

## Staff Paper

---

Project	<b>Insurance contracts</b>
Topic	<b>Illustrating the use of OCI for changes in the insurance contract liability arising from changes in the discount rate</b>

---

### What is the paper about?

1. In agenda paper 6B, the staff proposed that insurers should ‘lock in’ the discount rate at inception in profit or loss, and present in other comprehensive income (OCI) the difference between the result of using that locked-in rate and the result of using the current rate used to measure the liability. In other words, the unwinding of the ‘locked-in’ discount rate would be shown in profit or loss, with the effect of interest rate movements between the current and the ‘locked-in’ discount rate shown in OCI. This would be a means of reducing accounting mismatches arising when assets backing insurance contract liabilities are measured at amortised cost in accordance with IFRS 9 *Financial Instruments*.
2. This paper provides an example to illustrate the effects of the proposal. It does not ask for any decisions.

---

This paper has been prepared by the technical staff of the IFRS Foundation and the FASB for discussion at a public meeting of the FASB or the IASB.

The views expressed in this paper are those of the staff preparing the paper. They do not purport to represent the views of any individual members of the FASB or the IASB.

Comments made in relation to the application of U.S. GAAP or IFRSs do not purport to be acceptable or unacceptable application of U.S. GAAP or IFRSs.

The tentative decisions made by the FASB or the IASB at public meetings are reported in FASB *Action Alert* or in IASB *Update*. Official pronouncements of the FASB or the IASB are published only after each board has completed its full due process, including appropriate public consultation and formal voting procedures.

### **Effects illustrated by this example**

3. The example illustrates that:
  - (a) accounting mismatches are reduced when a locked-in discount rate is used. As a result, less volatility is reported in profit or loss.
  - (b) all effects of interest rate changes accounted for in OCI will self-reverse over time. The locking of the discount rate at inception would therefore not necessarily introduce significant calculation and tracking complexities.
  - (c) recycling need not be considered.

### **Example facts and assumptions**

4. The example considers a portfolio of 4-year insurance contracts for which the contract liability is measured using the building blocks (as proposed by the ED) and the backing assets are measured at amortised cost. Interest rates change over the duration of the contracts. The example illustrates the amounts recognised in the financial statements over the duration of the contracts in four situations:
  - (a) No locking of the discount rate, and no changes in cash flow assumptions (Calculation A)
  - (b) Locking the discount rate at the inception of the insurance contract and no changes in cash flow assumptions (Calculation B)
  - (c) No locking of the discount rate, with a change in cash flow assumptions at the end of the third year (Calculation C)
  - (d) Locking the discount rate at the inception of the insurance contract with a change in cash flow assumptions at the end of the third year (Calculation D)

