

## **Supplement B to Circular 02/07**

# **Report on the Calculation of Provisions in respect of Enhanced Early Retirement Pensions in Further Education Institutions**

**9 April 2002**

## Introduction

The purpose of this report is to provide instructions for calculating the provision that needs to be provided for in the accounts in respect of enhanced early retirement pensions.

The report is prepared solely for this purpose and for the attention of the National Learning + Skills Council and the Institutions that it will be circulated to. It should not be used by other parties.

In some cases the education sector grant enhancements to pensions for employees when they take early retirement. The estimated cost of the enhancements is a liability that should be included within the Institution's accounts.

The accounting standards that affect pension disclosures are:

- Statement of Accounting Practice No 24 (SSAP 24) *Pension Costs*, and
- Financial Reporting Standard No 17 (FRS 17) *Retirement Benefits*.

Institutions currently account under SSAP 24. However, SSAP 24 is being replaced by FRS 17 with a phased introduction period. For accounting periods ending after 22 June 2001, the pension costs are still calculated under SSAP 24 but FRS 17 requires additional disclosures. Further disclosures are required for accounting periods ending after 22 June 2002. It is only for accounting periods ending after 22 June 2003 that FRS 17 needs to be fully adopted and the pension costs shown in the primary financial statements. This report includes instructions for calculating figures required for both SSAP 24 and FRS 17.

It is a requirement of both standards that an estimate of the expected future cost of any enhancement to the ongoing pension of a former member of staff will need to be made and charged in full to the income and expenditure account in the year the member of staff retires. In subsequent years a provision needs to be made in the balance sheet.

The instructions are split into sections as follows:

- Section 1 – Calculating the interest rate to use.
- Section 2 – Calculating the figures required in connection with SSAP 24.
- Section 3 – Calculating the figures required in connection with FRS 17.
- Section 4 – Worked example.

The factors to use in the above calculations are given in Appendix 1. Further details on the method and assumptions used are given in Appendix 2. Appendix 3 shows a specimen page from the Financial Times.

## Section 1 - Interest rate calculation

a. The first step is to determine the interest rate (IR) and the net interest rate (NIR) at the relevant date. In the Companies and Markets section of the Financial Times there is a table that is of the same format as the one shown in Appendix 3.

b. From this table look up the following figures:

F = Fixed Interest 10 year yield index  
I = Index-linked over 5 years (5% inflation) real yield

c. Under FRS 17 the provision must be calculated with reference to the yield on AA rated corporate bonds. This is also acceptable under SSAP 24. However, as these yields are not published in the Financial Times a suitable approximation can be made by adding a margin to the fixed interest 10 year yield index. Currently a suitable margin is 1.00%.

d. The interest rate calculations are then as follows:

IR = F plus 1.00

RPI = F minus I

NIR = IR minus RPI, rounded to the nearest 0.50

## **Section 2 – Instructions for calculating SSAP 24 figures to be disclosed**

### **Section 2A – SSAP 24 provision**

- a. At the year end it is necessary to calculate the provision to be included on the balance sheet. The following process should be followed. Alternatively, for accounting periods ending before 22 June 2003 the same process as previous years could be followed.
- b. Determine the net interest rate (NIR) at the year-end.
- c. Look up the appropriate factor from the tables in Appendix 1 according to:
  - i. The NIR
  - ii. Whether the employee is male or female
  - iii. Whether they are married at the date of retirement, whether they are single, or whether the pension is a spouse's pension.
  - iv. The employee's age on their nearest birthday.
- d. Multiply the current annual enhanced pension for each individual by the factor derived in c above. The provision that must be allowed for in the balance sheet (PROV2) is equal to the sum of this calculation for all former members of staff with enhanced pensions in payment.

### **Section 2B – SSAP 24 cost**

- e. On the retirement of a member of staff with an enhanced pension, the cost of the enhanced pension should be charged to operating cost in the year of retirement. The following process should be followed. Alternatively, for accounting periods ending before 22 June 2003 the same process as previous years could be followed.
- f. Determine the net interest rate (NIR) at the date of the member's retirement.
- g. Look up the appropriate factor from the tables in Appendix 1 according to:
  - i. The NIR
  - ii. Whether the employee is male or female
  - iii. Whether they were married at the date of retirement and remain so, whether they are single, or whether the pension is a spouse's pension.
  - iv. The employee's age on their nearest birthday.
- h. Multiply the current annual enhanced pension for each individual by the factor derived in g above. The cost of the enhanced pension, also known as the retirement cost (RC), is equal to the sum of this calculation for all members who retired during the year.
- i. Calculate the interest (INT) on the provision at the start of the year

$$\text{INT} = \text{IR} \times \text{PROV1}$$

where:

IR is as calculated in section 1 at the start of the accounting year  
 PROV1 equals the total provision held at the start of the year.

- j. Calculate the actuarial gains (or losses) (AG) over the year as

$$\text{AG} = (\text{PROV1} + \text{INT} + \text{RC} - \text{PMTS}) - \text{PROV2}$$

where:

PROV1 equals the provision at the start of the year (taken from last years accounts)  
 INT equals the interest on the provision calculated in i.  
 RC equals the retirement cost calculated in h.  
 PMTS equals the total enhanced pension payments actually made during the year  
 PROV2 equals the provision at the year-end calculated in d.

- k. The total charge (I&E) to the income and expenditure account is then

$$\text{I\&E} = \text{RC} + \text{INT} - \text{AG}$$

where:

RC is the retirement cost calculated in h.  
 INT is the interest on the provision calculated in i.  
 AG is the actuarial gain (loss) calculated in j.

