STAFF PAPER

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Project	Dynamic Risk Management (DRM)	
Paper topic	Interest rate risk management strategies—Information from outreach	
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1. Introduction

1. The Board tentatively decided that the objective of the DRM model is to better reflect an entity's interest rate risk management strategy and activities in the financial statements. The Board therefore tentatively decided that the target profile – as a core element of the DRM model – would be based on the entity's interest rate risk management strategy.

2. Determining the risk management strategy is the most significant part of a banks' dynamic risk management. For this reason, the staff obtained during the outreach detailed information about participants' interest rate risk management strategies and activities, which is summarised in this agenda paper. The staff thought this information would be useful to provide context for the feedback summarised in other papers for this meeting, in particular, agenda paper 4C.

3. We are not asking the Board to make decisions during this meeting. However, we welcome Board members' comments on any feedback that was unclear, that provides new information, or that needs further research.

2. Key messages in this paper

4. The key information in this paper can be summarised as follows:

(a) There are diverse interest rate risk management strategies, processes, and techniques applied by participants to manage interest rate risk dynamically. This is consistent with the Board's rationale for developing a principle-based approach to DRM and not prescribing eligible risk strategies, risk aggregation approaches or behaviourlisation methods. Further information on this topic is set out in paragraphs 7–10.

(b) Almost all participants noted that their risk management strategy is not entirely focusing on stabilising net interest income (NII). Instead, it commonly combines measurement of both metrics—the change in economic value of equity (EVE), often being the primary focus, and the change in NII. This is different to the demonstration of the DRM model which has mainly been illustrated through examples that focus on a risk management strategy of stabilising NII. Further information on this topic is set out in paragraphs 24–26.

(c) All participants said that their interest rate risk management strategy is expressed in risk limits. This is different from the DRM model which requires entities to express their strategy and target profile on a single outcome basis, and measure performance against that outcome. In addition:

(i) participants said they do not frequently change the boundary of risk limits defined as part of their risk management strategy. However, the desired net open risk positions may be adjusted frequently within the boundary of acceptable risk limits by trading new hedging derivatives.

(ii) limited examples were provided that would illustrate the risk limits applied in practice. However, the feedback received suggests that some entities may set their risk limits as a relatively wide range.

Further information on this topic is set out in paragraphs 27–29.

3. Structure of this paper

5. This paper is structured as follows:

   (a) Information received (Section 4); and

   (b) Question for the Board (Section 5).

6. There are two appendices to the paper:

   (a) Appendix A—Sequence of risk management activities; and

   (b) Appendix B—Setting up acceptable risk limits.

4. Information received

4.1 Risk management strategies in the banking sector

7. When developing the DRM model, the Board acknowledged that, in practice, there are different interest rate risk management strategies adopted by banks and decided that the DRM model would aim to reflect entities' interest rate risk management strategies, rather than define what a valid strategy would be.

8. Many participants said that the focus of the DRM model on an entity's interest rate risk management strategy is a significant improvement towards better reflecting the risk management activities compared to the existing hedge accounting requirements.

9. Furthermore, most participants welcomed the Board's principle-based approach underpinning its tentative decisions about the qualifying criteria for designation in the DRM model as this would enable them to reflect their interest rate risk management strategies more faithfully. For example, the Board did not prescribe risk management strategies, risk aggregation approaches or behaviouralisation methods that would be eligible for designation in the DRM model but contemplated that such components should be consistent with an entity's interest rate risk management strategy.

10. Feedback from participants confirmed that there are different interest rate risk management strategies and diverse dynamic risk management processes and

techniques applied by banks. This diversity is reflective of the nature of their business and the characteristics of the market where the participants operate.

11. Participants described elements that are typically defined in their interest rate risk management strategies, notably:

    (a) Approval and changes in risk management strategy

    (b) Risk management levels (the entity level at which risk is managed)

    (c) Risk metrics for assessing interest rate risks

    (d) Range of acceptable risk limits

    (e) Risk aggregation and time horizon

    (f) Scope of assets and liabilities

    (g) Behaviouralisation methodologies

Approval and changes in risk management strategy

12. The Board tentatively decided that when a change in risk management strategy requires a change in the bank's target profile, the accumulated amount in other comprehensive income should be reclassified to profit and loss over the life of the target profile as defined prior to the change in risk management strategy. While changes in risk management strategy are contemplated in the DRM model, they are only expected to occur infrequently, otherwise the DRM model should be discontinued prospectively.