5. The facts and initial assumptions are as follows:

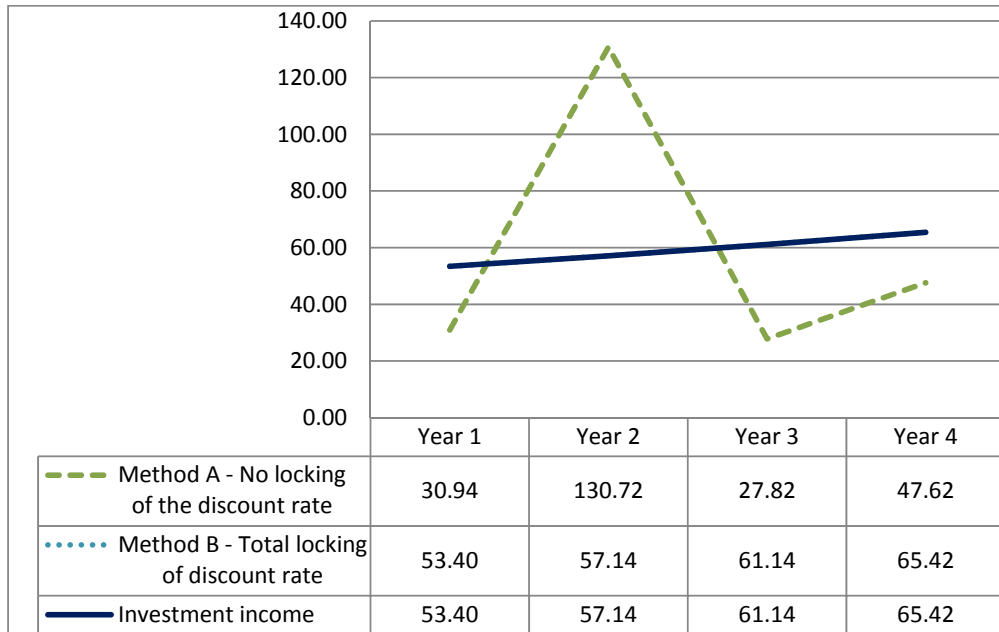
- (a) Type of contract                      Term life insurance, expecting that 90% of policyholders will survive 4 years (and receive no maturity benefit). As a simplifying assumption benefits for all policyholders who die will be paid on 1 January 20X5.
- (b) Duration of contract                4 years
- (c) Inception date of contract        1 January 20X1
- (d) Accounting period                  1 January to 31 December
- (e) Total sum assured                  CU 1,000 (NPV of CU 762.90 on 1 Jan 20X1) in aggregate for those policyholders who die.
- (f) Total premium charged            CU 762.90
- (g) Assets are measured at amortised cost, in accordance with IFRS 9.
- (h) Applicable interest rates:
  - 1 January 20X1:                      7%
  - 31 December 20X1:                 8%
  - 31 December 20X2:                 4%
  - 31 December 20X3:                 5%
  - 31 December 20X4:                 3%
- (i) The effective interest rate (used in accreting interest on the asset carried at amortised cost) and the discount rate (used in discounting the insurance contract liability) are assumed to be the same. It is assumed that the insurer invested in zero coupon bonds, matching the duration of the liabilities. Market risk premium for credit was assumed to be negligible.
- (j) The risk margin was assumed to be negligible.
- (k) The insurer charged policyholders an amount equal to expected cash outflows, resulting in a residual margin of nil.

6. In calculations A and B, estimates of the expected claims do not change - they remain at CU1,000 over the duration of the contracts. In calculation C, estimates of the expected claims change at the end of the third year of the contracts. The life expectancy of policyholders increases (a change in expected longevity) on 31 December 20X3 such that expected payments on 1 January 20X5 reduce to CU 600 (a decrease of CU 400, with a present value at 31 December 20X3 of CU 380.95 at a discount rate of 5%). The residual margin (of CU 0) is, in accordance with the proposals in the ED, not unlocked. The change in assumption is recognised in profit or loss in the year the estimate changes (ie 20X3).
7. The exact same assumptions are of relevance to calculation D (change in assumptions) as is the case for calculation C, except that the effect of the change in estimates at 31 December 20X3 is CU 373.83 (CU 400 discounted at 7%).
8. The profit or loss; statement of comprehensive income; statement of changes in equity and statement of financial position are shown, for each of the calculations, are in paragraphs 11 to 13.
9. The detailed calculations can be found in Appendix A to D. The effective interest calculation for the assets backing the insurance contract liability can be found in Appendix E.

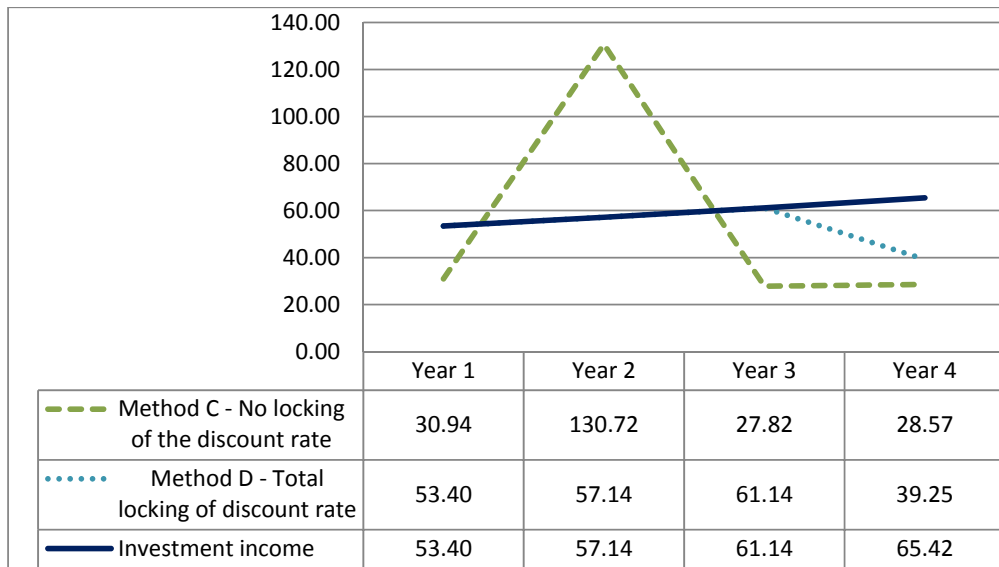
### **Overview of differences on interest expense recognised as a component of profit or loss**