- l. Check that the calculation balances, i.e.

$$\text{PROV2} = \text{PROV1} + \text{I\&E} - \text{PMTS}$$

where:

PROV2 is the provision of the year-end calculated in d.  
 PROV1 is the provision at the start of the year (taken from last year's accounts)  
 I&E is the charge to the income and expenditure account calculated in k.  
 PMTS is the total enhanced pension payment made during the year

## **Section 3 – instructions for calculating FRS 17 figures to be disclosed**

### **Section 3A – FRS 17 provision**

- a. The calculation of the year-end provision under FRS 17 is similar to that under SSAP 24.
- b. Determine the net interest rate (NIR) at the year-end.
- c. Look up the appropriate factor from the tables in Appendix 1 according to:
  - i. The NIR
  - ii. Whether the employee is male or female
  - iii. Whether they are married at the date of retirement, whether they are single, or whether the pension is a spouse's pension.
  - iv. The employee's age on their nearest birthday
- d. Multiply the current annual enhanced pension for each individual by the factor derived in c. above. The provision that must be allowed for on the balance sheet (PROV2) is equal to the sum of this calculation for all former members of staff with enhanced pensions in payment.
- e. If the Institution pays tax, there may need to be a deferred tax asset included. In this case contact your auditor for guidance.

### **Section 3B – FRS 17 cost**

- f. On the retirement of a member of staff with an enhanced pension, the cost of the enhanced pension should be charged to operating cost in the year of retirement.
- g. Determine the net interest rate (NIR) at the date of the member's retirement.
- h. Look up the appropriate factor from the tables in Appendix 1 according to:
  - i. The NIR
  - ii. Whether the employee is male or female
  - iii. Whether they were married at the date of retirement, and remain so, whether they are single, or whether the pension is a spouse's pension.
  - iv. The employee's age on their nearest birthday
- i. Multiply the current annual enhanced pension for each individual by the factor derived in h. above. The cost of the enhanced pension, also known as the retirement cost (RC), is equal to the sum of this calculation for all members who retired during the year.
- j. The FRS 17 charge to operating costs is then RC

- k. Calculate the interest (INT) on the provision at the start of the year

$$\text{INT} = \text{IR} \times \text{PROV1}$$

where:

IR is calculated in section 1 as at the start of the accounting year

PROV1 equals the total provision held at the start of the year.

- l. The FRS 17 financing cost is then equal to the interest cost, i.e. INT as calculated in section k. above.

### **Section 3C - Statement of Total Recognised Gains and Losses (STRGL)**

- m. The actuarial gain or loss (AG) arising in the year is recognised in the statement of total recognised gains and losses (STRGL). It is calculated as follows:

$$\text{AG} = (\text{PROV1} + \text{INT} + \text{RC} - \text{PMTS}) - \text{PROV2}$$

where:

PROV1 equals the provision at the start of the year (taken from last year's accounts)

INT equals the interest on the provision calculated in k.

RC equals the retirement cost calculated in i.

PMTS equals the total enhanced pension payments actually made during the year

PROV2 equals the provision at the year-end calculated in d.

## Section 4 – Worked example

We have detailed below the calculations for a sample employee.

Assume that the year end is 20 March 2002 and that one married male member of staff, date of birth 1 January 1950, is granted an enhanced pension of £1,000 per annum on his retirement on 31 January 2002.

### 1. Interest rate calculation

Relevant date = date of retirement = 31 January 2002

Fixed Interest 10 year yield index	(F)		4.91
Index-linked over 5 years (5% inflation real yield)	(I)		2.28
Interest rate	(IR)	= 4.91 + 1.00	5.91
Price Inflation	(RPI)	= 4.91 – 2.28	2.63
Net interest rate	(NIR)	= 5.91 – 2.63	(rounded) 3.50

Relevant date = year end = 20 March 2002

Fixed Interest 10 year yield index	(F)		5.30
Index-linked over 5 years (5% inflation real yield)	(I)		2.30
Interest rate	(IR)	= 5.30 + 1.00	6.30
Price Inflation	(RPI)	= 5.30 – 2.30	3.00
Net interest rate	(NIR)	= 6.30 – 3.00	(rounded) 3.50

Relevant date = year start = 20 March 2001

Fixed Interest 10 year yield index	(F)		4.68
Interest rate	(IR)	= 4.68 + 1.00	5.68

### 2A – SSAP 24 provision

Section 2 Paragraph	Description	Figure
b.	NIR at year end	3.50%
c.	NIR = 3.50 Sex = Male Pension Type = Married Age nearest = 52  Factor from table 1	20.38
d.	Annual enhancement = £1,000 pa Provision for this individual = £1,000 x 20.38	£20,380



## 2B – SSAP 24 cost

Section 2 Paragraph	Description	Figure
f.	NIR at date of retirement	3.50%
g.	NIR = 3.50 Sex = Male Pension Type = Married Age nearest = 52  Factor from table 1	20.38
h.	Annual enhancement = £1,000 pa  Retirement cost (RC) for the individual = £1,000 x 20.38	£20,380

	Now assume the following:  Provision at start of year = PROV1 Provision at end of year = PROV2  Retirement cost for all retirements in year= RC <i>Note: this is the sum of the calculations in h. for all the retirements in the year</i>  Pension payments in year = PMTS	£100,000 £140,000  £50,000 £3,000
i.	Interest on provision at start of year  INT = IR x PROV1 = 5.68% x £100,000	£5,680
j.	Actuarial gains (or losses) over the year  AG = (PROV1 + INT + RC – PMTS) – PROV2 = (100,000 + 5,680 + 50,000 – 3,000) – 140,000	£12,680
k.	Total charge to income and expenditure account  I&E = RC + INT – AG = 50,000 + 5,680 – 12,680	£43,000
l.	Check of calculation  PROV2 = PROV1 + I&E – PMTS 140,000 = 100,000 + 43,000 – 3,000 = 140,000	

### 3A – FRS 17 provision

Section 3 Paragraph	Description	Figure
b.	NIR at year end	3.50%
c.	NIR = 3.50 Sex = Male Pension Type = Married Age nearest = 52 Factor from table 1	20.38
d.	Annual enhancement = £1,000 pa Provision for this individual = £1,000 x 20.38	£20,380

