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Introduction

1. The purpose of this paper is to explore possible approaches for operational simplifications to the Dynamic Risk Management (DRM) accounting model. More specifically, in this paper the staff consider possible approaches to ease the operational burden related to the tracking of benchmark derivatives that arise from the addition of new layers in the model for the purposes of both measuring alignment and reclassifying accumulated gains or losses recognised in Other Comprehensive Income to the statement of profit or loss.

2. This paper is structured as follows:
   (a) Summary of staff recommendations (paragraph 3);
   (b) Operational complexities (paragraphs 4 – 24); and
   (c) Possible approaches for operational simplifications (paragraphs 25 – 53).

Summary of staff recommendations

3. In this paper the staff recommend aggregation based on similar contractual terms (ie maturity dates and floating rate basis) as a method to significantly reduce the number of benchmark derivatives that require tracking.

Operational complexities

4. An objective of the DRM project is to accommodate the dynamic nature of portfolios while keeping in mind the operational challenges that entities currently face applying the existing hedge accounting requirements of IFRS 9 *Financial Instruments* (IFRS 9) or IAS 39 *Financial Instruments: Recognition and Measurement* (IAS 39). While operational simplification is not necessarily an objective of the project, ensuring that any model developed is implementable without undue cost and effort is.

5. The objective of this paper is not to provide a comprehensive list of all possible approaches to operational simplification but to illustrate the principles to be considered when considering any such approach. The paper illustrates one such approach while rejecting another.

6. Before discussing simplification, it is important to understand where the operational challenges will arise and therefore, where simplification is required. The DRM accounting model has four components or items, more specifically:

    (a) The asset profile;

    (b) The target profile;

    (c) The designated derivatives; and

    (d) The benchmark derivative.

7. Regarding the designated derivatives, the model does not propose a major systemic change nor are there many operational implications as measurement of the designated derivatives remains unchanged, ie, they are measured at fair value. Neither do the proposals alter the unit of account and entities will have to account for each derivative contract they execute, as they do currently. Hence, the staff do not believe there is need for simplification regarding the designated derivatives.

8. Regarding the asset and target profiles, while the entity must create, develop and maintain both the asset and target profiles, the staff would highlight two important facts. Firstly, the asset and target profiles should have overlap with already existing risk management systems and processes and therefore, whilst there will be some incremental effort and cost required to implement the concepts as described in the accounting model, the staff is of the view that these should not be

significant. Secondly, the asset and target profiles do not impact the measurement of alignment directly nor do they require tracking for the purposes of reclassification. Both measurement of alignment and reclassification of the aligned portion are informed by the benchmark derivative.

9. The model is introducing a new method of measuring the performance of the risk management function through the use of a benchmark derivative. Perhaps the most intuitive method for measuring alignment would be to compare the derivatives designated within the DRM accounting model with the benchmark derivatives[1] required for alignment. This approach will enable an entity to quantify the extent to which it has achieved alignment. This would also allow the entity to determine the impact from imperfect alignment not only on the current period (by comparing the interest accruals of the designated derivatives with the benchmark derivatives) but also the expected impact on future periods (by comparing changes in fair value of the designated derivatives, excluding accruals, with changes in fair value of the benchmark derivatives, excluding accruals), both of which would be useful information for users of financial reporting, as demonstrated in paper 4C *Financial Performance* discussed during the June 2018 Board Meeting.

10. Said differently, the benchmark derivative captures both the asset and target profile because it is defined as the difference between the two. Therefore, it captures information about both and so informs performance. Once the entity has defined the asset and target profile, the entity uses the benchmark derivative to capture, measure, communicate and report alignment. It is also very important for reclassification, as the benchmark derivative must reflect the time horizon of the target profile. The benchmark derivative is a concept that the DRM accounting model introduces and the entity must track and measure the benchmark derivative in accordance with the requirements of the model. Therefore, the focus of simplification is on the benchmark derivative.

[1] As noted in paragraph 12 of the June 2018 Agenda Paper 4C *Financial Performance*, the benchmark derivative (also referred to as 'perfect derivative' in that paper) is the derivative that achieves perfect alignment.

Dynamic nature and operational complexities

11. As the DRM model allows for designation of open portfolios (ie portfolios where new exposures are continuously added and other exposures are removed over time), the portfolio of derivatives required for alignment will also change. As a result, the benchmark derivative will become a portfolio of derivatives over time due to the dynamic nature of open portfolios. This poses operational challenges depending on the volume and frequency of such changes.