10. The graphs below represent the effect of a locked and unlocked discount rate on the interest expense recognised (including the effect of changes in interest rates) for the insurance contracts liability, for both instances where the assumptions are unchanged (first graph) and changed (second graph).

**No change in the assumptions (Calculations A and B)**



**Change in the assumptions in year 3 (calculations C and D)**



11. Calculation A – No locking of discount rate and no changes in assumptions:

**Profit or loss**

	Year 1	Year 2	Year 3	Year 4	Total
Changes in insurance contract liabilities, excluding changes in discount rate	0.00	0.00	0.00	0.00	0.00
<b>Underwriting margin</b>	0.00	0.00	0.00	0.00	0.00
Investment income	53.40	57.14	61.14	65.42	237.10
Interest expense on insurance liability, comprising of:	30.94	130.72	27.82	47.62	237.10
<i>Effect of accreting interest at current rate</i>	53.40	63.51	36.98	47.62	201.51
<i>Effect of the change in discount rates</i>	-22.47	67.22	-9.16	0.00	35.59
Net interest and investment income	22.47	-73.58	33.32	17.80	0.00
<b>Profit / (loss) for the year (before tax)</b>	<b>22.47</b>	<b>-73.58</b>	<b>33.32</b>	<b>17.80</b>	<b>0.00</b>

(Interest is accreted at current rates. A possible alternative is to show interest accretion at the historic rate in which case interest accretion and the effect of the change in discount rates would be the same as in calculation B).

**Key ratios:**

<b>Investment income as a percentage of total investments</b>	6.54%	6.54%	6.54%
<b>Interest expense as a percentage of total insurance liability</b>	16.47%	3.01%	5.00%
Interest accretion as a percentage of total insurance liability	8.00%	4.00%	5.00%
Effect of the change in discount rate as a percentage of total insurance liability	8.47%	-0.99%	0.00%

**Statement of comprehensive income**

	Year 1	Year 2	Year 3	Year 4
Profit / (loss) for the year	22.47	-73.58	33.32	17.80
Other comprehensive income:				
Change in discount rate of insurance contract liability	0.00	0.00	0.00	0.00
<b>Total comprehensive income for the year</b>	<b>22.47</b>	<b>-73.58</b>	<b>33.32</b>	<b>17.80</b>

**Statement of change in equity**

	Year 1		Year 2		Year 3		Year 4	
	Other reserves	Retained earnings	Other reserves	Retained earnings	Other reserves	Retained earnings	Other reserves	Retained earnings
Opening balance	0.00	0.00	0.00	22.47	0.00	-51.12	0.00	-17.80
Movement	0.00	22.47	0.00	-73.58	0.00	33.32	0.00	17.80
<b>Total</b>	<b>0.00</b>	<b>22.47</b>	<b>0.00</b>	<b>-51.12</b>	<b>0.00</b>	<b>-17.80</b>	<b>0.00</b>	<b>0.00</b>

**Statement of financial position**

	Year 1	Year 2	Year 3	Year 4
Total investments	816.30	873.44	934.58	1,000.00
<b>Total assets</b>	<b>816.30</b>	<b>873.44</b>	<b>934.58</b>	<b>1,000.00</b>
Other reserves	0.00	0.00	0.00	0.00
Retained earnings	22.47	-51.12	-17.80	0.00
Insurance contract liability	793.83	924.56	952.38	1,000.00
<b>Total liability and equity</b>	<b>816.30</b>	<b>873.44</b>	<b>934.58</b>	<b>1,000.00</b>