### 3B – FRS 17 cost

g.	NIR at date of retirement	3.50%
h.	NIR = 3.50 Sex = Male Pension Type = Married Age nearest = 52 Factor from table 1	20.38
i.	Annual enhancement = £1,000 pa  Retirement cost (RC) for the individual = £1,000 x 20.38	£20,380

	Now assume the following:	
	Provision at start of year = PROV1	£100,000
	Provision at end of year = PROV2	£140,000
	Retirement cost for all retirements in year = RC <i>Note: this is the sum of the calculations in i. for all the retirements in the year</i>	50,000
	Pension payments in year = PMTS	3,000
<b>j.</b>	<b>FRS 17 charge to operating costs = RC</b>	<b>£50,000</b>
k.	Interest on provision at start of year  INT = IR x PROV1 = 5.68% x £100,000	£5,680
<b>l.</b>	<b>FRS 17 financing cost = INT</b>	<b>£5,680</b>

### 3C - Statement of total recognised gains and losses (STRGL)

m.	Amount to recognise in STRGL is AG where  AG = (PROV1 + INT + RC – PMTS) – PROV2 = (100,000 + 5,680 + 50,000 – 3,000) – 140,000	£12,680
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## Appendix 1

### Factors for use in provision calculations for Further Education Institutions

1% Net Interest Rate (NIR)									
	Male		Female			Male		Female	
Age	Single or spouse	Married	Single or spouse	Married	Age	Single or spouse	Married	Single or spouse	Married
50	28.67	31.75	30.70	31.77	75	11.04	14.11	13.32	14.22
51	27.96	31.07	30.02	31.10	76	10.45	13.47	12.70	13.58
52	27.25	30.38	29.33	30.41	77	9.88	12.84	12.10	12.96
53	26.54	29.69	28.64	29.73	78	9.33	12.23	11.52	12.35
54	25.82	29.00	27.95	29.03	79	8.81	11.63	10.95	11.75
55	25.10	28.30	27.24	28.34	80	8.30	11.06	10.40	11.18
56	24.37	27.59	26.54	27.63	81	7.82	10.50	9.87	10.62
57	23.65	26.88	25.83	26.93	82	7.36	9.96	9.36	10.08
58	22.91	26.17	25.12	26.22	83	6.93	9.44	8.86	9.56
59	22.18	25.45	24.40	25.50	84	6.52	8.94	8.39	9.06
60	21.44	24.73	23.69	24.78	85	6.13	8.46	7.94	8.58
61	20.70	24.01	22.97	24.06	86	5.76	8.01	7.50	8.12
62	19.96	23.28	22.25	23.34	87	5.41	7.57	7.09	7.69
63	19.23	22.55	21.53	22.61	88	5.09	7.16	6.70	7.27
64	18.49	21.82	20.81	21.89	89	4.78	6.76	6.33	6.87
65	17.77	21.10	20.09	21.17	90	4.50	6.39	5.97	6.50
66	17.04	20.37	19.38	20.44	91	4.23	6.04	5.64	6.14
67	16.33	19.65	18.67	19.73	92	3.99	5.70	5.32	5.80
68	15.62	18.93	17.97	19.01	93	3.76	5.39	5.02	5.48
69	14.93	18.22	17.28	18.30	94	3.54	5.09	4.74	5.19
70	14.24	17.51	16.59	17.60	95	3.34	4.82	4.47	4.90
71	13.57	16.81	15.91	16.90	96	3.16	4.55	4.23	4.64
72	12.91	16.12	15.25	16.22	97	2.99	4.31	3.99	4.39
73	12.27	15.44	14.59	15.54	98	2.83	4.08	3.77	4.16
74	11.64	14.77	13.95	14.87	99	2.69	3.87	3.57	3.94
					100	2.56	3.67	3.38	3.74

## Factors for use in provision calculations for Further Education Institutions

1.5% Net Interest Rate (NIR)									
Age	Male		Female		Age	Male		Female	
	Single or spouse	Married	Single or spouse	Married		Single or spouse	Married	Single or spouse	Married
50	26.41	28.98	28.10	29.02	75	10.64	13.50	12.76	13.61
51	25.81	28.42	27.53	28.46	76	10.09	12.91	12.19	13.02
52	25.20	27.85	26.95	27.89	77	9.56	12.32	11.63	12.44
53	24.59	27.27	26.36	27.31	78	9.04	11.76	11.08	11.88
54	23.97	26.68	25.77	26.73	79	8.54	11.20	10.55	11.32
55	23.35	26.09	25.17	26.13	80	8.07	10.66	10.04	10.78
56	22.72	25.49	24.57	25.54	81	7.61	10.14	9.54	10.26
57	22.08	24.88	23.96	24.93	82	7.17	9.63	9.06	9.75
58	21.44	24.27	23.34	24.32	83	6.76	9.14	8.59	9.27
59	20.79	23.65	22.72	23.70	84	6.36	8.67	8.15	8.79
60	20.14	23.02	22.09	23.08	85	5.99	8.22	7.72	8.34
61	19.48	22.39	21.46	22.45	86	5.64	7.79	7.30	7.90
62	18.82	21.75	20.83	21.82	87	5.30	7.37	6.91	7.49
63	18.16	21.11	20.19	21.18	88	4.99	6.98	6.54	7.09
64	17.50	20.47	19.55	20.54	89	4.70	6.60	6.18	6.71
65	16.84	19.82	18.92	19.90	90	4.42	6.24	5.84	6.35
66	16.19	19.18	18.28	19.26	91	4.16	5.90	5.52	6.01
67	15.54	18.53	17.65	18.62	92	3.92	5.58	5.21	5.68
68	14.89	17.89	17.01	17.98	93	3.70	5.28	4.92	5.38
69	14.25	17.24	16.38	17.34	94	3.49	5.00	4.65	5.09
70	13.62	16.60	15.76	16.70	95	3.30	4.73	4.40	4.82
71	13.00	15.97	15.14	16.07	96	3.12	4.48	4.16	4.56
72	12.39	15.34	14.53	15.44	97	2.95	4.24	3.93	4.32
73	11.79	14.72	13.93	14.83	98	2.80	4.02	3.72	4.09
74	11.21	14.10	13.34	14.21	99	2.66	3.81	3.52	3.88
					100	2.53	3.62	3.33	3.69