12. While the number of designated derivatives will also change over time due to the dynamic nature of portfolios, the operational challenges will arise from the definition and maintenance of the benchmark derivative. This is because the aligned and misaligned portions are calculated by comparing the change in fair value of the benchmark derivative with the change in fair value of the designated derivatives. Given entities must calculate the fair value of the actual designated derivatives regardless of whether or not they are designated in the model, the additional work arises from maintaining the defined benchmark derivative. Furthermore, as discussed above, the amounts to be reclassified from Other Comprehensive Income each period and the calculation of alignment / misalignment are informed by the benchmark derivative.

13. To illustrate, consider a scenario with a laddering strategy as this would be an ideal example to demonstrate the operational complexities that arise due to the dynamic nature of open portfolios. Assume an entity defines and designates a portfolio of residential mortgages originated by a given operating segment and a portfolio of core demand deposits. Because the DRM model allows for designation at a portfolio level, new mortgages and core demand deposits are added to the designated portfolios as they are recognised on the statement of financial position, provided the applicable qualifying criteria are met. At initial designation, the residential mortgage portfolio is comprised of CU 1,000 5-year floating rate financial assets which are entirely funded by core demand deposits. The entity's risk management strategy is to achieve a 5-year ladder on a continuous basis.

14. A 5-year ladder distributes re-pricing evenly over five years. To achieve this strategy, the entity needs five CU 200 receive fix, pay floating interest rate swaps

with different maturities. In particular, the entity needs a CU 200 1-year interest rate swap representing the first step of the ladder, a CU 200 2-year interest rate swap representing the second step of the ladder, and so on until the fifth step. The 1-year swap reflects the 1-year fixed rate at T^0 whereas the 2-year swap reflects the 2-year fixed rate at T^0, and so on. In summary, the derivatives required for perfect alignment are as follows:

Chart 1

Derivative	Notional	Start date	End date	Fixed rate	Floating rate
Swap 1	200	01/01/X1	31/12/X1	4.00%	(LIBOR)
Swap 2	200	01/01/X1	31/12/X2	4.25%	(LIBOR)
Swap 3	200	01/01/X1	31/12/X3	4.50%	(LIBOR)
Swap 4	200	01/01/X1	31/12/X4	4.75%	(LIBOR)
Swap 5	200	01/01/X1	31/12/X5	5.00%	(LIBOR)

15. The Chart below shows the definition of the benchmark in totality by showing the tenor of the asset profile, the target profile and the benchmark derivatives required for perfect alignment:

Chart 2

Fact pattern at T^0	**Float**	**X1**	**X2**	**X3**	**X4**	**X5**	**Total**
Asset profile	1,000						1,000
Target profile		200	200	200	200	200	1,000
Initial difference	**1,000**	**(200)**	**(200)**	**(200)**	**(200)**	**(200)**	**0**
1Y rec fix, pay float	(200)	200					0
2Y rec fix, pay float	(200)		200				0
3Y rec fix, pay float	(200)			200			0
4Y rec fix, pay float	(200)				200		0
5Y rec fix, pay float	(200)					200	0
Updated difference	**0**	**0**	**0**	**0**	**0**	**0**	**0**

16. The 5-year ladder strategy implies a portfolio of five derivatives to construct the benchmark and measuring alignment would require comparing that portfolio of benchmark derivatives against the designated derivatives. Measuring alignment can be straight forward in a static scenario as illustrated above. However, the staff acknowledge that operational complexities might arise due to the dynamic nature of open portfolios. These are further discussed in the following paragraphs.

17. To illustrate, assume the entity successfully issues another CU 500 of core demand deposits six months after initial designation of the DRM accounting model. At the same time, the entity successfully originates another CU 500 of 5-year floating rate residential mortgages. The origination of the new financial assets and the issuance of the new core demand deposits were not anticipated nor documented within the DRM accounting model at T^0. The newly originated CU 500 financial assets and CU 500 core demand deposits are designated within the DRM model as they are recognised on the statement of financial position in accordance with IFRS 9 (assuming the qualifying criteria are met and designation is consistent with the entity's documented risk management policies and procedures).

