%	250%
Small Scheduled and Admitted Bodies	230%	240%	250%

### Notes

Further sums should be paid to the Fund to meet the costs of any early retirements using methods and assumption issued by me from time to time.

The assumptions underlying the number of members who will become entitled to pensions under the provisions of the Scheme and the liabilities arising in respect of such members are set out in Appendix E.

## **Appendix G - Surplus Certificate**

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This certificate is given to the Commissioners of Inland Revenue for the purposes of paragraph 2 of Schedule 22 to the Income and Corporation Taxes Act 1988.

Name/description of scheme                          Strathclyde Pension Fund

Inland Revenue Reference Number                  49/24736

I hereby certify that: -

1.    in my opinion, as at 31 March 2002 the value of the assets of the scheme did not exceed 105 percent of the value of the liabilities of the scheme;
  
2.    the assets and liabilities to which paragraph (1) refers have been determined in accordance with principles and requirements prescribed by the Pension Scheme Surpluses (Valuation) Regulations 1987.

Donald Fleming

Name                          Donald Fleming                          Qualification: FFA

Date                            March 2003

Address                        Hymans Robertson  
 221 West George Street  
 GLASGOW  
 G2 2ND