IASB/FASB Meeting February 2011

IASB Agenda reference	3M
FASB Agenda reference	58M

Staff Paper

Project **Insurance contracts**

Topic **Margins – illustrative examples**

1. The purpose of this paper is to illustrate some of the approaches on unlocking the margin as presented in agenda paper 3L / 58L.

2. The following table summarises the examples that follow.

	Scenario		*Approaches illustrated*
A	Base case – no changes to the initial expectations		Proposal in the ED
B	Expected cash flows increase: in year 2 by CU10 in year 3 by a further CU2 in year 4 by a further CU2	B1	Proposal in the ED: all changes in profit or loss
		B2	Unfavourable changes consume the residual margin The residual margin **cannot** be negative.
		B3	Unfavourable changes consume the residual margin The residual margin **can** be negative.
		B4	Changes recognised in profit or loss if 'realised' and against residual margin if 'unrealised'. Difference between the previously expected and current actuals flow through profit or loss, the residual margin is adjusted for changes in estimates and assumptions.
		B5	Changes adjust the residual margin retrospectively to the amount that would have been determined if the new estimates had been used at inception.
C	Interest rates decline:	C1	Proposal in the ED: all changes in profit or loss

	Scenario		*Approaches illustrated*
	Year 1: drop from 2% to 1%		
		C2	Residual margin floats for all changes.

A Base case: Fact pattern

3. The following fact pattern is designed to illustrate the approaches discussed in this paper. To focus is on the recognition in profit or loss and the treatment of the residual margin. The examples are simple and the basis is a fact pattern, as follows:

   (a) Expected cash inflows of CU125. Those are received at the start of year 1.

   (b) Expected cash outflows of CU110, which are paid out at the end of year 5.

   (c) Risk adjustment of 5. The assumption is that the risk decreases proportionally to the passage of time, which means that the risk decreases by CU1 each year.

   (d) The discount rate is 2%, so the effect of time value of money at inception is CU-10 and decreases over time by CU-2 per year.

   (e) The residual margin is allocated according to the passage of time. The residual margin is CU20 at inception and decreases by CU4 each year, because the coverage period is 5 years.

4. The base case looks as follows:

Base case

Extract from the statement of financial position	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Expected cash outflows	110	110	110	110	110	110
Risk margin	5	4	3	2	1	0
Expected cash inflows	-125					
Effect of discounting	-10	-8	-6	-4	-2	
Residual margin	20	16	12	8	4	
Liability	0	122	119	116	113	110

Extract from the statement of comprehensive income	Inception	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Income – risk		1	1	1	1	1	5
Income – residual margin		4	4	4	4	4	20
Income – changes in estimates		0	0	0	0	0	0
Expenses interest		-2	-2	-2	-2	-2	-10
Expenses – changes in estimates		0	0	0	0	0	0
Profit / loss		3	3	3	3	3	15

Reconciliation of the residual margin	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Initial amount	20	20	20	20	20	20
Changes from year 1		-4	-4	-4	-4	-4
Changes from year 2			-4	-4	-4	-4
Changes from year 3				-4	-4	-4
Changes from year 4					-4	-4
Changes from year 5						-4
Residual margin – year end	20	16	12	8	4	0

B Cash flow estimates change: Fact pattern

5. The expected cash flows change under this scenario. In year 2 the expected cash outflows are CU10 higher than the year before, which means the outflow expected for year 5 is CU120 in year 2. In year 3 the expected cash outflows rise to CU122 and in year 4 to CU124.

6. The actual payout in year 5 is CU124.

7. If the residual margin is adjusted, this happens prospectively – except for case B5 where the adjustment is made retrospectively.

8. If the residual margin is adjusted for unfavourable changes, the residual margin can become negative, which is one approach, or cannot become negative, which means that the residual margin is consumed until nothing is left (this approach can be adjusted in a way that the residual margin can be rebuild up to the initial amount. Letting the residual margin become negative would be inconsistent with the staff's recommendation in agenda paper 3B / 58B.

9. The residual margin is reconciled every year for the changes in the residual margin, which consist of amounts that reflect the allocation and of amounts that reflect 'using' the residual margin. The notion 'use' refers to the effect of unlocking the residual margin.