## Factors for use in provision calculations for Further Education Institutions

2% Net Interest Rate (NIR)									
	Male		Female			Male		Female	
Age	Single or spouse	Married	Single or spouse	Married	Age	Single or spouse	Married	Single or spouse	Married
50	24.41	26.57	25.82	26.61	75	10.27	12.93	12.24	13.05
51	23.90	26.10	25.34	26.14	76	9.76	12.38	11.71	12.50
52	23.38	25.62	24.85	25.67	77	9.25	11.84	11.19	11.96
53	22.85	25.13	24.35	25.18	78	8.77	11.31	10.68	11.43
54	22.32	24.64	23.85	24.68	79	8.29	10.79	10.18	10.92
55	21.78	24.13	23.33	24.18	80	7.84	10.29	9.70	10.41
56	21.23	23.62	22.81	23.67	81	7.41	9.80	9.23	9.92
57	20.67	23.10	22.29	23.15	82	6.99	9.32	8.78	9.45
58	20.10	22.57	21.75	22.63	83	6.59	8.86	8.34	8.99
59	19.53	22.03	21.21	22.09	84	6.22	8.42	7.91	8.54
60	18.95	21.48	20.66	21.55	85	5.86	7.99	7.51	8.11
61	18.37	20.93	20.11	21.00	86	5.52	7.58	7.11	7.70
62	17.78	20.37	19.55	20.44	87	5.20	7.18	6.74	7.30
63	17.18	19.81	18.98	19.88	88	4.89	6.80	6.38	6.92
64	16.59	19.24	18.42	19.32	89	4.61	6.44	6.04	6.56
65	15.99	18.67	17.85	18.75	90	4.34	6.10	5.71	6.21
66	15.40	18.09	17.28	18.18	91	4.10	5.78	5.40	5.88
67	14.80	17.51	16.70	17.60	92	3.86	5.47	5.11	5.57
68	14.21	16.93	16.13	17.03	93	3.65	5.18	4.83	5.28
69	13.63	16.35	15.56	16.45	94	3.44	4.90	4.57	5.00
70	13.05	15.77	15.00	15.87	95	3.26	4.64	4.32	4.73
71	12.47	15.19	14.43	15.30	96	3.08	4.40	4.09	4.49
72	11.91	14.62	13.87	14.73	97	2.92	4.17	3.87	4.25
73	11.35	14.05	13.32	14.16	98	2.77	3.96	3.66	4.03
74	10.81	13.49	12.77	13.60	99	2.63	3.76	3.47	3.83
					100	2.50	3.57	3.29	3.64

## Factors for use in provision calculations for Further Education Institutions

2.5% Net Interest Rate (NIR)									
Age	Male		Female		Age	Male		Female	
	Single or spouse	Married	Single or spouse	Married		Single or spouse	Married	Single or spouse	Married
50	22.63	24.46	23.81	24.50	75	9.93	12.40	11.75	12.52
51	22.20	24.06	23.41	24.11	76	9.44	11.89	11.26	12.01
52	21.75	23.66	22.99	23.71	77	8.96	11.39	10.78	11.51
53	21.30	23.25	22.57	23.29	78	8.50	10.90	10.30	11.02
54	20.84	22.82	22.14	22.88	79	8.06	10.41	9.84	10.54
55	20.37	22.39	21.70	22.45	80	7.63	9.94	9.38	10.07
56	19.88	21.95	21.25	22.01	81	7.21	9.48	8.94	9.61
57	19.39	21.50	20.79	21.56	82	6.82	9.03	8.51	9.16
58	18.90	21.05	20.33	21.11	83	6.44	8.59	8.10	8.72
59	18.39	20.58	19.85	20.64	84	6.08	8.17	7.69	8.30
60	17.87	20.10	19.37	20.17	85	5.73	7.77	7.31	7.89
61	17.35	19.62	18.88	19.69	86	5.41	7.38	6.93	7.50
62	16.82	19.13	18.39	19.20	87	5.10	7.00	6.57	7.12
63	16.29	18.63	17.89	18.71	88	4.80	6.64	6.23	6.76
64	15.75	18.13	17.38	18.21	89	4.53	6.30	5.90	6.41
65	15.21	17.61	16.87	17.70	90	4.27	5.97	5.59	6.08
66	14.67	17.10	16.36	17.19	91	4.03	5.66	5.29	5.76
67	14.13	16.58	15.84	16.67	92	3.80	5.36	5.01	5.46
68	13.59	16.06	15.33	16.15	93	3.59	5.08	4.74	5.18
69	13.05	15.53	14.81	15.63	94	3.40	4.81	4.49	4.91
70	12.51	15.01	14.29	15.11	95	3.21	4.56	4.25	4.65
71	11.98	14.48	13.78	14.59	96	3.04	4.33	4.02	4.41
72	11.45	13.96	13.26	14.07	97	2.88	4.11	3.81	4.19
73	10.93	13.43	12.75	13.55	98	2.74	3.90	3.61	3.97
74	10.42	12.91	12.25	13.03	99	2.60	3.70	3.42	3.77
					100	2.48	3.52	3.25	3.59