18. Updating the asset profile is straightforward as the contractual terms dictate the new financial assets should be allocated to the float bucket within the asset profile. Also, because the documented risk management strategy is to achieve a 5-year ladder and the entity has clearly documented the portfolios of financial liabilities used to define the target profile, the entity updates the target profile accordingly and allocates the additional CU 500 core demand deposits into their corresponding time buckets.

19. Assuming market interest rates have changed since T^0, the new derivatives required for alignment will have different interest rates. Thus, additions to the portfolio of benchmark derivatives beyond those already listed in Chart 1 are as follows:

Chart 3

Derivative	Notional	Start date	End date	Fixed rate	Floating rate
Swap 6	100	30/06/X1	31/12/X1	4.10%	(LIBOR)
Swap 7	100	30/06/X1	31/12/X2	4.35%	(LIBOR)
Swap 8	100	30/06/X1	31/12/X3	4.60%	(LIBOR)
Swap 9	100	30/06/X1	31/12/X4	4.85%	(LIBOR)
Swap 10	100	30/06/X1	31/12/X5	5.10%	(LIBOR)

20. The Chart below shows the definition of the benchmark derivatives in totality by showing the tenor of the asset profile, the target profile and the benchmark derivatives required for perfect alignment:

Chart 4

Fact pattern after 6M	**Float**	**X1**	**X2**	**X3**	**X4**	**X5**	**Total**
Asset profile (1)	1,000						1,000
Asset profile (2)	500						500
Target profile (1)		200	200	200	200	200	1,000
Target profile (2)		100	100	100	100	100	500
Initial difference	**1,500**	**(300)**	**(300)**	**(300)**	**(300)**	**(300)**	**0**
0.5Y rec fix, pay float	(100)	100					0
1Y rec fix, pay float	(200)	200					0
1.5Y rec fix, pay float	(100)		100				0
2Y rec fix, pay float	(200)		200				0
2.5Y rec fix, pay float	(100)			100			0
3Y rec fix, pay float	(200)			200			0
3.5Y rec fix, pay float	(100)				100		0
4Y rec fix, pay float	(200)				200		0
4.5Y rec fix, pay float	(100)					100	0
5Y rec fix, pay float	(200)					200	0
Updated difference	**0**	**0**	**0**	**0**	**0**	**0**	**0**

21. As demonstrated in Chart 4, the portfolio of benchmark derivatives required for perfect alignment will change over time as new residential mortgages are originated and designated within the DRM accounting model. For example, at T^0 the entity needed to define a portfolio of five benchmark derivatives with different maturities and interest rates. After six months, as new financial assets are originated and new core demand deposits issued, the benchmark derivatives must

be updated. In particular, Chart 4 demonstrates the composition of the benchmark derivatives increasing from five to ten. As a result, a total of ten benchmark derivatives, with different maturity dates and coupons, will need to be tracked for the purposes of the model.

22. Such requirements are often onerous to apply given the frequency with which open portfolios are updated and the consequent number of new layers that are added. In view of the same, the staff considered possible approaches to ease the potential operational burden implied by the example illustrated above, since one objective of the DRM accounting model is to accommodate the dynamic nature of portfolios while considering the complexities faced by entities when applying the existing hedge accounting requirements.

23. While this paper explores some methods to ease the operational burden entities could face, the staff would caution that the methods considered do not eliminate the need to define the asset and target profiles, nor does it avoid the creation and maintenance of the benchmark derivative. The simplifications explored aims only to aggregate the number of benchmark derivatives in the portfolio that have already been defined, in a way that reduces the operational burdens associated with tracking without compromising measurement accuracy.

24. While there may be many different approaches to aggregation, the staff highlight that the approach recommended in this paper suffers from no loss in accuracy of measurement and is therefore entirely consistent with the tentative decisions regarding performance and the information to be provided in the statement of profit or loss agreed upon by the Board during the June and September 2018 Board meetings. Said differently, the approach to simplification recommended results in no change in the results reported in the statement of profit or loss, in any period, for the aligned and the misaligned portions, including those amounts reclassified from Other Comprehensive Income, irrespective of the application of the lower of test. This is the overall principle the staff have used for determining the appropriateness of any method for the purposes of simplification.

Possible approaches for operational simplifications

25. The staff considered the following two approaches that could ease the potential operational burden related to tracking of multiple benchmark derivatives for the purpose of both measuring alignment and reclassifying accumulated gains or losses recognised in Other Comprehensive Income to profit or loss. These two methods are further explored in paragraphs 26 – 53.