13. Almost all participants said that their interest rate risk management strategy is set by their board of directors or its delegated executive committees such as assets and liabilities committee (ALCO). Participants also mentioned that the interest rate risk management strategy is subject to supervision by the prudential regulators.

14. Most participants said that generally, they review their interest rate risk management strategies annually, suggesting that their interest risk management strategies are expected to be relatively stable. The periodical (eg annual) review may not necessarily lead to a change to the strategy and it is common for the bank's board or ALCO to simply re-confirm the existing strategy.

15. Furthermore, participants confirmed that changes to most elements of the risk management strategy are only expected to occur infrequently, and usually in response to significant changes in market conditions or the bank's business models.

16. Most participants said that once the risk management strategy is set, it is communicated or cascaded down in the form of 'risk mandates' to different levels of executives and risk managers within the bank, which are then used as the basis of their day-to-day risk management activities. Appendix A to this paper illustrates the sequence of interest rate risk management activities as described by participants.

17. Although most of the participants monitor their interest rate risk exposures frequently (eg daily), they may not perform risk management activities as often. Risk management activities (ie risk hedging) are commonly performed on ad-hoc basis when the net open risk exposures are close to breaching the limits as per their risk mandates. This is typically done by trading new hedging derivatives to reduce the overall net open risk positions. Consequently, the actual net open risk positions may change frequently within the risk limits set by the board or ALCO (due to the frequent changes in risk exposures and ad-hoc new hedging derivatives).

18. On the other hand, a few other participants, try to perform economic hedges for any changes in the interest rate risk exposures immediately, in order to maintain a target position or the so-called 'sweet-spot' as referred by the treasury executives, but such sweet-spot could also change from time to time.

19. A few participants also added that they are more active in positioning themselves to the expected future economic conditions by frequently adjusting their target net open risk position. For example, one participating bank said that they would adjust their target net open risk position intra-daily based on their expectation of the market. These participants noted that the frequent change could lead to operational complexity for the application of the DRM model if these adjustments were to be treated as changes to risk management strategy. The implications of this comment are discussed in detail in agenda paper AP4C for this meeting.

Risk management levels

20. Participants considered that the DRM model would be most effectively implemented if the bank has a comprehensive view of its interest rate risk exposure from managed portfolio(s). This would be achieved if the bank has a centralised (or

aggregated) view of its risk exposure. In this scenario, the DRM model could be implemented more directly and efficiently so that it better reflects the bank's risk management strategy and activities in the financial statements.

21. Most participants said that they do have an aggregated interest rate risk management strategy across the group and as a result, the DRM model could potentially be applied in the consolidated financial statements based on that view.

22. However, a few participants said that a group-wide interest rate risk management strategy is not explicitly set by their senior management. Instead, risk limits or targets are set individually for each subsidiary in their group. This is because, these participants follow a decentralised approach to interest rate risk management. As a result, the group's overall interest rate risk exposure is managed by maintaining each subsidiaries' risks within an acceptable level, which are usually set proportionately to the entity's overall risk appetite (eg the 15% Tier 1 threshold as per Basel Committee on Banking Supervision). In this scenario, if additional risk management is deemed necessary by the senior management, separate risk mandates will be provided to individual subsidiaries (usually the one that manages the largest interest rate risk exposures) to steer the overall group risk position.

23. Consequently, these participants asked for clarity on the application of the DRM model in this scenario. In particular, they said that:

    (a) there may be challenges in setting up the DRM model at a consolidated level, because they are only actively managing interest rate risk at the subsidiary level; and

    (b) the Board should provide clarity on whether hedge accounting designations based on the DRM models implemented at each subsidiary level can be considered as valid designations for the DRM model at a group consolidated level.

Risk metrics for assessing interest rate risks

24. Almost all the participants said that their interest rate risk management strategies are expressed in terms of the risk to both EVE and change in NII, consistent with the Interest Rate Management in Banking Book framework (IRRBB) as defined by the Bank of international Settlement (BIS).