12. Calculation B – Locking of discount rate at inception and no changes in assumptions:

**Profit or loss**

	Year 1	Year 2	Year 3	Year 4	Total
Changes in insurance contract liabilities, excluding changes in discount rate	0.00	0.00	0.00	0.00	0.00
<b>Underwriting margin</b>	0.00	0.00	0.00	0.00	0.00
Investment income	53.40	57.14	61.14	65.42	237.10
Interest expense on insurance liability, comprising of:	53.40	57.14	61.14	65.42	237.10
<i>Effect of accreting interest at locked in discount rate</i>	53.40	57.14	61.14	65.42	237.10
<i>Effect of the change in discount rates (accounted for in OCI)</i>	0.00	0.00	0.00	0.00	0.00
Net interest and investment income	0.00	0.00	0.00	0.00	0.00
<b>Profit / (loss) for the year (before tax)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**Key ratios:**

<b>Investment income as a percentage of total investments</b>	6.54%	6.54%	6.54%
<b>Interest expense as a percentage of total insurance liability</b>	7.20%	6.61%	6.87%
Interest accretion as a percentage of total insurance liability	7.20%	6.61%	6.87%
Effect of the change in discount rate as a percentage of total insurance liability	0.00%	0.00%	0.00%

**Statement of comprehensive income**

	Year 1	Year 2	Year 3	Year 4
Profit / (loss) for the year	0.00	0.00	0.00	0.00
Other comprehensive income:				
Change in discount rate of insurance contract liability	22.47	-73.58	33.32	17.80
<b>Total comprehensive income for the year</b>	<b>22.47</b>	<b>-73.58</b>	<b>33.32</b>	<b>17.80</b>



**Statement of change in equity**

	Year 1		Year 2		Year 3		Year 4	
	Other reserves	Retained earnings	Other reserves	Retained earnings	Other reserves	Retained earnings	Other reserves	Retained earnings
Opening balance	0.00	0.00	22.47	0.00	-51.12	0.00	-17.80	0.00
Movement	22.47	0.00	-73.58	0.00	33.32	0.00	17.80	0.00
<b>Total</b>	<b>22.47</b>	<b>0.00</b>	<b>-51.12</b>	<b>0.00</b>	<b>-17.80</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**Statement of financial position**

	Year 1	Year 2	Year 3	Year 4
Total investments	816.30	873.44	934.58	1,000.00
<b>Total assets</b>	<b>816.30</b>	<b>873.44</b>	<b>934.58</b>	<b>1,000.00</b>
Other reserves	22.47	-51.12	-17.80	0.00
Retained earnings	0.00	0.00	0.00	0.00
Insurance contract liability	793.83	924.56	952.38	1,000.00
<b>Total liability and equity</b>	<b>816.30</b>	<b>873.44</b>	<b>934.58</b>	<b>1,000.00</b>

Calculation C – No locking of discount rate and a change in estimates of expected cash flows at the end of Year 3:

**Profit or loss**

	Year 1	Year 2	Year 3	Year 4	Total
Changes in insurance contract liabilities, excluding changes in discount rate	0.00	0.00	380.95	0.00	380.95
<b>Underwriting margin</b>	0.00	0.00	380.95	0.00	380.95
Investment income	53.40	57.14	61.14	65.42	237.10
Interest expense on insurance liability, comprising of:	30.94	130.72	27.82	28.57	218.06
<i>Effect of accreting interest at current rate</i>	53.40	63.51	36.98	28.57	182.46
<i>Effect of the change in discount rates</i>	-22.47	67.22	-9.16	0.00	35.59
Net interest and investment income	22.47	-73.58	33.32	36.85	19.05
<b>Profit / (loss) for the year (before tax)</b>	<b>22.47</b>	<b>-73.58</b>	<b>414.27</b>	<b>36.85</b>	<b>400.00</b>

(Interest is accreted at current rates. A possible alternative is to show interest accretion at the historic rate in which case interest accretion and the effect of the change in discount rates would be the same as in calculation D).