    (a) Amortising swap; and

    (b) Aggregation by shared contractual terms.

Amortising Swap

26. In the scenario described in paragraph 16 through 20 and illustrated in Chart 4, within six months, the entity requires ten derivatives to accomplish the rolling ladder strategy and therefore, the benchmark derivative is a portfolio of ten derivatives. Over time the number will increase as the portfolios change. To reduce the operational burden, the approach considers whether it would be possible to combine the different benchmark derivatives into a single derivative called the aggregated derivative/s for the purposes of this paper. Said differently, in the Chart below (a re-production of Chart 3), is there a way to combine the five - benchmark derivatives into a single aggregated derivative for the purposes of tracking. This example focuses on a subset of the defined benchmark derivatives from Chart 4 for the purposes of simplicity and the same rationale can be applied to the complete set of defined benchmark derivatives.

Chart 3 (re-produced)

Derivative	Notional	Start date	End date	Fixed rate	Floating rate
Swap 6	100	30/06/X1	31/12/X1	4.10%	(LIBOR)
Swap 7	100	30/06/X1	31/12/X2	4.35%	(LIBOR)
Swap 8	100	30/06/X1	31/12/X3	4.60%	(LIBOR)
Swap 9	100	30/06/X1	31/12/X4	4.85%	(LIBOR)
Swap 10	100	30/06/X1	31/12/X5	5.10%	(LIBOR)

27. One method of aggregation would be to combine the defined benchmark derivatives into a single aggregated derivative such that the aggregated derivative replicates the risk profile. In this example, rather than having a series of benchmark derivatives with staggered maturities, the entity would aggregate by creating the aggregated derivative as an amortising interest rate swap rather than five individual interest rate swaps.

28. An amortising interest rate swap is similar to a fixed-for-floating interest swap except that the stated notional amount decreases over time based on an agreed upon pattern. For example, the stated notional of a 5-year fixed-for-floating amortising interest rate swap would begin at CU 500, and then decrease by CU 100 each year until maturity (ie, at T^0 the swap notional amount would equal CU 500, at T^1 the notional amount would be reduced to CU 400, and so on until the swap expires at T^5). In this way, the notional of the aggregated derivative (the amortising swap in this case) decreases replicating how the total notional of the benchmark derivatives listed in paragraph 20 decreases over time.

29. The fixed rate of such an amortising swap is determined by decomposing the amortising swap into a number of fixed-for-floating interest rate swaps. For example, the CU 500 5-year fixed-for-floating amortising interest rate swap amortising at a rate of twenty per cent per year is the same as the combination of a CU 100 1-year interest rate swap, CU 100 2-year interest rate swap, etc. Each individual swap would have a different interest rate because the rate is based upon the maturity date of the swap. The fixed rate on the amortising swap is determined based on the fixed rates of the individual interest rate swaps that

replicate the amortisation pattern of the amortising swap (ie the five individual swaps with different maturities that form the replicating portfolio for determining the fixed rate of the amortising swap). More specifically, using the figures from Chart 3, the coupon of the amortising swap is the interest rate that provides the same total amount of interest cash flows over 5-years as the five individual interest rate swaps (the replicating portfolio) used to construct the amortising swap. This coupon is calculated by taking the coupons of the individual swaps and averaging them not only on notionals but also on time to maturity (i.e., the 5-year swap is given more weight because those cash flows will exist for longer than the 1-year swap).

30. Completing the necessary calculations determines the fixed rate on an amortising swap based on the replicating portfolio and would be approximately 4.77%[2]. If an entity were to aggregate the benchmark derivatives required to establish their ladder as an amortising swap (the aggregated derivative), it would reduce the amount of tracking from five individual benchmark derivatives to one and, in that manner, accomplish the goal of simplification.

31. However, the staff have a number of concerns with this approach. Firstly, the cash flow pattern of the amortising swap is not the same as that of the portfolio of five individual derivatives. This means that not only will the accruals arising from the amortising swap be different but the present value sensitivity to a change in interest rates will also be different ie the change in fair value of the amortising swap will be different from the change in fair values of the portfolio of five defined benchmark derivatives.