25. However, the actual risk metrics adopted are different amongst banks, and some banks use multiple metrics to better reflect and manage the overall risks embedded in their banking book. The common measurement techniques include:

    (a) the present value of a single basis point change in interest rates based on gap analysis (PV01);

    (b) the absolute economic value of equity based on cash flows (EVE);

    (c) the economic value-at-risk (EVaR); and

    (d) the expected changes in NII over a short time horizon due to interest rate movements (NII).

26. Many participants noted that the choice of the risk metrics is one of the key elements in the bank's risk management strategy, which is usually closely aligned with the bank's business model and the complexity of the interest rate risks it manages. Consequently, the choice of risk metrics is not expected to change frequently.

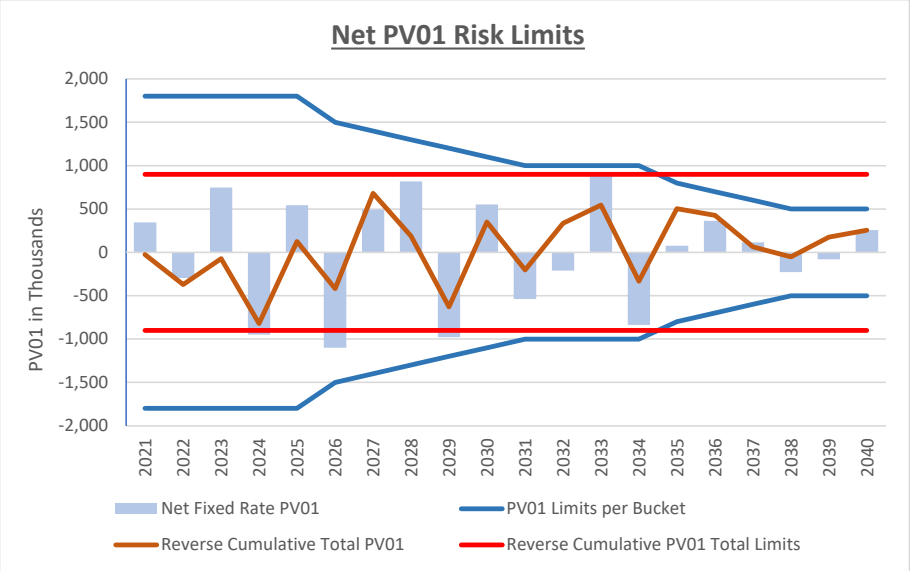
Range of acceptable risk limits

27. One of the key messages expressed from almost all participants with regards to the interaction between their interest rate risk management strategy and the DRM model is that they set and express their interest rate risk management strategies in the form of risk limits which are typically defined as a range. This is different from one of the core elements of the DRM model, being the target profile, which is assumed to be a single outcome. Consequently, there are significant implications which emerge from this inconsistent approach between how banks determine their target profiles *versus* how it is currently contemplated in the DRM model. Agenda paper 4C for this meeting sets out detailed feedback on this topic.

28. The chart below provides an example of how acceptable risk limits may be set using a PV01 metric by individual re-pricing bucket (illustrated through blue lines) and by the overall exposures in reverse cumulative total risk limits (illustrated through red lines).[1] The blue bars show the net PV01 exposures that the bank has

[1] In the chart, the reverse cumulative total PV01 in a particular year refers to the sum of all PV01 in buckets on or after that year.

after its hedging activities, and the orange line shows the reverse cumulative total of the net PV01 exposures. Appendix B to this paper illustrates other possible approaches that could be used depending on the bank's risk management strategy.



29. Banks determine the risk limits in accordance with their risk appetite. The size of the risk limits could vary significantly amongst banks, and banks may also choose to build-in some flexibility to their risk limits to provide for potential change in circumstances. The only external restriction with regards to the width of risk limits which was mentioned by the participants relates to the regulatory requirements. For example, the European Banking Authority has a guideline indicating banks need to report immediately if the economic value change in banking book is more than 20% of the Tier 1 capital for a 200bps parallel shift of interest rate. Consequently, to ensure compliance banks would usually set their risk limits below such threshold.

Risk aggregation and time horizon

30. It is essential that banks have various types of risk aggregation approaches in order to generate a holistic view of the net interest rate risk exposure from all types of assets and liabilities that are managed centrally. Participants described their approaches to achieve such an aggregated risk view, suggesting such approaches are applied consistently across the bank, although different methods are used by different participants.