## Factors for use in provision calculations for Further Education Institutions

3% Net Interest Rate (NIR)									
Age	Male		Female		Age	Male		Female	
	Single or spouse	Married	Single or spouse	Married		Single or spouse	Married	Single or spouse	Married
50	21.06	22.60	22.04	22.64	75	9.60	11.90	11.30	12.03
51	20.68	22.26	21.70	22.31	76	9.14	11.43	10.84	11.56
52	20.30	21.92	21.35	21.97	77	8.69	10.97	10.39	11.09
53	19.91	21.57	20.99	21.62	78	8.26	10.51	9.94	10.63
54	19.51	21.21	20.62	21.27	79	7.83	10.05	9.51	10.18
55	19.09	20.84	20.24	20.90	80	7.43	9.61	9.08	9.74
56	18.67	20.47	19.85	20.53	81	7.03	9.18	8.67	9.31
57	18.24	20.08	19.45	20.14	82	6.65	8.75	8.26	8.88
58	17.80	19.68	19.05	19.75	83	6.29	8.34	7.87	8.47
59	17.35	19.28	18.63	19.34	84	5.94	7.94	7.48	8.07
60	16.89	18.86	18.21	18.93	85	5.61	7.56	7.12	7.68
61	16.42	18.44	17.77	18.51	86	5.30	7.18	6.76	7.31
62	15.95	18.00	17.34	18.08	87	5.00	6.83	6.42	6.95
63	15.47	17.56	16.89	17.64	88	4.72	6.48	6.09	6.60
64	14.98	17.11	16.44	17.19	89	4.45	6.15	5.77	6.27
65	14.49	16.66	15.98	16.74	90	4.20	5.84	5.47	5.95
66	14.00	16.19	15.52	16.28	91	3.97	5.54	5.19	5.65
67	13.50	15.73	15.05	15.82	92	3.75	5.25	4.91	5.36
68	13.00	15.25	14.58	15.35	93	3.54	4.98	4.66	5.08
69	12.50	14.78	14.11	14.88	94	3.35	4.73	4.41	4.82
70	12.01	14.30	13.64	14.41	95	3.17	4.48	4.18	4.58
71	11.52	13.82	13.17	13.93	96	3.01	4.26	3.96	4.34
72	11.03	13.34	12.70	13.45	97	2.85	4.04	3.75	4.12
73	10.54	12.86	12.23	12.97	98	2.71	3.84	3.56	3.92
74	10.07	12.38	11.76	12.50	99	2.58	3.65	3.38	3.72
					100	2.45	3.47	3.20	3.54

## Factors for use in provision calculations for Further Education Institutions

3.5% Net Interest Rate (NIR)									
Age	Male		Female		Age	Male		Female	
	Single or spouse	Married	Single or spouse	Married		Single or spouse	Married	Single or spouse	Married
50	19.65	20.95	20.47	20.99	75	9.29	11.44	10.87	11.56
51	19.33	20.67	20.18	20.72	76	8.86	11.00	10.45	11.13
52	19.00	20.38	19.88	20.43	77	8.43	10.57	10.02	10.70
53	18.66	20.09	19.57	20.14	78	8.02	10.14	9.61	10.27
54	18.31	19.78	19.25	19.83	79	7.62	9.72	9.20	9.85
55	17.95	19.46	18.93	19.52	80	7.23	9.30	8.80	9.43
56	17.58	19.14	18.59	19.19	81	6.86	8.89	8.41	9.02
57	17.20	18.80	18.25	18.86	82	6.49	8.49	8.02	8.62
58	16.81	18.46	17.89	18.52	83	6.15	8.10	7.65	8.23
59	16.40	18.10	17.53	18.17	84	5.81	7.72	7.29	7.85
60	15.99	17.74	17.15	17.81	85	5.50	7.36	6.93	7.48
61	15.58	17.36	16.77	17.43	86	5.19	7.00	6.59	7.13
62	15.15	16.98	16.38	17.06	87	4.91	6.66	6.27	6.78
63	14.71	16.59	15.98	16.67	88	4.63	6.33	5.95	6.45
64	14.27	16.19	15.57	16.27	89	4.38	6.02	5.65	6.13
65	13.82	15.78	15.16	15.87	90	4.13	5.71	5.36	5.83
66	13.37	15.36	14.75	15.46	91	3.91	5.43	5.09	5.53
67	12.92	14.94	14.32	15.04	92	3.69	5.15	4.82	5.26
68	12.46	14.51	13.90	14.61	93	3.49	4.89	4.57	4.99
69	12.00	14.08	13.47	14.19	94	3.31	4.64	4.34	4.74
70	11.54	13.65	13.04	13.75	95	3.13	4.41	4.11	4.50
71	11.08	13.21	12.60	13.32	96	2.97	4.19	3.90	4.27
72	10.63	12.77	12.17	12.88	97	2.82	3.98	3.70	4.06
73	10.18	12.32	11.73	12.44	98	2.68	3.78	3.51	3.86
74	9.73	11.88	11.30	12.00	99	2.55	3.60	3.33	3.67
					100	2.43	3.43	3.16	3.49