**Key ratios:**

<b>Investment income as a percentage of total investments</b>	6.54%	6.54%	6.54%
<b>Interest expense as a percentage of total insurance liability</b>	16.47%	3.01%	5.00%
Interest accretion as a percentage of total insurance liability	8.00%	4.00%	5.00%
Effect of the change in discount rate as a percentage of total insurance liability	8.47%	-0.99%	0.00%

**Statement of comprehensive income**

	Year 1	Year 2	Year 3	Year 4
Profit / (loss) for the year	22.47	-73.58	414.27	36.85
Other comprehensive income:				
Change in discount rate of insurance contract liability	0.00	0.00	0.00	0.00
<b>Total comprehensive income for the year</b>	<b>22.47</b>	<b>-73.58</b>	<b>414.27</b>	<b>36.85</b>

**Statement of change in equity**

	Year 1		Year 2		Year 3		Year 4	
	Other reserves	Retained earnings	Other reserves	Retained earnings	Other reserves	Retained earnings	Other reserves	Retained earnings
Opening balance	0.00	0.00	0.00	22.47	0.00	-51.12	0.00	363.15
Movement	0.00	22.47	0.00	-73.58	0.00	414.27	0.00	36.85
<b>Total</b>	<b>0.00</b>	<b>22.47</b>	<b>0.00</b>	<b>-51.12</b>	<b>0.00</b>	<b>363.15</b>	<b>0.00</b>	<b>400.00</b>

**Statement of financial position**

	Year 1	Year 2	Year 3	Year 4
Total investments	816.30	873.44	934.58	1,000.00
<b>Total assets</b>	<b>816.30</b>	<b>873.44</b>	<b>934.58</b>	<b>1,000.00</b>
Other reserves	0.00	0.00	0.00	0.00
Retained earnings	22.47	-51.12	363.15	400.00
Insurance contract liability	793.83	924.56	571.43	600.00
<b>Total liability and equity</b>	<b>816.30</b>	<b>873.44</b>	<b>934.58</b>	<b>1,000.00</b>

13. Calculation D – Locking of discount rate at inception and a change in estimates of expected cash flows at the end of Year 3:

**Profit or loss**

	Year 1	Year 2	Year 3	Year 4	Total
Changes in insurance contract liabilities, excluding changes in discount rate	0.00	0.00	373.83	0.00	373.83
<b>Underwriting margin</b>	<b>0.00</b>	<b>0.00</b>	<b>373.83</b>	<b>0.00</b>	<b>373.83</b>
Investment income	53.40	57.14	61.14	65.42	237.10
Interest expense on insurance liability, comprising of:	53.40	57.14	61.14	39.25	210.94
<i>Effect of accreting interest at locked in discount rate</i>	<i>53.40</i>	<i>57.14</i>	<i>61.14</i>	<i>65.42</i>	<i>237.10</i>
<i>Effect of the change in discount rates (accounted for in OCI)</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
Net interest and investment income	0.00	0.00	0.00	26.17	26.17
<b>Profit / (loss) for the year (before tax)</b>	<b>0.00</b>	<b>0.00</b>	<b>373.83</b>	<b>26.17</b>	<b>400.00</b>

**Key ratios:**

<b>Investment income as a percentage of total investments</b>	6.54%	6.54%	6.54%
<b>Interest expense as a percentage of total insurance liability</b>	7.20%	6.61%	6.87%
Interest accretion as a percentage of total insurance liability	7.20%	6.61%	11.45%
Effect of the change in discount rate as a percentage of total insurance liability	0.00%	0.00%	0.00%

**Statement of comprehensive income**

	Year 1	Year 2	Year 3	Year 4
Profit / (loss) for the year	0.00	0.00	373.83	26.17
Other comprehensive income:				
Change in discount rate of insurance contract liability	22.47	-73.58	40.44	10.68
<b>Total comprehensive income for the year</b>	<b>22.47</b>	<b>-73.58</b>	<b>414.27</b>	<b>36.85</b>

**Statement of change in equity**

	Year 1		Year 2		Year 3		Year 4	
	Other reserves	Retained earnings	Other reserves	Retained earnings	Other reserves	Retained earnings	Other reserves	Retained earnings
Opening balance	0.00	0.00	22.47	0.00	-51.12	0.00	-10.68	373.83
Movement	22.47	0.00	-73.58	0.00	40.44	373.83	10.68	26.17
<b>Total</b>	<b>22.47</b>	<b>0.00</b>	<b>-51.12</b>	<b>0.00</b>	<b>-10.68</b>	<b>373.83</b>	<b>0.00</b>	<b>400.00</b>

**Statement of financial position**

	Year 1	Year 2	Year 3	Year 4
Total investments	816.30	873.44	934.58	1,000.00
<b>Total assets</b>	<b>816.30</b>	<b>873.44</b>	<b>934.58</b>	<b>1,000.00</b>
Other reserves	22.47	-51.12	-10.68	0.00
Retained earnings	0.00	0.00	373.83	400.00
Insurance contract liability	793.83	924.56	571.43	600.00
<b>Total liability and equity</b>	<b>816.30</b>	<b>873.44</b>	<b>934.58</b>	<b>1,000.00</b>