31. Most participants said that they adopt an internal fund transfer pricing mechanism based on the prevailing interest rate benchmark, by either creating a proxy internal

derivative position, or a proxy loan/deposit position between the business division and treasury department to replicate the interest rate risk from the underlying assets or liabilities. Any commercial margin or other spread components of the underlying assets or liabilities are retained within the division and ignored for the purpose of internal transfer pricing (for interest rate risks), and thus not included in the interest rate risk management view. Accordingly, most participants said that they only consider the interest rate benchmark for the purpose of interest rate risk management.

32. In contrast, a few participants said that they include the full coupon of the assets and liabilities when aggregating their net open interest rate risks, arguing that such an approach is significantly simpler operationally compared to applying the interest rate benchmark method described in paragraph 31.

33. Both approaches are contemplated by the IRRBB framework, and thus banks consider them both as acceptable for risk management purposes as long as the method chosen is clearly communicated and applied consistently.[2]

34. In addition, the determination of the time horizon and construction of maturity buckets are also key elements of the risk management strategy. For interest rate risk management purpose, many participants deem all cash flows in the maturity bucket to have the same repricing date and thus can be viewed holistically. It is also common for some participants to manage risk exposures in adjacent maturity buckets together and only perform economic hedging at the liquid part of the curve to reduce cost of hedging.[3]

Scope of assets and liabilities

35. The risk management strategy includes information about the scope of assets and liabilities managed for interest rate risk purposes, which in aggregate result in the net open risk exposure. While the amounts of the risk exposures in the managed portfolios may be changing frequently depending on the market conditions and

[2] In both approaches banks would use an appropriate benchmark interest rate curve to discount the cash flows in order to derive a PV of the banking book. Therefore, even if the full coupons are included it is arguably still measuring the interest rate risk re-pricing exposure.

[3] These banks simply assume the interest rates in the adjacent buckets would move parallelly in most cases and accept the residual risks if that was not the case in reality.

bank's business decisions, the scope of such portfolios is pre-determined and documented in the risk management strategy.

36. Many participants commented that the scope of the assets and liabilities in their banking book that are managed for interest rate risk purposes (and possibly the deemed interest rate risk exposures from equity as per paragraph 37) is consistent with the principles set out in the IRRBB framework. They also mentioned the control systems in place to separate their banking book from their trading book.

37. Most participants said that for the DRM model to enable them better reflecting their interest rate risk management strategy, they encourage the Board to consider extending the scope of qualifying exposures to be designated in the DRM model. For instance, they suggested the Board includes deemed interest rate risk exposures in equity and financial assets measured through fair value through other comprehensive income as eligible items to be designated in the DRM model. Acknowledging that the Board tentatively decided to address these items in its second phase of development of the DRM model, these participants advocated the Board to avoid issuing DRM accounting requirements in phases (ie not proceeding with standard setting for the core DRM model without considering the deemed interest rate risks from equity). In their view, these interest rate risk exposures are quantitatively important elements of their interest rate risk exposure and risk management strategy.