10. The effect on the statement of comprehensive income can be summarised as follows:

	Profit / loss						
Proposal	In-ception	Year 1	Year 2	Year 3	Year 4	Year 5	Total
B1 ED: all changes in profit or loss	0	3	-7	1	1	3	1
B2 Unfavourable changes consume the residual margin. The residual margin **cannot** be negative.	0	3	3	-1	-3	-1	1
B3 Unfavourable changes consume the residual margin. The residual margin **can** be negative.	0	3	3	-0.33	-1.33	-3.33	1
B4 Changes adjust the residual margin retrospectively to the amount that would have been determined if the new estimates had been used at inception	0	3	3	0.6	-2.6	-3	1
B5 Difference between the previously expected and current actuals flow through profit or loss, the residual margin is adjusted for changes in estimates and assumptions.	0	3	-7	1.67	1.67	1.67	1

B1 Proposal in the ED: all changes in profit or loss

Extract from the statement of financial position	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Expected cash outflows	110	110	120	122	124	124
Risk margin	5	4	3	2	1	0
Expected cash inflows	-125					
Effect of discounting	-10	-8	-6	-4	-2	
Residual margin	20	16	12	8	4	
Liability	0	122	129	128	127	124

Extract from the statement of comprehensive income	Inception	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Income – risk		1	1	1	1	1	5
Income – residual margin		4	4	4	4	4	20
Income – changes in estimates		0	0	0	0	0	0
Expenses interest		-2	-2	-2	-2	-2	-10
Expenses – changes in estimates		0	-10	-2	-2	0	-14
Profit / loss		3	-7	1	1	3	1

Reconciliation of the residual margin	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Initial amount	20	20	20	20	20	20
Changes from year 1		-4	-4	-4	-4	-4
Changes from year 2			-4	-4	-4	-4
Changes from year 3				-4	-4	-4
Changes from year 4					-4	-4
Changes from year 5						-4
Residual margin – year end	20	16	12	8	4	0

B2 Unfavourable changes consume the residual margin
– the residual margin <u>cannot</u> become negative

Extract from the statement of financial position	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Expected cash outflows	110	110	120	122	124	124
Risk margin	5	4	3	2	1	0
Expected cash inflows	-125					
Effect of discounting	-10	-8	-6	-4	-2	
Residual margin	20	16	2	0	0	
Liability	0	122	119	120	123	124

Extract from the statement of comprehensive income	Inception	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Income – risk		1	1	1	1	1	5
Income – residual margin		4	4	0.67	0	0	8.67
Income – changes in estimates		0	0	0	0	0	0
Expenses interest		-2	-2	-2	-2	-2	-10
Expenses – changes in estimates		0		-0.67	-2	0	-2.67
Profit / loss		3	3	-1	-3	-1	1

Reconciliation of the residual margin	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Initial amount	20	20	20	20	20	20
Changes from year 1		-4	-4	-4	-4	-4
Changes from year 2 – allocation			-4	-4	-4	-4
Changes from year 2 - use			-10	-10	-10	-10
Changes from year 3 - allocation				-0.67	0	0
Changes from year 3 - use				-2	0	0
Changes from year 4 - use					-2	-2
Changes from year 5						2
Change to loss				0.67	2	0
Residual margin – year end	20	16	2	0	0	0

Comments

11. All (unfavourable) changes are set against the residual margin until the residual margin is consumed in its entirety. The effects that go beyond the residual margin are shown in profit or loss.