14. The following was noted regarding the calculations in which the discount rate was not locked (Calculations A and C):
- (a) Significant volatility is introduced in profit or loss if discount rates used in measuring the insurance contract liability change. The effect is not mirrored in assets backing the insurance contract liability, as they were measured at amortised cost. An accounting mismatch therefore arises.
  - (b) The impact of assumption change affects the net interest recognised over the life of the contract. In calculation C, the change in assumptions at 31 December 20X3 eliminates CU 19.05 of interest expense that would otherwise have been accreted on the liability in 20X4 ( $CU\ 19.05 = CU\ 400 - CU\ 380.95$ .  $CU\ 19.05 = 5\% \times CU\ 380.95$ ). Thus, total investment income less interest on the insurance liability equals CU 19.05 over the total life of the contract.
15. The following was noted regarding the calculations in which the discount rate was locked at the inception date of the insurance contract (Calculations B and D).
- (a) No volatility or accounting mismatches were reported in the profit or loss as result of the change in interest rates used in measuring the insurance contract liability. This is because the changes of insurance contract liability and assets backing the insurance contract liability are presented at 'cost' in the profit or loss. The accounting mismatch that exists (assets measured at 'cost' and liabilities measured at 'current') is not presented in the profit or loss but in comprehensive income. The total equity did not change from when the discount rate was not locked (refer Example A and C), but presentation within total equity did change. The amount recognised in profit or loss was stable, with OCI used to present the effect of all interest rate changes.
  - (b) Interest rate changes presented in OCI self-reverse from OCI over the duration of the contract (ie as the liability approaches the expected payment date). Recycling of amounts from OCI to profit or loss therefore did not need to be considered.

- (c) In calculation D (as in calculation C), the impact of assumption changes affects the net interest recognised over the life of the contract. In calculation D, the change in assumptions at 31 December 20X3 eliminates CU 26.17 of interest expense that would otherwise have been accreted on the liability in 20X4 ( $CU\ 26.17 = CU\ 400 - CU\ 373.83$ .  $CU\ 26.17 = 7\% \times CU\ 373.83$ ). Thus, total investment income less interest on the insurance liability equals CU 26.17 over the total life of the contract.

## Appendix A – No locking of the discount rate, without any change in assumptions

i) *Discounting effect, using current rates (with the full impact presented in profit or loss)*

		Interest rate	Nominal liability	Discounted liability	Discounted liability movement	Retained earnings	OCI	Equity
Year 1	Opening balance	7.00%	1,000.00	762.90		0.00	0.00	0.00
	Movement		0.00		30.94	30.94	0.00	30.94
	Closing balance	8.00%	1,000.00	793.83		30.94	0.00	30.94
Year 2	Opening balance	8.00%	1,000.00	793.83		30.94	0.00	30.94
	Movement		0.00		130.72	130.72	0.00	130.72
	Closing balance	4.00%	1,000.00	924.56		161.66	0.00	161.66
Year 3	Opening balance	4.00%	1,000.00	924.56		161.66	0.00	161.66
	Movement		0.00		27.82	27.82	0.00	27.82
	Closing balance	5.00%	1,000.00	952.38		189.49	0.00	189.49
Year 4	Opening balance	5.00%	1,000.00	952.38		189.49	0.00	189.49
	Movement		0.00		47.62	47.62	0.00	47.62
	Closing balance	3.00%	1,000.00	1,000.00		237.10	0.00	237.10



## Appendix A – No locking of the discount rate, without any change in assumptions (continued)

ii) *Breakdown of interest expense into the effect of discount rate changes and the effect of time value of money*

Discounted liability, reflecting the change in interest rate and the effect of the time value of money					
Discount rate	Opening balance	1 year	2 year	3 year	4 year
7.00%	<b>762.90</b>	816.30	873.44	934.58	1,000.00
8.00%		<b>793.83</b>	857.34	925.93	1,000.00
4.00%			<b>924.56</b>	961.54	1,000.00
5.00%				<b>952.38</b>	1,000.00
3.00%					<b>1,000.00</b>
<b>Total movement for the year</b>		<b>-30.94</b>	<b>-130.72</b>	<b>-27.82</b>	<b>-47.62</b>