Behaviouralisation methodologies

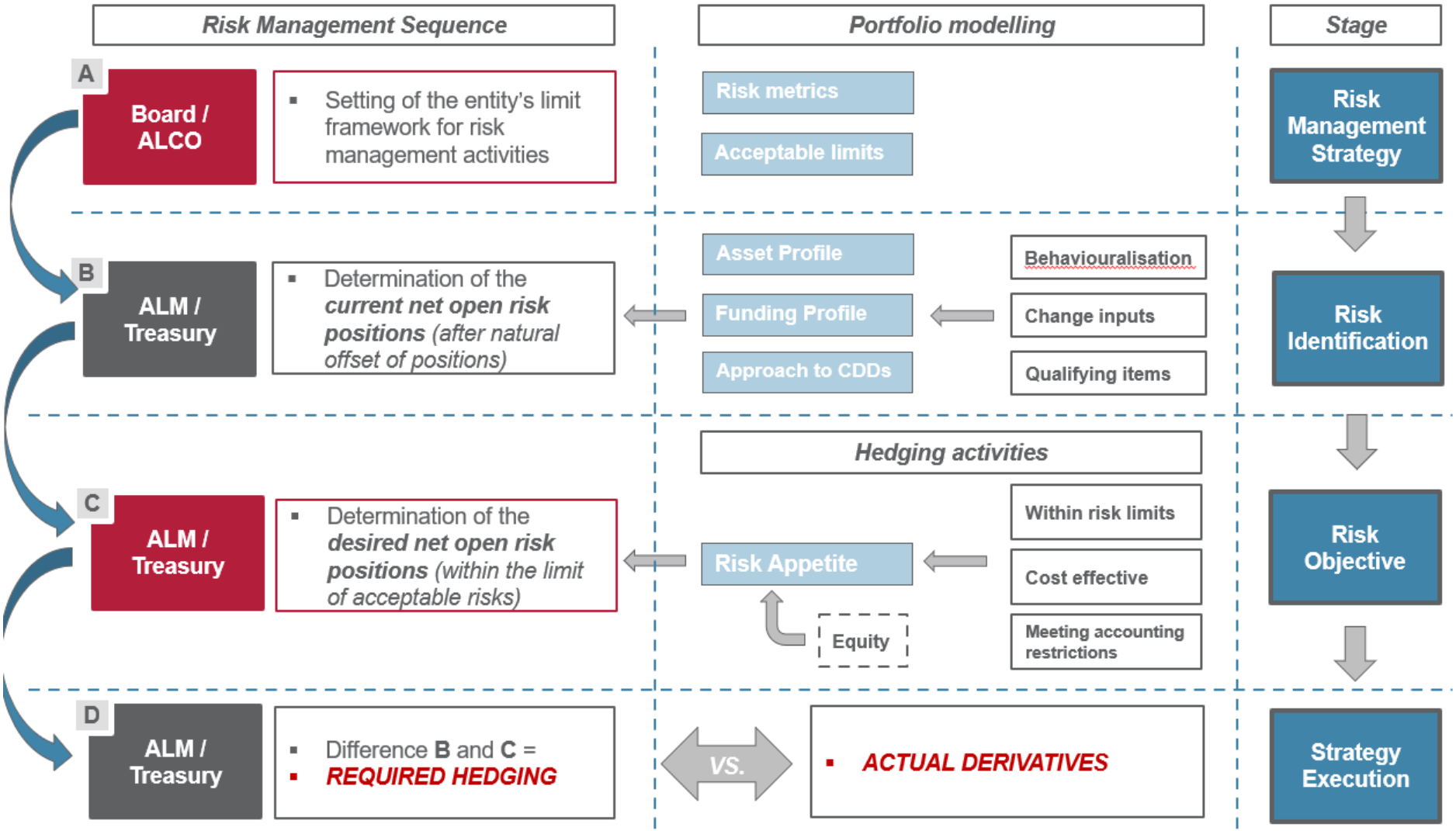
38. Almost all participants consider interest rate risk based on expected rather than contractual cash flows for risk management purpose, but there is a variety in behaviouralisation methodologies in practice. Some methodologies are inherently more complicated than others and banks can choose the methodology most appropriate for the characteristics of their managed portfolio (eg using conditional prepayment rate) as part of their risk management strategy. Similarly, the profiling of core demand deposits and the level of deemed interest rate risk exposure from equity also vary among banks.

39. Participants confirmed that although changes to the methodologies of the behaviouralisation models are possible, they not expected to occur frequently. In

comparison, the inputs to the behaviouralisation models are constantly reviewed and amended as the market evolves.

40. Further information on this topic and the feedback received from participants can be found in agenda paper 4D for this meeting.

Appendix A—Sequence of Risk Management Activities



Appendix B—Setting up acceptable risk limits

B1. Setting up acceptable risk limits

(a) Banks commonly focus on the PV01 risks when setting up the acceptable risk limits, as shown in the left chart below, with an overall PV01 limit or individual limits for each re-pricing buckets, or a combination of the two.

(b) In addition to PV01 based risk limits, some banks also have limits set for the net interest margin variability in the form of net fixed rate exposure subject to re-pricing.

(c) Such limits are commonly set for a shorter period in future, and used as a supplementary measure to the PV01 based limits

(d) For example, banks may focus on the interst margin variability for the next 36 months as shown in the right chart below. Any exposures that would re-price after the next 36 months are not considered until they fall into these buckets.