32. Assuming the amortising swap is used to determine the amounts to be reclassified each period, this would also distort performance because the amount reclassified each period would be the accrual on the amortising swap rather than the combined accruals from the individual benchmark derivatives. The following chart and explanations illustrate the resulting distortion:

[2] The staff acknowledge additional pricing complications may arise due to the lack of liquidity for amortising swaps and various other reasons. However, the staff highlight that these factors would not impact the rationale used to illustrate this possible approach for simplification.

Chart 5

Year	Amortising swap yield (*)	Accrual amortising swap	Benchmark derivative yield (**)	Accrual benchmark derivatives	Difference
20X1	4.77%	23.8	4.60%	23.0	0.8
20X2	4.77%	19.1	4.73%	18.9	0.2
20X3	4.77%	14.3	4.85%	14.6	(0.3)
20X4	4.77%	9.5	4.98%	10.0	(0.5)
20X5	4.77%	4.8	5.10%	5.1	(0.3)

(*) Refer to paragraph 29 for further information on how the yield is determined.

(**) Represents the moving average interest rate shown in Chart 3.

33. Chart 5 shows that if the amortising swap is used to determine the amounts for reclassification into the statement of profit or loss, the amount reclassified would differ. The above difference arises from the manner in which the fixed rate of an amortising swap is determined using a replicating portfolio. In this case the replicating portfolio is composed of five individual swaps as elaborated in paragraph 28 and mirror exactly the benchmark derivatives outlined in Chart 3. The fixed rate of an amortising swap is the weighted average of the fixed rates of the individual swaps with the weights being the notional and the maturity date of the swaps. Since the weighted average is determined using both the maturity date and the notional as weights, the interest accrual for each period arising from the amortising swap will not equal that of the individual swaps (and therefore those of the benchmark derivatives as outlined in Chart 3). This difference arises not from the inclusion of notionals in the weights but from the inclusion of the maturity date in the weights[3]. Consequently, aggregation using an amortising interest rate swap will alter the amount of interest accrual in each period if it were to be allowed for the purposes of simplification, as demonstrated above.

34. In addition, the change in fair value of the amortising swap for a change in interest rates will also be different from the change in fair values of the benchmark derivates for the same given change in interest rates. Although the individual swaps in the replicating portfolio (see Chart 3) used to determine the fixed rate of

[3] The only instance when it will be the same is under a flat yield curve – a possibility that is rarely if ever seen in reality.

the amortising swap match the benchmark derivatives exactly, the amortising swap does not. The benchmark derivatives required represents five individual derivative instruments with different maturity dates ranging from one to five years, whilst the amortising swap is a single derivative instrument with a contractual term of five years. Consequently, the change in fair value of the benchmark derivatives will not sum to the change in fair value of the amortising swap given the inherent duration and convexity[4] of all interest rate products.[5] Using risk terminology, the instruments are not 'key rate duration' matched and therefore will not have equal changes in fair values due to changes in interest rates.

35. The staff would highlight that the fair value sensitivity is a function of the maturity date of the amortising swap and the difference between the various fixed rates of individual swaps in the replicating portfolio. More simply, a 3-year amortising swap with a flat yield curve will have a much lower difference than a 10-year amortising swap with a traditional upward sloping yield curve. The resulting differences are dependent on the interest rate environment at the inception of the amortising swap. For this approach to meet the stated principles of simplification, there would need to be a test indicating that the fair value sensitivity of the amortising swap is not materially different than the benchmark derivatives that the amortising swap purports to represent. As such, the staff are concerned this approach could provide some operational simplification, but only when market interest rate conditions permit.

36. Furthermore, the staff would highlight that combining the benchmark derivatives into an amortising swap would not simplify the rolling nature of a laddering strategy. For example, after 20X1, 20% of the ladder will expire and most likely be re-invested with a maturity date of 20X6 to balance the distribution of the

[4] In simplistic terms duration is a measure of the sensitivity of the price of a bond or other instruments to a change in interest rates whilst convexity captures the change in fair value sensitivity of such instruments arising from a change interest rates. Due to the inherent curvature of the yield curve, the rate of change of fair value due to a change in interest rates varies and depends on the time to maturity of the instrument. Consequently, two bonds with identical terms but different maturity dates will have different changes in fair values due to the same change in interest rates. For the bonds to have the same change in fair values they must have the same convexity and duration and more specifically, be key rate duration matched.