	1 year	2 year	3 year	4 year	Total
Time value of money	-53.40	-63.51	-36.98	-47.62	-201.51
Change in discount rate	22.47	-67.22	9.16	0.00	-35.59
<b>Total change</b>	<b>-30.94</b>	<b>-130.72</b>	<b>-27.82</b>	<b>-47.62</b>	<b>-237.10</b>

### **Matters to note:**

1. The diagonal line of the first table depicts the combined effect of both the time value of money and the change in interest rates.
2. The time value of money component is shown by the difference in the rows, for example CU -53.40 = CU 762.90 – CU 816.30.
3. The effect of change in discount rate is shown by the difference in the columns, for example CU 22.47 = CU 816.30 – CU 793.83.

## Appendix B – Locking the discount rate, without any change in assumption

i) *The effect of the discounting using the locked-in discount rate (7%)*

		Interest rate	Nominal liability	Discounted liability *	Discounted liability movement	Retained earnings	OCI	Equity
Year								
1	Opening balance	7.00%	1,000.00	762.90		0.00	0.00	0.00
	Movement		0.00		53.40	53.40	-22.47	30.94
	Closing balance		1,000.00	816.30		53.40	-22.47	30.94
Year								
2	Opening balance		1,000.00	816.30		53.40	-22.47	30.94
	Movement		0.00		57.14	57.14	73.58	130.72
	Closing balance		1,000.00	873.44		110.54	51.12	161.66
Year								
3	Opening balance		1,000.00	873.44		110.54	51.12	161.66
	Movement		0.00		61.14	61.14	-33.32	27.82
	Closing balance		1,000.00	934.58		171.68	17.80	189.49
Year								
4	Opening balance		1,000.00	934.58		171.68	17.80	189.49
	Movement		0.00		65.42	65.42	-17.80	47.62
	Closing balance		1,000.00	1,000.00		237.10	0.00	237.10

## Appendix B – Locking the discount rate, without any change in assumption (continued)

### **Matters to note:**

1. 'Discounted liability' is calculated using the locked discount rate to present the accretion of interest at a locked rate in profit or loss (refer to column titled 'Retained earnings').
2. The amount in OCI is calculated as the difference between the discounting effect using the current rate (refer calculation A) and a locked rate (refer to 'discounted liability movement' column)).

The effects of changes in the discount rates are presented in OCI. (The amount in OCI is calculated as the difference between when the discount rate

is not locked (refer calculation C) and when a locked in rate is used (refer to 'discounted liability movement' column)).

3. The total effect on equity remained unchanged compared to calculation C.

## Appendix C - No locking of the discount rate, with a change in assumption

i) *Discounting effect, using current rates (with the full impact presented in profit or loss)*

		Interest rate	Nominal liability	Discounted liability	Discounted liability movement	Retained earnings	OCI	Equity
Year								
1	Opening balance	7.00%	1,000.00	762.90		0.00	0.00	0.00
	Movement		0.00		30.94	30.94	0.00	30.94
	Closing balance	8.00%	1,000.00	793.83		30.94	0.00	30.94
Year								
2	Opening balance	8.00%	1,000.00	793.83		30.94	0.00	30.94
	Movement		0.00		130.72	130.72	0.00	130.72
	Closing balance	4.00%	1,000.00	924.56		161.66	0.00	161.66
Year								
3	Opening balance	4.00%	1,000.00	924.56		161.66	0.00	161.66
	Movement		<b>-400.00</b>		-353.13	-353.13	0.00	-353.13
	Closing balance	5.00%	600.00	571.43		-191.47	0.00	-191.47
Year								
4	Opening balance	5.00%	600.00	571.43		-191.47	0.00	-191.47
	Movement		0.00		28.57	28.57	0.00	28.57
	Closing balance	3.00%	600.00	600.00		-162.90	0.00	-162.90

## Appendix C - No locking of the discount rate, with a change in assumption (continued)

ii) Breakdown of interest expense into the effect of discount rate changes and the effect of time value of money