B3 Unfavourable changes consume the residual margin
– the residual margin <u>can</u> become negative

Extract from the statement of financial position	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Expected cash outflows	110	110	120	122	124	124
Risk margin	5	4	3	2	1	0
Expected cash inflows	-125					
Effect of discounting	-10	-8	-6	-4	-2	
Residual margin	20	16	2	-0.67	-2.33	
Liability	0	122	119	119.33	120.67	124

Extract from the statement of comprehensive income	Inception	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Income – risk		1	1	1	1	1	5
Income – residual margin		4	4	0.67	-0.33	-2.33	6
Income – changes in estimates		0	0	0	0	0	0
Expenses interest		-2	-2	-2	-2	-2	-10
Expenses – changes in estimates		0	0	0	0	0	0
Profit / loss		3	3	-0.33	-1.33	-3.33	1

Reconciliation of the residual margin	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Initial amount	20	20	20	20	20	20
Changes from year 1		-4	-4	-4	-4	-4
Changes from year 2 – allocation			-4	-4	-4	-4
Changes from year 2 - use			-10	-10	-10	-10
Changes from year 3 - allocation				-0.67	-0.67	-0.67
Changes from year 3 - use				-2	-2	-2
Changes from year 4 - allocation					0.33	0.33
Changes from year 4 -use					-2	-2
Changes from year 5						2.33
Residual margin – year end	20	16	2	-0.67	-2.33	0

Comments

12. All (unfavourable) changes are set against the residual margin and even beyond the initial amount of the residual margin. The losses are spread over the coverage period by allocating the (negative) residual margin.

B4 Unfavourable changes adjust the residual margin retrospectively to the residual margin is the amount that would have been determined if the new estimates had been used at inception – the residual margin can become negative

Extract from the statement of financial position	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Expected cash outflows	110	110	120	122	124	124
Risk margin	5	4	3	2	1	0
Expected cash inflows	-125					
Effect of discounting	-10	-8	-6	-4	-2	
Residual margin	20	16	4	0.4	0	
Liability	0	122	121	120.4	123	124

Extract from the statement of comprehensive income	Inception	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Income – risk		1	1	1	1	1	5
Income – residual margin		4	4	1.6	1.2	0	10.8
Income – changes in estimates		0	0	0	0	0	0
Expenses interest		-2	-2	-2	-2	-2	-10
Expenses – changes in estimates		0	0	0	-2.8	-2	-4.8
Profit / loss		3	3	0.6	-2.6	-3	1

Reconciliation of the residual margin	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Initial amount	20	20	20	20	20	20
Changes from year 1		-4	-4	-4	-4	-4
Changes from year 2 – allocation			-2	-2	-2	-2
Changes from year 2 - use			-10	-10	-10	-10
Changes from year 3 - allocation				-1.6	-1.6	-1.6
Changes from year 3 - use				-2	-2	-2
Changes from year 4 - allocation					-1.2	-1.2
Changes from year 4 -use					-2	-2
Changes from year 5						0
Change to loss					2.8	2
Residual margin – year end	20	16	4	0.4	0	0

Comments

13. This example shows how a retrospective unlocking could look like. Every time a change occurs the residual margin at inception is adjusted and a new allocation amount is being calculated. This is why the allocation amounts change every year.

14. The calculation of the respective allocation amounts works as follows:

Changes from year 2 – allocation			-2	-2	-2	-2
Initial residual margin: 20	minus adjustment of CU 10	=10	divided by 5 years	Annual allocation of -2		

Changes from year 3 - allocation				-1.6	-1.6	-1.6
Initial residual margin: 20	minus adjustment of CU 10	minus adjustment of CU 2	=8	divided by 5 years	Annual allocation of -1.6	

Changes from year 4 - allocation					-1.2	-1.2
Initial residual margin: 20	minus adjustment of CU 10	minus adjustment of CU 2	minus adjustment of CU 2	=6	divided by 5 years	Annual allocation of -1.2

B5 Difference between the previously expected and current actuals flow through profit or loss, the residual margin is adjusted for changes in estimates and assumptions

Extract from the statement of financial position	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Expected cash outflows	110	110	124	124	124	124
Risk margin	5	4	3	2	1	0
Expected cash inflows	-125					
Effect of discounting	-10	-8	-6	-4	-2	
Residual margin	20	16	8	5.33	2.67	
Liability	0	122	129	127.33	125.67	124

Extract from the statement of comprehensive income	Inception	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Income – risk		1	1	1	1	1	5
Income – residual margin		4	4	2.67	2.67	2.67	16
Income – changes in estimates		0	0	0	0	0	0
Expenses interest		-2	-2	-2	-2	-2	-10
Expenses – changes in estimates		0	-10	0	0	0	-10
Profit / loss		3	-7	1.67	1.67	1.67	1