[5] Again, the only exception being when the yield curve is flat. In this instance, as convexity arises from the slope of the yield curve it is zero as the yield curve is flat.

ladder. While the amortising swap will automatically capture the maturity, it would not automatically capture the re-investment. As the original ladder matures and rolls, the entity will again be forced to track at the individual level. In addition, if such a simplification method were allowed, an entity that executes actual derivatives as described in Chart 3 but measures them against the amortising swap as described, would record measurement differences. If such measurement differences are recorded in the statement of profit or loss, it would not be a faithful representation of performance because the entity has indeed executed the derivatives necessary to achieve perfect alignment and the strategy as intended.

37. The above analysis also demonstrates that any simplification whereby the timing of the cashflows of the benchmark derivative (or the portfolio of derivatives that are the benchmark) are altered through aggregation will lead to the same problems as discussed in paragraphs 31 to 35. This problem arises as any such method results in a reallocation of the cashflows of the defined benchmark derivatives thereby changing the accruals as well as fair value changes due to changes in interest rates.

Summary

38. While the staff acknowledge the potential benefit in reducing the volume of tracking required by this method, the staff are concerned that it will not provide a faithful representation of performance for the reasons discussed in paragraphs 31–37. Furthermore, the staff are concerned that this approach will provide simplification opportunities only at certain times and thus, the opportunity for application of this approach is limited. Also, for the reasons outlined the staff would not recommend any method of simplification or aggregation that results in a reallocation of cash flows over time when compared with the benchmark derivatives. For these reasons, the staff do not think this approach will be successful in providing practical operational simplification as it does not meet the principles outlined in paragraph 23 and 24.

Aggregation by shared contractual terms

39. In view of the conclusions outlined in paragraph 38 the staff have evaluated an aggregation methodology that does not alter the maturity date of the benchmark derivatives. Under this approach benchmark derivatives would be aggregated based on similar contractual terms ie maturity date, payment date and floating rate basis ie benchmark derivatives having the same maturity date and interest rate basis would be aggregated into a single derivative for the purposes of tracking and measurement. For example, if an entity had two receive fix, pay float interest rate swaps where both float legs were linked to 1M LIBOR and both swaps will mature on 6/30/X1, that entity could aggregate the two swaps into one for the purpose of the DRM accounting model and more specifically, for creating the aggregated derivative. Consider the chart below that show the portfolio of benchmark derivatives as at 6/30/X1 as defined from the example discussed in paragraph 16 - 20.

Chart 7

Derivative	Notional	Start date	End date	Fixed rate	Floating rate
Swap 1	200	01/01/X1	31/12/X1	4.00%	(LIBOR)
Swap 2	200	01/01/X1	31/12/X2	4.25%	(LIBOR)
Swap 3	200	01/01/X1	31/12/X3	4.50%	(LIBOR)
Swap 4	200	01/01/X1	31/12/X4	4.75%	(LIBOR)
Swap 5	200	01/01/X1	31/12/X5	5.00%	(LIBOR)
Swap 6	100	30/06/X1	31/12/X1	4.10%	(LIBOR)
Swap 7	100	30/06/X1	31/12/X2	4.35%	(LIBOR)
Swap 8	100	30/06/X1	31/12/X3	4.60%	(LIBOR)
Swap 9	100	30/06/X1	31/12/X4	4.85%	(LIBOR)
Swap 10	100	30/06/X1	31/12/X5	5.10%	(LIBOR)

40. To illustrate the methodology proposed in paragraph 39, Chart 8 combines derivatives based on their maturity dates reducing the number of derivatives required for tracking from ten to five (all the derivatives in the example have the same interest rate basis).

Chart 8

Derivative	Notional	End date	Fixed rate	Floating rate
Swap X1	300	31/12/X1	4.03%	(LIBOR)
Swap X2	300	31/12/X2	4.28%	(LIBOR)
Swap X3	300	31/12/X3	4.53%	(LIBOR)
Swap X4	300	31/12/X4	4.78%	(LIBOR)
Swap X5	300	31/12/X5	5.03%	(LIBOR)