## Factors for use in provision calculations for Further Education Institutions

4% Net Interest Rate (NIR)									
Age	Male		Female		Age	Male		Female	
	Single or spouse	Married	Single or spouse	Married		Single or spouse	Married	Single or spouse	Married
50	18.38	19.49	19.08	19.53	75	9.00	11.01	10.47	11.13
51	18.11	19.26	18.83	19.30	76	8.59	10.60	10.08	10.73
52	17.82	19.01	18.58	19.06	77	8.19	10.20	9.68	10.32
53	17.53	18.76	18.31	18.81	78	7.80	9.80	9.29	9.92
54	17.22	18.49	18.04	18.55	79	7.42	9.40	8.91	9.53
55	16.91	18.22	17.75	18.28	80	7.05	9.01	8.53	9.14
56	16.58	17.94	17.46	18.00	81	6.69	8.62	8.16	8.75
57	16.24	17.65	17.16	17.71	82	6.34	8.24	7.80	8.37
58	15.90	17.35	16.85	17.41	83	6.01	7.88	7.44	8.00
59	15.54	17.04	16.52	17.10	84	5.69	7.52	7.10	7.64
60	15.17	16.72	16.19	16.79	85	5.38	7.17	6.76	7.29
61	14.80	16.39	15.85	16.46	86	5.09	6.83	6.44	6.95
62	14.41	16.05	15.50	16.12	87	4.82	6.50	6.12	6.62
63	14.02	15.70	15.15	15.78	88	4.55	6.19	5.82	6.31
64	13.62	15.34	14.78	15.42	89	4.30	5.89	5.53	6.00
65	13.21	14.98	14.41	15.06	90	4.07	5.60	5.25	5.71
66	12.79	14.60	14.04	14.69	91	3.85	5.32	4.99	5.43
67	12.38	14.22	13.65	14.32	92	3.64	5.05	4.73	5.16
68	11.95	13.83	13.26	13.93	93	3.45	4.80	4.49	4.90
69	11.53	13.44	12.87	13.54	94	3.26	4.56	4.26	4.66
70	11.10	13.04	12.48	13.15	95	3.09	4.34	4.05	4.43
71	10.68	12.64	12.08	12.75	96	2.93	4.12	3.84	4.21
72	10.25	12.23	11.68	12.35	97	2.79	3.92	3.64	4.00
73	9.83	11.83	11.28	11.95	98	2.65	3.73	3.46	3.81
74	9.41	11.42	10.87	11.54	99	2.52	3.55	3.29	3.62
					100	2.41	3.38	3.12	3.45

## Factors for use in provision calculations for Further Education Institutions

4.5% Net Interest Rate (NIR)									
Age	Male		Female		Age	Male		Female	
	Single or spouse	Married	Single or spouse	Married		Single or spouse	Married	Single or spouse	Married
50	17.25	18.19	17.84	18.23	75	8.72	10.61	10.10	10.73
51	17.01	17.99	17.63	18.04	76	8.34	10.23	9.73	10.35
52	16.76	17.79	17.41	17.83	77	7.96	9.85	9.36	9.97
53	16.51	17.57	17.18	17.62	78	7.59	9.47	9.00	9.60
54	16.24	17.34	16.94	17.39	79	7.23	9.10	8.63	9.23
55	15.96	17.11	16.69	17.16	80	6.87	8.73	8.28	8.86
56	15.67	16.86	16.44	16.92	81	6.53	8.37	7.93	8.50
57	15.38	16.61	16.17	16.67	82	6.20	8.01	7.58	8.14
58	15.07	16.35	15.90	16.41	83	5.88	7.66	7.24	7.79
59	14.75	16.08	15.61	16.14	84	5.57	7.32	6.92	7.45
60	14.42	15.79	15.32	15.86	85	5.28	6.99	6.60	7.11
61	14.08	15.50	15.02	15.57	86	5.00	6.66	6.29	6.79
62	13.73	15.20	14.71	15.27	87	4.73	6.35	5.99	6.47
63	13.37	14.89	14.39	14.97	88	4.47	6.05	5.70	6.17
64	13.01	14.57	14.06	14.65	89	4.23	5.76	5.42	5.88
65	12.64	14.24	13.72	14.33	90	4.00	5.48	5.15	5.59
66	12.26	13.90	13.38	13.99	91	3.79	5.21	4.89	5.32
67	11.87	13.56	13.03	13.65	92	3.59	4.96	4.65	5.06
68	11.48	13.20	12.68	13.30	93	3.40	4.72	4.42	4.82
69	11.09	12.85	12.32	12.95	94	3.22	4.49	4.19	4.58
70	10.69	12.48	11.96	12.59	95	3.06	4.27	3.98	4.36
71	10.30	12.11	11.59	12.22	96	2.90	4.06	3.78	4.14
72	9.90	11.74	11.22	11.85	97	2.76	3.86	3.59	3.94
73	9.50	11.36	10.85	11.48	98	2.62	3.68	3.41	3.75
74	9.11	10.99	10.47	11.11	99	2.50	3.50	3.24	3.57
					100	2.38	3.34	3.08	3.41

## Factors for use in provision calculations for Further Education Institutions

5% Net Interest Rate (NIR)									
Age	Male		Female		Age	Male		Female	
	Single or spouse	Married	Single or spouse	Married		Single or spouse	Married	Single or spouse	Married
50	16.23	17.04	16.73	17.07	75	8.46	10.23	9.75	10.35
51	16.02	16.87	16.54	16.91	76	8.10	9.87	9.41	10.00
52	15.81	16.69	16.35	16.73	77	7.74	9.52	9.06	9.64
53	15.58	16.50	16.16	16.55	78	7.39	9.17	8.71	9.29
54	15.35	16.31	15.95	16.35	79	7.04	8.82	8.37	8.94
55	15.10	16.10	15.74	16.15	80	6.70	8.47	8.04	8.60
56	14.85	15.89	15.51	15.94	81	6.38	8.12	7.70	8.25
57	14.58	15.67	15.28	15.73	82	6.06	7.79	7.38	7.92
58	14.31	15.44	15.04	15.50	83	5.75	7.46	7.06	7.58
59	14.02	15.20	14.79	15.26	84	5.46	7.13	6.74	7.26
60	13.73	14.95	14.52	15.02	85	5.17	6.81	6.44	6.94
61	13.42	14.69	14.25	14.76	86	4.90	6.51	6.14	6.63
62	13.10	14.42	13.98	14.50	87	4.64	6.21	5.86	6.33
63	12.78	14.14	13.69	14.22	88	4.40	5.92	5.58	6.04
64	12.45	13.86	13.39	13.94	89	4.16	5.64	5.31	5.75
65	12.10	13.56	13.09	13.65	90	3.94	5.37	5.05	5.48
66	11.76	13.26	12.78	13.35	91	3.73	5.12	4.80	5.22
67	11.40	12.94	12.46	13.04	92	3.54	4.87	4.57	4.97
68	11.04	12.62	12.14	12.72	93	3.35	4.63	4.34	4.73
69	10.68	12.30	11.81	12.40	94	3.18	4.41	4.13	4.51
70	10.31	11.96	11.47	12.07	95	3.02	4.20	3.92	4.29
71	9.94	11.62	11.13	11.73	96	2.87	4.00	3.73	4.08
72	9.57	11.28	10.79	11.39	97	2.73	3.81	3.54	3.89
73	9.20	10.93	10.45	11.05	98	2.59	3.63	3.37	3.70
74	8.83	10.58	10.10	10.70	99	2.47	3.46	3.20	3.53
					100	2.36	3.30	3.05	3.36