Reconciliation of the residual margin	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Initial amount	20	20	20	20	20	20
Changes from year 1		-4	-4	-4	-4	-4
Changes from year 2 – allocation			-4	-4	-4	-4
Changes from year 2 - use			-4	-4	-4	-4
Changes from year 3 - allocation				-2.67	-2.67	-2.67
Changes from year 4 - allocation					-2.67	-2.67
Changes from year 5						-2.67
Residual margin – year end	20	16	8	5.33	2.67	0

Comments

15. The fact pattern for this example has slightly changed to illustrate the specifics of this approach. In year 2 the expected cash outflows change. We assume that a change of CU10 reflects the expected additional payouts based on the current state in year 2. The additional CU4 are a reflection of the change of the expectations about the future. While the changes in the current state (CU10) are immediately recognized as a loss, the residual margin is adjusted for the changes in expectations regarding the future.

C Interest rates decline: Fact pattern

16. The interest rate drops in year 1 from 2% to 1%, which is an unfavourable change.

17. If the residual margin is adjusted for this change, this happens prospectively again. Because the change is shown as an adjustment to the residual margin, the interest expense shown in the statement of comprehensive income stays the same as expected.

C1 Proposal in the ED: all changes in profit or loss

Extract from the statement of financial position	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Expected cash outflows	110	110	110	110	110	110
Risk margin	5	4	3	2	1	0
Expected cash inflows	-125					
Effect of discounting	-10	-7	-5	-3	-1	
Residual margin	20	16	12	8	4	
Liability	0	123	120	117	114	110

Extract from the statement of comprehensive income	Inception	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Income – risk		1	1	1	1	1	5
Income – residual margin		4	4	4	4	4	20
Income – changes in interest rates		0	0	0	0	0	0
Expenses interest		-2	-2	-2	-2	-1	-9
Expenses – changes in interest rates		-1	0	0	0	0	-1
Profit / loss		2	3	3	3	4	15

Reconciliation of the residual margin	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Initial amount	20	20	20	20	20	20
Changes from year 1		-4	-4	-4	-4	-4
Changes from year 2			-4	-4	-4	-4
Changes from year 3				-4	-4	-4
Changes from year 4					-4	-4
Changes from year 5						-4
Residual margin – year end	20	16	12	8	4	0

C2 Residual margin floats for all changes

Extract from the statement of financial position	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Expected cash outflows	110	110	110	110	110	110
Risk margin	5	4	3	2	1	0
Expected cash inflows	-125					
Effect of discounting	-10	-7	-5	-3	-1	
Residual margin	20	15	11.25	7.5	3.75	
Liability	0	122	119.25	116.5	113.75	110

Extract from the statement of comprehensive income	Inception	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Income – risk		1	1	1	1	1	5
Income – residual margin		4	3.75	3.75	3.75	3.75	19
Income – changes in interest rates		0	0	0	0	0	0
Expenses interest		-2	-2	-2	-2	-2	-10
Expenses – changes in interest rates		0	0	0	0	0	0
Profit / loss		3	2.75	2.75	2.75	2.75	14

Reconciliation of the residual margin	Inception	Year 1	Year 2	Year 3	Year 4	Year 5
Initial amount	20	20	20	20	20	20
Changes from year 1 - allocation		-4	-4	-4	-4	-4
Changes from year 1 - use		-1	-1	-1	-1	-1
Changes from year 2			-3.75	-3.75	-3.75	-3.75
Changes from year 3				-3.75	-3.75	-3.75
Changes from year 4					-3.75	-3.75
Changes from year 5						-3.75
Residual margin – year end	20	15	11.25	7.5	3.75	0

Comments

18. The drop in the interest rate in year 1 is a phenomenon that stays on until the actual payout in year 5. The residual margin is adjusted for the unfavourable change and the allocation amount changes slightly.

19. All our examples show the liability side of the statement of financial position. In the scenario that changes interest rates, one needs to bear in mind that the asset side reacts to interest rate changes as well.