### Method C

#### Non-locked in discount rate

Discounted liability, reflecting the change in interest rate, the effect of the time value of money and the change in assumption					
Discount rate	Opening balance	1 year	2 year	3 year	4 year
7.00%	<b>762.90</b>	816.30	873.44	934.58	1,000.00
8.00%		<b>793.83</b>	857.34	925.93	1,000.00
4.00%			<b>924.56</b>	961.54	1,000.00
5.00%				<b>571.43</b>	600.00
3.00%					<b>600.00</b>
<b>Total movement for the year</b>		<b>-30.94</b>	<b>-130.72</b>	<b>353.13</b>	<b>-28.57</b>

	1 year	2 year	3 year	4 year	Total
Time value of money	-53.40	-63.51	-36.98	-28.57	-182.46
Change in discount rate	22.47	-67.22	9.16	0.00	-35.59
Assumption change	0.00	0.00	380.95	0.00	0.00
<b>Total change</b>	<b>-30.94</b>	<b>-130.72</b>	<b>-27.82</b>	<b>-28.57</b>	<b>-218.06</b>

#### Matters to note:

1. The diagonal line of the first table depicts the combined effect of both the time value of money and the change in interest rates.
2. The time value of money component is shown by the difference in the rows, for example CU -53.40 = CU 762.90 – CU 816.30.
3. The effect of change in discount rate is shown by the difference in the columns, for example CU 22.47 = CU 816.30 – CU 793.83.

## Appendix D - Locking the discount rate, with change in assumption

i) The effect of the discounting using the locked-in discount rate (7%)

(d)

	Interest rate	Nominal liability	Discounted liability *	Discounted liability movement	Retained earnings	OCI	Equity
Year 1							
1	Opening balance	7.00%	1,000.00	762.90	0.00	0.00	0.00
	Movement		0.00	53.40	53.40	-22.47	30.94
	Closing balance		1,000.00	816.30	53.40	-22.47	30.94
Year 2							
2	Opening balance		1,000.00	816.30	53.40	-22.47	30.94
	Movement		0.00	57.14	57.14	73.58	130.72
	Closing balance		1,000.00	873.44	110.54	51.12	161.66
Year 3							
3	Opening balance		1,000.00	873.44	110.54	51.12	161.66
	Movement		-400.00	-312.69	-312.69	-40.44	-353.13
	Closing balance		600.00	560.75	-202.15	10.68	-191.47
Year 4							
4	Opening balance		600.00	560.75	-202.15	10.68	-191.47
	Movement		0.00	39.25	39.25	-10.68	28.57
	Closing balance		600.00	600.00	-162.90	0.00	-162.90

## **Appendix D - Locking the discount rate, with change in assumption (continued)**

### **Matters to note:**

- 1 'Discounted liability' is calculated using the locked discount rate to present the accretion of interest at a locked rate in profit or loss (refer to column titled 'Retained earnings').
- 2 The amount in OCI is calculated as the difference between the discounting effect using the current rate (refer calculation A) and a locked rate (refer to 'discounted liability movement' column)).
- 3 The changes in the discount rates are presented in OCI. (The amount in OCI is calculated as the difference between when the discount rate is not locked (refer calculation C) and when a locked in rate is used (refer to 'discounted liability movement' column)).
- 4 The movement of CU -40.44 in OCI in 3rd year consists of the following items:
  - Difference between interest at current rate (4%) and interest at locked in rate (7%). The total effect is CU - 24.16. (Similar treatment to previous years).
  - Effect of interest rate change (4% to 5%). The total effect is CU -9.16. (Similar treatment to previous years).
  - The difference between using a locked-in rate (7%) and a current rate (5%) for discounting the change in assumptions. Total effect is CU - 7.12 (CU 373.83 (CU 400 discounted at 7%) minus CU 380.95 (CU 400 discounted at 5%)). An alternative approach could be to account for the entire change in assumption at the current discount rate in profit or loss.
- 5 The total effect on equity remained unchanged compared to calculation C.

**Appendix E – Effective interest calculation for backing assets measured at amortised cost**

		Interest rate	Total assets
--	--	------------------	--------------

Year			
1	Opening balance	7.00%	762.90
	Movement		53.40
	Closing balance		816.30

Year			
2	Opening balance		816.30
	Movement		57.14
	Closing balance		873.44

Year			
3	Opening balance		873.44
	Movement		61.14
	Closing balance		934.58

Year			
4	Opening balance		934.58
	Movement		65.42
	Closing balance		1,000.00