## Factors for use in provision calculations for Further Education Institutions

5.5% Net Interest Rate (NIR)									
Age	Male		Female		Age	Male		Female	
	Single or spouse	Married	Single or spouse	Married		Single or spouse	Married	Single or spouse	Married
50	15.31	16.00	15.73	16.03	75	8.21	9.87	9.42	9.99
51	15.13	15.85	15.57	15.89	76	7.87	9.54	9.10	9.66
52	14.94	15.70	15.41	15.74	77	7.53	9.21	8.77	9.33
53	14.74	15.54	15.24	15.58	78	7.19	8.88	8.45	9.00
54	14.53	15.37	15.06	15.42	79	6.87	8.55	8.13	8.68
55	14.32	15.19	14.87	15.24	80	6.54	8.22	7.81	8.35
56	14.09	15.01	14.67	15.06	81	6.23	7.90	7.49	8.02
57	13.86	14.82	14.47	14.87	82	5.93	7.58	7.18	7.70
58	13.61	14.61	14.25	14.67	83	5.63	7.26	6.88	7.39
59	13.36	14.40	14.03	14.46	84	5.35	6.95	6.58	7.08
60	13.09	14.18	13.80	14.25	85	5.08	6.65	6.29	6.77
61	12.81	13.95	13.56	14.02	86	4.81	6.36	6.01	6.48
62	12.52	13.71	13.30	13.78	87	4.56	6.07	5.73	6.19
63	12.23	13.46	13.05	13.54	88	4.33	5.79	5.46	5.91
64	11.92	13.20	12.78	13.28	89	4.10	5.53	5.20	5.64
65	11.61	12.94	12.50	13.02	90	3.88	5.27	4.96	5.38
66	11.29	12.66	12.22	12.75	91	3.68	5.02	4.72	5.13
67	10.96	12.38	11.93	12.47	92	3.49	4.78	4.49	4.89
68	10.63	12.08	11.63	12.18	93	3.31	4.55	4.27	4.65
69	10.29	11.78	11.33	11.88	94	3.14	4.34	4.06	4.43
70	9.95	11.48	11.02	11.58	95	2.98	4.13	3.86	4.22
71	9.60	11.17	10.71	11.27	96	2.83	3.94	3.67	4.02
72	9.26	10.85	10.39	10.96	97	2.70	3.75	3.49	3.83
73	8.91	10.53	10.07	10.64	98	2.57	3.58	3.32	3.65
74	8.56	10.20	9.75	10.32	99	2.45	3.41	3.16	3.48
					100	2.34	3.25	3.01	3.32

## Factors for use in provision calculations for Further Education Institutions

6% Net Interest Rate (NIR)									
Age	Male		Female		Age	Male		Female	
	Single or spouse	Married	Single or spouse	Married		Single or spouse	Married	Single or spouse	Married
50	14.47	15.06	14.83	15.10	75	7.98	9.54	9.11	9.66
51	14.31	14.94	14.69	14.97	76	7.65	9.23	8.81	9.35
52	14.15	14.81	14.55	14.85	77	7.33	8.92	8.50	9.04
53	13.97	14.67	14.40	14.71	78	7.01	8.61	8.20	8.73
54	13.79	14.52	14.24	14.57	79	6.70	8.29	7.89	8.42
55	13.60	14.37	14.08	14.42	80	6.39	7.98	7.59	8.11
56	13.40	14.21	13.91	14.26	81	6.09	7.68	7.29	7.81
57	13.19	14.04	13.73	14.09	82	5.80	7.37	7.00	7.50
58	12.97	13.86	13.54	13.92	83	5.52	7.07	6.71	7.20
59	12.74	13.67	13.34	13.73	84	5.24	6.78	6.42	6.91
60	12.50	13.48	13.13	13.54	85	4.98	6.49	6.14	6.62
61	12.25	13.27	12.91	13.34	86	4.73	6.21	5.87	6.33
62	11.99	13.06	12.69	13.13	87	4.49	5.94	5.61	6.06
63	11.72	12.83	12.45	12.91	88	4.25	5.67	5.35	5.79
64	11.44	12.60	12.21	12.68	89	4.04	5.41	5.10	5.53
65	11.15	12.36	11.96	12.44	90	3.83	5.17	4.86	5.28
66	10.86	12.11	11.70	12.19	91	3.63	4.93	4.63	5.03
67	10.55	11.85	11.44	11.94	92	3.44	4.70	4.41	4.80
68	10.25	11.58	11.17	11.68	93	3.27	4.48	4.20	4.58
69	9.93	11.31	10.89	11.41	94	3.10	4.27	4.00	4.36
70	9.61	11.03	10.60	11.13	95	2.95	4.07	3.80	4.16
71	9.29	10.74	10.31	10.85	96	2.80	3.88	3.62	3.96
72	8.96	10.45	10.02	10.56	97	2.67	3.70	3.45	3.78
73	8.63	10.15	9.72	10.26	98	2.54	3.53	3.28	3.60
74	8.31	9.84	9.42	9.96	99	2.43	3.37	3.12	3.44
					100	2.32	3.21	2.97	3.28

### **Discussion on assumptions and methods used**

According to FRS 17: "The assumptions underlying the valuation should be mutually compatible and lead to the best estimate of the future cash flows that will arise under the scheme liabilities. The assumptions are ultimately the responsibility of the Institution but should be set upon advice given by an actuary. Any assumptions that are affected by economic conditions (financial assumptions) should reflect market expectations at the balance sheet date."