41. The fixed rate on the aggregated derivative is calculated by taking the weighted average of the coupons on the individual benchmark derivatives with the same maturity dates. For example, Chart 7 shows two interest rate swaps maturing at the end of 20X1 – each with notional amount of CU 200 and CU 100, and fixed interest rates of 4.00% and 4.10%, respectively. In this case, the weighted average interest rate is 4.03% because [(200 * 4.00%) + (100 * 4.10%)] / 300 = 4.03%. The notional of the aggregated derivative is CU 300 ie a simple summation of CU 200 and CU 100

42. In contrast with the previous proposals, the staff would highlight that the accruals from the aggregated derivatives are identical when compared with the accruals from the defined benchmark derivatives and will be so over time because in determining the weighted average the only weight used is the notional and not the maturity date. This is illustrated in the following Chart:

Chart 9

Year	Weighted average swap (*)	Weighted average accrual	Benchmark derivative yield (**)	Accrual benchmark derivatives	Difference
20X2	4.53%	67.9	4.53%	67.9	0

(*) Calculated as the simple average of Swap X1 – X5 from Chart 8.

(**) Represents the simple average interest rate shown in Chart 3.

43. Chart 9 shows that the accruals are not altered when the derivatives are aggregated in this manner ie the accruals on the aggregated derivatives are identical to the accruals from the benchmark derivatives, as demonstrated in Chart 9. In addition, since there is no change in the maturity date of the aggregated derivatives as compared to the benchmark derivatives, the change in fair values of the aggregated derivatives will be the same as the change in fair values of the benchmark derivatives for changes in interest rate ie because the instruments are ‘key rate duration’ matched they have the same change in fair value for a given change in interest rates. This avoids the challenges that are discussed in paragraph 31 to 37. More specifically, if an entity defines the benchmark derivatives as described in Chart 4 but measures accruals and alignment / misalignment using

the aggregation method described above, no measurement differences will arise. Therefore, this approach will provide a faithful representation of the entity's performance in the statement of profit or loss.

44. The staff have also considered what would happen over time and would highlight another potential benefit of this approach. Moving forward to the beginning of 20X3 and assuming the entity maintains its strategy and grows at the same rate as in 20X1, then the benchmark derivatives required for perfect alignment would be as follows:

Chart 10

Derivative	Notional	Start date	End date	Fixed rate	Floating rate
Swap 3	200	01/01/X1	31/12/X3	4.50%	(LIBOR)
Swap 4	200	01/01/X1	31/12/X4	4.75%	(LIBOR)
Swap 5	200	01/01/X1	31/12/X5	5.00%	(LIBOR)
Swap 7	100	30/06/X1	31/12/X3	4.60%	(LIBOR)
Swap 8	100	30/06/X1	31/12/X4	4.85%	(LIBOR)
Swap 9	100	30/06/X1	31/12/X5	5.10%	(LIBOR)
Swap 10	100	01/01/X2	31/12/X6	5.10%	(LIBOR)
Swap 11	200	01/01/X2	31/12/X6	5.10%	(LIBOR)
Swap 12	100	01/01/X3	31/12/X3	5.00%	(LIBOR)
Swap 13	100	01/01/X3	31/12/X4	5.25%	(LIBOR)
Swap 14	100	01/01/X3	31/12/X5	5.50%	(LIBOR)
Swap 15	100	01/01/X3	31/12/X6	5.75%	(LIBOR)
Swap 16	100	01/01/X3	31/12/X7	6.00%	(LIBOR)
Swap 17	200	01/01/X3	31/12/X7	6.00%	(LIBOR)
Swap 18	100	01/01/X3	31/12/X7	6.00%	(LIBOR)

45. Repeating the exercise from paragraph 40, the above defined benchmark derivatives can be aggregated based on maturity dates reducing the number benchmark derivatives required for tracking from fifteen to five.

Chart 11

Derivative	Notional	End date	Fixed rate	Floating rate
Swap X3	400	31/12/X3	4.65%	(LIBOR)
Swap X4	400	31/12/X4	4.90%	(LIBOR)
Swap X5	400	31/12/X5	5.15%	(LIBOR)
Swap X6	400	31/12/X6	5.26%	(LIBOR)
Swap X7	400	31/12/X7	6.00%	(LIBOR)

46. However, mathematically, the entity could also arrive at the same final aggregated position by aggregating the already aggregated derivatives from Chart 8 with the additions to the benchmark derivatives during the period. More specifically, the entity can aggregate Swap X3 through X5 from Chart 8 and swaps 10 through 18 from Chart 11) as shown below:

Chart 12

Derivative	Notional	End date	Fixed rate	Floating rate
Swap X3	300	31/12/X3	4.53%	(LIBOR)
Swap X4	300	31/12/X4	4.78%	(LIBOR)
Swap X5	300	31/12/X5	5.03%	(LIBOR)
Swap 10	200	31/12/X6	5.10%	(LIBOR)
Swap 11	100	31/12/X6	5.10%	(LIBOR)
Swap 12	100	31/12/X3	5.00%	(LIBOR)
Swap 13	100	31/12/X4	5.25%	(LIBOR)
Swap 14	100	31/12/X5	5.50%	(LIBOR)
Swap 15	100	31/12/X6	5.75%	(LIBOR)
Swap 16	100	31/12/X7	6.00%	(LIBOR)
Swap 17	200	31/12/X7	6.00%	(LIBOR)
Swap 18	100	31/12/X7	6.00%	(LIBOR)

47. Repeating the exercise from paragraph 45, the derivatives in Chart 12 (composed of already aggregated derivatives and newly defined benchmark derivatives) can be aggregated based on maturity dates reducing the number of benchmark derivatives required for tracking from twelve to five.

Chart 13

Derivative	Notional	End date	Fixed rate	Floating rate
Swap X3	400	31/12/X3	4.65%	(LIBOR)
Swap X4	400	31/12/X4	4.90%	(LIBOR)
Swap X5	400	31/12/X5	5.15%	(LIBOR)
Swap X6	400	31/12/X6	5.26%	(LIBOR)
Swap X7	400	31/12/X7	6.00%	(LIBOR)

48. Given the figures are identical in Charts 11 and 13, this indicates the need for individual tracking after they have been aggregated is not required thereby significantly reducing the volume of data required for tracking. In this example, the entity would be required to track the aggregated derivatives and update the corresponding weighted average interest rates as new derivatives are executed in the current period, rather than tracking every individual benchmark derivative.

49. While the above demonstration focused on a simple interest rate swap, the approach could be used for other linear hedging instruments, for example a forward starting interest rate swap. While it may be necessary to consider additional contractual terms depending on the instrument in question (e.g., the start date of a forward starting swap), this does not alter the fact that as long as key rate durations of the benchmark derivatives and the aggregated derivatives are matched, such a method should lead to simplified tracking mechanics.

50. In addition, it is worth noting that similar methods are used by industry participants to aggregate positions for various purposes, including collateral management. Perhaps the best example are the rules used by central clearing agencies to facilitate compression, a process that reduces the absolute number of trades (i.e., contracts) in a given members portfolio. These processes identify trades that share economically compatible characteristics for the purposes of aggregating (or compressing) multiple trades into one or potentially eliminating the trade altogether if the trades are offsetting. While this paper does not discuss the exact terms and conditions of compression as they are varied and also not directly relevant, the staff would highlight that methods similar to the shared contractual terms approach are used by market participants to reduce the size of derivative portfolios.

Summary

51. Aggregating derivatives that share maturity dates and floating rate basis could significantly reduce the amount of data required for tracking. Given the aggregation proposed in this approach does not alter the expected cash flows or the maturity dates between the individual benchmark derivatives and aggregated derivatives, the staff believe this method should significantly reduce the volume

of data required for tracking and therefore bring about significant operational simplicity.

52. Irrespective of the simplification discussion in this paper, the staff would highlight that the DRM accounting model has addressed the "capacity issue" regarding core demand deposits by facilitating designation of the same within the target profile subject to certain qualifying criteria. This decision should reduce operational complexity as it eliminates the need for "capacity management" whereby some entities frequently de-designate and re-designate hedge accounting relationships when attempting to reflect their risk management actions in financial reporting. In addition, the ability to designate on a portfolio basis will reduce the absolute number of designations and again reducing operational complexity when compared with the requirements of IFRS 9 and IAS 39.

Preliminary Staff View

53. The staff support the 'Aggregation by shared contractual terms' approach. The staff think that aggregating derivatives with similar contractual terms would significantly reduce the number of benchmark derivatives that are required to be tracked. Given this approach does not alter the expected cash flows, the staff believe this method would significantly reduce the burden of tracking and therefore provide significant operational simplicity without decreasing accuracy of measurement.

Question for the Board

Question for the Board
1) Does the Board agree with the preliminary staff view in paragraphs 53?