Walk-through of Staff example 3 – Floating Rate Loan

Staff example 3 illustrates how discounted cash flow calculation mechanics work in the context of accounting for variable rate assets.

The calculation steps are straightforward and will be familiar to most with some knowledge about yield curves and internal rate of return (IRR) calculations.

This note accompanies the staff audio recording to help constituents understand the calculation mechanics for variable rate assets.

The spreadsheet can be found here:

http://www.iasb.org/NR/rdonlyres/C79AAC1C-FCC6-44D1-976D-B62B393465FB/0/Ex3FRN.xls

On opening the spreadsheet you will be taken to Tab FRN t0.

Tab FRN t0

The calculation steps are as follows:

1. Derive the forward yield curve from the spot yield curve. This provides the expected benchmark interest rates in future periods, and hence permits the calculation of the expected cash flows in future periods.

2. Forecast the expected cash flows. Expected cash flows are the combination of (1) any expected credit losses, and (2) the expected future interest rates as derived above.

3. Determine the present value of the expected cash flows. Discount at the rate that results in the present value of the expected cash outflows and inflows being equal to zero (the IRR). For the purpose of amortised cost, the initial cash flow on a loan is replaced by the initial carrying amount in accordance with IFRS 9. Approximate the necessary adjustment to the contractual spread by (1) calculating the IRR for the contractual cash flows, (2) calculating the IRR for the expected cash flows, and then (3) treating the difference between those two IRRs as the adjustment to the contractual spread of 3% to arrive at the initial expected spread.

In this example the expected spread is 54 basis points. It is now possible to arrive at the contractual & expected spot/forward curves based on the expected spread. The expected cash flows for each future period are discounted using the expected spot rate for the respective period.

The accounting The accounting steps then follows from this discounted cash flow calculation.

1. The expected return for each future period (‘expected EIR’) has been calculated.
2. This expected EIR is multiplied by the opening carrying amount to return the recognised interest in each period.
3. Any difference between the recognised interest and the actual cash expected to be received is used to adjust the carrying amount.
So what can change in future periods? After the initial calculation, there are two possible factors that can change:

1. expected credit loss estimates (tab FRNt1)
2. the benchmark yield curve (tab FRNt2)

**Tab FRN t1**

This spreadsheet illustrates the effect of a change in the expected credit losses.

1. Begin by revising estimated future cash flows taking account of the new estimates of credit losses.
2. Then determine the present value of those cash flows using a discount rate made up of the spot rates for each period and the initial expected credit spread (as above).
3. The NPV is the revised carrying amount, and the difference from the old carrying amount is the impairment loss recognised in the period.

**Tab FRN t2**

This spreadsheet illustrates the effect of a change in the benchmark yield curve.

In this case, future expected rates are now higher than was previously the case, so the curve has shifted upwards.

The steps are as for Tab FRN t1.

2. Then determine the present value of those cash flows using a discount rate made up of the spot rates for each period and the initial expected credit spread.
3. The NPV is the revised carrying amount, and the difference from the old carrying amount is the catch-up adjustment recognised in the period.

**Summary**

The main points that this example demonstrates are that:

- the estimated cash flows reflect expected future interest rates and credit losses;
- these cash flows are discounted using a discount rate made up of the current interest rates and the initial expected credit spread; and
- any differences between this calculated NPV and the last carrying amount are recognised either as an impairment loss, or as a catch-up adjustment.