As FRS 17 requires market expectations at the balance sheet date to be taken into account, figures should be calculated on an annual basis. For simplicity, the same assumptions can be used to calculate the SSAP 24 figures given that SSAP 24 is shortly being phased out. For accounting periods ending on or after 22 June 2003, SSAP 24 figures will not longer be required.

The derivation of the proposed assumptions is discussed below. However, the Institution should be satisfied that they are happy with the proposals.

#### **Interest rate**

FRS 17 requires liabilities to be discounted using the current rate of return on a high quality corporate bond of equivalent currency and term to the scheme liabilities. For practical reasons, the Corporate Bond Yield is taken as the yield on fixed interest government bonds of ten year terms plus a margin of 1%. The 1% margin represents the expected outperformance of government bonds over corporate bonds. This margin should be reviewed from time to time to check it is still reasonable.

#### **Pension increases**

As the enhanced pensions increase with inflation, the assumption is based on market expectations of inflation at the balance sheet date. A long term estimate of inflation can be obtained by comparing yields on index-linked and fixed interest government bonds at the relevant accounting date.

#### **Mortality rate**

It is necessary to make an assumption as to the life expectancy of the pensioner and therefore for how long the pension will be paid. Standard tables have been used that have been produced to allow for recent improvements in mortality. These tables do not specifically allow for experience in the education sector. As time goes on, it may be appropriate to review the use of these tables and update the assumptions if life expectancies in the UK change significantly. The current tables are PMA92 (C=2020) for males and PFA92 (C=2020) for females.

#### **Marital status**

Separate factors have been provided to use for individuals who were married at retirement and for those who were not. No allowance has been made for the possibility of an employee marrying after the pension has commenced, or for a

pension to be payable to a dependant other than a spouse. This approximation should not have a significant effect on the figures disclosed.

**Pension guarantee**

The factors make no allowance for the pension being guaranteed. This is to avoid the need for separate factors for spouses' pensions in payment and for reviewing the provisions. Consequently the cost of retirement will be slightly understated. However, as the difference is likely to be no more than 5%, it was decided that such additional complexity would not be warranted.

**Actuarial gains and losses**

Under FRS17, actuarial gains and losses are immediately recognised via the STRGL to the Balance Sheet. SSAP24 is less clear on when they should be recognised. In order to be consistent with the approach of immediately recognising the cost of pensions, the method used in Section 2 recognises actuarial gains and losses immediately.

## Appendix 3

UK BONDS – FTSE Actuaries Government Securities																	
Price indices		Wed	Day's	Accrued	xd adj	Total	Yield	Duration	%	Index-linked	Wed	Day's	Accrued	xd adj	Total	%	
UK Gilts		Mar	chge	interest	ytd	Return		Years	weight		Mar	change	Interest	ytd	return	weigh	
		20	%								20	%				t	
1	Up to 5 years (13)	112.73	-0.04	2.05	0.75	1401.15	5.17	2.68	37.71	1	Up to 5 years (3)	240.20	+0.02	1.86	0.96	1354.07	17.26
2	5-10 years (9)	155.84	-0.17	2.33	1.53	1487.15	5.30	6.05	25.89	2	Over 5 years (7)	256.30	-0.03	1.25	2.47	1497.24	82.74
3	10-15 years (2)	165.60	-0.27	1.55	4.23	1580.79	5.28	8.63	7.50	3	5-15 years (4)	241.54	+0.00	0.89	2.58	1405.12	49.64
4	5-15 years (11)	158.77	-0.19	2.18	2.13	1513.19	5.30	6.63	33.39	4	Over 15 years (3)	270.18	-0.08	1.81	2.19	1581.70	33.11
5	Over 15 years (5)	206.61	-0.45	2.58	1.45	1662.76	5.11	12.71	28.22	5	All stocks (10)	253.44	-0.02	1.36	2.19	1482.95	100.00
6	Irredeemables (2)	283.19	-0.51	3.72	1.14	1910.90	5.30	19.12	0.68								
7	All stocks (31)	150.84	-0.21	2.27	1.36	1500.56	5.18	7.29	100.00								

  

Yield indices	Mar 20	Mar 19	Yr ago	FT fixed indices	Mar 20	Mar 19	Yr ago	Real yield	..... Inflation 0% .....				..... Inflation 5% .....			
									Mar 20	Dur yrs	Mar 19	Yr ago	Mar 20	Dur yrs	Mar 19	Yr ago
5 yrs	5.31	5.29	4.84					Up to 5 yrs	3.03	2.48	3.03	3.57	1.89	2.50	1.88	2.37
10 yrs	5.30	5.27	4.68					Over 5 yrs	2.54	12.39	2.53	2.26	2.30	12.49	2.30	2.03
15 yrs	5.21	5.18	4.56	Govt Secs (UK)	100.82	101.06	106.98	5-15 yrs	2.68	9.77	2.68	2.52	2.39	9.81	2.38	2.18
20yrs	5.15	5.11	4.50	Fixed Interest	132.52	135.85	142.32	Over 15 yrs	2.40	16.52	2.40	2.14	2.23	16.61	2.23	1.96
Irred	5.30	5.27	4.66					ys								
								All stocks	2.56	10.66	2.55	2.29	2.29	10.79	2.28	2.03